North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

April 10, 2014

**MEMORANDUM**

To: Thomas A. Reeder, Director

From: Karen Higgins, 401 & Buffer Permitting Unit Supervisor KH

Subject: Consolidated Buffer Mitigation Rule (15A NCAC 02B .0295) Stakeholder Report

---

On May 9, 2013 the Environmental Management Commission adopted Rule 15A NCAC 02B .0295. On July 18, 2013, the Rules Review Commission approved Rule 15A NCAC 02B .0295, however more than ten letters of objection were received. The Department (DENR) requested us (DWR) to assemble a stakeholder group to resolve the objections to the rule.

The stakeholder group was assembled with seven members:

- Norton Webster, Environmental Banc & Exchange
- John Hutton, Wildlands Engineering
- Tara Disy Allden, Restoration Systems
- Jeff Furness, PCS Phosphate
- Leilani Paugh, NC Department of Transportation
- Michael Ellison, NC Ecosystem Enhancement Program
- Eric Kulz, NC Division of Water Resources

The group met between October 2013 and March 2014 to work through each paragraph of the rule. The group came to a consensus on all the revisions to the OAH draft rule and those recommendations are attached.

If you have any questions or require further information, please let me know.

Attachments

A – Stakeholder group's recommended rule text for 15A NCAC 02B .0295

B – Stakeholder group's recommended rule text for 15A NCAC 02B .0295 showing all revisions to the OAH draft of the Approved Rule

C – OAH draft of the Approved rule

cc (via email): Norton Webster, John Hutton, Tara Allden, Michael Ellison, Leilani Paugh, Jeff Furness, Eric Kulz, Katie Merritt, Rich Gannon, Cyndi Karoly, Matt Matthews, Amy Chapman

Division of Water Resources – 401 & Buffer Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6494
Internet: www.ncwaterquality.org

**Attachment A**

Stakeholder group's recommended rule text for 15A NCAC 02B .0295

**15A NCAC 02B .0295 MITIGATION PROGRAM REQUIREMENTS FOR PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS**

(a) PURPOSE. The purpose of this Rule is to set forth the mitigation requirements that apply to applicants listed in Subparagraphs (1) and (2) of this Paragraph and to set forth requirements for buffer mitigation providers. Buffer mitigation is required when one of the following applies:

(1) The applicant has received an authorization certificate for impacts that cannot be avoided or practicably minimized pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607; or

(2) The applicant has received a variance pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607 and is required to perform mitigation as a condition of a variance approval.

(b) DEFINITIONS. For the purpose of this Rule, these terms shall be defined as follows:

(1) "Authority" means either the Division or a local government that has been delegated or designated to implement the riparian buffer program.

(2) "Division" means the Division of Water Resources of the North Carolina Department of Environment and Natural Resources.

(3) "Enhancement Site" means a riparian zone site characterized by conditions between that of a restoration site and a preservation site such that the establishment of woody stems (*i.e.*, tree or shrub species) will maximize nutrient removal and other buffer functions.

(4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653} using the eight-digit Hydrologic Unit Code (HUC) prepared by the United States Geological Survey.

(5) "Locational Ratio" means the mitigation ratio applied to the mitigation requirements based on the location of the mitigation site relative to the impact site as set forth in Paragraph (f).

(6) "Monitoring period" means the length of time specified in the approved mitigation plan during which monitoring of vegetation success and other anticipated benefits to the adjacent water as listed in the authorization certification is done.

(7) "Non-wasting endowment" means a fund that generates enough interest to cover the cost of the long term monitoring and maintenance.

(8) "Outer Coastal Plain" means the portion of the state shown as the Middle Atlantic Coastal Plain (63) on Griffith, *et al.* (2002) "Ecoregions of North and South Carolina." Reston, VA, United States Geological Survey.

(9) "Preservation Site" means riparian zone sites that are characterized by a natural forest consisting of the forest strata and diversity of species appropriate for the Omernik Level III ecoregion.

(10) "Restoration Site" means riparian zone sites that are characterized by an absence of trees and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings) or sites that are

characterized by scattered individual trees such that the tree canopy is less than 25% of the cover and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings).

(11) "Riparian buffer mitigation unit" means a unit representing a credit of riparian buffer mitigation that offsets one square foot of riparian buffer impact.

(12) "Riparian wetland" means a wetland that is found in one or more of the following landscape positions: in a geomorphic floodplain; in a natural topographic crenulation; contiguous with an open water equal to or greater than 20 acres in size; or subject to tidal flow regimes excluding salt/brackish marsh wetlands.

(13) "Urban" means an area that is designated as an urbanized area under the most recent federal decennial census or within the corporate limits of a municipality.

(14) "Zonal Ratio" means the mitigation ratio applied to impact amounts in the respective zones of the riparian buffer as set forth in Paragraph (e).

(c) APPLICATION REQUIREMENTS, MITIGATION SITE REQUIREMENTS AND MITIGATION OPTIONS. Any applicant who seeks approval to impact riparian buffers covered under this Rule who is required by Paragraph (a) shall submit to the Division a written mitigation proposal that calculates the required area of mitigation and describes the area and location of each type of proposed mitigation. The applicant shall not impact buffers until the Division has approved the mitigation plan by issuance of written authorization. For all options except payment of a fee under Paragraphs (j) or (k) of this Rule, the proposal shall include a commitment to provide a perpetual conservation easement or similar legal protection mechanism to ensure perpetual stewardship that protects the mitigation site's nutrient removal and other water quality functions, a commitment to provide a non-wasting endowment or other financial mechanism for perpetual stewardship and protection, and a commitment to provide a completion bond that is payable to the Division sufficient to ensure that land or easement purchase, construction, monitoring and maintenance are completed. For each mitigation site, the Division shall identify functional criteria to measure the anticipated benefits of the mitigation to the adjacent water. The Division shall issue a mitigation determination that specifies the area, type and location of mitigation and the water quality benefits to be provided by the mitigation site. The mitigation determination issued according to this Rule shall be included as an attachment to the authorization certification. The applicant may propose any of the following types of mitigation and shall provide a written demonstration of practicality that takes into account the relative cost and availability of potential options, as well as information addressing all requirements associated with the option proposed:

(1) Applicant provided riparian buffer restoration or enhancement pursuant to Paragraph (i) of this Rule;

(2) Payment of a compensatory mitigation fee to a mitigation bank if buffer credits are available pursuant to Paragraph (j) of this Rule or payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph (k) of this Rule. Payment must conform to the requirements of G.S. 143-214.20;

(3) Donation of real property or of an interest in real property pursuant to Paragraph (l) of this Rule; or

(4) Alternative buffer mitigation options pursuant to Paragraph (m) of this Rule.

(d) AREA OF IMPACT. The authority shall determine the area of impact in square feet to each zone of the proposed riparian buffer impact by adding the following:

(1) The area of the footprint of the use impacting the riparian buffer;

(2) The area of the boundary of any clearing and grading activities within the riparian buffer necessary to accommodate the use;

(3) The area of any ongoing maintenance corridors within the riparian buffer associated with the use; and

(4) The authority shall deduct from this total the area of any wetlands that are subject to and compliant with riparian wetland mitigation requirements under 15A NCAC 02H .0506 and are located within the proposed riparian buffer impact area.

(e) AREA OF MITIGATION REQUIRED ON ZONAL MITIGATION RATIOS. The authority shall determine the required area of mitigation for each zone by applying each of the following ratios to the area of impact calculated under Paragraph (d) of this Rule:

| Basin/Watershed | Zone 1 Ratio | Zone 2 Ratio |
|---|---|---|
| Neuse River Basin (15A NCAC 02B .0233) | 3:1 | 1.5:1 |
| Catawba River Basin (15A NCAC 02B .0243) | 2:1 | 1.5:1 |
| Randleman Lake Watershed (15A NCAC 02B .0250) | 3:1 | 1.5:1 |
| Tar-Pamlico River Basin (15A NCAC 02B .0259) | 3:1 | 1.5:1 |
| Jordan Lake Watershed (15A NCAC 02B .0267) | 3:1 | 1.5:1 |
| Goose Creek Watershed (15A NCAC 02B .0607) | 3:1[A] | |

[A] The Goose Creek Watershed does not have a Zone 1 and Zone 2. The mitigation ratio in the Goose Creek Watershed is 3:1 for the entire buffer.

(f) AREA OF MITIGATION REQUIRED ON LOCATIONAL MITIGATION RATIOS. The applicant must use the following locational ratios as applicable based on location of the proposed mitigation site relative to that of the proposed impact site. Locational ratios shall be as follows:

| Location | Ratio |
|---|---|
| Within the 12-digit HUC[A] | 0.75:1 |
| Within the eight-digit HUC[B] | 1:1 |
| In the adjacent eight-digit HUC[B,C] | 2:1 |

[A] Except within the Randleman Lake Watershed. Within the Randleman Lake Watershed the ratio is 1:1.

[B] Except as provided in Paragraph (g) of this Rule.

[C] To use mitigation in the adjacent eight-digit HUC, the applicant shall describe why buffer mitigation within the eight-digit HUC is not practical for the project.

(g) GEOGRAPHIC RESTRICTIONS ON LOCATION OF MITIGATION. Mitigation shall be performed in the same river basin in which the impact is located with the following additional specifications:

(1) In the following cases, mitigation shall be performed in the same watershed in which the impact is located:

(A) Falls Lake Watershed, as defined in Rule 15A NCAC 02B .0275;

(B) Goose Creek Watershed, as defined in Rule15A NCAC 02B .0601;

(C) Randleman Lake Water Supply Watershed, as defined in Rule15A NCAC 02B .0248;

(D) Each subwatershed of the Jordan Lake watershed, as defined in Rule 15A NCAC 02B .0262; and

(E) Other watersheds as specified in riparian buffer protection rules adopted by the Commission.

(2) Buffer mitigation for impacts within watersheds with riparian buffer rules that also have federally listed threatened or endangered aquatic species may be done within other watersheds with the same federally listed threatened or endangered aquatic species as long as the impacts are in the same river basin and same Omernik Level III ecoregion as the mitigation site.

(h) RIPARIAN BUFFER MITIGATION UNITS. Mitigation activities shall generate riparian buffer mitigation units as follows:

| Mitigation Activity | Square Feet of Mitigation Buffer | Riparian Buffer Mitigation Units Generated |
|---|---|---|
| Restoration | 1 | 1 |
| Enhancement | 2 | 1 |
| Preservation on Non-Subject Urban Streams | 3 | 1 |
| Preservation on Subject Urban Streams | 3 | 1 |
| Preservation on Non-Subject Rural Streams | 5 | 1 |
| Preservation on Subject Rural Streams | 10 | 1 |

(i) RIPARIAN BUFFER RESTORATION OR ENHANCEMENT. Division staff shall make an on-site determination as to whether a potential mitigation site qualifies as a restoration or enhancement site based on the applicable definition in Paragraph (b) of this Rule. Riparian buffer restoration or enhancement sites shall meet the following requirements:

(1) Buffer restoration or enhancement may be proposed as follows:

| Urban Areas | |
|---|---|
| Buffer width (ft) | Proposed Percentage of Full Credit |
| Less than 20 | 0 % |
| 20-29 | 75 % |
| 30-100 | 100 % |
| 101-200 [A] | 50 % [A] |

| Non-Urban Areas | |
|---|---|
| Buffer width (ft) | Proposed Percentage of Full Credit |
| Less than 20 | 0 % |
| 20-29 | 0 % |
| 30-100 | 100 % |
| 101-200 [A] | 50 % [A] |

[A] The area of the mitigation site beyond 100 linear feet from the top of bank shall comprise no more than 10% of the total area of mitigation.

(2) The location of the restoration or enhancement shall comply with the requirements of Paragraphs (e), (f) and (g) of this Rule and in the Catawba watershed, buffer mitigation may be done along the lake shoreline as well as along intermittent and perennial stream channels throughout the watershed.

