



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

**STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

**REPORT OF PROCEEDINGS ON THE PROPOSED
TEMPORARY RULEMAKING
15A NCAC 02B .0295
MITIGATION PROGRAM REQUIREMENTS FOR THE
PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS
REPORT DATE: SEPTEMBER 17, 2014**

**PUBLIC HEARING
AUGUST 28, 2014
512 N. SALISBURY ST
RALEIGH, NC**

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Background

Purpose for Rulemaking

The purpose of this rulemaking is to adopt Rule 15A NCAC 02B .0295, Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers, in order to comply with the effective date of a recent act of the General Assembly and to comply with the requirements in G.S. 143-214.20 (Riparian Buffer Protection Program: Alternatives to maintaining riparian buffers; compensatory mitigation fees). This rule adoption is authorized by Section 2 of SL 2014-95. Specifically, Section 2 states that the Environmental Management Commission shall adopt a *Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers* Rule, pursuant to G.S. 150B-21.1, no later than October 1, 2014. It further states that the rule adopted pursuant to Section 2 shall be substantively identical to the recommended rule text contained in the April 10, 2014 Consolidated Buffer Mitigation Rule Stakeholder Report.

Previous Rulemaking

The EMC began rulemaking in September 2009 and adopted Rule 15A NCAC 02B .0295 on May 9, 2013. On July 18, 2013, the Rules Review Commission (RRC) approved the Rule, however more than ten letters of objection were received. The Department of Environment and Natural Resources (DENR) requested the Division of Water Resources (DWR) assemble a stakeholder group to resolve the objections to the rule. The group came to a consensus on all the revisions to the Office of Administrative Hearings (OAH) draft rule; those recommendations were included in the April 10, 2014 Consolidated Buffer Mitigation Rule Stakeholder Report. Section 1 of SL 2014-95 disapproved the rule adopted by the EMC on May 9, 2013 and approved by the RRC on July 18, 2013.

Anticipated Costs and Benefits of Proposed Rulemaking

Per G.S. 150B-21.4 (Fiscal notes on rules), a fiscal note is required only when adopting a permanent rule. As such, an analysis of the anticipated costs and benefits of this temporary rulemaking was not performed. The EMC anticipates adopting a permanent rule to replace this temporary rule. A fiscal analysis will be performed in conjunction with the permanent rulemaking, and a fiscal note will be prepared at that time.

Permission to Proceed to Public Hearing

Permission to proceed to public notice and hearing with the proposed Rule 15A NCAC 02B .0295 was received from the EMC on August 14, 2014. The Notice of Text for the public hearing was published on the North Carolina Office of Administrative Hearings website on August 19, 2014. The Notice of Text is contained in Appendix B.

Public Hearing

One public hearing for this temporary rulemaking was conducted in Raleigh, NC on August 28, 2014. EMC member David Anderson served as the Hearing Officer for the proceedings. A copy of the Hearing Officer's remarks is contained in Appendix D. The hearing was attended by approximately 11 people, including DWR staff. Of those attending, one person made oral

comments during the hearing. A list of attendees and speakers is contained in Appendix F. A digital audio recording of the public hearing was made and is available from DWR.

Summary of Oral and Written Comments

The following is a summary of the main issues raised during the public hearing and comment period. A transcript of the oral comments is included in Appendix G and a copy of all the written comments received is included in Appendix H. One person made oral comments and the same person provided his comments in writing. Written comments from five parties were received during the public comment period.

Oral and written comments received during the public hearing did not address any specific portion of the proposed rule, but expressed support for buffer mitigation in general and encouraged the implementation of buffer rules in all of North Carolina's river basins.

One commenter wrote to object to an increase or perpetuation of riparian buffer and wetland rules without valid science. Comments relating to buffers state that science used by DENR in support of buffer rules was invalid, and that buffer rules actually increase pollution rather than decrease pollution.

Two commenters questioned the stakeholder process that was used to develop the temporary rule, and acknowledged that the EMC does not have the authority to modify the temporary rule due to Section 2 of SL 2014-95. Both commenters recommended that as part of the permanent rulemaking process to follow, the EMC should adopt the final rule that was approved by the EMC on May 9, 2013.

These two commenters also expressed specific concerns regarding the following changes to the 2013 rule:

- Increased credits for wider buffers;
- Reduced enhancement requirements;
- Eliminated preference for mitigation with riparian buffers; and
- Authorized credit for buffering ditches.

Finally, both commenters expressed the need for more, not less, stringent riparian buffer rules.

Another commenter submitted a number of fairly specific recommendations based on his experience with the development and implementation of the original buffer rules. A summary of the recommendations include the following :

- Modify the crediting for buffer widths (reduce crediting for buffers 50-100 feet wide from 100% to 50%);

- Use the most recent version of the Stream Identification Method (version 4.11) and adopt a numerical threshold of 7 in order to reduce staff inconsistency in the field in making an ephemeral channel determination;
- Stormwater Best Management Practices as otherwise allowed in the rule should be required in addition to ditch buffering in order to manage nutrients and other pollutants from the landscape surrounding the ditch so that the filtration capacity of the buffered ditch is not overwhelmed.

Section 2 of the Session Law requiring adoption of this temporary rule (SL 2014-95) indicated that “the rule adopted pursuant to this section shall be substantively identical to the recommended rule text contained in the April 10, 2014 Consolidated Buffer Mitigation Rule Stakeholder Report.”. Therefore, no revisions to the rule are recommended at this time. The comments provided are included for the record in this report, and commenters are encouraged to provide comments during the permanent rulemaking process which will begin immediately following the adoption of this temporary rule.

Hearing Officer’s Final Recommendation

After careful consideration of all comments, the Hearing Officer recommends the Environmental Management Commission adopt Rule 15A NCAC 02B .0295 as proposed in Appendix I.

APPENDIX A

Factsheet about the Proposed Rule and its Implications



North Carolina Department of Environment and Natural Resources

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FACT SHEET

Proposed Temporary Rule – Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers

15A NCAC 02B .0295

PUBLIC HEARING:

August 28, 2014
Archdale Building, Ground Floor Hearing Room
512 N. Salisbury Street, Raleigh, NC 27604

Registration for the hearing starts at 6:30 PM. Hearing will begin at 7:00 PM.

PURPOSE OF PROPOSED RULEMAKING:

The purpose of this rulemaking is to adopt Rule 15A NCAC 02B .0295, Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers, in order to comply with the effective date of a recent act of the General Assembly and to comply with the requirements in G.S. 143-214.20 (Riparian Buffer Protection Program: Alternatives to maintaining riparian buffers; compensatory mitigation fees).

Section 2 of SL 2014-95 states that the Environmental Management Commission (EMC) shall adopt a Buffer Mitigation Rule no later than October 1, 2014. It further states that the rule adopted pursuant to Section 2 shall be substantively identical to the recommended rule text contained in the April 10, 2014 Consolidated Buffer Mitigation Rule Stakeholder Report. A copy of the stakeholder report can be found online. <http://portal.ncdenr.org/web/wq/proposed-consolidated-buffer-mitigation-rules>.

PREVIOUS RULEMAKING:

The EMC began rulemaking in September 2009 and adopted Rule 15A NCAC 02B .0295 on May 9, 2013. On July 18, 2013, the Rules Review Commission (RRC) approved the Rule, however more than ten letters of objection were received and the Rule was sent to the General Assembly. Section 1 of SL 2014-95 disapproved the rule adopted by the EMC.

Division of Water Resources – 401 & Buffer Permitting Unit
1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone 919-807-6300 \ FAX 919-807-6494
Internet www.ncwaterquality.org

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SUMMARY OF PROPOSED CHANGES:

- Fulfills requirements of G.S. 143-214.20 and complies with Section 2 of SL 2014-95.
- Consolidates mitigation requirements from six different buffer mitigation rules.
- Replaces language with simple definitions and summary tables to improve clarity.
- Specifies options for proposing riparian buffer mitigation: applicant-provided mitigation; payment to a private mitigation bank or to the NC Riparian Buffer Restoration Fund; donation of real property or an interest in real property; or alternative buffer mitigation options.
- Includes requirements for bonding for mitigation sites to account for land purchase, construction and monitoring/maintenance, and establishment of a non-wasting endowment to ensure stewardship in perpetuity.
- Provides for restoration credit to be generated on buffers 20 feet wide in urban areas and 30 feet wide in non-urban areas. Also provides for restoration credit to be generated on buffers up to 200 feet wide.
- Provides for alternative buffer mitigation options beyond restoration or enhancement of non-forested buffers along subject streams; including:
 - Coastal headwater stream mitigation;
 - Buffer restoration and enhancement along non-subject streams;
 - Preservation of buffer on streams;
 - Enhancement of grazing areas adjacent to streams;
 - Mitigation on ephemeral channels;
 - Restoration and enhancement on ditches;
 - Stormwater treatment; and
 - Other alternatives not specifically outlined in the rule.
- Provides for retroactive crediting for existing mitigation sites depending on age of the mitigation site.
- Clarifies accounting for buffer credit on stream mitigation sites.

HOW TO SUBMIT COMMENTS:

Comments shall be directed to:

Eric Kulz
DWR/401 & Buffer Permitting Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617
E-Mail: eric.kulz@ncdenr.gov (please note "Buffer Mitigation Rule" in the subject line)

All written comments must be received by 5:00 PM on September 12, 2014 in order to be considered.

FOR MORE INFORMATION:

<http://portal.ncdenr.org/web/wq/proposed-consolidated-buffer-mitigation-rules>

APPENDIX B

Notice of Text for Proposed Temporary Rulemaking

PROPOSED TEMPORARY RULES

Note from the Codifier: The OAH website includes notices and the text of proposed temporary rules as required by G S 150B-21 1(a1). Prior to the agency adopting the temporary rule, the agency must hold a public hearing no less than five days after the rule and notice have been published and must accept comments for at least 15 business days. For questions, you may contact the Office of Administrative Hearings at 919 431 3000 or email oah_postmaster@oah.nc.gov

TITLE 15A – DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Rulemaking Agency: *Environmental Management Commission*

Codifier of Rules received for publication the following notice and proposed temporary rule(s) on: *August 14, 2014*

Rule Citations: *15A NCAC 02B 0295*

Public Hearing:

Date: *August 28, 2014*

Time: *7 00 p m*

Location: *Ground Floor Hearing Room, Archdale Building, 512 N Salisbury Street, Raleigh, NC 27604*

Reason: *The effective date of a recent act of the General Assembly or of the U S Congress Cite S L 2014-95, effective August 1, 2014. This rule adoption is authorized by Section 2 of SL 2014-95, which states that the Environmental Management Commission shall adopt a Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers Rule, pursuant to G S 150B-21 1, no later than October 1, 2014.*

Comment Procedures: *Comments from the public shall be directed to Eric Kulz, NC DENR-Division of Water Resources, 1617 Mail Service Center, Raleigh, NC 27699-1617, email eric.kulz@ncdenr.gov. The comment period begins August 14, 2014 and ends September 12, 2014.*

CHAPTER 02 – ENVIRONMENTAL MANAGEMENT

SUBCHAPTER 02B – SURFACE WATER AND WETLANDS STANDARDS

SECTION .0200 – CLASSIFICATIONS AND WATER QUALITY STANDARDS APPLICABLE TO SURFACE WATERS AND WETLANDS OF NORTH CAROLINA

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.ncnemap.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.

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- (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)	3:1A	

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.

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(g) GEOGRAPHIC RESTRICTIONS ON LOCATION OF MITIGATION Mitigation shall be performed in the same river basin in which the impacts 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 Rule 15A NCAC 02B 0601,
 - (C) Randleman Lake Water Supply Watershed, as defined in Rule 15A 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		Non-Urban Areas	
Buffer width (ft)	Proposed Percentage of Full Credit	Buffer width (ft)	Proposed Percentage of Full Credit
Less than 20	0 %	Less than 20	0 %
20-29	75 %	20-29	0 %
30-100	100 %	30-100	100 %
101-200 A	50 % A	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-

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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 filed, 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.

PROPOSED TEMPORARY RULES

- (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

PROPOSED TEMPORARY RULES

- 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. Geological 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.

PROPOSED TEMPORARY RULES

- (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).

Authority G S 143-214 1, 143-214 5, 143-214 7, 143-214 20, 143-215 3(a)(1), 143-215 6A, 143-215 6B, 143-215 6C, 143-215 8A, 143-215 8B, 143-282(c), 143B-282(d), S L 1998, c 221, 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, S L 2014-95

APPENDIX C

Hearing Officer Designation Memo



ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Benne C. Hutson
Chairman

Kevin C. Martin
Vice Chairman

Pat McCrory, Governor
John E. Skvarla, III, Secretary

David W. Anderson	Manning W. Puette
Gerard P. Carroll	Lawrence W. Raymond
Charles Carter	Albert R. Rubin
Thomas Craven	Clyde E. Smith, Jr.
Daniel E. Dawson	Steve W. Tedder
E. O. Ferrell	Julie A. Wilsey

August 14, 2014

MEMORANDUM:

To: David W. Anderson
Environmental Management Commission

From: Benne C. Hutson, Chair *BCH*
Environmental Management Commission

Subject: Hearing Officer Appointment

I hereby appoint you to serve as the hearing officer for the public hearing to be held for the Proposed Temporary Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers Rule (15A NCAC 02B 0295). The hearing is scheduled as follows.