(3) Diffuse flow of runoff shall be maintained in the riparian buffer. Any existing impervious cover or stormwater conveyances such as ditches, pipes or drain tiles shall be eliminated and the flow converted to diffuse flow. If elimination of existing stormwater conveyances is not feasible, then the applicant or mitigation provider shall provide a delineation of the watershed draining to the stormwater outfall and the percentage of the total drainage treated by the riparian buffer for Division approval; credit may be reduced proportionally.

(4) The applicant or mitigation provider shall submit a restoration or enhancement plan for written approval by the Division. The restoration or enhancement plan shall demonstrate compliance with the requirements of Subparagraphs (1) through (3) of this Paragraph and shall contain the following in addition to elements required in Paragraph (c) of this Rule:

(A) A map of the proposed restoration or enhancement site;

(B) A vegetation plan that shall include a minimum of four native hardwood tree species or four native hardwood tree and native shrub species, where no one species is greater than 50% of established stems, established at a density sufficient to provide 260 stems per acre at the completion of monitoring. Native volunteer species may be included to meet performance standards. The Division may approve alternative vegetation plans upon consideration of factors including site wetness and plant availability to meet the requirements of this Part;

(C) A grading plan (if applicable). The site shall be graded in a manner to ensure diffuse flow through the entire riparian buffer;

(D) A schedule for implementation, including a fertilization and herbicide plan if applicable; and

(E) A monitoring plan, including monitoring of vegetative success and other anticipated benefits to the adjacent water as listed in the Authorization Certification.

(5) Within one year after the Division has approved the restoration or enhancement plan, the applicant or mitigation provider shall present documentation to the Division that the riparian buffer has been restored or enhanced unless the Division agrees in writing to a longer time period due to the necessity for a longer construction period.

(6) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions.

(7) The applicant or mitigation provider shall submit written annual reports for a period of five years after the restoration or enhancement showing that the trees or tree and shrub species planted are

meeting success criteria and that diffuse flow through the riparian buffer has been maintained. The applicant or mitigation provider shall replace trees or shrubs and restore diffuse flow if needed during that five-year period. Additional years of monitoring may be required if the objectives under Paragraph (i) have not been achieved at the end of the five-year monitoring period.

(8) The mitigation provider shall provide a site specific credit/debit ledger to the Division at regular intervals once credits are established and until they are exhausted.

(9) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(j) PURCHASE OF BUFFER MITIGATION CREDITS FROM A PRIVATE OR PUBLIC MITIGATION BANK. Applicants who choose to satisfy some or all of their mitigation by purchasing mitigation credits from a private or public mitigation bank shall meet the following requirements:

(1) The mitigation bank from which credits are purchased is listed on the Division's webpage (http://portal.ncdenr.org/web/wq/swp/ws/401) and shall have available riparian buffer credits;

(2) The mitigation bank from which credits are purchased shall be located as described in Paragraphs (e), (f) and (g) of this Rule; and

(3) After receiving a mitigation acceptance letter from the mitigation provider, proof of payment for the credits shall be provided to the Division prior to any activity that results in the removal or degradation of the protected riparian buffer.

(k) PAYMENT TO THE RIPARIAN BUFFER RESTORATION FUND. Applicants who choose to satisfy some or all of their mitigation determination by paying a compensatory mitigation fee to the Riparian Buffer Restoration Fund shall meet the requirements of 15A NCAC 02B .0269 (Riparian Buffer Mitigation Fees to the NC Ecosystem Enhancement Program). Payment made to the NC Ecosystem Enhancement Program (the Program) shall be contingent upon acceptance of the payment to the Program. The financial, temporal and technical ability of the Program to satisfy the mitigation request shall be considered to determine whether the Program shall accept or deny the request.

(l) DONATION OF PROPERTY. Applicants who choose to satisfy their mitigation determination by donating real property or an interest in real property to fully or partially offset an approved payment into the Riparian Buffer Restoration Fund pursuant to Paragraph (k) of this Rule shall meet the following requirements:

(1) The value of the property interest shall be determined by an appraisal performed in accordance with Part (l)(4)(D) of this Rule. The donation shall satisfy the mitigation determination if the appraised value of the donated property interest is equal to or greater than the required fee. If the appraised value of the donated property interest is less than the required fee calculated pursuant to 15A NCAC 02B .0269, the applicant shall pay the remaining balance due.

(2) The donation of real property interests shall be granted in perpetuity.

(3) Donation of real property interests to satisfy the full or partial payments under Paragraph (k) shall be accepted only if such property meets all of the following requirements:

(A) The property shall be suitable for restoration or enhancement to successfully produce viable riparian buffer compensatory mitigation credits in accordance with Paragraph (i) of this Rule or the property shall be suitable for preservation to successfully produce viable riparian buffer compensatory mitigation credits in accordance with Part (m)(2)(C) of this Rule;

(B) The property shall be located in an area where the Program can reasonably utilize the credits, based on historical or projected use, to offset compensatory mitigation requirements;

(C) The estimated cost of restoring or enhancing and maintaining the property shall not exceed the projected mitigation credit value of the property minus land acquisition costs, except where the applicant supplies additional funds acceptable to the Program for restoration or enhancement and maintenance of the buffer;

(D) The property shall not contain any building, structure, object, site, or district that is listed in the National Register of Historic Places established pursuant to Public Law 89-665, 16 U.S.C. 470 as amended;

(E) The property shall not contain any hazardous substance or solid waste such that water quality could be adversely impacted, unless the hazardous substance or solid waste can be properly remediated before the interest is transferred;

(F) The property shall not contain structures or materials that present health or safety concerns to the general public. If wells, septic, water or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations before the interest is transferred. Sewer connections in Zone 2 may be allowed for projects in accordance with Part (m)(2)(E) of this Rule;

(G) The property and adjacent properties shall not have prior, current, or known future land use that would jeopardize the functions of the compensatory mitigation;

(H) The property shall not have any encumbrances or conditions that are inconsistent with the requirements of this rule or purposes of the buffer rules;

(I) Fee simple title to the property or a perpetual conservation easement on the property shall be donated to the State of North Carolina, a local government or a qualified holder under N.C. General Statute 121-34 et seq. and 170(h) of the Internal Revenue Code as approved by the Department and the donee; and

(J) The donation shall be accompanied by a non-wasting endowment or other financial mechanism for perpetual maintenance and protection sufficient to ensure perpetual long-term monitoring and maintenance, except that where a local government has donated a perpetual conservation easement and has entered into a binding intergovernmental

agreement with the Program to manage and protect the property consistent with the terms of the perpetual conservation easement, such local government shall not be required to provide a non-wasting endowment.

(4) At the expense of the applicant or donor, the following information shall be submitted to the Program with any proposal for donations or dedications of interest in real property:

(A) Documentation that the property meets the requirements laid out in Subparagraph (l)(3) of this Rule;

(B) US Geological Survey 1:24,000 (7.5 minute) scale topographic map, county tax map, USDA Natural Resource Conservation Service County Soil Survey Map, and county road map showing the location of the property to be donated along with information on existing site conditions, vegetation types, presence of existing structures and easements;

(C) A current property survey performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the State Board of Registration for Professional Engineers and Land Surveyors in "Standards of Practice for Land Surveying in North Carolina." Copies may be obtained from the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609;

(D) A current appraisal of the value of the property performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the Appraisal Board in the "Uniform Standards of Professional North Carolina Appraisal Practice." Copies may be obtained from the Appraisal Foundation, Publications Department, P.O. Box 96734, Washington, D.C. 20090-6734; and

(E) A complete attorney's report on title with a title commitment for policy in the name of the State of North Carolina in the dollar amount of the appraised value.

(m) ALTERNATIVE BUFFER MITIGATION OPTIONS. Some or all of a buffer mitigation requirement may be met through any of the alternative mitigation options described in this Paragraph. Any proposal for alternative mitigation shall meet, in addition to the requirements of Paragraphs (c), (e), (f) and (g) of this Rule, the requirements set out in the Subparagraph addressing that option as well as the following requirements:

(1) Any proposal for alternative mitigation shall be provided in writing to the Division and shall meet the following content and procedural requirements for approval by the Division:

(A) Projects that have been constructed and are within the required monitoring period on the effective date of this Rule are eligible for use as alternative buffer mitigation. Projects that have completed monitoring and have been released by the Division on or before the effective date of this Rule are eligible for use as alternative buffer mitigation for a period of ten years from the effective date of this Rule;

(B) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions; and

(C) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(2) ALTERNATIVE BUFFER MITIGATION – NON-STRUCTURAL, VEGETATIVE OPTIONS

(A) Coastal Headwater Stream Mitigation. Wooded buffers planted along Outer Coastal Plain headwater stream mitigation sites can be approved as riparian buffer mitigation as long as the site meets all applicable requirements of Paragraph (i) of this Rule. In addition, all success criteria including woody species, stem density, diffuse flow and stream success criteria specified by the Division in any required written approval of the site must be met. The area of the buffer shall be measured perpendicular to the length of the valley being restored. The area within the proposed buffer mitigation shall not also be used as wetland mitigation. Monitoring of the site must be for at least five years from the date of planting by providing annual reports for written Division approval.

(B) Buffer Restoration and Enhancement on Non-Subject Streams. Restoration or enhancement of buffers may be conducted on intermittent or perennial streams that are not subject to riparian buffer rules. These streams shall be confirmed as intermittent or perennial streams by Division staff using the Division publication, *Methodology for Identification of Intermittent and Perennial Streams and Their Origins* (v.4.11, 2010). The proposal shall meet all applicable requirements of Paragraph (i) of this Rule.

(C) Preservation of Buffer on Non-subject streams. Preservation of buffers on intermittent or perennial streams that are not subject to riparian buffer rules may be proposed in order to protect permanently the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer. These streams shall be confirmed as intermittent or perennial streams by Division staff using the Division publication, *Methodology for Identification of Intermittent and Perennial Streams and Their Origins* (v.4.11, 2010). The preservation site shall meet the requirements of Subparagraph (i)(1), (i)(3), (i)(6) and Parts (l)(3)(D), (E), (F), (H) and (J) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed.

(D) Preservation of Buffers on Subject Streams. Buffer preservation may be proposed in order to permanently protect the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer above and beyond the protection afforded by the existing buffer rules on sites that meet the definition of a preservation site along streams, estuaries or ponds that are subject to buffer rules. The

preservation site shall meet the requirements of Subparagraph (i)(1), (i)(3), (i)(6) and Part (l)(3)(D), (E), (F), (H) and (J) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed.

(E) Sewer easement within the buffer. If the proposed mitigation site contains a sewer easement in Zone 1, that portion of the sewer easement within Zone 1 is not suitable for buffer mitigation. If the proposed mitigation site contains a sewer easement in Zone 2, the portion of the sewer easement in Zone 2 may be suitable for buffer mitigation if the applicant or mitigation provider restores or enhances the forested buffer in Zone 1 adjacent to the sewer easement, the sewer easement is at least 30 feet wide, the sewer easement is required to be maintained in a condition which meets the vegetative requirements of the collection system permit, and diffuse flow is provided across the entire buffer width. The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement. The proposal shall meet all applicable requirements of Part (m)(2)(C) of this Rule for preservation.

(F) Enhancement of grazing areas adjacent to streams. Buffer credit at a 2:1 ratio shall be available for an applicant or mitigation provider who proposes permanent exclusion of grazing livestock that otherwise degrade the stream and riparian zone through trampling, grazing or waste deposition by fencing the livestock out of the stream and its adjacent buffer. The applicant or mitigation provider shall provide an enhancement plan to the standards identified in Paragraph (i). The applicant or mitigation provider shall demonstrate that grazing was the predominant land use since the effective date of the applicable buffer rule.