August 28, 2014 at 7.00 PM
Archdale Building
Ground Floor Hearing Room
512 N. Salisbury Street, Raleigh, NC 27604

Eric Kulz (eric.kulz@ncdenr.gov; 919-807-6476) will provide staff support for you. Please present your findings and recommendations to the Environmental Management Commission. Thank you for your assistance and service.

cc. Tom Reeder, Lois Thomas. Hearing Record File

APPENDIX D

Hearing Officer's Remarks at Public Hearing

Hearing Officer Presentation

August 28, 2014

**Archdale Building, Ground Floor Hearing Room
512 N. Salisbury Street, Raleigh, NC**

THE PROPOSED ADOPTION OF THE PROPOSED TEMPORARY CONSOLIDATED BUFFER MITIGATION RULE (15A NCAC 02B .0295)

This public hearing will please come to order. Before we begin, I ask that everyone turn off or silence all cell phones as a courtesy to the speakers.

My name is David Anderson, I am a member of the Environmental Management Commission. I have been appointed by the Chairman of the Environmental Management Commission to preside at this hearing.

I would also like to introduce the members of the Division of Water Resources

- Eric Kulz
- Niki Maher
- Jennifer Burdette
- Shelton Sullivan
- Cyndi Karoly
- Sarah Young
- Tom Reeder

This public hearing is being held in accordance with North Carolina General Statute 150B-21.1 “Procedure for adopting a temporary rule.” This statute allows that under certain conditions, an agency may adopt a temporary rule when it finds that adherence to the normal notice and hearing requirements would be contrary to the public interest and that the immediate adoption of the rule is necessary. This same statute also requires that a state agency hold at least one public hearing on the proposed temporary rule no less than five days after the rule and notice have been published.

The public notice of this proposed temporary rule and public hearing was published on August 14, 2014 on the NCDENR Public Event Calendar and the North Carolina Division of Water Resources Public Notices website. It was also published on the North Carolina Office of Administrative Hearings website on August 14, 2014. Notice was also sent to members of the Division of Water Resources’ Rules listserv and Wetlands listserv.

The purpose of tonight’s hearing is to obtain public comments on the proposed temporary rule – Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers. This rule will replace the existing riparian buffer mitigation rules for the Neuse, Tar-Pamlico and Catawba River Basins and the Goose Creek, Jordan Lake and Randleman Lake Watersheds.

I will now ask Eric Kulz from the Division of Water Resources to make a presentation addressing the proposed rule changes. There are handouts available at the registration table that provide this information as well.

PRESENTATION (A copy of the presentation is included in Appendix E)

That concludes the Division of Water Resources' presentation. At this time we will now hear from those in the audience who have indicated on their registration form that they would like to comment on this matter. I will call speakers in the order they registered for this hearing. When your name is called, please come up to the microphone and clearly state your name and any affiliation with an organization you may be representing. If you have written copies of your comments, we would appreciate receiving a copy of them.

Cross-examination of persons presenting remarks will not be allowed. The Hearing Officer may ask questions for clarification. After all registered speakers have had an opportunity to comment, anyone who did not register to speak or desires additional time to speak will have the opportunity to do so if time allows. Staff will be available after the hearing to address any additional questions or comments that you may have. No signs or banners may be waved or hung inside the meeting area.

We appreciate your cooperation in complying with these requests.

I WILL NOW CALL ON THE FIRST SPEAKER.

(George Howard, representing Restoration Systems, read from his written comments, a copy of which is included in Appendix I)

Is there anyone else that would like to comment?

If you did not speak tonight, but would still like to make your comments known, we will also accept written comments until 5:00 PM on September 12, 2014. Written comments should be submitted to the address found in the handout available tonight.

Based on the public comments and input by the Division of Water Resources, I will make a recommendation to the Environmental Management Commission. To make a final decision, the Environmental Management Commission considers the written record, the recommendation of the hearing officer and any concerns expressed by other commission members.

This temporary rule will expire unless a permanent rule is adopted to replace it. The Environmental Management Commission anticipates adopting a permanent rule before this temporary rule expires.

I would like to thank all of you for your attendance and interest. This hearing is adjourned.

APPENDIX E

List of Attendees at Public Hearing



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

SIGN IN SHEET

PROPOSED TEMPORARY RULE – MITIGATION PROGRAM REQUIREMENTS FOR THE PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS (15A NCAC 02B .0295) PUBLIC HEARING

ARCHDALE BUILDING, GROUND FLOOR HEARING ROOM, RALEIGH, NC, 28001

AUGUST 28, 2014

#	NAME	SPEAKING? Y/N	WRITTEN COMMENTS? Y/N	WHOM DO YOU REPRESENT?
1	ERIC KULZ			DWR
2	David Anderson			EMC
3	Jennifer Burdette	N	N	DWR
4	Nicki Maher	N	N	DWR
5	Raymond H.	N	N	Restoration Systems LLC.
6	Ross Smith	N	N	PARASH COPE
7	Raynolds Smith	N	N	Durham Open Space & Trails
8	George A. Howard	Y		Restoration Systems
9	Martha Richmond	N	Maybe	Citizen
10	EBAN BEAN	N	N	CITIZEN



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

SIGN IN SHEET

PROPOSED TEMPORARY RULE – MITIGATION PROGRAM REQUIREMENTS FOR THE PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS (15A NCAC 02B .0295) PUBLIC HEARING

ARCHDALE BUILDING, GROUND FLOOR HEARING ROOM, RALEIGH, NC, 28001

AUGUST 28, 2014

#	NAME	SPEAKING? Y/N	WRITTEN COMMENTS? Y/N	WHOM DO YOU REPRESENT?
11	Sarah Young	N	N	NC DENR
12				
13				
14				
15				
16				
17				
18				
19				
20				

APPENDIX F
DWR Staff Presentation

Consolidated Buffer
Mitigation Rule
15A NCAAC 02B .0295



Public Hearing
August 28, 2014

Purpose for Proposed Temporary Rule

∞ Required by SL 2014-95

∞ EMC shall adopt a Buffer Mitigation Rule no later than October 1, 2014.

∞ The rule adopted...shall be substantively identical to the recommended rule text contained in the April 10, 2014, Consolidated Buffer Mitigation Rule Stakeholder Report.

∞ Required by G.S. 143-214.20

∞ EMC to adopt rules concerning “Construction of an alternative measure (of buffer mitigation) that reduces nutrient loading as well as or better than the riparian buffer that is lost.”

Benefits of Proposed Rule



- ∞ Easier to understand
- ∞ Consistent across basins/watersheds
- ∞ Greater flexibility for compliance
- ∞ Increases number of sites and options for buffer mitigation
 - ∞ Provides value to communities, homeowners and developers
- ∞ Consistent with the principles in Executive Order 70 and SB781

Timeline



May 9, 2013	EMC adopted Rule 15A NCAC 02B .0295 and repeal of six existing rules
June 19, 2013	RRC meeting
July 18, 2013	RRC approved rule; more than ten letters of objection were received

2013/2014
Stakeholder Group

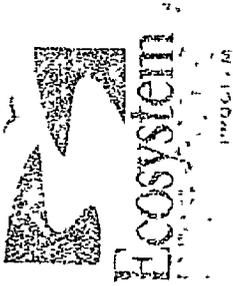


Stakeholder Group



- œ After the Rule was objected to, DENR requested DWR to assemble a stakeholder group to resolve the objections to the rule
- œ Stakeholder group included seven members
- œ Met between October 2013 and March 2014
- œ Prepared a stakeholder report which included the group's recommended rule language for 15A NCAC 02B .0295

8-5-13



REFORMS NEEDED IMMEDIATELY IN THE REGULATION OF RIPARIAN BUFFER MITIGATION

① Riparian Buffer Mitigation Widths – the Ironclad 50’ Standard
 DWQ rules state that riparian buffer mitigation projects must be “a minimum width of 50 feet” DWQ interprets this rule so that no mitigation credits can be generated from buffer restoration or enhancement work that occurs greater than 50’ from the watercourse. This interpretation violates the three main tenets of the DENR Mission Statement. Perhaps most egregiously, DWQ staff intentionally ignores the overwhelming body of science that conclusively demonstrates increased water quality benefits with increased buffer widths out to about 200 feet (a fact duly recognized in the nutrient offset rules).

ⓐ Proposed improvement. DWQ should interpret “a minimum of 50 feet” as it is written. Allowing buffer mitigation projects greater than 50 feet from watercourses and recognizing full mitigation credit up to 200 feet is reasonable on most mitigation sites. This improvement will greatly expand the opportunities to improve water quality, reduce costs, and bring consistency between DWQ’s riparian buffer and nutrient rules which both have the same goal of improving water quality. This improvement can be made without legislation or rule making

ⓑ Proposed improvement: The rules should be modified or legislation passed to change the rule to state a “minimum of 30 feet”. Zone 1 (0-30 feet) arguably the most critical buffer protection area for the removal of sediment and nutrients, and also important for channel stability. Allowing mitigation credit to be generated from narrower buffer restoration and enhancement projects will greatly expand project opportunities

Stakeholder Discussion List



- œ The “Ironclad” 50’ standard
- œ Conducting restoration/enhancement on unmapped streams
- œ Conducting restoration/enhancement on ephemeral streams
- œ Conducting restoration/enhancement on ditches
- œ Stream calls on mapped streams
- œ Restoration success criteria – native hardwood trees
- œ Restoration success criteria – planted stems
- œ Restoration and enhancement criteria – measuring density
- œ Diffuse flow across entire buffer
- œ Existing stormwater outfalls
- œ Requiring no practical alternative demonstration for alternative mitigation
- œ Physiographic province definition
- œ Locational ratios
- œ Donation language

Summary of Changes from EMC's 2013 Rule



No Substantive Changes



∞ The following paragraphs had no changes other than fixing punctuation or updating citations:

- (a) Purpose
- (c) Application Requirements, Mitigation Site Requirements and Mitigation Options
- (d) Area of Impact
- (g) Geographic Restrictions on Location of Mitigation
- (j) Purchase of Buffer Mitigation Credits from a Private or Public Mitigation Bank
- (k) Payment to the Riparian Buffer Restoration Fund
- (n) Accounting for Buffer Credit, Nutrient Offset Credit and Stream Mitigation Credit

(b) Definitions



∞ Removed definitions no longer in the Rule

∞ "Off-site"

∞ "On-site"

∞ "Physiographic province"

∞ Added definition for "riparian buffer mitigation unit"

(e) Area of Mitigation Required on Zonal Mitigation Ratios

and

(f) Area of Mitigation Required on Locational Mitigation Ratios

œ Split out Zonal and Locational ratios into their own paragraphs

œ Converted paragraph text to a table

(h) Riparian Buffer Mitigation Units

- ∞ Consolidated the various mitigation ratios that were spread throughout the rule
- ∞ Converted paragraph text to a table
- ∞ Changed the enhancement ratio from 3:1 to 2:1

(i) Riparian Buffer Restoration or Enhancement



- œ Consolidated and converted paragraph text to a table
- œ Clarified mitigation credits beyond 50-feet
- œ Clarified requirements for existing stormwater conveyances
- œ Reduced the number of tree species from five to four
- œ Clarified that mitigation providers provide ledgers to DWR

Buffer Mitigation Widths



∞ Current Rule and 2013 Rule:

Buffer width (ft.)	Percentage of Full Credit
50-100	100%
101-200	25% for area > 100 ft.

∞ Stakeholder Rule:

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

(1) Donation of Property



- œ Clarified that donated property could be suitable for restoration, enhancement or preservation
- œ Cleaned up language to allow for restoration, enhancement or preservation
- œ Clarified who the title/easement shall be donated to
- œ Changed requirement for a title certificate to a complete attorney's report on title

(m) Alternative Buffer Mitigation Options



- œ Removed requirement to demonstrate no practical alternative to traditional buffer mitigation
- œ Split out requirements for restoration/enhancement on non-subject streams from preservation requirements
- œ Cleaned up language for preservation
- œ Removed paragraph for narrower buffers on urban streams as this is now in Paragraph (i) of the Rule
- œ Changed requirement for BMP annual reports to a Certificate of Completion

(m) Alternative Buffer Mitigation Options

- ∞ Added an alternative for mitigation on ephemeral channels
- ∞ Defined ephemeral channel for this Rule
- ∞ Defined criteria:
 - ∞ Area proposed for mitigation must drain to ephemeral channel
 - ∞ Must be directly connected to a stream
 - ∞ Must be contiguous with rest of mitigation site
 - ∞ Must be part of conservation easement
 - ∞ Cannot be more than 25% of the total area of mitigation

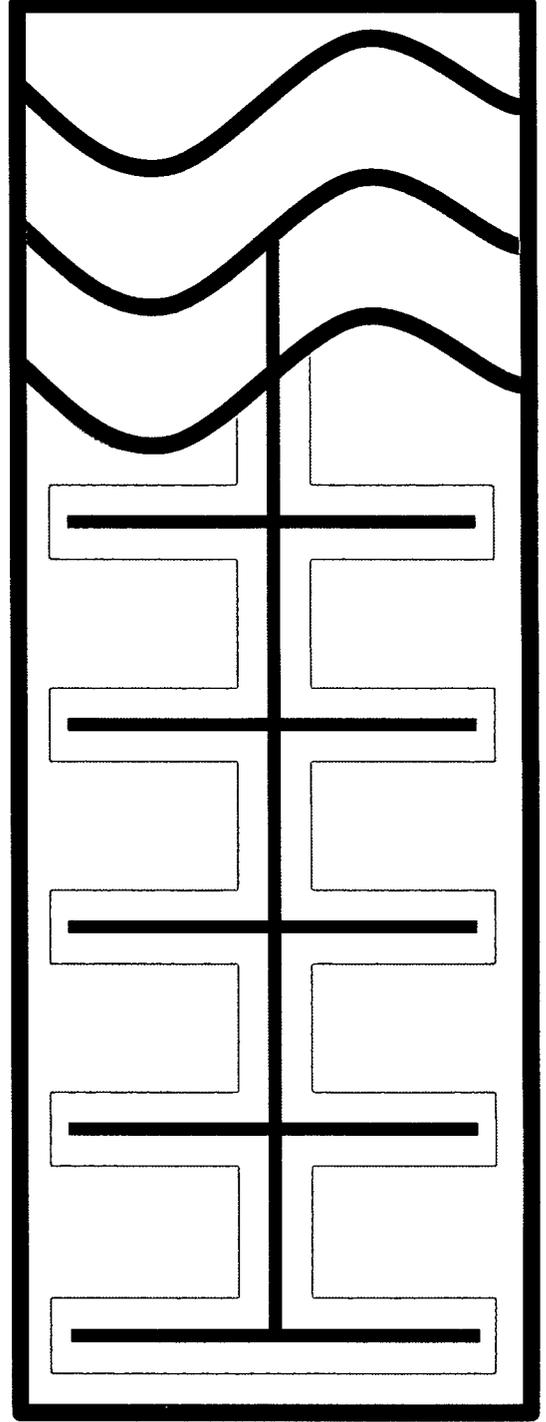
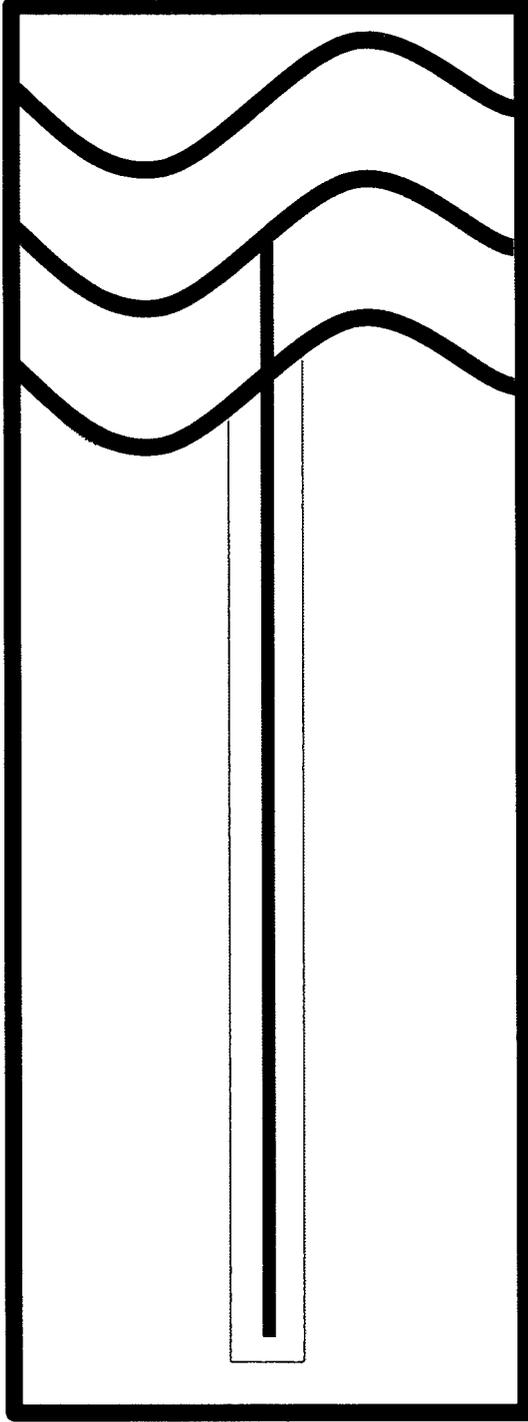
(m) Alternative Buffer

Mitigation Options



- ∞ Added an alternative for restoration/enhancement on ditches
- ∞ Defined ditch for this Rule
- ∞ Defined criteria:
 - ∞ Must be directly connected & draining towards a stream
 - ∞ Must be contiguous with rest of mitigation site
 - ∞ Must be part of conservation easement
 - ∞ Ditch must have been in place prior to buffer rule
 - ∞ Width of restoration/enhancement must be between 30 and 50 feet
 - ∞ Watershed draining to ditch shall be four times greater than the mitigated area along the ditch

Watershed draining to ditch shall be four times greater than the mitigated area along the ditch



Temporary Rulemaking Schedule



- Aug. 14, 2014 EMC Meeting – request to public comment
- Aug. 22, 2014 Rule and Notice of Hearing published online
- Aug. 28, 2014 Public Hearing in Raleigh
- Sept. 12, 2014 Public Comment Period ends
- Sept. 30, 2014 EMC meeting – request adoption of temporary rule
- Oct. 16, 2014 RRC Meeting
- Oct. 31, 2014 Effective date of temporary rule
- Nov. 17, 2014 Temporary rule published in Register
- Aug. 14, 2015 Expiration of Temporary Rule

Permanent Rulemaking

Schedule

Fall 2014	DWR work on fiscal note
Nov. 2014	WQC – info item on permanent rule?
Jan. 2015	WQC – request approval to go to EMC
March 2015	EMC – request to public comment with rule and fiscal note
April to June 2015	Public Comment Period
May 2015	Public Hearing on permanent rule
July 2015	EMC adopts permanent rule; submit to RRC
Sept. 2015	Permanent rule becomes effective

APPENDIX G
Oral Comments

George A Howard (Restoration Systems) Oral Comment
 Public Hearing – August 28, 2014
 Temporary Rulemaking
 Mitigation Program Requirements For The Protection And Maintenance Of Riparian
 Buffers

Thank you Commissioner Anderson Just one or two questions Can we place something into the record? Is there such a procedure, you know, to place a statement, a written statement, into the record? (Eric Kulz Yes, absolutely.) There is, obviously, OK, is that then provided on the website? (Eric Kulz It would be part of the stakeholders report ..) It does (Eric Kulz Part of the hearing officer's report) OK but is that in a dusty cabinet somewhere unless there's litigation, or is that published on the web? (Eric Kulz It would be on our website.) OK Are the recordings also on the web? (Tom Reeder. No, we don't publish the recordings on the web) OK

As a commissioner on the Mining and Energy Commission, and incidentally, it's kinda nice to be a shooter instead of a target this evening, we put all the audio on, and I just want to know, if I'm speaking whether anyone's going to hear it other than those in the room

So I'm George Howard, I'm Chief Executive Officer of Restoration Systems, a small business right down the street, been there 14 or 15 years We're an environmental mitigation banker, we bank streams, wetlands, nutrients, riparian buffers, the subject tonight, and indeed, prairie chickens In 13 states, we've got about 125, 130,000 acres under various stages of development We've got over 50 sites, and I feel compelled to mention that 90 percent of our business is out-of-state, so a lot of this stuff we just do for fun these days, you know, just because we love North Carolina and like good public policy, not because it's critical to our business any longer At one time it was very critical to our business, and in fact, when my wife and I were engaged, what do you call that, fiancée, and I we went to the original meetings to establish the buffers, she got a real kick out this 16 years later seeing this stuff in the paper, so I will not go on any longer, get set to go on much longer reading an unpublished op-ed that I'm going to submit for the record and just go ahead and read out just for the heck of it, because I plan to, that we provided to the News & Observer kind of in response to some of the recent attention that was paid to this issue, this very obscure issue, also an easy to get wrong, and indeed they got it wrong, and we wrote an op-ed and they haven't published it, which is the first time I have ever seen that, where you put something in, and they don't put it in the paper, and indeed, we were not even called as a company to respond to any of the allegations that were made, or be quoted in articles that were published, despite being mentioned in both articles, which I thought was very unusual as well. But so be it, we wrote an op-ed, on the fly, and its no great prose, but I'm going to go ahead and read it because I think it establishes where me and John Preyer, my partner, are on these issues We call it More Buffers, Better Streams and Rivers

Riparian buffers are the areas on either side of streams and rivers composed of trees and woody vegetation which serve as a valuable protection for water quality as they reduce pollutants like nitrogen and phosphorus from entering these waters by capturing them in the buffer

During the Perdue administration the North Carolina Division of Water Quality (NCDWQ) embarked on an effort to update the then ten year old state rules concerning regulation of riparian buffers and the requirements for mitigating their loss due to unavoidable impacts from development. This resulted in NCDWQ convening a large group of stakeholders including environmental groups, development interests, and mitigation companies

This process eventually resulted in the Environmental Management Commission adopting what is known as the Consolidated Buffer Rule in 2013. Letters of objection to this Rule eventually resulted in it going to the legislature for resolution

The McCrory Administration's re-named NCDWQ, the Division of Water Resources, then convened a new stakeholder group comprised of a smaller subset of the original group. Restoration Systems participated in both groups, as it has in multiple administrations on issues dealing with buffer, wetland, and stream mitigation as a practitioner that does the work involved: land acquisition, site design, construction, planting, and monitoring, so we go as practitioners of this and obviously we pay close attention to it

The original EMC Rule was passed by the General Assembly last week as Senate bill 883 with minor modifications leaving intact the original regulatory and jurisdictional scope

In recent news accounts, the stakeholder meetings were described in a cartoon fashion as a "cabal," and part of a deliberate effort in a "smoke filled room" to roll back and undermine environmental protection to riparian buffers. This is silly -- and reveals a fundamental misunderstanding of the mitigation business

No industry in the state has a more clear and direct financial interest in stronger environmental regulation and enforcement than the mitigation industry. People do not buy the product we sell, compensatory mitigation, unless they are compelled to by strong, well-enforced water protection regulations and rules like North Carolina's

Given that the original stakeholder group comprised so many different interest groups it was clearly a mistake that the follow up group convened did not include more participants, especially representatives from environmental advocacy groups.

We suspect this oversight, whether intentional or not, explains some of the criticism directed at the recently passed bill -- even though the substance is nearly indistinguishable from the original EMC approved Rule

Fortunately, all of this recent attention to a normally obscure subject offers a unique opportunity to significantly advance the cause of better protecting our state's rivers and streams

The McCrory administration, the General Assembly, and all environmental advocacy groups, and the Environmental Management Commission, should demonstrate a tangible commitment to North Carolina's environment and support a vast *expansion* of the current riparian buffer protection rules

Today, these rules only apply to two river basins, the Neuse and Tar-Pamlico, and a handful of water supply watersheds like Falls and Jordan lakes. The other fifteen major river basins experience unmitigated (no pun intended) degradation of unregulated riparian buffers by development on a daily basis.

Opponents of regulatory expansion may argue that the unprotected river basins are a lower priority and less deserving of water quality protection. They should consider the lower Cape Fear. It is a sad irony that the current rules were catalyzed by alarm over hog waste spills in the 1990's but failed to extend protections granted the Neuse to its adjacent watershed -- which is home to many more pig farms.

Notwithstanding the shortcomings, it took courage, foresight, and leadership by the original NCDWQ staff in the 1990's to properly protect the resources they did in the Neuse and Tar Pamlico basins.

That same courage must now be shown again and these same riparian buffer protections extended statewide.

Instead of politicians of both parties grandstanding about the need to protect our streams and rivers they ought to actually do it. And make no mistake about the self-interest of mitigation companies either: this change would benefit them, as well as the water quality of these additional river basins.

No "smoke filled room" or "cabal" required for plotting to increase opportunities for our business, or for protecting the water quality of our streams and rivers, you read it here first.

My partner wrote that closing, and I do not like it. The point is, that our business depends on these regulations, and right or wrong, we like good public policy, but right or wrong we want to see more of them. We'll take wrong new regulations over no new regulations, we like regulations from a personally self-interested business sense, and to have it implied in the paper that we were part of a regulatory rollback scheme, is absolutely ridiculous. There is absolutely no industry involved in environmental regulations that would be less likely to involve themselves in a rollback of environmental regulations than the mitigation industry, and that's self-evident to anyone who knows it. So I will conclude there.