(G) Mitigation on ephemeral channels. For purposes of riparian buffer mitigation as described in this Part, an ephemeral channel is defined as a natural channel exhibiting discernible banks within a topographic crenulation (V-shaped contour lines) indicative of natural drainage on the 1:24,000 scale (7.5 minute) quadrangle topographic map prepared by the U.S. Geologic Survey or as seen on digital elevation models with contours developed from the most recent available LiDAR data. Ephemeral channels only flow for a short period of time after precipitation in the immediate area and do not have periods of base flow sustained by groundwater discharge. The applicant or mitigation provider shall provide a delineation of the watershed draining to the ephemeral channel. The entire area proposed for mitigation must be within the contributing drainage area to the ephemeral channel. The ephemeral channel must be directly connected to an intermittent or perennial stream and contiguous with the rest of the mitigation site protected under a perpetual conservation easement. The area of the mitigation site on ephemeral channels shall comprise no more than 25% of the total area of mitigation. The

proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement. The proposal shall meet all applicable requirements of Part (m)(2)(C) of this Rule for preservation.

(H) Restoration and Enhancement on Ditches. For purposes of riparian buffer mitigation as described in this Part, a ditch is defined as a man-made channel other than a modified natural stream that was constructed for drainage purposes. To be used for mitigation, a ditch must meet all of the following criteria: the ditch must be directly connected with and draining towards an intermittent or perennial stream; the ditch must be contiguous with the rest of the mitigation site protected under a perpetual conservation easement; stormwater runoff from overland flow must drain towards the ditch; the ditch must be between 1 and 3 feet in depth; and the entire length of the ditch must have been in place prior to the effective date of the applicable buffer rule. The width of the restored or enhanced area shall not be less than 30 feet and shall not exceed 50 feet for crediting purposes. The applicant or mitigation provider shall provide a delineation of the watershed draining to the ditch. The watershed draining to the ditch shall be at least four times larger than the restored or enhanced area along the ditch. The perpetual conservation easement must include the ditch and the confluence of the ditch with the intermittent or perennial stream, and provide language that prohibits future maintenance of the ditch. The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement.

(3) ALTERNATIVE BUFFER STORMWATER TREATMENT OPTIONS.

(A) For all structural options: Riparian buffer restoration or enhancement is required with an area at least equal to the footprint of the buffer impact, and the remaining mitigation resulting from the multipliers can be met through structural options;

(B) Structural measures already required by other local, state or federal rule or permit cannot be used as alternative buffer mitigation, except to the extent such measure(s) exceed the requirements of such rule. Stormwater Best Management Practices (BMPs), including bioretention facilities, constructed wetlands, infiltration devices and sand filter are all potentially approvable (BMPs) for alternative buffer mitigation. Other BMPs may be approved only if they meet the nutrient removal levels outlined in Part (3)(C) of this Subparagraph. Existing or planned BMPs for a local, state or federal rule or permit may be retrofitted or expanded to improve their nutrient removal if this level of treatment would not be required by other local, state or federal rules. In this case, the predicted increase in nutrient removal may be counted toward alternative buffer mitigation;

(C) Minimum treatment levels: Any structural BMP shall provide at least 30% total nitrogen and 35% total phosphorus removal as demonstrated by a scientific and engineering literature review as approved by the Division. The mitigation proposal shall demonstrate

that the proposed alternative removes an equal or greater annual mass load of nutrients to surface waters as the buffer impact authorized in the authorization certificate or variance, following the calculation of impact and mitigation areas pursuant to Paragraphs (d), (e) and (f) of this Rule. To estimate the rate of nutrient removal of the impacted buffer, the applicant or mitigation provider shall use a method previously approved by the Division. Alternatively, the applicant or mitigation provider may propose an alternative method of estimating the rate of nutrient removal for consideration and review by the Division;

(D) All proposed structural BMPs shall follow the Division's 2009 Stormwater Best Management Practice Design Manual. If a specific proposed structural BMP is not addressed in this Manual, follow Chapter 20 in this Manual for approval;

(E) An operation and maintenance plan is required to be approved by the Division for all structural options;

(F) Continuous and perpetual maintenance is required for all structural options and shall follow the Division's 2009 Stormwater Best Management Practice Design Manual;

(G) Upon completion of construction, the designer for the type of BMP installed must certify that the system was inspected during construction and was constructed in substantial conformity with plans and specifications approved by the Division;

(H) Removal and replacement of structural options: If a structural option is proposed to be removed and cannot be replaced on site, then a structural or non-structural measure of equal or better nutrient removal capacity shall be constructed as a replacement with the location as specified by Paragraph (f) and (g) of this Rule;

(I) Renovation or repair of structural options: If a structural option must be renovated or repaired, it shall be renovated to provide equal or better nutrient removal capacity as originally designed;

(J) Structural options as well as their operation and maintenance are the responsibility of the landowner or easement holder unless the Division agrees in writing to operation and maintenance by another responsible party. Structural options shall be located in recorded drainage easements for the purposes of operation and maintenance and shall have recorded access easements to the nearest public right-of-way. These easements shall be granted in favor of the party responsible for operating and maintaining the structure, with a note that operation and maintenance is the responsibility of the landowner, easement holder or other responsible party; and

(K) Bonding and endowment. A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed and a non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(4) OTHER ALTERNATIVE BUFFER MITIGATION OPTIONS. Other riparian buffer mitigation options may be considered by the Division on a case-by-case basis after 30-day public notice through the Division's Water Quality Certification Mailing List in accordance with 15A NCAC 02H .0503 as long as the options otherwise meet the requirements of this Rule. Division staff shall present recommendations to the Environmental Management Commission for a final decision with respect to any proposal for alternative buffer mitigation options not specified in this Rule.

(n) ACCOUNTING FOR BUFFER CREDIT, NUTRIENT OFFSET CREDIT AND STREAM MITIGATION CREDIT. Buffer mitigation credit, nutrient offset credit, wetland mitigation credit and stream mitigation credit shall be accounted for in accordance with the following:

(1) Buffer mitigation that is used for buffer mitigation credit cannot be used for nutrient offset credits;

(2) Buffer mitigation or nutrient offset credit cannot be generated within wetlands that provide wetland mitigation credit required by 15A NCAC 02H .0506; and

(3) Either buffer mitigation or nutrient offset credit may be generated on stream mitigation sites as long as the width of the restored or enhanced riparian buffer meets the requirements of Subparagraph (i)(1).

*History Note:* *Authority 143-214.1; 143-214.5; 143-214.7; 143-214.20; 143-215.3(a)(1); S.L. 1998, c. 221; 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8A; 143-215.8B; 143-282(c); 143B-282(d); S.L. 1999, c. 329, s. 7.1; S.L. 2001, c. 418, s 4.(a); S.L 2003, c. 340, s. 5; S.L. 2005-190; S.L 2006-259; S.L. 2009-337; S.L. 2009-486.*
*Eff. Pending Legislative Review.*

**Attachment B**

Stakeholder group's recommended rule text for 15A NCAC 02B .0295 showing all revisions to the OAH draft of the Approved Rule

**15A NCAC 02B .0295 MITIGATION PROGRAM REQUIREMENTS FOR PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS**

(a) PURPOSE. The purpose of this Rule is to set forth the mitigation requirements that apply to applicants listed in Subparagraphs (1) and (2) of this Paragraph and to set forth requirements for buffer mitigation providers. Buffer mitigation is required when one of the following applies:

(1) The applicant has received an authorization certificate for impacts that cannot be avoided or practicably minimized pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607; or

(2) The applicant has received a variance pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607 and is required to perform mitigation as a condition of a variance approval.

(b) DEFINITIONS. For the purpose of this Rule, these terms shall be defined as follows:

(1) "Authority" means either the Division or a local government that has been delegated or designated to implement the riparian buffer program.

(2) "Division" means the Division of Water ~~Quality~~ Resources of the North Carolina Department of Environment and Natural Resources.

(3) "Enhancement Site" means a riparian zone site characterized by conditions between that of a restoration site and a preservation site such that the ~~planting~~ establishment of woody stems (*i.e.*, ~~shrubs or saplings~~)tree or shrub species) will maximize nutrient removal and other buffer functions.

(4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653} using the eight-digit Hydrologic Unit Code (HUC) prepared by the United States Geological Survey.

(5) "Locational Ratio" means the mitigation ratio applied to the mitigation requirements based on the location of the mitigation site relative to the impact site as set forth in Paragraph ~~(e).~~(f).

(6) "Monitoring period" means the length of time specified in the approved mitigation plan during which monitoring of vegetation success and other anticipated benefits to the adjacent water as listed in the authorization certification is done.

(7) "Non-wasting endowment" means a fund that generates enough interest to cover the cost of the long term monitoring and maintenance.

~~(8) "Off-site" means an area that is not located on the same parcel of land as the impact site.~~

~~(9) "On-site" means an area located on the same parcel of land as the impact site.~~

~~(10)~~(8) "Outer Coastal Plain" means the portion of the state shown as the Middle Atlantic Coastal Plain (63) on Griffith, *et al.* (2002) "Ecoregions of North and South Carolina." Reston, VA, United States Geological Survey.

~~(11) "Physiographic province" means one of the four Level III ecoregions shown on Griffith, *et al.* (2002) "Ecoregions of North and South Carolina", Reston, VA, United States Geological Survey.~~

~~(12)~~(9) "Preservation Site" means riparian zone sites that are characterized by a natural forest consisting of the forest strata and diversity of species appropriate for the ~~physiographic province.~~Omernik Level III ecoregion.

~~(13)~~(10) "Restoration Site" means riparian zone sites that are characterized by an absence of trees and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings) or sites that are characterized by scattered individual trees such that the tree canopy is less than 25% of the cover and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings).

(11) "Riparian buffer mitigation unit" means a unit representing a credit of riparian buffer mitigation that offsets one square foot of riparian buffer impact.

~~(14)~~(12) "Riparian wetland" means a wetland that is found in one or more of the following landscape positions: in a geomorphic floodplain; in a natural topographic crenulation; contiguous with an open water equal to or greater than 20 acres in size; or subject to tidal flow regimes excluding salt/brackish marsh wetlands.

~~(15)~~(13) "Urban" means an area that is designated as an urbanized area under the most recent federal decennial census or within the corporate limits of a municipality.

~~(16)~~(14) "Zonal Ratio" means the mitigation ratio applied to impact amounts in the respective zones of the riparian buffer as set forth in Paragraph (e).

(c) APPLICATION REQUIREMENTS, MITIGATION SITE REQUIREMENTS AND MITIGATION OPTIONS. Any applicant who seeks approval to impact riparian buffers covered under this Rule who is required by Paragraph (a) shall submit to the Division a written mitigation proposal that calculates the required area of mitigation and describes the area and location of each type of proposed ~~mitigation,~~mitigation. The applicant shall not impact buffers until the Division has approved the mitigation plan by issuance of written authorization. For all options except payment of a fee under Paragraphs ~~(h)~~(j) or ~~(i)~~(k) of this Rule, the proposal shall include a commitment to provide a perpetual conservation easement or similar legal protection mechanism to ensure perpetual stewardship that protects the mitigation site's nutrient removal and other water quality functions, a commitment to provide a non-wasting endowment or other financial mechanism for perpetual stewardship and protection, and a commitment to provide a completion bond that is payable to the Division sufficient to ensure that land or easement purchase, construction, monitoring and maintenance are completed. For each mitigation site, the Division shall identify functional criteria to measure the anticipated benefits of the mitigation to the adjacent water. The Division shall issue a mitigation determination that specifies the area, type and location of mitigation and the water quality benefits to be provided by the mitigation site. The mitigation determination issued according to this Rule shall be included as an attachment to the authorization certification. The applicant may propose any of the following types of mitigation and shall provide a written demonstration of practicality that takes into account the relative cost and availability of potential options, as well as information addressing all requirements associated with the option proposed:

(1) Applicant provided ~~on-site or off-site~~ riparian buffer ~~restoration,~~restoration or enhancement ~~or preservation~~ pursuant to Paragraph ~~(g)~~(i) of this Rule;

(2) Payment of a compensatory mitigation fee to a mitigation bank if buffer credits are available pursuant to Paragraph ~~(h)~~(j) of this Rule or payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph ~~(i)~~(k) of this Rule. Payment must conform to the requirements of G.S. 143-214.20;

(3) Donation of real property or of an interest in real property pursuant to Paragraph ~~(j)~~(l) of this Rule; or

(4) Alternative buffer mitigation options pursuant to Paragraph ~~(k)~~(m) of this Rule.