Thank you very much Mr Anderson, I hope you take some of this to heart, and please, we're sincere here. The unstated elephant in the room as far as I'm concerned, particularly with regard to the environmental groups, is why are we not protecting the additional river basins? Where is the forward program to be proactive in protecting water quality instead of just responsive to dirty water?

Thanks you very much.

APPENDIX H
Written Comments

More Buffers, Better Streams and Rivers

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The original EMC Rule was passed by the General Assembly last week as Senate bill 883 with minor modifications leaving intact the original regulatory and jurisdictional scope [The two versions can be compared at goo.gl/dTyK0e]

In news accounts last week, the stakeholder meetings were described in a cartoon fashion as a "cabal," and part of a deliberate effort in a "smoke filled room" to roll back and undermine environmental protection to riparian buffers. This is silly -- and reveals a fundamental misunderstanding of the mitigation business

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John Preyer and George Howard are co-founders of Restoration Systems which sells riparian buffer, and wetland and stream restoration to compensate for impacts to regulated resources.

Kulz, Eric

From billprice2112@centurylink.net
Sent Wednesday, September 03, 2014 4:47 PM
To: RBroome@ncreators.org, Kulz, Eric, Cady Thomas
Cc Zack Taylor, Bud Stilley, Larry Baldwin
Subject: Object to Increase or Perpetuation of Riparian Buffers and Wetlands Rules without valid Science

Object to Increase or Perpetuation of Riparian Buffers and Wetlands Rules without valid Science

The USLandAlliance US objects to increase or perpetuation of any and all Buffer and Wetland rules until the State Agencies present valid Empirical Studies of the Issues for consideration by the General Assembly

Wetlands NC Wetlands rules are based on the Maureau study done for DENR in the 1980's. That study Deleted all wetlands lost to development, but the author Refused to Add wetlands created by development, such as Lake and Pond Building, Ditches, Isolated Wetland due to embankments, agribusiness and hunting. Furthermore, most the benefits listed for Wetlands by DWQ were Invalid, while Valid benefits were omitted, making it impossible to evaluate the Cost/Benefits of the regulatory program.

Buffers In 2008 605 hearings at the General Assembly, the Land Alliance of North Carolina demonstrated that the Storm Water science positions presented by the DWQ were invalid, and asserted that Buffer Rules actually Increase Pollution (as measured) rather than decrease pollution. Consequently, the General Assembly authorized the DWQ to do accurate Storm Water Studies to produce comprehensive evidence of the benefits or problems with Buffers. The DWR has refused to do the study.

(It is difficult to understand how State Bureaucrats can obstruct the will of the General Assembly, and quite possibly force increase in Pollution of our waters for political objectives.)

Bill Price
 USLand Alliance US 336-214-2676

On Sep 3, 2014, at 3:05 PM, Zack Taylor wrote

<image001.png>

2838 Stuart Drive
Durham, NC 27707

Mr. Eric Kulz
NC Division of Water Resources
401 and Buffer Permitting Unit
Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

September 5, 2014

**RE: Buffer Mitigation Rule - Comments on proposed temporary rules for alternative buffer mitigation
15A NCAC 2B .0295**

Dear Mr Kulz and members of the NC Environmental Management Commission

The following comments are in response to the public notice for the proposed temporary alternative buffer mitigation rules – 15A NCAC 2B 0295. As you may know, I was responsible for the original stakeholder group when employed by the NC Division of Water Quality. These rules were approved by the NC Environmental Management Commission but not approved by the NC Rules Review Commission (RRC) since more than 10 letters of objection were filed with the RRC. At your August 14 meeting, the EMC had a thorough airing of the unfortunate process that was followed by Mr. Michael Ellison, Director of the NC Ecosystem Enhancement Program to organize the effort to stymie the EMC's earlier rules, I will not comment further on that process but rather focus on suggestions to the proposed rules which would improve their scientific accuracy and regulatory certainty.

First, any comments on these rules must be done within the context of SB 883 from the 2013 Session of the NC General Assembly. That legislation authorizes the EMC to adopt these rules as long as they are "substantially identical to the recommended rule text contained in the April 10, 2014 Consolidated Buffer Mitigation Rule Stakeholder Report." This language certainly constricts the ability of the EMC to make large changes to these proposed rules but does allow some leeway for some changes by the EMC since the adverb "substantially" is clearly included in the legislation. The changes I have suggested below are presented in the light of this legislation. When the EMC is considering permanent rules for alternative buffer mitigation which I understand will be the next process that the EMC follows, then I may suggest more extensive changes. I have made my suggestions in **bold** so that they may be more readily found and considered.

The first scientific issue is that full buffer credit is proposed to be allowed for a 30 to 100 foot buffer rather than a 50 foot buffer. The previous rules required restored buffers to be a minimum of 50 feet wide but under the proposed rule buffers from 30 to 100 feet would get full credit. Certainly buffers less than 50 feet wide have less water quality benefits but if you plant a 30 foot buffer, then you need 40% more planted buffer to make up the shortfall in mitigation area. Therefore, the pertinent question is whether (say) 1000 feet of a planted buffer 50 feet wide provides better water quality than 1666.7 feet of a buffer 30 feet wide. One could do an estimate of the nutrient removal in those instances but I suspect that the longer, narrower buffer would remove more pounds of nitrogen or phosphorus than the shorter, narrower buffer. However, the converse is also true since a mitigation provider can now get full credit for a 100 foot wide buffer. Would (say) 1000 feet of a 50 foot buffer provide more nutrient

removal than 500 feet of a 100 foot wide buffer? Probably not since the rate of nutrient removal at a 50 foot buffer is about the same as that for a 100 foot wide buffer while the wider buffer is only filters half as much landscape as a 50 foot buffer Table 1 below is taken from the overall equation presented by Mayer, et al (2007 Journal of Environmental Quality 36 1172-1180) which predicts the percent removal of total nitrogen by buffer width and is certainly not linear Basically, there is not much additional nutrient removal once the buffer width gets beyond 50 feet and certainly very little increase beyond 75 feet

Buffer width (feet)	Percent removal of total nitrogen
25 feet	55.2%
50	61.8
75	66.1
100	69.3
200	77.6

My suggestion is that the amount of buffer credit for buffers wider than 50 feet be reduced in order to be more consistent with the scientific literature which clearly shows more nutrient removal beyond 50 feet but at very reduced rates **Therefore, I suggest that the buffer width limits in the table at 15A NCAC 2B .0295(i)(1) be changed from 30 to 100 feet to 30 to 50 feet and the line from 101 to 200 feet be changed to 51 to 200 feet to allow some additional credit for wider buffers but more consistent with the scientific literature.**

Second, mitigation is allowed on ephemeral channels but no more than 25% of the total area of mitigation can be on ephemeral channels which I think is a good restriction This provision will be used most often in the piedmont I suspect where ephemeral channels are more common Since ephemeral channels do carry nutrients, buffering them provides water quality benefit I would say that the definition of ephemeral channel in the rule is not very clear and should be tied to the state's Stream Identification method which is used to identify intermittent and perennial streams A numerical threshold for where ephemeral channels begin would be useful to have and to reference in the rule Based on extensive field work done by my staff and DWQ Regional Office staff before I retired from the Division, I know that the Division has data which indicates that ephemeral channel flow begins at a numerical value of about 7 from the Division's Stream Identification Method **I suggest that EMC members and DWR staff review these data and adopt the numerical threshold of 7 using the most recent version of the Stream Identification Method in 15A NCAC 2B .0295 (m)(2)(G) in order to reduce staff inconsistency in the field in making an ephemeral channel determination.** As you probably know, this method has been widely used in NC for over a decade to make determinations of intermittent and perennial stream origins and it is only logical to also use it for ephemeral stream origins

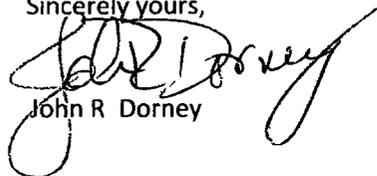
Third, buffer mitigation is now allowed along ditches which is a clear nod to the situation in the coastal plain where there are a lot more ditches than streams This is clearly a major change in the rule and will probably mean that none to very little alternative buffer mitigation (such as urban or agricultural stormwater treatment) will be done in the coastal plain for buffer credit since buffering ditches is much cheaper than any other measure There are some important restrictions in the rule which require conservation easements to be in place along the ditch to the ditch confluence with a stream and also that there can be no future maintenance of the ditch. These two restrictions (especially the latter) will reduce how often ditch buffers are installed but I think they will become fairly common in certain situations Whether this is a bad or good change of course depends on your perspective but clearly allowing "riparian" buffers on ditches opens up many more options especially in the coastal plain

although ditches are also present elsewhere in the state. An interesting omission is that unlike the ephemeral stream clause of 25% as discussed before, there is no limit to the amount of ditch that can be buffered on a particular mitigation site. This leads me to conclude that an entire mitigation site could consist of ditch mitigation as long as the site includes a confluence with a stream and no more ditch maintenance occurs. Therefore, buffering a small watershed of ditches is potentially possible leaving the rest of the watershed in agricultural use but when (not if) the ditches fill in from natural sedimentation (say after a tropical storm), then the agricultural fields beyond the buffer will likely flood which will be problematic for future agriculture use of that field. **Therefore, I suggest that stormwater best management practices as otherwise allowed in the rule be required in addition to ditch buffering in order to manage the nutrients and other pollutants from the landscape surrounding the ditch so that the filtration capacity of the buffered ditch is not overwhelmed.**

In summary, the changes from the rules previously adopted by the Commission are mostly good in my opinion and certainly the organizational changes to make the ratios into tables results in much clearer rules. Of course, the big overall question is whether these changes will result in more or less nutrient removal from buffer restoration. I believe that it is impossible to say with any certainty whether these changes will result in more or less nutrient removal (compared to the present situation or the earlier EMC-approved rules) but I believe that DWR (and the EMC) should look at the type of mitigation done five years after adoption of the modified rules and compare it to the previous type of buffer mitigation. A projection of nutrient removal could be done fairly easily to make the comparison. **I believe that the requirement for a comparison of these new buffer mitigation provisions as compared to the previous rule should be an EMC requirement to staff in addition to adoption of the rule.** In general, the rules are long overdue and these are in balance, good changes with some fairly large uncertainties that can and should be addressed by the changes outlined above in **bold**.

Thank you for your consideration of these thoughts. I can be reached via email at swampjrd@earthlink.net or by phone at 919-781-4626 if you have any questions.

Sincerely yours,

A handwritten signature in black ink, appearing to read "John R. Dorney", written over a printed name.

John R. Dorney



**Pamlico-Tar River
FOUNDATION**

September 12, 2014

Via Electronic Mail

Eric Kulz
Division of Water Resources
NC DENR
1617 Mail Service Center
Raleigh, NC 27699-1617
eric.kulz@ncdenr.gov

Re Temporary Buffer Mitigation Rule

Dear Mr. Kulz,

Please accept these comments from the Pamlico-Tar River Foundation (PTRF) regarding the temporary rule, mandated by SL 2014-95 (H883), revising the Consolidated Riparian Buffer Mitigation rules. PTRF is a grassroots environmental organization representing more than 2,100 members and is a licensed member of Waterkeeper Alliance, Inc. Our mission is to monitor, protect, and enhance the Tar-Pamlico River and watershed while promoting environmental justice.

While we understand the EMC has no authority to alter the legislatively mandated temporary rules, it is our recommendation that the EMC should restore the integrity and the public's confidence of the rule-making process by re-adopting the May 2013 rules as its proposed permanent rule. Our comments below provide background and context to support this recommendation.

Strong riparian buffer rules and mitigation programs are necessary to meet water quality standards in the Tar-Pamlico River Basin.

The long-term protection and enhancement of the Tar-Pamlico River watershed requires the protection of existing riparian buffers and a quality mitigation program that would provide for "protection of water quality that is equivalent or greater than that provided by the riparian buffer that is lost."¹

The need for more, not less, stringent riparian buffer rules is most clearly depicted in the 2010 Tar-Pamlico River Basin plan. The plan identifies those areas where successes have been made, areas that continue to threaten water quality, and methods of improving water quality within the river basin. Each of the plan's elements support strong buffer rules and an effective mitigation program.

¹ N.C. Gen. Stat. § 143-214.20(a1)(3), *see* § 143-214.20(a1)(4)

Reductions in point source discharges in the Basin have largely been successful, as the plan states “The TPBA [Tar-Pamlico Basin Association] has consistently and reliably kept its nutrient loadings beneath the caps without relying on banked credits ”²

Nonpoint source discharges, however, continue to be a substantial problem “The goal of a 30 percent reduction in instream nitrogen loading and no net increase in phosphorus loading since 1991 does not appear to have been met, and the Pamlico River Estuary remains impaired ”³ “The decrease in annual loads of TP and TN below the baseline levels during the drought years of 2007-2008, suggest recent nutrient loading to the estuary is likely a result of nonpoint source contributions ”⁴

PTRF staff and members have been active in the public rule-making process

PTRF staff has been intimately involved for decades in the creation of nutrient management strategies and rules for the Tar-Pamlico watershed, including riparian buffer requirements. Currently PTRF is a member of the Basin Oversight Committee that oversees the nutrient management rules as they relate to the agricultural sector and are signatories on the Tar-Pamlico Basin Association Phase III agreement. We have participated in numerous meetings and will likely remain signatories on the Phase IV agreement- to be presented to the EMC in November.