(d) AREA OF IMPACT. The authority shall determine the area of impact in square feet to each zone of the proposed riparian buffer impact by adding the following:

(1) The area of the footprint of the use impacting the riparian buffer;

(2) The area of the boundary of any clearing and grading activities within the riparian buffer necessary to accommodate the use;

(3) The area of any ongoing maintenance corridors within the riparian buffer associated with the use; and

(4) The authority shall deduct from this total the area of any wetlands that are subject to and compliant with riparian wetland mitigation requirements under 15A NCAC 02H .0506 and are located within the proposed riparian buffer impact area.

(e) AREA OF MITIGATION REQUIRED ON ZONAL MITIGATION RATIOS. The authority shall determine the required area of mitigation for each zone by applying each of the following ratios to the area of impact calculated under Paragraph (d) of this Rule:

| Basin/Watershed | Zone 1 Ratio | Zone 2 Ratio |
|---|---|---|
| Neuse River Basin (15A NCAC 02B .0233) | 3:1 | 1.5:1 |
| Catawba River Basin (15A NCAC 02B .0243) | 2:1 | 1.5:1 |
| Randleman Lake Watershed (15A NCAC 02B .0250) | 3:1 | 1.5:1 |
| Tar-Pamlico River Basin (15A NCAC 02B .0259) | 3:1 | 1.5:1 |
| Jordan Lake Watershed (15A NCAC 02B .0267) | 3:1 | 1.5:1 |
| Goose Creek Watershed (15A NCAC 02B .0607) | 3:1[A] | |

[A] The Goose Creek Watershed does not have a Zone 1 and Zone 2. The mitigation ratio in the Goose Creek Watershed is 3:1 for the entire buffer.

~~(e)~~(f) AREA OF MITIGATION ~~BASED~~ REQUIRED ON ~~ZONAL AND~~ LOCATIONAL MITIGATION RATIOS. The ~~authority shall determine the required area of mitigation for each zone by applying each of the following ratios to the area of impact calculated under Paragraph (d) of this Rule with a 3:1 ratio for Zone 1 and 1.5:1 ratio for Zone 2, except that the required area of mitigation for impacts proposed within the Goose Creek watershed is 3:1 for the entire buffer and the Catawba River watershed is 2:1 for Zone 1 and 1.5:1 for Zone 2, and:~~

~~(1) In addition to the ratios listed above in this Paragraph, the~~ applicant ~~or mitigation provider~~ must use the following locational ratios as applicable based on location of the proposed mitigation site relative to that of the proposed impact site. ~~Mitigation options~~Locational ratios shall be ~~available to applicants~~ as follows:

| Location | Ratio |
|---|---|
| Within the 12-digit HUC [A] | 0.75:1 |
| Within the eight-digit HUC [B] | 1:1 |
| In the adjacent eight-digit HUC [B, C] | 2:1 |

[A] Except within the Randleman Lake Watershed. Within the Randleman Lake Watershed the ratio is 1:1.

[B] Except as provided in Paragraph (g) of this Rule.

[C] To use mitigation in the adjacent eight-digit HUC, the applicant shall describe why buffer mitigation within the eight-digit HUC is not practical for the project.

~~(A) On-site mitigation is 0.75:1 except within the Randleman Lake watershed which is 1:1;~~

~~(B) Within the 12-digit HUC is 0.75:1 except within the Randleman Lake watershed which is 1:1;~~

~~(C) Within the eight-digit HUC is 1:1 except as provided in Paragraph (f) of this Rule;~~

~~(D) In the adjacent eight-digit HUC is 2:1 except as provided in Paragraph (f) of this Rule.~~

~~For use of Part (e)(1)(D) of this Rule, the applicant shall describe why buffer mitigation within the eight digit HUC is not practical for the project; and~~

~~(2) Donation of property shall satisfy all the conditions of Paragraph (j) of this Rule.~~

~~(f)~~(g) GEOGRAPHIC RESTRICTIONS ON LOCATION OF MITIGATION. Mitigation shall be performed in the same river basin in which the impact is located with the following additional specifications:

(1) In the following cases, mitigation shall be performed in the same watershed in which the impact is located:

(A) Falls Lake ~~Watershed;~~Watershed, as defined in Rule 15A NCAC 02B .0275;

(B) Goose Creek ~~Watershed;~~Watershed, as defined in Rule15A NCAC 02B .0601;

(C) Randleman Lake Water Supply ~~Watershed;~~Watershed, as defined in Rule15A NCAC 02B .0248;

(D) Each subwatershed of the Jordan Lake watershed, as defined in Rule 15A NCAC 02B .0262; and

(E) Other watersheds as specified in riparian buffer protection rules adopted by the Commission.

(2) Buffer mitigation for impacts within watersheds with riparian buffer rules that also have federally listed threatened or endangered aquatic species may be done within other watersheds with the same federally listed threatened or endangered aquatic species as long as the impacts are in the same river basin and same ~~physiographic province~~Omernik Level III ecoregion as the mitigation site.

(h) RIPARIAN BUFFER MITIGATION UNITS. Mitigation activities shall generate riparian buffer mitigation units as follows:

| Mitigation Activity | Square Feet of Mitigation Buffer | Riparian Buffer Mitigation Units Generated |
|---|---|---|
| Restoration | 1 | 1 |
| Enhancement | 2 | 1 |
| Preservation on Non-Subject Urban Streams | 3 | 1 |
| Preservation on Subject Urban Streams | 3 | 1 |
| Preservation on Non-Subject Rural Streams | 5 | 1 |
| Preservation on Subject Rural Streams | 10 | 1 |

~~(g)~~(i) RIPARIAN BUFFER RESTORATION OR ENHANCEMENT. Division staff shall make an on-site determination as to whether a potential mitigation site qualifies as a restoration or enhancement site based on the applicable definition in Paragraph (b) of this Rule. ~~Persons who choose to meet their mitigation requirement through riparian~~Riparian buffer restoration or enhancement sites shall meet the following requirements:

~~(1) The restoration area is equal to the required area of mitigation determined pursuant to Paragraph (e) of this Rule.~~

~~(2) The enhancement area is three times larger than the required area of mitigation determined pursuant to Paragraph (e) of this Rule.~~

(1) Buffer restoration or enhancement may be proposed as follows:

| Urban Areas | |
|---|---|
| Buffer width (ft) | Proposed Percentage of Full Credit |
| Less than 20 | 0 % |
| 20-29 | 75 % |
| 30-100 | 100 % |
| 101-200 [A] | 50 % [A] |

| Non-Urban Areas | |
|---|---|
| Buffer width (ft) | Proposed Percentage of Full Credit |
| Less than 20 | 0 % |
| 20-29 | 0 % |
| 30-100 | 100 % |
| 101-200 [A] | 50 % [A] |

[A] The area of the mitigation site beyond 100 linear feet from the top of bank shall comprise no more than 10% of the total area of mitigation.

~~(3)~~(2) The location of the restoration or enhancement shall comply with the requirements of Paragraphs ~~(e) and~~(e), (f) and (g) of this Rule ~~and:~~and in the Catawba watershed, buffer mitigation

~~(A) For the Catawba River mainstem below Lake James, the width of the riparian buffer shall begin at the top of the bank and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank. For the mainstem lakes located on the Catawba River mainstem, the width of the riparian buffer shall begin at the most landward limit of the full pond level and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the full pond level.~~

~~Buffer mitigation in the Catawba watershed~~ may be done along the lake shoreline as well as along intermittent and perennial stream channels throughout the ~~watershed;~~watershed.

~~(B) For the Goose Creek Watershed the riparian buffer restoration or enhancement site shall have a minimum width of 50 feet as measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank and may include restoration or enhancement of existing riparian areas, restoration or enhancement of streamside areas along first order ephemeral streams that discharge or outlet into intermittent or perennial streams, and preservation of the streamside area along first order ephemeral streams that discharge or outlet into intermittent or perennial streams at a 5:1 ratio as long as there is also an amount of restoration or enhancement equivalent to the amount of permitted impact.~~

~~(4)~~(3) ~~The mitigation site shall provide diffuse~~Diffuse flow ~~across the entire~~of runoff shall be maintained in the riparian buffer. ~~buffer width.~~ Any existing impervious cover or stormwater conveyances such as ditches, pipes or drain tiles shall be eliminated and the flow converted to diffuse flow. If elimination of existing stormwater conveyances is not feasible, then the applicant or mitigation provider shall provide a delineation of the watershed draining to the stormwater outfall and the percentage of the total drainage treated by the riparian buffer for Division approval; credit may be reduced proportionally.

~~(5)~~(4) The applicant or mitigation provider shall submit a restoration or enhancement plan for written approval by the Division. The restoration or enhancement plan shall demonstrate compliance with the requirements of Subparagraphs (1) through (3) of this Paragraph and shall contain the following in addition to elements required in Paragraph (c) of this Rule:

(A) A map of the proposed restoration or enhancement site;

(B) A vegetation plan that shall include a minimum of ~~five~~ four native hardwood tree species or ~~five~~four native hardwood tree and native shrub species, where no one species is greater than 50% of ~~planted~~ established stems, ~~planted~~ established at a density sufficient to provide 260 stems per acre at the completion of monitoring. Native volunteer species may be included to meet performance standards. The Division may approve alternative ~~planting~~ vegetation plans upon consideration of factors including site wetness and plant availability to meet the requirements of this Part;

(C) A grading plan (if applicable). The site shall be graded in a manner to ensure diffuse flow through the entire riparian buffer;

(D) A schedule for ~~implementation~~ implementation, including a fertilization and herbicide plan if applicable;~~that will include protective measures to ensure that fertilizer and herbicide is not deposited downstream from the site and will be applied per manufacturers guidelines. Herbicides used must be certified by EPA for use in or near aquatics sites and must be applied in accordance with the manufacturers' instructions;~~ and

(E) A monitoring ~~plan~~ plan, including monitoring of vegetative success and other anticipated benefits to the adjacent water as listed in the Authorization Certification.

~~(6)~~(5) Within one year after the Division has approved the restoration or enhancement plan, the applicant or mitigation provider shall present documentation to the Division that the riparian buffer has been restored or enhanced unless the Division agrees in writing to a longer time period due to the necessity for a longer construction period.

~~(7)~~(6) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions.

~~(8)~~(7) The applicant or mitigation provider shall submit written annual reports for a period of five years after the restoration or enhancement showing that the trees or ~~trees~~tree and shrub species planted are meeting success criteria and that diffuse flow through the riparian buffer has been maintained. The applicant or mitigation provider shall replace trees or shrubs and restore diffuse flow if needed during that five-year period. Additional years of monitoring may be required if the objectives under Paragraph ~~(g)~~(i) have not been achieved at the end of the five-year monitoring ~~period, and~~period.

(8) The mitigation provider shall provide a site specific credit/debit ledger to the Division at regular intervals once credits are established and until they are exhausted.

(9) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

~~(h)~~(j) PURCHASE OF BUFFER MITIGATION CREDITS FROM A PRIVATE OR PUBLIC MITIGATION BANK. Applicants who choose to satisfy some or all of their mitigation ~~determination~~ by purchasing mitigation credits from a private or public mitigation bank shall meet the following requirements:

(1) The mitigation bank from which credits are purchased is listed on the Division's webpage (http://portal.ncdenr.org/web/wq/swp/ws/401) and shall have available riparian buffer credits;

(2) The mitigation bank from which credits are purchased shall be located as described in Paragraphs ~~(e) and~~(e), (f) and (g) of this Rule; and

(3) After receiving a mitigation acceptance letter from the mitigation provider, proof of payment for the credits shall be provided to the ~~Department~~ Division prior to any activity that results in the removal or degradation of the protected riparian buffer.

~~(i)~~(k) PAYMENT TO THE RIPARIAN BUFFER RESTORATION FUND. Applicants who choose to satisfy some or all of their mitigation determination by paying a compensatory mitigation fee to the Riparian Buffer Restoration Fund shall meet the requirements of 15A NCAC 02B .0269 (Riparian Buffer Mitigation Fees to the NC Ecosystem Enhancement Program). Payment made to the NC Ecosystem Enhancement Program (the Program) shall be contingent upon acceptance of the payment to the Program. The financial, temporal and technical ability of the

Program to satisfy the mitigation request shall be considered to determine whether the Program shall accept or deny the request.

~~(j)~~(l) DONATION OF PROPERTY. Applicants who choose to satisfy their mitigation determination by donating real property or an interest in real property ~~in lieu of payment~~to fully or partially offset an approved payment into the Riparian Buffer Restoration Fund pursuant to Paragraph (k) of this Rule shall meet the following requirements:

(1) ~~The donation of real property interests may be used to either partially or fully satisfy the payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph (i)(k) of this Rule.~~ The value of the property interest shall be determined by an appraisal performed in accordance with Part ~~(j)~~(l)(4)(D) of this Rule. The donation shall satisfy the mitigation determination if the appraised value of the donated property interest is equal to or greater than the required fee. If the appraised value of the donated property interest is less than the required fee calculated pursuant to 15A NCAC 02B .0269, the applicant shall pay the remaining balance due.

(2) The donation of ~~a conservation easement or similar legal protection mechanism that includes a non-wasting endowment or other financial mechanism for perpetual maintenance and protection to satisfy compensatory mitigation requirements shall be accepted only if it is granted in perpetuity.~~real property interests shall be granted in perpetuity.

(3) Donation of real property interests to satisfy the full or partial payments under Paragraph (k) ~~mitigation determination~~ shall be accepted only if such property meets all of the following requirements:

(A) The property shall ~~contain riparian areas that are in need of restoration or enhancement rather than preservation;~~be suitable for restoration or enhancement to successfully produce viable riparian buffer compensatory mitigation credits in accordance with Paragraph (i) of this Rule or the property shall be suitable for preservation to successfully produce viable riparian buffer compensatory mitigation credits in accordance with Part (m)(2)(C) of this Rule;

~~(B) For the Neuse and Tar-Pamlico basins, the Catawba River mainstem below Lake James, and the Randleman and Jordan watersheds, the restorable riparian buffer on the property shall begin at the top of the bank and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank. For the mainstem lakes located on the Catawba River mainstem, the width of the riparian buffer shall begin at the most landward limit of the full pond level and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the full pond level. A minimum distance of less than 50 feet may be allowed only for projects in accordance with Part (k)(2)(D) of this Rule;~~

~~(C)~~(B) The ~~size of the restorable riparian buffer on the property to be donated shall equal or exceed the acreage of riparian buffer required to be mitigated under the mitigation~~

~~responsibility determined pursuant to Paragraph (e) and (f) of this Rule. If the size of the restorable riparian buffer on the property to be donated is less than the acreage of riparian buffer required to be mitigated under the mitigation responsibility determined pursuant to Paragraph (e),(e) and (f), then the applicant shall satisfy the remaining balance by Subparagraph (e)(1) or (2) or a combination of (e)(1) and (2) of this Rule;~~property shall be located in an area where the Program can reasonably utilize the credits, based on historical or projected use, to offset compensatory mitigation requirements;

~~(D) The property shall not have any impervious cover or stormwater conveyances such as ditches, pipes or drain tiles. If impervious cover or stormwater conveyances exist, they shall be eliminated and the flow converted to diffuse flow;~~

~~(E) The property shall be suitable to be successfully restored, based on existing hydrology, soils, and vegetation;~~

~~(F)~~(C) The estimated cost of restoring or enhancing and maintaining the property shall not exceed the ~~value of the property~~projected mitigation credit value of the property minus ~~site identification and~~ land acquisition ~~costs~~ costs, except where~~unless~~ the applicant supplies ~~financial assurance~~additional funds acceptable to the ~~Division~~ Program for restoration or enhancement and maintenance of the buffer;

~~(G)~~(D) The property shall not contain any building, structure, object, site, or district that is listed in the National Register of Historic Places established pursuant to Public Law 89-665, 16 U.S.C. 470 as amended;

~~(H)~~(E) The property shall not contain any hazardous substance or solid waste such that water quality could be adversely impacted, unless the hazardous substance or solid waste can be properly remediated before the interest is transferred;

~~(I)~~(F) The property shall not contain structures or materials that present health or safety concerns to the general public. If wells, septic, water or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations before the interest is transferred. Sewer connections in Zone 2 may be allowed for projects in accordance with Part ~~(k)~~(m)(2)(E) of this Rule;

~~(J)~~(G) The property and adjacent properties shall not have prior, current, or known future land use that would ~~inhibit~~ jeopardize the ~~function~~ functions of the ~~restoration effort;~~compensatory mitigation;

~~(K)~~(H) The property shall not have any encumbrances or conditions that are inconsistent with the requirements of this rule or purposes of the buffer rules;

~~(L)~~(I) Fee simple title to the property or a perpetual conservation easement ~~in~~ on the property shall be donated to the State of North ~~Carolina; and~~Carolina, a local government or a qualified holder under N.C. General Statute 121-34 et seq. and 170(h) of the Internal Revenue Code as approved by the Department and the donee; and

~~(M)~~(J) ~~Upon completion of the buffer restoration or enhancement, the property or the easement shall be donated to a local land trust or to a local government or other state organization that will hold and enforce the conservation easement and its interests.~~ The donation shall be accompanied by a non-wasting endowment or other financial mechanism for perpetual maintenance and protection sufficient to ensure perpetual long-term monitoring and maintenance, except that where a local government has donated a perpetual conservation easement and has entered into a binding intergovernmental agreement with the ~~Division~~ Program to manage and protect the property consistent with the terms of the perpetual conservation easement, such local government shall not be required to provide a non-wasting endowment.

(4) At the expense of the applicant or donor, the following information shall be submitted to the ~~Division~~ Program with any proposal for donations or dedications of interest in real property:

(A) Documentation that the property meets the requirements laid out in Subparagraph ~~(j)~~(l)(3) of this Rule;

(B) US Geological Survey 1:24,000 (7.5 minute) scale topographic map, county tax map, USDA Natural Resource Conservation Service County Soil Survey Map, and county road map showing the location of the property to be donated along with information on existing site conditions, vegetation types, presence of existing structures and easements;

(C) A current property survey performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the State Board of Registration for Professional Engineers and Land Surveyors in "Standards of Practice for Land Surveying in North Carolina." Copies may be obtained from the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609;

(D) A current appraisal of the value of the property performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the Appraisal Board in the "Uniform Standards of Professional North Carolina Appraisal Practice." Copies may be obtained from the Appraisal Foundation, Publications Department, P.O. Box 96734, Washington, D.C. 20090-6734; and

(E) ~~A title certificate.~~ A complete attorney's report on title with a title commitment for policy in the name of the State of North Carolina in the dollar amount of the appraised value.

~~(k)~~(m) ALTERNATIVE BUFFER MITIGATION OPTIONS. Some or all of a buffer mitigation requirement may be met through any of the alternative mitigation options described in this Paragraph. Any proposal for alternative mitigation shall meet, in addition to the requirements of Paragraphs (c), ~~(e) and~~(e), (f) and (g) of this Rule, the requirements set out in the Subparagraph addressing that option as well as the following requirements:

(1) Any proposal for alternative mitigation shall be provided in writing to the Division and shall meet the following content and procedural requirements for approval by the Division:

~~(A) Demonstration of no practical alternative. The application shall describe why traditional buffer mitigation options are not practical for the project;~~

~~(B)~~(A) Projects that have been constructed and are within the required monitoring period on the effective date of this Rule are eligible for use as alternative buffer mitigation. Projects that have completed monitoring and have been released by the Division on or before the effective date of this Rule are eligible for use as alternative buffer mitigation for a period of ten years from the effective date of this Rule;

~~(C)~~(B) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions; and

~~(D)~~(C) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(2) ALTERNATIVE BUFFER MITIGATION – NON-STRUCTURAL, VEGETATIVE OPTIONS

(A) Coastal Headwater Stream Mitigation. Wooded buffers planted along Outer Coastal Plain headwater stream mitigation sites can be approved as riparian buffer mitigation as long as the site meets all applicable requirements of Paragraph ~~(g)~~(i) of this Rule. In addition, all success criteria including ~~tree~~woody species, ~~tree~~stem density, diffuse flow and stream success criteria specified by the Division in any required written approval of the site must be met. The area of the buffer shall be measured perpendicular to the length of the valley being restored. The area within the proposed buffer mitigation shall not also be used as wetland mitigation. Monitoring of the site must be for at least five years from the date of planting by providing annual reports for written ~~DWQ~~ Division ~~approval;~~approval.

(B) Buffer ~~Mitigation~~ Restoration and Enhancement on Non-Subject Streams. Restoration or enhancement of buffers may be conducted on intermittent or perennial streams that are not subject to riparian buffer rules. These streams shall be confirmed as intermittent or perennial streams by Division staff ~~or staff from a local delegated program~~ using the Division publication, *Methodology for Identification of Intermittent and Perennial Streams and Their Origins* (v.4.11, 2010). The proposal shall meet all applicable requirements of Paragraph ~~(g)~~(i) of this Rule.

(C) Preservation of Buffer on Non-subject streams. Preservation of ~~these stream~~ buffers on intermittent or perennial streams that are not subject to riparian buffer rules may be proposed in order to protect permanently the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer. These streams shall be confirmed as intermittent or perennial streams by Division staff using the Division publication, *Methodology for Identification of Intermittent and Perennial*

*Streams and Their Origins* (v.4.11, 2010). The preservation site ~~shall protect at least a 50 foot wide forested riparian buffer and~~ shall meet the requirements of Subparagraph (i)(1), (i)(3), ~~(j)(2)~~(i)(6) and Parts ~~(j)~~(I)(3)(D), ~~(G), (H), (I), (K)~~(E), (F), (H) and ~~(M)~~(J) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed. ~~The preservation area shall be five times larger than the required area of mitigation determined pursuant to Paragraph (e) of this Rule that is not satisfied through restoration or enhancement;~~

~~(C)~~(D) Preservation of Buffers on Subject Streams. Buffer preservation may be proposed in order to permanently protect ~~permanently~~ the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer above and beyond the protection afforded by the existing buffer rules on sites that meet the definition of a preservation site along streams, estuaries or ponds that are subject to buffer rules. The preservation site shall meet the requirements of Subparagraph (i)(1), (i)(3), ~~(j)(2)~~(i)(6) and Part ~~(j)~~(I)(3)(D), ~~(G), (H), (I), (K)~~(E), (F), (H) and ~~(M)~~(J) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed. ~~The preservation area shall be ten times larger in non-urban areas and three times larger in urban areas than the required area of mitigation determined pursuant to Paragraph (e) of this Rule that is not satisfied through restoration or enhancement. Reduced buffer mitigation credit can be given per Part (k)(2)(D) of this Rule in urban areas;~~

~~(D) Narrower buffers on urban streams. Buffer restoration or enhancement with widths less than 50 feet may be proposed along urban streams. If buffer widths between 30 and 50 feet are proposed and on-site stormwater management is provided to control local sources of nutrients and other pollutants, then full buffer credit shall be awarded for the area of buffer restored or enhanced. A total of 75% of full credit shall be awarded for buffers between 20 and 30 feet wide if on-site stormwater management is provided to control local sources of nutrients and other pollutants. If on-site stormwater management is not provided, then 50% of full credit shall be provided for buffers between 30 and 50 feet wide and 25% of full credit for buffers between 20 and 30 feet wide. Buffers less than 20 feet wide shall receive no buffer credit regardless of whether on-site stormwater management is provided;~~

(E) Sewer easement within the buffer. If the proposed mitigation site contains a sewer easement in Zone 1, that portion of the sewer easement within Zone 1 is not suitable for buffer mitigation. If the proposed mitigation site contains a sewer easement in Zone 2, the portion of the sewer easement in Zone 2 may be suitable for buffer mitigation if the applicant or mitigation provider restores or enhances the forested buffer in Zone 1 adjacent to the sewer easement, the sewer easement is at least 30 feet wide, the sewer

easement is required to be maintained in a condition which meets the vegetative requirements of the collection system permit, and diffuse flow is provided across the entire buffer ~~width;~~ width. The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement. The proposal shall meet all applicable requirements of Part (m)(2)(C) of this Rule for preservation.