PTRF has also participated in stakeholder processes regarding nutrient credit accounting / stacking and shifts to actual cost methodologies for mitigation during 2009 and 2010.

Regarding the protection and enhancement of riparian buffers in the Tar-Pamlico, PTRF was involved in all of the 2009 and 2010 stakeholder meetings concerning the buffer rule consolidation and flexible buffer mitigation development. PTRF along with the Southern Environmental Law Center (SELC) submitted seven written comment letters during the public rule-making process from 2009-2011 in an effort to provide detailed information to improve upon the buffer mitigation rules.⁵ Throughout the process, we have represented our many members who use the Tar-Pamlico River for recreation, commercial and recreational fishing, eco-tourism and water dependent business activities, and who want clean and healthy waterways.

Creation of a private stakeholder group

The EMC adopted the final buffer mitigation rule on May 9, 2013. Following the 10 letters of objection submitted to the Rules Review Committee, including 4 letters by DENR personnel,⁶ DENR directed DWR to assemble a stakeholder group to resolve the objections to the rule. In August, 2014 PTRF conducted a file review of all documents, emails and meeting notes produced by the private- industry stakeholder group made available to us. It is not clear if the files contained all of the email communications between DENR personnel and the individuals of

² Tar-Pamlico Basin Plan 2010 Chapter 6, pg 10

³ Id at Chapter 6, pg 29

⁴ Id at Chapter 6, pg 6

⁵ PTRF and SELC submitted comments to the EMC and DWQ on February 20, 2009, November 16, 2009, May 7, 2010, September 30, 2010, December 27, 2010, July 12, 2011, and March 18, 2013

⁶ The staff were all state employees at the time they submitted letters, although some subsequently have taken other jobs. Three of the four currently work for EEP.

the stakeholder group. The documents show that the group met five times between October 2013 and March of 2014. How the individual participants were selected to be included in this group is unclear. It is clear that the invited stakeholders consisted exclusively of entities regulated by DWR under the state's consolidated buffer rules. The participants represented the Ecosystem Enhancement Program (EEP), state Department of Transportation (DOT), Potash Corp. of Aurora (formerly PCS Phosphate), and three mitigation banking businesses.⁷ No other participants from the previous public stakeholder group regarding the buffer rule consolidation appear to have been invited.⁸ Contrary to early claims by Michael Ellison that EEP and the mitigation providers were not included in earlier stakeholder meetings, personnel from EEP, Potash Corporation of Aurora, DOT and mitigation businesses, including Restoration Systems, Wildlands Engineering, and Environmental Banc and Exchange were all included in the emails from 2009 and 2010 and were present at some of the in-person meetings.⁹

2014 Private stakeholder group and subsequent rule changes are worse for water quality.

The intent of PTRF's file review was to understand the rationale and science supporting the changes made to the rule by DWR and the regulated community. During the special meeting of the EMC to send the temporary rule to public comment on August 14, NC EEP Director Michael Ellison and DENR Deputy Director Mitch Gillespie both asserted that the changes made were done to improve water quality. The information in DWR's files does not support that claim. Throughout the meeting notes, in an email,¹⁰ and in the RRC letter of objection from Michael Ellison, it appears that the primary goal for the rule changes was not to improve water quality but to reduce costs and increase mitigation options.

A key question for the EMC in shaping the proposed permanent rule to follow this temporary rule should be: do the changes forced by SL 2004-95 in fact protect water quality? The answer, unfortunately, is a clear no.

The private stakeholder group did not rely on peer-reviewed scientific studies to establish context or scientific justification for key rule changes. As a result, several of the resulting rule changes made significant policy decisions that do not appear to be supported by current science, including

- 1) Deleting the requirement that existing stormwater conveyances shall be eliminated¹¹
- 2) Adding in new mitigation options for ditches¹²

⁷ Memorandum to Tom Reeder from Karen Higgins. April 10, 2014. Subject: Consolidated Buffer Mitigation Rule (15A NCAC 02B 0295) Stakeholder Report.

⁸ Emails sent from DWQ personnel from 2009 through 2010 reveal the following organizations, agencies, businesses and university personnel included: Southern Environmental Law Center, PTRF, Farm Bureau, NC League of Municipalities, Neuse Riverkeeper Foundation, Environmental Defense Fund, Haw River Assembly, Yadkin Riverkeeper, NC Homebuilders Association, UNC, US Army Corps of Engineers, NC State University, Kimley-Horn and Associates, Weyerhaeuser, NC Conservation Network, Catawba Riverkeeper Foundation, Cities of Charlotte and Greensboro, and Pitt and Orange County governments.

⁹ <http://www.newsobserver.com/2014/08/06/4055121/mitch-gillespie-and-michael-ellison.html>

¹⁰ Email from Michael Ellison to NC Representatives and staffers. June 20, 2014. This email was forwarded to EMC Chair Hutson by Molly Diggins, NC Sierra Club on August 29, 2014 after receiving a printed and mailed copy of the email anonymously. In reference to the private stakeholder group, Mr. Ellison stated, "Our goals were to increase mitigation opportunities, reduce regulatory uncertainty and control mitigation costs."

¹¹ Temporary rule. 15A NCAC 02B 0295 (i)(3)

3) Changing the mitigation units ratio for enhancement from 3:1 to 2:1¹³

Nitrate removal is one of the main water quality benefits provided by buffers and the main pollutant of concern that the state's buffer rules are addressing. Research has shown that numerous factors play into a riparian buffer's capacity to remove nitrogen. Those factors include buffer width, vegetation type, soil type, subsurface hydrology (soil saturation, flow paths), and subsurface biogeochemistry (organic supply and nitrate inputs).

In our March 2013 Comments, PTRF and SELC were supportive of consideration of credit for narrower buffers for urban streams but only if adequate stormwater control were also provided. Stormwater control is essential because it prevents bank incision, which in turn isolates the stream from its floodplain and lowers the water table—preventing denitrification and nutrient uptake.

As described in Mayer (2007), subsurface nitrogen removal is more efficient than removal through surface flow.¹⁴ Surface flows generally bypass zones of denitrification, and thus buffers can only effectively remove nitrogen via surface flows when they are wide enough and have adequate vegetation cover to control erosion and filter movement of particulate forms of nitrogen. Mayer notes that, for buffer to remove nitrogen properly, the stream channel must not be disconnected from the flood plain, and the soil must experience regular saturation. Both these conditions are lost when increased runoff incises a stream bed.

Scientists at East Carolina University have conducted significant research in North Carolina's Coastal Plain demonstrating that uncontrolled urban stormwater isolates streams from their floodplain and reduces soil saturation by lowering the water table. Several studies have documented the effects of urban runoff on stream hydrology in low-order Coastal Plain watersheds in the Greenville Area. Urban channel cross-sectional areas were larger directly downstream of stormwater culverts. A comparison of 20 urban and 20 rural channels revealed that urban channels were approximately 2–3 times larger than their rural counterparts. Most of the urban channel enlargement could be explained by the amount of total impervious area within the watershed.¹⁵

Additionally Hardison et al (2009) evaluated the effects of urban land use on stream channels and riparian ground-water levels. They found that channel incision from increased urban stormwater caused groundwater levels to decline in urban riparian areas. Because of the greater channel incision along the stream, the riparian areas are measurably drier and suffer from “riparian hydrologic drought.” These studies suggest that urban channel incision reduces stream-riparian zone interactions and lower groundwater tables along urban Coastal Plain channels.¹⁶

¹² Temporary rule 15A NCAC 02B .0295 (m)(2)(H)

¹³ Temporary rule 15A NCAC 02B .0295 (h)

¹⁴ Mayer, P M et al 2007 Meta-Analysis of Nitrogen Removal in Riparian Buffers J Environ Qual 36 1172-1180

¹⁵ O'Driscoll, M , et al 2010 Urbanization effects on watershed hydrology and in-stream processes in the Southern United States Water 2 605-648 Doi: 10.3390/w2030605

¹⁶ Hardison, E et al 2009 Urban landuse, channel incision, and riparian water table decline along Inner Coastal Plain streams, North Carolina Journal of American Water Resources Association 45(4) 1032-1046

Similarly, a 2010 research paper found that urban channel incision can decrease the riparian buffer's ability to reduce nitrogen concentrations in groundwater. It concluded that improved nitrate attenuation in groundwater could be achieved by stabilizing stream channels to elevate water levels and improve the much needed contact between groundwater and organic-rich soil. When streams are reconnected to their riparian floodplain areas water quality improves.¹⁷

By allowing for narrower buffers in urban stream settings, but eliminating the requirement to adequately control for stormwater that are necessary to ensure that the buffers are effective, the new mitigation rules will give credit for projects that do not actually remove nitrogen and do not protect water quality- or offset the functions of the lost buffers they are supposed to replace. Without significant effort to restore the stream channel hydrology to the riparian buffer, and eliminating the urban hydrologic drought effect, the mitigation sites will not be able to meet the standards as required by statute to provide the same or greater water quality benefit than those buffers that were impacted.

Including ditches as a new mitigation option has the same problem. By artificially lowering the water table, ditches eliminate the many factors necessary for nutrient removal capabilities. Furthermore, research by NC State University suggests that for riparian buffers along ditches to provide water quality benefits via nitrogen removal (primarily via denitrification) then water control structures should also be employed as part of the buffer project.¹⁸

To summarize, without adequate stormwater control, especially upstream of the proposed buffer mitigation site, the buffer's functions within urban settings will degrade over time due to stream incision and bank erosion. The addition of allowing credit for buffers on ditches is not supported by any scientific evidence that it will provide the same or greater level of water quality benefit, as required by N C Gen Stat § 143-214 20(a1)(3), see § 143-214 20(a1)(4).

In addition to the changes noted above for which we find no scientific support, providing mitigation credit for buffers greater than 100 ft also warrants further discussion. The science shows that additional water quality benefits beyond 75 feet are generally regarded to be minimal. The policy decision here relates to whether it is beneficial to have more stream miles protected by at least 50 feet of buffer or fewer stream miles that have wider buffers that provide minimal additional water quality benefit. This is a policy debate that should be decided with public input, not behind closed doors.

Finally, the rule change that reduced the required ratio for enhancement projects from 3:1 to 2:1 was not supported by any science or other documentation. It appears from the stakeholder meeting minutes that the decision was based solely on the comment by one mitigation provider that little incentives exist for enhancement at the current ratio.

¹⁷ Harnsberger, D F and M A O'Driscoll 2010 The influence of urban channel incision and water table decline on floodplain groundwater nitrogen dynamics, Greenville, NC Journal of Env Hydrology 18 (6) 1-22

¹⁸ Kunickis S H et al 2010 The effect of riparian buffers with controlled drainage on soil redox potential

Recommendation: EMC should restore the integrity and the public's confidence in the rule-making process

In a letter emailed to all EMC members from PTRF and the Sierra Club of NC on August 13, 2014, we outlined our concerns over the threat to the integrity of rulemaking that has occurred by this process. The use of a private stakeholder group consisting entirely of regulated entities does not comply with the intent of North Carolina's Administrative Procedures Act (APA) requirements for rule-making and significantly undermines the EMC's authority.

While SL 2014-95 limits the EMC's authority to enact provisions other than those brought forward by the private stakeholder group, it does not prohibit the EMC from making changes when adopting the permanent rule in 2015. The EMC will have the opportunity to restore the public's confidence in future rule-making efforts by rejecting the temporary rule and proposing to re-adopt the May, 2013 rule as a permanent rule.

Finally, on the substance, the temporary rule is inadequate. As discussed above, the changes forced on the EMC by SL2014-95 are all about reduced costs for mitigation providers, not protecting water quality, which remains the enduring statutory purpose of the mitigation buffer rule. Having a greater area eligible for mitigation not supported by sound science will not provide the necessary functional uplift and over time will result in a mitigation program that ultimately harms water quality. Thus on grounds of substance as well as process, we urge the EMC to propose a permanent rule that aligns with the terms adopted by the EMC in 2013.

We appreciate your consideration of these comments.

Sincerely,



Heather Deck
Pamlico-Tar Riverkeeper
Pamlico-Tar River Foundation

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September 12, 2014

Via U.S. and Electronic Mail

Eric Kulz
Division of Water Resources
N C DENR
1617 Mail Service Center
Raleigh, NC 27699-1617
eric.kulz@ncdenr.gov

Re Temporary Rule Imposing Revisions to 15A NCAC 02B 0295

Dear Mr. Kulz,

Please accept these comments on the legislatively mandated revisions to 15A N C Admin Code 02B 0295 under Session Law 2014-95 ("Temporary Rule"). The Southern Environmental Law Center submits these comments on behalf of the Pamlico-Tar River Foundation, the North Carolina Conservation Network, and the Neuse Riverkeeper Foundation. At the August 14, 2014 Environmental Management Commission ("EMC" or "Commission") meeting authorizing this public comment period, Commissioner Tedder, Commissioner Martin, and Chair Hutson appropriately questioned the process that led to the Temporary Rule, including the Department of Environment and Natural Resources' ("DENR") secret collaboration with entities it is intended to regulate. Because the EMC is powerless to modify the terms of the Temporary Rule spelled out in the session law, these comments focus on the process to be used in developing the final rule.