(F) Enhancement of grazing areas adjacent to streams. Buffer credit at a 2:1 ratio shall be available for an applicant or mitigation provider who proposes permanent exclusion of grazing livestock that otherwise degrade the stream and riparian zone through trampling, grazing or waste deposition by fencing the livestock out of the stream and its adjacent buffer. The applicant or mitigation provider shall provide an enhancement plan to the standards identified in Paragraph ~~(g)~~(i). The applicant or mitigation provider shall demonstrate that grazing was the predominant land use since the effective date of the applicable buffer rule.

(G) Mitigation on ephemeral channels. For purposes of riparian buffer mitigation as described in this Part, an ephemeral channel is defined as a natural channel exhibiting discernible banks within a topographic crenulation (V-shaped contour lines) indicative of natural drainage on the 1:24,000 scale (7.5 minute) quadrangle topographic map prepared by the U.S. Geologic Survey or as seen on digital elevation models with contours developed from the most recent available LiDAR data. Ephemeral channels only flow for a short period of time after precipitation in the immediate area and do not have periods of base flow sustained by groundwater discharge. The applicant or mitigation provider shall provide a delineation of the watershed draining to the ephemeral channel. The entire area proposed for mitigation must be within the contributing drainage area to the ephemeral channel. The ephemeral channel must be directly connected to an intermittent or perennial stream and contiguous with the rest of the mitigation site protected under a perpetual conservation easement. The area of the mitigation site on ephemeral channels shall comprise no more than 25% of the total area of mitigation. The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement. The proposal shall meet all applicable requirements of Part (m)(2)(C) of this Rule for preservation.

(H) Restoration and Enhancement on Ditches. For purposes of riparian buffer mitigation as described in this Part, a ditch is defined as a man-made channel other than a modified natural stream that was constructed for drainage purposes. To be used for mitigation, a ditch must meet all of the following criteria: the ditch must be directly connected with and draining towards an intermittent or perennial stream; the ditch must be contiguous with the rest of the mitigation site protected under a perpetual conservation easement; stormwater runoff from overland flow must drain towards the ditch; the ditch must be

between 1 and 3 feet in depth; and the entire length of the ditch must have been in place prior to the effective date of the applicable buffer rule. The width of the restored or enhanced area shall not be less than 30 feet and shall not exceed 50 feet for crediting purposes. The applicant or mitigation provider shall provide a delineation of the watershed draining to the ditch. The watershed draining to the ditch shall be at least four times larger than the restored or enhanced area along the ditch. The perpetual conservation easement must include the ditch and the confluence of the ditch with the intermittent or perennial stream, and provide language that prohibits future maintenance of the ditch. The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement.

(3) ALTERNATIVE BUFFER STORMWATER TREATMENT OPTIONS.

(A) For all structural options: Riparian buffer restoration or enhancement is required with an area at least equal to the footprint of the buffer impact, and the remaining mitigation resulting from the multipliers can be met through structural options;

(B) Structural measures already required by other local, state or federal rule or permit cannot be used as alternative buffer mitigation, except to the extent such measure(s) exceed the requirements of such rule. Stormwater Best Management Practices (BMPs), including bioretention facilities, constructed wetlands, infiltration devices and sand filter are all potentially approvable (BMPs) for alternative buffer mitigation. Other BMPs may be approved only if they meet the nutrient removal levels outlined in Part (3)(C) of this Subparagraph. Existing or planned BMPs for a local, state or federal rule or permit may be retrofitted or expanded to improve their nutrient removal if this level of treatment would not be required by other local, state or federal rules. In this case, the predicted increase in nutrient removal may be counted toward alternative buffer mitigation;

(C) Minimum treatment levels: Any structural BMP shall provide at least 30% total nitrogen and 35% total phosphorus removal as demonstrated by a scientific and engineering literature review as approved by the Division. The ~~application~~ mitigation proposal shall demonstrate that the proposed alternative removes an equal or greater annual mass load of nutrients to surface waters as the buffer impact authorized in the authorization certificate or variance, following the calculation of impact and mitigation areas pursuant to Paragraphs ~~(d) and~~(d), (e) and (f) of this Rule. To estimate the rate of nutrient removal of the impacted buffer, the applicant or mitigation provider shall use a method previously approved by the Division. Alternatively, the applicant or mitigation provider may propose an alternative method of estimating the rate of nutrient removal for consideration and review by the Division;

(D) All proposed structural BMPs shall follow the Division's 2009 Stormwater Best Management Practice Design Manual. If a specific proposed structural BMP is not addressed in this Manual, follow Chapter 20 in this Manual for approval;

(E) An operation and maintenance plan is required to be approved by the Division for all structural options;

(F) Continuous and perpetual maintenance is required for all structural options and shall follow the Division's 2009 Stormwater Best Management Practice Design Manual;

(G) Upon completion of construction, the designer for the type of BMP installed must certify that the system was inspected during construction and was constructed in substantial conformity with plans and specifications approved by the Division;~~Annual reports shall be sent in writing to the Division of Water Quality concerning operation and maintenance of all structural options approved under this Rule;~~

(H) Removal and replacement of structural options: If a structural option is proposed to be removed and cannot be replaced on site, then a structural or non-structural measure of equal or better nutrient removal capacity shall be constructed as a replacement with the location as specified by Paragraph ~~(e)~~(f) and (g) of this Rule;

(I) Renovation or repair of structural options: If a structural option must be renovated or repaired, it shall be renovated to provide equal or better nutrient removal capacity as originally designed;

(J) Structural options as well as their operation and maintenance are the responsibility of the landowner or easement holder unless the Division agrees in writing to operation and maintenance by another responsible party. Structural options shall be located in recorded drainage easements for the purposes of operation and maintenance and shall have recorded access easements to the nearest public right-of-way. These easements shall be granted in favor of the party responsible for operating and maintaining the structure, with a note that operation and maintenance is the responsibility of the landowner, easement holder or other responsible party; and

(K) Bonding and endowment. A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed and a non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(4) OTHER ALTERNATIVE BUFFER MITIGATION OPTIONS. Other riparian buffer mitigation options may be considered by the Division on a case-by-case basis after 30-day public notice through the Division's Water Quality Certification Mailing List in accordance with 15A NCAC 02H .0503 as long as the options otherwise meet the requirements of this Rule. Division staff shall present recommendations to the Environmental Management Commission for a final

decision with respect to any proposal for alternative buffer mitigation options not specified in this Rule.

~~(l)~~(n) ACCOUNTING FOR BUFFER CREDIT, NUTRIENT OFFSET CREDIT AND STREAM MITIGATION CREDIT. Buffer mitigation credit, nutrient offset credit, wetland mitigation credit and stream mitigation credit shall be accounted for in accordance with the following:

(1) Buffer mitigation that is used for buffer mitigation credit cannot be used for nutrient offset credits;

(2) Buffer mitigation or nutrient offset credit cannot be generated within wetlands that provide wetland mitigation credit required by 15A NCAC 02H .0506; and

(3) Either buffer mitigation or nutrient offset credit may be generated on stream mitigation sites as long as the width of the restored or enhanced riparian buffer ~~is at least 50 feet.~~meets the requirements of Subparagraph (i)(1).

*History Note:* *Authority 143-214.1; 143-214.5; 143-214.7; 143-214.20; 143-215.3(a)(1); S.L. 1998, c. 221; 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8A; 143-215.8B; 143-282(c); 143B-282(d); S.L. 1999, c. 329, s. 7.1; S.L. 2001, c. 418, s 4.(a); S.L 2003, c. 340, s. 5; S.L. 2005-190; S.L 2006-259; S.L. 2009-337; S.L. 2009-486.*
*Eff. Pending Legislative Review.*

**Attachment C**

OAH draft of the Approved rule

**15A NCAC 02B .0295 MITIGATION PROGRAM REQUIREMENTS FOR PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS**

(a) PURPOSE. The purpose of this Rule is to set forth the mitigation requirements that apply to applicants listed in Subparagraphs (1) and (2) of this Paragraph and to set forth requirements for buffer mitigation providers. Buffer mitigation is required when one of the following applies:

(1) The applicant has received an authorization certificate for impacts that cannot be avoided or practicably minimized pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607; or

(2) The applicant has received a variance pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607 and is required to perform mitigation as a condition of a variance approval.

(b) DEFINITIONS. For the purpose of this Rule, these terms shall be defined as follows:

(1) "Authority" means either the Division or a local government that has been delegated or designated to implement the riparian buffer program.

(2) "Division" means the Division of Water Quality of the North Carolina Department of Environment and Natural Resources.

(3) "Enhancement Site" means a riparian zone site characterized by conditions between that of a restoration site and a preservation site such that the planting of woody stems (*i.e.*, shrubs or saplings) will maximize nutrient removal and other buffer functions.

(4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653} using the eight-digit Hydrologic Unit Code (HUC) prepared by the United States Geological Survey.

(5) "Locational Ratio" means the mitigation ratio applied to the mitigation requirements based on the location of the mitigation site relative to the impact site as set forth in Paragraph (e).

(6) "Monitoring period" means the length of time specified in the approved mitigation plan during which monitoring of vegetation success and other anticipated benefits to the adjacent water as listed in the authorization certification is done.

(7) "Non-wasting endowment" means a fund that generates enough interest to cover the cost of the long term monitoring and maintenance.

(8) "Off-site" means an area that is not located on the same parcel of land as the impact site.

(9) "On-site" means an area located on the same parcel of land as the impact site.

(10) "Outer Coastal Plain" means the portion of the state shown as the Middle Atlantic Coastal Plain (63) on Griffith, *et al.* (2002) "Ecoregions of North and South Carolina." Reston, VA, United States Geological Survey.

(11) "Physiographic province" means one of the four Level III ecoregions shown on Griffith, *et al.* (2002) "Ecoregions of North and South Carolina". Reston, VA, United States Geological Survey.

(12) "Preservation Site" means riparian zone sites that are characterized by a natural forest consisting of the forest strata and diversity of species appropriate for the physiographic province.

(13) "Restoration Site" means riparian zone sites that are characterized by an absence of trees and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings) or sites that are characterized by scattered individual trees such that the tree canopy is less than 25% of the cover and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings).

(14) "Riparian wetland" means a wetland that is found in one or more of the following landscape positions: in a geomorphic floodplain; in a natural topographic crenulation; contiguous with an open water equal to or greater than 20 acres in size; or subject to tidal flow regimes excluding salt/brackish marsh wetlands.

(15) "Urban" means an area that is designated as an urbanized area under the most recent federal decennial census or within the corporate limits of a municipality.

(16) "Zonal Ratio" means the mitigation ratio applied to impact amounts in the respective zones of the riparian buffer as set forth in Paragraph (e).

(c) APPLICATION REQUIREMENTS, MITIGATION SITE REQUIREMENTS AND MITIGATION OPTIONS. Any applicant who seeks approval to impact riparian buffers covered under this Rule who is required by Paragraph (a) shall submit to the Division a written mitigation proposal that calculates the required area of mitigation and describes the area and location of each type of proposed mitigation, The applicant shall not impact buffers until the Division has approved the mitigation plan by issuance of written authorization. For all options except payment of a

fee under Paragraphs (h) or (i) of this Rule, the proposal shall include a commitment to provide a conservation easement or similar legal protection mechanism to ensure perpetual stewardship that protects the mitigation site's nutrient removal and other water quality functions, a commitment to provide a non-wasting endowment or other financial mechanism for perpetual stewardship and protection, and a commitment to provide a completion bond that is payable to the Division sufficient to ensure that land or easement purchase, construction, monitoring and maintenance are completed. For each mitigation site, the Division shall identify functional criteria to measure the anticipated benefits of the mitigation to the adjacent water. The Division shall issue a mitigation determination that specifies the area, type and location of mitigation and the water quality benefits to be provided by the mitigation site. The mitigation determination issued according to this Rule shall be included as an attachment to the authorization certification. The applicant may propose any of the following types of mitigation and shall provide a written demonstration of practicality that takes into account the relative cost and availability of potential options, as well as information addressing all requirements associated with the option proposed:

(1) Applicant provided on-site or off-site riparian buffer restoration, enhancement or preservation pursuant to Paragraph (g) of this Rule;

(2) Payment of a compensatory mitigation fee to a mitigation bank if buffer credits are available pursuant to Paragraph (h) of this Rule or payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph (i) of this Rule. Payment must conform to the requirements of G.S. 143-214.20;

(3) Donation of real property or of an interest in real property pursuant to Paragraph (j) of this Rule; or

(4) Alternative buffer mitigation options pursuant to Paragraph (k) of this Rule.

(d) AREA OF IMPACT. The authority shall determine the area of impact in square feet to each zone of the proposed riparian buffer impact by adding the following:

(1) The area of the footprint of the use impacting the riparian buffer;

(2) The area of the boundary of any clearing and grading activities within the riparian buffer necessary to accommodate the use;

(3) The area of any ongoing maintenance corridors within the riparian buffer associated with the use; and

(4) The authority shall deduct from this total the area of any wetlands that are subject to and compliant with riparian wetland mitigation requirements under 15A NCAC 02H .0506 and are located within the proposed riparian buffer impact area.

(e) AREA OF MITIGATION BASED ON ZONAL AND LOCATIONAL MITIGATION RATIOS. The authority shall determine the required area of mitigation for each zone by applying each of the following ratios to the area of impact calculated under Paragraph (d) of this Rule with a 3:1 ratio for Zone 1 and 1.5:1 ratio for Zone 2, except that the required area of mitigation for impacts proposed within the Goose Creek watershed is 3:1 for the entire buffer and the Catawba River watershed is 2:1 for Zone 1 and 1.5:1 for Zone 2, and:

(1) In addition to the ratios listed above in this Paragraph, the applicant or mitigation provider must use the following locational ratios as applicable based on location of the proposed mitigation site relative to that of the proposed impact site. Mitigation options shall be available to applicants as follows:

(A) On-site mitigation is 0.75:1 except within the Randleman Lake watershed which is 1:1;

(B) Within the 12-digit HUC is 0.75:1 except within the Randleman Lake watershed which is 1:1;

(C) Within the eight-digit HUC is 1:1 except as provided in Paragraph (f) of this Rule;

(D) In the adjacent eight-digit HUC is 2:1 except as provided in Paragraph (f) of this Rule.

For use of Part (e)(1)(D) of this Rule, the applicant shall describe why buffer mitigation within the 8 digit HUC is not practical for the project; and

(2) Donation of property shall satisfy all the conditions of Paragraph (j) of this Rule.

(f) GEOGRAPHIC RESTRICTIONS ON LOCATION OF MITIGATION. Mitigation shall be performed in the same river basin in which the impact is located with the following additional specifications:

(1) In the following cases, mitigation shall be performed in the same watershed in which the impact is located:

(A) Falls Lake Watershed;

(B) Goose Creek Watershed;

(C) Randleman Lake Water Supply Watershed;

(D) Each subwatershed of the Jordan Lake watershed, as defined in Rule 15A NCAC 02B .0262; and

(E) Other watersheds as specified in riparian buffer protection rules adopted by the Commission.

(2) Buffer mitigation for impacts within watersheds with riparian buffer rules that also have federally listed threatened or endangered aquatic species may be done within other watersheds with the same federally listed threatened or endangered aquatic species as long as the impacts are in the same river basin and same physiographic province as the mitigation site.

(g) RIPARIAN BUFFER RESTORATION OR ENHANCEMENT. Division staff shall make an on-site determination as to whether a potential mitigation site qualifies as a restoration or enhancement site based on the applicable definition in Paragraph (b) of this Rule. Persons who choose to meet their mitigation requirement through riparian buffer restoration or enhancement shall meet the following requirements:

(1) The restoration area is equal to the required area of mitigation determined pursuant to Paragraph (e) of this Rule.

(2) The enhancement area is three times larger than the required area of mitigation determined pursuant to Paragraph (e) of this Rule.

(3) The location of the restoration or enhancement shall comply with the requirements of Paragraphs (e) and (f) of this Rule and:

(A) For the Catawba River mainstem below Lake James, the width of the riparian buffer shall begin at the top of the bank and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank. For the mainstem lakes located on the Catawba River mainstem, the width of the riparian buffer shall begin at the most landward limit of the full pond level and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the full pond level. Buffer mitigation in the Catawba watershed may be done along the lake shoreline as well as along intermittent and perennial stream channels throughout the watershed;

(B) For the Goose Creek Watershed the riparian buffer restoration or enhancement site shall have a minimum width of 50 feet as measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank and may include restoration or enhancement of existing riparian areas, restoration or enhancement of streamside areas along first order ephemeral streams that discharge or outlet into intermittent or perennial streams, and preservation of the streamside area along first order ephemeral streams that discharge or outlet into intermittent or perennial streams at a 5:1 ratio as long as there is also an amount of restoration or enhancement equivalent to the amount of permitted impact.

(4) The mitigation site shall provide diffuse flow across the entire buffer width. Any existing impervious cover or stormwater conveyances such as ditches, pipes or drain tiles shall be eliminated and the flow converted to diffuse flow.

(5) The applicant or mitigation provider shall submit a restoration or enhancement plan for written approval by the Division. The restoration or enhancement plan shall demonstrate compliance with the requirements of Subparagraphs (1) through (3) of this Paragraph and shall contain the following in addition to elements required in Paragraph (c) of this Rule:

(A) A map of the proposed restoration or enhancement site;

(B) A vegetation plan that shall include a minimum of five native hardwood tree species or five native hardwood tree and native shrub species, where no one species is greater than 50% of planted stems, planted at a density sufficient to provide 260 stems per acre at the completion of monitoring. The Division may approve alternative planting plans upon consideration of factors including site wetness and plant availability to meet the requirements of this Part;

(C) A grading plan (if applicable). The site shall be graded in a manner to ensure diffuse flow through the entire riparian buffer;

(D) A schedule for implementation including a fertilization and herbicide plan that will include protective measures to ensure that fertilizer and herbicide is not deposited downstream from the site and will be applied per manufacturers guidelines. Herbicides

used must be certified by EPA for use in or near aquatics sites and must be applied in accordance with the manufacturers' instructions; and

(E) A monitoring plan including monitoring of vegetative success and other anticipated benefits to the adjacent water as listed in the Authorization Certification.

(6) Within one year after the Division has approved the restoration or enhancement plan, the applicant or mitigation provider shall present documentation to the Division that the riparian buffer has been restored or enhanced unless the Division agrees in writing to a longer time period due to the necessity for a longer construction period.

(7) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions.

(8) The applicant or mitigation provider shall submit written annual reports for a period of five years after the restoration or enhancement showing that the trees or trees and shrub species planted are meeting success criteria and that diffuse flow through the riparian buffer has been maintained. The applicant shall replace trees or shrubs and restore diffuse flow if needed during that five-year period. Additional years of monitoring may be required if the objectives under Paragraph (g) have not been achieved at the end of the five-year monitoring period, and

(9) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(h) PURCHASE OF BUFFER MITIGATION CREDITS FROM A PRIVATE OR PUBLIC MITIGATION BANK. Applicants who choose to satisfy some or all of their mitigation determination by purchasing mitigation credits from a private or public mitigation bank shall meet the following requirements:

(1) The mitigation bank from which credits are purchased is listed on the Division's webpage (http://portal.ncdenr.org/web/wq/swp/ws/401) and shall have available riparian buffer credits;

(2) The mitigation bank from which credits are purchased shall be located as described in Paragraphs (e) and (f) of this Rule; and

(3) After receiving a mitigation acceptance letter from the mitigation provider, proof of payment for the credits shall be provided to the Department prior to any activity that results in the removal or degradation of the protected riparian buffer.

(i) PAYMENT TO THE RIPARIAN BUFFER RESTORATION FUND. Applicants who choose to satisfy some or all of their mitigation determination by paying a compensatory mitigation fee to the Riparian Buffer Restoration Fund shall meet the requirements of 15A NCAC 02B .0269 (Riparian Buffer Mitigation Fees to the NC Ecosystem Enhancement Program). Payment made to the NC Ecosystem Enhancement Program (the Program) shall be contingent upon acceptance of the payment to the Program. The financial, temporal and technical ability of the Program to satisfy the mitigation request shall be considered to determine whether the Program shall accept or deny the request.

(j) DONATION OF PROPERTY. Applicants who choose to satisfy their mitigation determination by donating real property or an interest in real property in lieu of payment shall meet the following requirements:

(1) The donation of real property interests may be used to either partially or fully satisfy the payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph (i) of this Rule. The value of the property interest shall be determined by an appraisal performed in accordance with Part (j)(4)(D) of this Rule. The donation shall satisfy the mitigation determination if the appraised value of the donated property interest is equal to or greater than the required fee. If the appraised value of the donated property interest is less than the required fee calculated pursuant to 15A NCAC 02B .0269, the applicant shall pay the remaining balance due.

(2) The donation of a conservation easement or similar legal protection mechanism that includes a non-wasting endowment or other financial mechanism for perpetual maintenance and protection to satisfy compensatory mitigation requirements shall be accepted only if it is granted in perpetuity.

(3) Donation of real property interests to satisfy the mitigation determination shall be accepted only if such property meets all of the following requirements:

(A) The property shall contain riparian areas that are in need of restoration or enhancement rather than preservation;

(B) For the Neuse and Tar-Pamlico basins, the Catawba River mainstem below Lake James, and the Randleman and Jordan watersheds, the restorable riparian buffer on the property shall begin at the top of the bank and extend landward a distance of 50 feet, measured

horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank. For the mainstem lakes located on the Catawba River mainstem, the width of the riparian buffer shall begin at the most landward limit of the full pond level and extend landward a distance of 50 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the full pond level. A minimum distance of less than 50 feet may be allowed only for projects in accordance with Part (k)(2)(D) of this Rule;

(C) The size of the restorable riparian buffer on the property to be donated shall equal or exceed the acreage of riparian buffer required to be mitigated under the mitigation responsibility determined pursuant to Paragraph (e) of this Rule. If the size of the restorable riparian buffer on the property to be donated is less than the acreage of riparian buffer required to be mitigated under the mitigation responsibility determined pursuant to Paragraph (e), then the applicant shall satisfy the remaining balance by Subparagraph (c)(1) or (2) or a combination of (c)(1) and (2) of this Rule;

(D) The property shall not have any impervious cover or stormwater conveyances such as ditches, pipes or drain tiles. If impervious cover or stormwater conveyances exist, they shall be eliminated and the flow converted to diffuse flow;

(E) The property shall be suitable to be successfully restored, based on existing hydrology, soils, and vegetation;

(F) The estimated cost of restoring and maintaining the property shall not exceed the value of the property minus site identification and land acquisition costs unless the applicant supplies financial assurance acceptable to the Division for restoration and maintenance of the buffer;

(G) The property shall not contain any building, structure, object, site, or district that is listed in the National Register of Historic Places established pursuant to Public Law 89-665, 16 U.S.C. 470 as amended;

(H) The property shall not contain any hazardous substance or solid waste such that water quality could be adversely impacted, unless the hazardous substance or solid waste can be properly remediated before the interest is transferred;

(I) The property shall not contain structures or materials that present health or safety concerns to the general public. If wells, septic, water or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations before the interest is transferred. Sewer connections in Zone 2 may be allowed for projects in accordance with Part (k)(2)(E) of this Rule;

(J) The property and adjacent properties shall not have prior, current, or known future land use that would inhibit the function of the restoration effort;

(K) The property shall not have any encumbrances or conditions that are inconsistent with the requirements of this rule or purposes of the buffer rules;

(L) Fee simple title to the property or a conservation easement in the property shall be donated to the State of North Carolina; and

(M) Upon completion of the buffer restoration or enhancement, the property or the easement shall be donated to a local land trust or to a local government or other state organization that will hold and enforce the conservation easement and its interests. The donation shall be accompanied by a non-wasting endowment or other financial mechanism for perpetual maintenance and protection sufficient to ensure perpetual long-term monitoring and maintenance, except that where a local government has donated a conservation easement and has entered into a binding intergovernmental agreement with the Division to manage and protect the property consistent with the terms of the conservation easement, such local government shall not be required to provide a non-wasting endowment.