We request that the EMC make clear that it intends to both reclaim its role in rulemaking and ensure meaningful public participation going forward by proposing a final rule identical to the rule approved by the EMC on May 9, 2013 and by the Rules Review Commission on July 18, 2013 ("Adopted Rule").

The revisions that the EMC will adopt in the Temporary Rule undercut the public trust in the work of the EMC specifically and DENR generally. As the notes from DWR's secret stakeholder group reveal, significant changes were made to the publicly adopted rule through private negotiations between DWR staff and beneficiaries of the revisions, specifically PCS Phosphate, mitigation bankers, the Ecosystem Enhancement Program ("EEP"), and the N C Department of Transportation. Each of the stakeholders exercised a vote on rule revisions, giving PCS, Restoration Systems, Environmental Bank and Exchange, Wildlands Engineering, EEP, and DOT direct control over the rules that are intended to regulate their activities. See Oct 11, 2013 Meeting Notes at 1 (describing ground rules, including that consensus was preferred but not required to make rule changes) (attached as Ex. 1). Six of the seven stakeholders represented

regulated entities with direct, financial interests in reducing mitigation requirements. A majority of the stakeholders—a controlling faction—were private companies, delegating the EMC’s rulemaking authority to the private sector it is intended to regulate.

The General Assembly has mandated that the EMC put a façade of legitimacy on this process by passing the Temporary Rule implementing the revisions, but did not prohibit the Commission from restoring meaningful public engagement during the permanent rulemaking process. The EMC can only do so by reinstating the Adopted Rule, sending that rule out for public comment and debating any potential changes, including those implemented by the secret stakeholder group, in public view.

Although the Adopted Rule by the EMC and RRC suffered significant weaknesses, the revisions to the rule make it weaker still. It is clear that the revisions were adopted with a focus on ensuring mitigation options were available without regard to whether those mitigation options would provide for “protection of water quality that is equivalent or greater than that provided by the riparian buffer that is lost.” N.C. Gen. Stat. § 143-214.20(a1)(3), see § 143-214.20(a1)(4).

Comment on the Temporary Rule during this pointless public comment period cannot substitute for actual public debate over the revisions in the Temporary Rule. The Temporary Rule weakens the Adopted Rule in numerous ways that warrant public discussion. For example:

- **Increased credit for wider buffers:** The Adopted Rule allowed 25% credit for buffer mitigation beyond 100 feet based on scientific literature demonstrating that “pollutant load drops dramatically after 75 feet.” Buffer Rules Draft and Meeting Notes at 16 of 34 (Jan. 14, 2014) (attached as Ex. 2) (“Notes”), see DWR Resp. to EEP Letter at 3 (Aug. 8, 2013) (attached as Ex. 3). The Temporary Rule increases credit to 50% to create more mitigation opportunities despite no demonstration of a corresponding benefit to water quality. See Notes at 16 of 34.
- **Reduced enhancement requirements:** The Temporary Rule decreases the required mitigation to earn one mitigation credit through buffer enhancement from 3:1 to 2:1, reducing mitigation provided by that unit by one third. As a result, an enhancement project will now produce additional mitigation credit, with corresponding higher payments to mitigation providers, but provide significantly less water quality benefit.
- **Eliminated preference for mitigation with riparian buffers:** The Temporary Rule eliminates the Adopted Rule’s preference for mitigating riparian buffers with riparian buffers. This preference is well-grounded in the statute, which sets riparian buffers protected by the program as the benchmark for mitigation. The rule can only ensure that mitigation provides “protection of water quality that is equivalent or greater than that provided by the riparian buffer that is lost” and nutrient reduction equal to or greater than that provided by the lost buffer by maintaining the preference for traditional riparian buffer mitigation over experimental approaches or structural nutrient reduction techniques that must be maintained in perpetuity.

- **Authorized credit for buffering ditches:** The Temporary Rule further weakens mitigation requirements by allowing for mitigation credit by buffering ditches. DWR recognized the futility of this approach in its response to EEP's effort to allow buffering of ditches in the public comment process on the Adopted Rule. There, DWR recognized that ditches do not have sufficient drainage area to provide water quality protection equal to or better than protected riparian buffers.

These are only a few specific examples of the faults of the Temporary Rule. The rule errs in other ways that reflect the secret stakeholder group's goal of providing additional mitigation opportunities without regard to the effect on water quality. See Email from M. Ellison, EEP, to D. Lewis, NCGA (June 20, 2014) (describing goal as increasing "mitigation opportunities" and controlling costs rather than protecting water quality) (attached as Ex. 4).

The riparian buffer program is essential to protecting water quality in North Carolina. Citizens who drink, fish, swim, and boat the waters of this state are true stakeholders of the program and deserve a voice in the rulemaking process. In seeking direct legislative adoption of a rule that was the result of its secret collaboration, DENR denied citizens that opportunity. We ask that the EMC restore openness and transparency to the rulemaking process by proposing a permanent rule that does not include the changes included in the Temporary Rule.

Thank you for consideration of these comments. Please contact me at (919) 967-1450 or ggisler@selcnc.org if you have any questions regarding their content.

Sincerely,



Geoffrey R. Gisler

GRG/rd

Enclosures

cc Heather Deck, Pamlico-Tar River Foundation (email)
 Grady McCallie, N C Conservation Network (email)
 Matthew Starr, Neuse Riverkeeper Foundation (email)
 Travis Graves, Neuse Riverkeeper Foundation (email)

10-11-13 Consolidated Buffer Mitigation Rules

Ground Rules

- no sticky dot voting
- try for consensus but OK with majority
- be respectful and listen
- cell phone conversations outside
- start / end on time
- clearly ID who has what to do before next meeting
- set dates for future meetings
- ID all issues → develop game plan
- ID end date
 - ↳ ID what will be in SL

Discussion → use FEP ma document / DWR memo from Aug. as the roadmap

I 50'ft standard

I

① ↳ could be 50% credit beyond 100 → beyond 100 would be no more than 10%

② smaller buffers → use table, remove on-site SW management
↳ where to put it? → how to address (g)(4)?

→ aside → def. for diffuse flow → instead maybe exclude piped conveyances
↳ remove altogether? ^{the first sentence, keep 2nd sent. and add provision for urban}
↳ met through monitoring requirement?

II ① - should we delete (k)(1)(A)?

↳ take rest + enhancement for non-subject out of (k) + add a bullet under (g) → keep preservation as an alternative

- should we remove the "2nd tier" class for the alternat. 2
vote → delete (K)(1)(A) - Yes

10-29-13 Mtg. with Rich

- diffuse flow is even more important in urban areas b/c there is so much ^{more} surface flow than in rural areas.

- remove "on-site SW treatment" from urban & just treat it as a bump. → would almost be like a train.
↳ could use tool to determine what the credits would be.

Notes from Stake Holder meeting on 15A NCAC 02B .0295 October 11, 2013

Attendees: Karen Higgins (DWR), Layla Cummings (DENR), Leilani Paugh (DOT), Eric Kulz (DWR), John Hutton (WEI), Michael Ellison (EEP), Norton Webster (EBX), Jeff Furness (PCS), Tara Alden (RS), Katie Merritt (DWR – note taker), Sue Homewood (DWR).

Discuss issues with the current rule: Michael Ellison requested the group start with the memo from Tom Reeder dated August 9, titled "DWR responses to the EEP document, "Reforms needed immediately in the regulation of riparian buffer mitigation", which was a response to Michael Ellison's letter dated August 5, 2013.

Going through Memo dated August 9 referenced above

- I. Riparian Buffer Mitigation Widths – the Ironclad 50' Standard Buffer Widths and crediting beyond 50 feet.

Michael feels that buffer mitigation should be allowed with higher % credit in the 101'-200' –
 *Michael (EEP) – Randleman has very minimal options for buffer mitigation available, expanding 50 feet would allow more mitigation for buffer impacts in Randleman Tara – why is this an issue?

*John (less streams in Randleman are suitable for mitigation...going further out gives more credits per stream buffer mitigated)

*Eric – area around lake is supposed to be used for mitigation which is what was provided in the 401 when creating the lake. So the mitigation around the lake can be used for buffer mitigation?

*Sue – DWR/USACE accepted protection of buffer around lake as part of acceptance of the 401 for their mitigation requirement...we shouldn't be offering credits in that area. But thinks we are doing that? USACE was pretty sure the 200 foot buffer around Randleman was to go toward 401 only and was part of their approval of the 404

*Michael – after 75 feet the pollutant load drops dramatically, Eric agreed and said that's what DWR used for addressing the memo.

*Norton – no one is going to mitigate beyond 100 feet for only 25% credits, would need to do a cost benefit analysis to determine what % of credits would be viable to do mitigation from 101' to 200'

*Michael – stated most of expenses come from having to do monitoring

*Norton & John – said that most expenses actually come from land acquisition .not necessarily monitoring costs,

*Karen – net nutrient increase is actually less than 17% beyond 100 feet even when converting ag to buffer

**Side Note Michael – doesn't want land to be donated to EEP anymore for buffer mitigation. Wants to change the statute

*Michael – asked for 50% credit (instead of 25%) for mitigating 101'- 200' buffer but no more than 10% of total area of project can be mitigated in the 101'- 200'.

*John and Norton agree, it's a % by area. Project size shouldn't matter;

*Eric to Tara = side note: still get Nutrient Offset out of the 101'-200' feet even if you don't get buffer mitigation.

DECISION MADE: 50% credit (instead of 25%) for mitigating 101'- 200' buffer but no more than 10% of total area of project can be mitigated in the 101'- 200'. Everyone is okay with this.

Discussed Buffer widths less than 50 feet: see k(2)d) – below.

II) Stream Buffer Determinations and mitigation credits – Mapped Jurisdiction –

*Karen said the mapping choices will be determined by someone else in the regular buffer rules

*Group Discussion Subject streams vs non subject streams is better to be used than mapped vs unmapped since streams don't have to be mapped in the Randleman to be subject to the buffer rules G S 143-214.20.

*Karen Subject = Jurisdictional and are waters of the State.

Michael - What about buffer mitigation allowed on ditches and ephemeral channels?

Karen: We will discuss at later meeting.

Sections of 15A NCAC 02B 0295

a)

b)

c)

d)

e)

f)

g) Karen – thinks part of (k)(2)(B) shouldn't be listed as an Alternative Buffer Mitigation option anyway; but rather should be where the Division agrees you could get credit, maybe in (g)(3)? (Tara agrees)

*Group - add language that DWR isn't increasing regulations on non-subject streams

DECISION PARTIALLY MADE: move language from (k)(2)(B) to (g)(3) allowing for enhancement and restoration on non subject features. Add language that DWR isn't increasing regulations on non subject streams. No final agreement on language...DWR will derive language for review for next meeting or prior.

*Tara (g) (4) - diffuse flow requirement should be excluded only within urban buffers so that sw management on urban streams is not required as described in (k)(2)(D);

*Michael – do not want to discourage urban buffers that may have a drainage/pipe infrastructure.

*Leilani – modify the diffuse flow rule? "...required to provide diffuse flow" and eliminate "across the entire buffer width"?

*Karen – there are outside discussions right now regarding diffuse flow through a different group of stakeholders to get clear definitions for diffuse flow. Hold off on language changes for now until we meet with SW groups?

*Katie – need to consider that the direct discharges may not be present in the beginning of mitigation acceptance, but on steep hills being mitigated; or in urban settings with large flows probably, may over time create erosional gullies that could develop discharge points & transport sediment and runoff, so we need to make sure we encourage management to ensure diffuse flow is maintained.

*Jeff – Katie's concern of diffuse flow is already provided in the monitoring requirement in g(8). This could be duplicative? Is it really needed also in g(4)?

DECISION MADE: Eliminate first sentence of g(4) all together, since it's already mentioned in (g)(8) of the monitoring requirements (all agreed to leave diffuse flow in (g), but others wanted to add in (g)(4) that diffuse flow/SW management is excluded on urban streams – all agreed. Karen and Katie not so confident with the change (Katie not a stakeholder) – May need to revisit this after further discussion & after other stakeholder groups define "diffuse flow".

h)

i)

j)

k) (2)(D) Narrower buffers on urban streams – Restoration and Enhancement

*Michael – rules needs to be changed to allow for narrower buffers:

*Karen proposed a table rather than the text that currently exists: Urban buffers less than 20 feet (no credit), 20 – 29ft = 75% credit, 30 – 100 100% credit, Non Urban buffers less 30 feet (no credit), 30 – 100 = 100% credit

*Michael – multiple landowners to deal with near and around the streams, there is a benefit to getting buffer mitigation less than 30 feet;

*Michael & Norton – Need to eliminate the stormwater (SW) management requirements (diffuse flow concern also came up here since SW management device would be installed to ensure diffuse flow through the buffer);

*Leilani & Tara - what is the benefit of the buffer then if the sw is discharging directly to a stream (as would be if there was a sw pipe bypassing buffer) – the whole diffuse flow criteria, which is important, is non-existent and the mitigated buffer has little to no value on stream

*Leilani – SW management is too vague as written in rules; fairly easy to see that a pipe bypassing the buffer would be discharging right into the buffer. DWR should be specific as to what they would describe as "SW management". This type of buffer, one with a direct discharge to surface waters & no diffuse flow through buffer, shouldn't be viable for mitigation.

*Michael – argues that urban areas need more shading on streams and buffering, large or small, is still a substantial benefit to water quality regardless of the absence of a SW management device.

*Eric – need to ask ourselves, "is stream better with or without the buffer if there is a SW discharging on it"? What is being mitigated?

*Tara – there is usually an easement over the area with the pipe anyway so it might be difficult putting another easement over it or plugging it

*Karen – As for diffuse flow/SW management issue, Restoration vs enhance definitions state that diffuse flow shall be maintained; this definition doesn't carry over into section (k) for the alternative options & therefore it's important to ask for an Alternative option to include SW treatment (which could be termed "aka Diffuse Flow" in some cases). So, if we leave (2)(D) in (k) we need the language for stormwater management. This section takes a lot of (g) out of the equation since it's "Alternative" to traditional mitigation options.

*Michael & Tara – suggest that (g)(4) covers this: mitigation site shall offer diffuse flow throughout the site. They want to add an exception though: "except where there is an urban stream"? See g(4) comments

DECISION MADE: Karen's suggested narrow buffer table is probably okay, but no final decision made. Group did like idea of using a table for (2)(D) rather than text to show widths & credits. No final decision made on whether to leave SW management as a requirement for Narrow Buffers on Urban Streams.

(k)(2)(B) – 1st sentence on enhancement and restoration part to move to (g)(3) (SEE ABOVE (g)(3)), and not be considered "Alternative" Keep preservation wording the same and in same location in (k)(2)(B)

k (1)(A) – John, Tara, Michael – remove "no practical alternative"?

*Jeff thinks that all alternatives are good for water quality.

*Leilani – you need to keep in mind Like for Like and that you lose value when you aren't mitigating like for like.

*Karen – indicate a preference for what DWR wants to be in-kind mitigation. but take out the language for NO PRACTICAL ALTERNATIVE

*Eric – eliminate a

DECISION MADE: Eliminate (k)(1)(A)

EXHIBIT 2

1 **15A NCAC 02B .0295 MITIGATION PROGRAM REQUIREMENTS FOR PROTECTION AND**
 2 **MAINTENANCE OF RIPARIAN BUFFERS**

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

6 (1) The applicant has received an authorization certificate for impacts that cannot be avoided or
 7 practicably minimized pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243, 15A NCAC
 8 .02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607, or

9 (2) The applicant has received a variance pursuant to 15A NCAC 02B .0233, 15A NCAC 02B .0243,
 10 15A NCAC 02B .0250, 15A NCAC 02B .0259, 15A NCAC 02B .0267 or 15A NCAC 02B .0607
 11 and is required to perform mitigation as a condition of a variance approval

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

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

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

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

20 (4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at
 21 [http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-](http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653})
 22 [6DC7-4EC3-88A9-03E6B7D55653}](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
 23 by the United States Geological Survey

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

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

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

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

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

33 ~~(10)~~(8) "Outer Coastal Plain" means the portion of the state shown as the Middle Atlantic Coastal Plain
 34 (63) on Griffith, *et al* (2002) "Ecoregions of North and South Carolina " Reston, VA, United
 35 States Geological Survey

36 ~~(11) "Physiographic province" means one of the four Level III ecoregions shown on Griffith, *et al*~~
 37 ~~(2002) "Ecoregions of North and South Carolina" Reston, VA, United States Geological Survey~~

1 ~~(12)~~(9) "Preservation Site" means riparian zone sites that are characterized by a natural forest consisting
 2 of the forest strata and diversity of species appropriate for the ~~physiographic province~~ Level III
 3 ecoregion

4 ~~(13)~~(10) "Restoration Site" means riparian zone sites that are characterized by an absence of trees and by a
 5 lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings) or sites that are
 6 characterized by scattered individual trees such that the tree canopy is less than 25% of the cover
 7 and by a lack of dense growth of smaller woody stems (*i.e.*, shrubs or saplings)

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

10 ~~(14)~~(12) "Riparian wetland" means a wetland that is found in one or more of the following landscape
 11 positions in a geomorphic floodplain, in a natural topographic creculation, contiguous with an
 12 open water equal to or greater than 20 acres in size, or subject to tidal flow regimes excluding
 13 salt/brackish marsh wetlands

14 ~~(15)~~(13) "Urban" means an area that is designated as an urbanized area under the most recent federal
 15 decennial census or within the corporate limits of a municipality

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

18 (c) APPLICATION REQUIREMENTS, MITIGATION SITE REQUIREMENTS AND MITIGATION OPTIONS

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

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

(2) Payment of a compensatory mitigation fee to a mitigation bank if buffer credits are available pursuant to Paragraph ~~(h)~~(l) of this Rule or payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Paragraph ~~(j)~~(l) 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 ~~(i)~~(k) of this Rule, or

(4) Alternative buffer mitigation options pursuant to Paragraph ~~(k)~~(l) 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)(A)~~ Within the 12-digit HUC is 0.75 1 except within the Randleman Lake watershed which is 1 1,

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

~~(D)(C)~~ 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)~~(k) 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

split and make 2 tables

(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 —*
- (B) Goose Creek Watershed, *as defined in —*
- (C) Randleman Lake Water Supply Watershed, *as defined in —*
- (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~~ Level III ecoregion as the mitigation site

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

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

(g)(h) 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.~~
- (1) Buffer restoration or enhancement may be proposed as follows

<u>Urban Areas</u>		<u>Non-Urban Areas</u>	
<u>Buffer width (ft)</u>	<u>Proposed Percentage of Full Credit</u>	<u>Buffer width (ft)</u>	<u>Proposed Percentage of Full Credit</u>
<u>Less than 20</u>	<u>0 %</u>	<u>Less than 20</u>	<u>0 %</u>

<u>20-29</u>	<u>75 %</u>	<u>20-29</u>	<u>0 %</u>
<u>30-100</u>	<u>100 %</u>	<u>30-100</u>	<u>100 %</u>
<u>101-200^A</u>	<u>50 %^A</u>	<u>101-200^A</u>	<u>50 %^A</u>

^A The area of the mitigation site beyond 100 linear feet from the top of bank can 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 (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~~ Buffer mitigation in the Goose Creek watershed 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 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,

- 1 (B) A vegetation plan that shall include a minimum of ~~five-four~~ native hardwood tree species
 2 or ~~five-four~~ native hardwood tree and native shrub species, where no one species is
 3 greater than 50% of ~~planted-established~~ stems; ~~planted-established~~ at a density sufficient
 4 to provide 260 stems per acre at the completion of monitoring. Native volunteer species
 5 may be included to meet performance standards. The Division may approve alternative
 6 planting plans upon consideration of factors including site wetness and plant availability
 7 to meet the requirements of this Part,
- 8 (C) A grading plan (if applicable) The site shall be graded in a manner to ensure diffuse
 9 flow through the entire riparian buffer,
- 10 (D) A schedule for ~~implementation-implementation~~, including a fertilization and herbicide
 11 plan if applicable that will include protective measures to ensure that fertilizer and
 12 herbicide is not deposited downstream from the site and will be applied per
 13 manufacturers guidelines. ~~Herbicides used must be certified by EPA for use in or near~~
 14 ~~aquatics sites and must be applied in accordance with the manufacturers' instructions, and~~
- 15 (E) A monitoring ~~plan-plan~~, including monitoring of vegetative success and other anticipated
 16 benefits to the adjacent water as listed in the Authorization Certification
- 17 ~~(6)(5)~~ Within one year after the Division has approved the restoration or enhancement plan, the applicant
 18 or mitigation provider shall present documentation to the Division that the riparian buffer has been
 19 restored or enhanced unless the Division agrees in writing to a longer time period due to the
 20 necessity for a longer construction period
- 21 ~~(7)(6)~~ The mitigation area shall be placed under a perpetual conservation easement or similar legal
 22 protection mechanism to provide for protection of the property's nutrient removal and other water
 23 quality functions
- 24 ~~(8)(7)~~ The applicant or mitigation provider shall submit written annual reports for a period of five years
 25 after the restoration or enhancement showing that the trees or trees and shrub species planted are
 26 meeting success criteria and that diffuse flow through the riparian buffer has been maintained.
 27 The applicant shall replace trees or shrubs and restore diffuse flow if needed during that five-year
 28 period. Additional years of monitoring may be required if the objectives under Paragraph ~~(g)(h)~~
 29 have not been achieved at the end of the five-year monitoring period, and
- 30 ~~(9)(8)~~ A completion bond that is payable to the Division sufficient to ensure that land purchase,
 31 construction, monitoring and maintenance are completed. A non-wasting endowment or other
 32 financial mechanism for perpetual maintenance and protection must be provided
- 33 ~~(h)(i)~~ PURCHASE OF BUFFER MITIGATION CREDITS FROM A PRIVATE OR PUBLIC MITIGATION
 34 BANK Applicants who choose to satisfy some or all of their mitigation determination by purchasing mitigation
 35 credits from a private or public mitigation bank shall meet the following requirements
- 36 (1) The mitigation bank from which credits are purchased is listed on the Division's webpage
 37 (<http://portal.ncdenr.org/web/wq/swp/ws/401>) and shall have available riparian buffer credits,

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

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

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

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

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

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

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

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

30 ~~(B) For the Neuse and Tar-Pamlico basins, the Catawba River mainstem below Lake James,
31 and the Randleman and Jordan watersheds, the restorable riparian buffer on the property
32 shall begin at the top of the bank and extend landward a distance of 50 feet, measured
33 horizontally on a line perpendicular to a vertical line marking the edge of the top of the
34 bank For the mainstem lakes located on the Catawba River mainstem, the width of the
35 riparian buffer shall begin at the most landward limit of the full pond level and extend
36 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) 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)(C)~~ 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)(D)~~ The property shall be suitable to be successfully restored, based on existing hydrology, soils, and vegetation,

~~(F)(E)~~ 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)(F)~~ 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)(G)~~ 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)(H)~~ 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)(1)(2)(E) of this Rule,

~~(J)(I)~~ 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)(J)~~ 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)(K)~~ Fee simple title to the property or a conservation easement in the property shall be donated to the State of North Carolina, and

~~(M)(L)~~ 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

1 that will hold and enforce the conservation easement and its interests. The donation shall
 2 be accompanied by a non-wasting endowment or other financial mechanism for perpetual
 3 maintenance and protection sufficient to ensure perpetual long-term monitoring and
 4 maintenance, except that where a local government has donated a conservation easement
 5 and has entered into a binding intergovernmental agreement with the Division to manage
 6 and protect the property consistent with the terms of the conservation easement, such
 7 local government shall not be required to provide a non-wasting endowment.

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

10 (A) Documentation that the property meets the requirements laid out in Subparagraph
 11 ~~(j)~~(k)(3) of this Rule,

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

16 (C) A current property survey performed in accordance with the procedures of the North
 17 Carolina Department of Administration, State Property Office, as identified by the State
 18 Board of Registration for Professional Engineers and Land Surveyors in "Standards of
 19 Practice for Land Surveying in North Carolina." Copies may be obtained from the North
 20 Carolina State Board of Registration for Professional Engineers and Land Surveyors,
 21 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609,

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

27 (E) A title certificate

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

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

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

36 ~~(B)~~(A) Projects that have been constructed and are within the required monitoring period on the
 37 effective date of this Rule are eligible for use as alternative buffer mitigation. Projects

1 that have completed monitoring and have been released by the Division on or before the
 2 effective date of this Rule are eligible for use as alternative buffer mitigation for a period
 3 of ten years from the effective date of this Rule,

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

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

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

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

20 (B) ~~Buffer Mitigation~~ Restoration and Enhancement on Non-Subject Streams. Restoration or
 21 enhancement of buffers may be conducted on intermittent or perennial streams that are
 22 not subject to riparian buffer rules. These streams shall be confirmed as intermittent or
 23 perennial streams by Division staff or staff from a local delegated program using the
 24 Division publication, *Methodology for Identification of Intermittent and Perennial*
 25 *Streams and Their Origins* (v 4 11, 2010). The proposal shall meet all applicable
 26 requirements of Paragraph ~~(g)~~(h) of this Rule.