(4) At the expense of the applicant or donor, the following information shall be submitted to the Division with any proposal for donations or dedications of interest in real property:

(A) Documentation that the property meets the requirements laid out in Subparagraph (j)(3) of this Rule;

(B) US Geological Survey 1:24,000 (7.5 minute) scale topographic map, county tax map, USDA Natural Resource Conservation Service County Soil Survey Map, and county road map showing the location of the property to be donated along with information on existing site conditions, vegetation types, presence of existing structures and easements;

(C) A current property survey performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the State Board of Registration for Professional Engineers and Land Surveyors in "Standards of Practice for Land Surveying in North Carolina." Copies may be obtained from the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609;

(D) A current appraisal of the value of the property performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the Appraisal Board in the "Uniform Standards of Professional North Carolina Appraisal Practice." Copies may be obtained from the Appraisal Foundation, Publications Department, P.O. Box 96734, Washington, D.C. 20090-6734; and

(E) A title certificate.

(k) ALTERNATIVE BUFFER MITIGATION OPTIONS. Some or all of a buffer mitigation requirement may be met through any of the alternative mitigation options described in this Paragraph. Any proposal for alternative mitigation shall meet, in addition to the requirements of Paragraphs (c), (e) and (f) of this Rule, the requirements set out in the Subparagraph addressing that option as well as the following requirements:

(1) Any proposal for alternative mitigation shall be provided in writing to the Division and shall meet the following content and procedural requirements for approval by the Division:

(A) Demonstration of no practical alternative. The application shall describe why traditional buffer mitigation options are not practical for the project;

(B) Projects that have been constructed and are within the required monitoring period on the effective date of this Rule are eligible for use as alternative buffer mitigation. Projects that have completed monitoring and have been released by the Division on or before the effective date of this Rule are eligible for use as alternative buffer mitigation for a period of ten years from the effective date of this Rule;

(C) The mitigation area shall be placed under a perpetual conservation easement or similar legal protection mechanism to provide for protection of the property's nutrient removal and other water quality functions; and

(D) A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed. A non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(2) ALTERNATIVE BUFFER MITIGATION – NON-STRUCTURAL, VEGETATIVE OPTIONS

(A) Coastal Headwater Stream Mitigation. Wooded buffers planted along Outer Coastal Plain headwater stream mitigation sites can be approved as riparian buffer mitigation as long as the site meets all applicable requirements of Paragraph (g) of this Rule. In addition, all success criteria including tree species, tree density, diffuse flow and stream success criteria specified by the Division in any required written approval of the site must be met. The area of the buffer shall be measured perpendicular to the length of the valley being restored. The area within the proposed buffer mitigation shall not also be used as wetland mitigation. Monitoring of the site must be for at least five years from the date of planting by providing annual reports for written DWQ approval;

(B) Buffer Mitigation on Non-Subject Streams. Restoration or enhancement of buffers may be conducted on intermittent or perennial streams that are not subject to riparian buffer rules. These streams shall be confirmed as intermittent or perennial streams by Division staff or staff from a local delegated program using the Division publication, *Methodology for Identification of Intermittent and Perennial Streams and Their Origins* (v.4.11, 2010). The proposal shall meet all applicable requirements of Paragraph (g) of this Rule.

Preservation of these stream buffers may be proposed in order to protect permanently the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer. The preservation site shall protect at least a 50 foot wide forested riparian buffer and shall meet the requirements of Subparagraph (j)(2) and Parts (j)(3)(D), (G), (H), (I), (K) and (M) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed. The preservation area shall be five times larger than the required area of mitigation determined pursuant to Paragraph (e) of this Rule that is not satisfied through restoration or enhancement;

(C) Preservation of Buffers on Subject Streams. Buffer preservation may be proposed in order to protect permanently the buffer from cutting, clearing, filling and grading and similar activities that would affect the functioning of the buffer above and beyond the protection afforded by the existing buffer rules on sites that meet the definition of a preservation site along streams, estuaries or ponds that are subject to buffer rules. The preservation site shall meet the requirements of Subparagraph (j)(2) and Part (j)(3)(D), (G), (H), (I), (K) and (M) of this Rule. Preservation shall be proposed only when restoration or enhancement with an area at least equal to the footprint of the buffer impact has been proposed. The preservation area shall be ten times larger in non-urban areas and three times larger in urban areas than the required area of mitigation determined pursuant to Paragraph (e) of this Rule that is not satisfied through restoration or enhancement. Reduced buffer mitigation credit can be given per Part (k)(2)(D) of this Rule in urban areas;

(D) Narrower buffers on urban streams. Buffer restoration or enhancement with widths less than 50 feet may be proposed along urban streams. If buffer widths between 30 and 50 feet are proposed and on-site stormwater management is provided to control local sources of nutrients and other pollutants, then full buffer credit shall be awarded for the area of buffer restored or enhanced. A total of 75% of full credit shall be awarded for buffers between 20 and 30 feet wide if on-site stormwater management is provided to control local sources of nutrients and other pollutants. If on-site stormwater management is not provided, then 50% of full credit shall be provided for buffers between 30 and 50 feet wide and 25% of full credit for buffers between 20 and 30 feet wide. Buffers less than 20 feet wide shall receive no buffer credit regardless of whether on-site stormwater management is provided;

(E) Sewer easement within the buffer. If the proposed mitigation site contains a sewer easement in Zone 1, that portion of the sewer easement within Zone 1 is not suitable for buffer mitigation. If the proposed mitigation site contains a sewer easement in Zone 2, the portion of the sewer easement in Zone 2 may be suitable for buffer mitigation if the applicant restores or enhances the forested buffer in Zone 1 adjacent to the sewer easement, the sewer easement is at least 30 feet wide, the sewer easement is required to be maintained in a condition which meets the vegetative requirements of the collection system permit, and diffuse flow is provided across the entire buffer width;

(F) Enhancement of grazing areas adjacent to streams. Buffer credit at a 2:1 ratio shall be available for an applicant who proposes permanent exclusion of grazing livestock that otherwise degrade the stream and riparian zone through trampling, grazing or waste deposition by fencing the livestock out of the stream and its adjacent buffer. The applicant shall provide an enhancement plan to the standards identified in Paragraph (g). The applicant shall demonstrate that grazing was the predominant land use since the effective date of the applicable buffer rule.

(3) ALTERNATIVE BUFFER STORMWATER TREATMENT OPTIONS.

(A) For all structural options: Riparian buffer restoration or enhancement is required with an area at least equal to the footprint of the buffer impact, and the remaining mitigation resulting from the multipliers can be met through structural options;

(B) Structural measures already required by other local, state or federal rule or permit cannot be used as alternative buffer mitigation, except to the extent such measure(s) exceed the requirements of such rule. Stormwater Best Management Practices (BMPs), including bioretention facilities, constructed wetlands, infiltration devices and sand filter are all potentially approvable (BMPs) for alternative buffer mitigation. Other BMPs may be approved only if they meet the nutrient removal levels outlined in Part (3)(C) of this Subparagraph. Existing or planned BMPs for a local, state or federal rule or permit may be retrofitted or expanded to improve their nutrient removal if this level of treatment would not be required by other local, state or federal rules. In this case, the predicted increase in nutrient removal may be counted toward alternative buffer mitigation;

(C) Minimum treatment levels: Any structural BMP shall provide at least 30% total nitrogen and 35% total phosphorus removal as demonstrated by a scientific and engineering literature review as approved by the Division. The application shall demonstrate that the

proposed alternative removes an equal or greater annual mass load of nutrients to surface waters as the buffer impact authorized in the authorization certificate or variance, following the calculation of impact and mitigation areas pursuant to Paragraphs (d) and (e) of this Rule. To estimate the rate of nutrient removal of the impacted buffer, the applicant shall use a method previously approved by the Division. Alternatively, the applicant may propose an alternative method of estimating the rate of nutrient removal for consideration and review by the Division;

(D) All proposed structural BMPs shall follow the Division's 2009 Stormwater Best Management Practice Design Manual. If a specific proposed structural BMP is not addressed in this Manual, follow Chapter 20 in this Manual for approval;

(E) An operation and maintenance plan is required to be approved by the Division for all structural options;

(F) Continuous and perpetual maintenance is required for all structural options and shall follow the Division's 2009 Stormwater Best Management Practice Design Manual;

(G) Annual reports shall be sent in writing to the Division of Water Quality concerning operation and maintenance of all structural options approved under this Rule;

(H) Removal and replacement of structural options: If a structural option is proposed to be removed and cannot be replaced on site, then a structural or non-structural measure of equal or better nutrient removal capacity shall be constructed as a replacement with the location as specified by Paragraph (e) of this Rule;

(I) Renovation or repair of structural options: If a structural option must be renovated or repaired, it shall be renovated to provide equal or better nutrient removal capacity as originally designed;

(J) Structural options as well as their operation and maintenance are the responsibility of the landowner or easement holder unless the Division agrees in writing to operation and maintenance by another responsible party. Structural options shall be located in recorded drainage easements for the purposes of operation and maintenance and shall have recorded access easements to the nearest public right-of-way. These easements shall be granted in favor of the party responsible for operating and maintaining the structure, with a note that operation and maintenance is the responsibility of the landowner, easement holder or other responsible party; and

(K) Bonding and endowment. A completion bond that is payable to the Division sufficient to ensure that land purchase, construction, monitoring and maintenance are completed and a non-wasting endowment or other financial mechanism for perpetual maintenance and protection must be provided.

(4) OTHER ALTERNATIVE BUFFER MITIGATION OPTIONS. Other riparian buffer mitigation options may be considered by the Division on a case-by-case basis after 30-day public notice through the Division's Water Quality Certification Mailing List in accordance with 15A NCAC 02H .0503 as long as the options otherwise meet the requirements of this Rule. Division staff shall present recommendations to the Environmental Management Commission for a final decision with respect to any proposal for alternative buffer mitigation options not specified in this Rule.

(l) ACCOUNTING FOR BUFFER CREDIT, NUTRIENT OFFSET CREDIT AND STREAM MITIGATION CREDIT. Buffer mitigation credit, nutrient offset credit, wetland mitigation credit and stream mitigation credit shall be accounted for in accordance with the following:

(1) Buffer mitigation that is used for buffer mitigation credit cannot be used for nutrient offset credits;

(2) Buffer mitigation or nutrient offset credit cannot be generated within wetlands that provide wetland mitigation credit required by 15A NCAC 02H .0506; and

(3) Either buffer mitigation or nutrient offset credit may be generated on stream mitigation sites as long as the width of the restored or enhanced riparian buffer is at least 50 feet.

*History Note:* *Authority 143-214.1; 143-214.5; 143-214.7; 143-214.20; 143-215.3(a)(1); S.L. 1998, c. 221; 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8A; 143-215.8B; 143-282(c); 143B-282(d); S.L. 1999, c. 329, s. 7.1; S.L. 2001, c. 418, s 4.(a); S.L 2003, c. 340, s. 5; S.L. 2005-190; S.L 2006-259; S.L. 2009-337; S.L. 2009-486.*
*Eff. Pending Legislative Review.*