27 ~~(C) Buffer Preservation on Non-subject streams.~~ Preservation of ~~these stream buffers on~~
 28 intermittent or perennial streams that are not subject to riparian buffer rules may be
 29 proposed in order to protect permanently the buffer from cutting, clearing, filling and
 30 grading and similar activities that would affect the functioning of the buffer. These
 31 streams shall be confirmed as intermittent or perennial streams by Division staff or staff
 32 from a local delegated program using the Division publication, *Methodology for*
 33 *Identification of Intermittent and Perennial Streams and Their Origins* (v 4 11, 2010).
 34 The preservation site shall protect at least a 50-foot-wide forested riparian buffer and shall
 35 meet the requirements of Subparagraph ~~(h)(1), (j)(k)(2)~~ and Parts ~~(j)(k)(3)(D), (G), (H),~~
 36 ~~(I), (K) and (M)~~ of this Rule. Preservation shall be proposed only when restoration or
 37 enhancement with an area at least equal to the footprint of the buffer impact has been

~~proposed, 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;

(D) 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 (h)(1), (j)(k)(2) and Part (j)(k)(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, 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

1 otherwise degrade the stream and riparian zone through trampling, grazing or waste
 2 deposition by fencing the livestock out of the stream and its adjacent buffer. The
 3 applicant shall provide an enhancement plan to the standards identified in Paragraph
 4 ~~(e)~~(h). The applicant shall demonstrate that grazing was the predominant land use since
 5 the effective date of the applicable buffer rule.

6 (3) ALTERNATIVE BUFFER STORMWATER TREATMENT OPTIONS

- 7 (A) For all structural options, Riparian buffer restoration or enhancement is required with an
 8 area at least equal to the footprint of the buffer impact, and the remaining mitigation
 9 resulting from the multipliers can be met through structural options,
- 10 (B) Structural measures already required by other local, state or federal rule or permit cannot
 11 be used as alternative buffer mitigation, except to the extent such measure(s) exceed the
 12 requirements of such rule. Stormwater Best Management Practices (BMPs), including
 13 bioretention facilities, constructed wetlands, infiltration devices and sand filter are all
 14 potentially approvable (BMPs) for alternative buffer mitigation. Other BMPs may be
 15 approved only if they meet the nutrient removal levels outlined in Part (3)(C) of this
 16 Subparagraph. Existing or planned BMPs for a local, state or federal rule or permit may
 17 be retrofitted or expanded to improve their nutrient removal if this level of treatment
 18 would not be required by other local, state or federal rules. In this case, the predicted
 19 increase in nutrient removal may be counted toward alternative buffer mitigation,
- 20 (C) Minimum treatment levels. Any structural BMP shall provide at least 30% total nitrogen
 21 and 35% total phosphorus removal as demonstrated by a scientific and engineering
 22 literature review as approved by the Division. The application shall demonstrate that the
 23 proposed alternative removes an equal or greater annual mass load of nutrients to surface
 24 waters as the buffer impact authorized in the authorization certificate or variance;
 25 following the calculation of impact and mitigation areas pursuant to Paragraphs (d) and
 26 (e) of this Rule. To estimate the rate of nutrient removal of the impacted buffer, the
 27 applicant shall use a method previously approved by the Division. Alternatively, the
 28 applicant may propose an alternative method of estimating the rate of nutrient removal
 29 for consideration and review by the Division,
- 30 (D) All proposed structural BMPs shall follow the Division's 2009 Stormwater Best
 31 Management Practice Design Manual. If a specific proposed structural BMP is not
 32 addressed in this Manual, follow Chapter 20 in this Manual for approval.
- 33 (E) An operation and maintenance plan is required to be approved by the Division for all
 34 structural options,
- 35 (F) Continuous and perpetual maintenance is required for all structural options and shall
 36 follow the Division's 2009 Stormwater Best Management Practice Design Manual,

- 1 (G) Annual reports shall be sent in writing to the Division of Water Quality concerning
 2 operation and maintenance of all structural options approved under this Rule,
- 3 (H) Removal and replacement of structural options If a structural option is proposed to be
 4 removed and cannot be replaced on site, then a structural or non-structural measure of
 5 equal or better nutrient removal capacity shall be constructed as a replacement with the
 6 location as specified by Paragraph (e) of this Rule,
- 7 (I) Renovation or repair of structural options If a structural option must be renovated or
 8 repaired, it shall be renovated to provide equal or better nutrient removal capacity as
 9 originally designed,
- 10 (J) Structural options as well as their operation and maintenance are the responsibility of the
 11 landowner or easement holder unless the Division agrees in writing to operation and
 12 maintenance by another responsible party Structural options shall be located in recorded
 13 drainage easements for the purposes of operation and maintenance and shall have
 14 recorded access easements to the nearest public right-of-way These easements shall be
 15 granted in favor of the party responsible for operating and maintaining the structure, with
 16 a note that operation and maintenance is the responsibility of the landowner, easement
 17 holder or other responsible party, and . . .
- 18 (K) Bonding and endowment A completion bond that is payable to the Division sufficient to
 19 ensure that land purchase, construction, monitoring and maintenance are completed and a
 20 non-wasting endowment or other financial mechanism for perpetual maintenance and
 21 protection must be provided
- 22 (4) OTHER ALTERNATIVE BUFFER MITIGATION OPTIONS Other riparian buffer mitigation
 23 options may be considered by the Division on a case-by-case basis after 30-day public notice
 24 through the Division's Water Quality Certification Mailing List in accordance with 15A NCAC
 25 02H 0503 as long as the options otherwise meet the requirements of this Rule Division staff
 26 shall present recommendations to the Environmental Management Commission for a final
 27 decision with respect to any proposal for alternative buffer mitigation options not specified in this
 28 Rule
- 29 ~~(H)(m)~~ ACCOUNTING FOR BUFFER CREDIT, NUTRIENT OFFSET CREDIT AND STREAM MITIGATION
 30 CREDIT Buffer mitigation credit, nutrient offset credit, wetland mitigation credit and stream mitigation credit shall
 31 be accounted for in accordance with the following
- 32 (1) Buffer mitigation that is used for buffer mitigation credit cannot be used for nutrient offset credits,
 33 (2) Buffer mitigation or nutrient offset credit cannot be generated within wetlands that provide
 34 wetland mitigation credit required by 15A NCAC 02H 0506, and
 35 (3) Either buffer mitigation or nutrient offset credit may be generated on stream mitigation sites as
 36 long as the width of the restored or enhanced riparian buffer ~~is at least 50 feet~~ meets the
 37 requirements of Subparagraph (h)(1).

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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

Notes from Stake Holder meetings on 15A NCAC 02B 0295

Attendees: 10/11/13. Karen Higgins (DWR), Layla Cummings (DENR), Leilani Paugh (DOT), Eric Kulz (DWR), John Hutton (WEI), Michael Ellison (EEP), Norton Webster (EBX), Jeff Furness (PCS), Tara Allden (RS), Katie Merritt (DWR – note taker), Sue Homewood (DWR),

Attendees 11/14/13 Leilani, Tara, Rich Gannon, Eric, Karen, Jeff, Michael Ellison, Sue Homewood, Norton (temporarily), Katie Merritt

All notes from 11/14/13 are in red font

All notes from 12/12/13 are in blue Attendees Karen, Eric, Jeff, Michael, Norton, Sue, Katie (note taker), Tara

All notes from 1/15/14 are in green: Attendees: Karen, Eric, Jeff, Norton, Katie (note taker), Periann, Leilani, Tara, John, Rich, Michael

Discuss issues with the current rule: Michael Ellison requested the group start with the memo from Tom Reeder dated August 9, titled "DWR responses to the EEP document *"Reforms needed immediately in the regulation of riparian buffer mitigation"*, which was a response to Michael Ellison's letter dated August 5, 2013

Going through Memo dated August 9 referenced above

I Riparian Buffer Mitigation Widths – the Ironclad 50' Standard

Buffer Widths and crediting beyond 50 feet

Michael feels that buffer mitigation should be allowed with higher %credit in the 101-200' -
 ---*Michael (EEP)- Randleman has very minimal options for buffer mitigation available, expanding 50 feet would allow more mitigation for buffer impacts in Randleman Tara – why is this an issue?

*John (less streams in Randleman are suitable for mitigation .going further out gives more credits per stream buffer mitigated

*Eric – area around lake is supposed to be used for mitigation which is what was provided in the 401 when creating the lake. So the mitigation around the lake can be used for buffer mitigation?

*Sue – DWR/USACE accepted protection of buffer around lake as part of acceptance of the 401 for their mitigation requirement. we shouldn't be offering credits in that area. But thinks we are doing that? USACE was pretty sure the 200 feet buffer around Randleman was to go toward 401 only and was part of their approval of the 404 ..

*Michael – after 75 feet the pollutant load drops dramatically, Eric agreed and said that's what DWR used for addressing the memo.

*Norton – no one is going to mitigate beyond 100 feet for only 25% credits, would need to do a cost benefit analysis to determine what % of credits would be viable to do mitigation from 101' to 200'

*Michael – stated most of expenses come from having to do monitoring

*Norton & John – said that most expenses actually come from land acquisition...not necessarily monitoring costs;

*Karen – net nutrient increase is actually less than 17% beyond 100 feet even when converting ag to buffer

**Side Note Michael – doesn't want land to be donated to EEP anymore for buffer mitigation. Wants to change the statute

*Michael – asked for 50% credit (instead of 25%) for mitigating 101'- 200' buffer but no more than 10% of total area of project can be mitigated in the 101'- 200'

*John and Norton agree, it's a % by area. Project size shouldn't matter,

*Eric to Tara – side note: still get Nutrient Offset out of the 101'-200' feet even if you don't get buffer mitigation

DECISION MADE 10/11: 50% credit (instead of 25%) for mitigating 101'- 200' buffer but no more than 10% of total area of project can be mitigated in the 101'- 200'. Everyone is okay with this.

Table footnote Karen will look at language again

Discussed Buffer widths less than 50 feet. see k(2)d) – below:

II Stream Buffer Determinations and mitigation credits – Mapped Jurisdiction –

*Karen said the mapping choices will be determined by someone else in the regular buffer rules

*Group Discussion Subject streams vs non subject streams is better to be used that mapped vs unmapped since streams don't have to be mapped in the Randleman to be subject to the buffer rules G.S. 143-214.20

*Karen Subject = Jurisdictional and are waters of the State

Michael - What about buffer mitigation allowed on ditches and ephemeral channels?

Karen We will discuss at later meeting

Sections of 15A NCAC 02B .0295

a)

b)

c)

d)

e)

f)

g) Karen – thinks part of (k)(2)(B) shouldn't be listed as an Alternative Buffer Mitigation option anyway, but rather should be where the Division agrees you could get credit, maybe in (g)(3)? (Tara agrees)

*Group - add language that DWR isn't increasing regulations on non subject streams.

DECISION PARTIALLY MADE 10/11: move language from (k)(2)(B) to (g)(3) allowing for enhancement and restoration on non subject features. Add language that DWR isn't increasing regulations on non subject streams. No final agreement on language...DWR will derive language for review for next meeting or prior.

*Tara (g) (4) - diffuse flow requirement should be excluded only within urban buffers so that sw management on urban streams is not required as described in (k)(2)(D);

*Michael – do not want to discourage urban buffers that may have a drainage/pipe infrastructure;

*Leilani – modify the diffuse flow rule? “.. *required to provide diffuse flow*” and eliminate “*across the entire buffer width*”?

*Karen – there are outside discussions right now regarding diffuse flow through a different group of stakeholders to get clear definitions for diffuse flow. Hold off on language changes for now until we meet with SW groups?

*Katie – need to consider that the direct discharges may not be present in the beginning of mitigation acceptance, but on steep hills being mitigated, or in urban settings with large flows probably, may over time create erosional gullies that could develop discharge points & transport sediment and runoff, so we need to make sure we encourage management to ensure diffuse flow is maintained

*Jeff – Katie's concern of diffuse flow is already provided in the monitoring requirement in g(8) This could be duplicative? Is it really needed also in g(4)?

DECISION MADE 10/11: Eliminate first sentence of g(4) all together, since it's already mentioned in (g)(8) of the monitoring requirements (all agreed to leave diffuse flow in (g), but others wanted to add in (g)(4) that diffuse flow/Sw management is excluded on urban streams – all agreed. Karen and Katie not so confident with the change (Katie not a stakeholder) – May need to revisit this after further discussion & after other stakeholder groups define “diffuse flow”.

(g4) – everyone agrees with Karen's revised language below the table

g(5) Karen revisit diffuse flow: did we fix g(5) language? Tara – Diffuse flow “of runoff” on the mitigation site. Michael what about impervious cover & or SW conveyances that are present? Are we required to deduct the footprint of the conveyance? Eric, buffer isn't functioning where the conveyance bypasses the buffer you are mitigating Tara – where elimination isn't feasible, mitigation viability of conveyance present would have to be determined on a case by case basis (or, what is the drainage area going through the buffer and that would allow for reduced crediting), Rich – credit shall be reduced proportional to the fraction of the contributing drainage area that is bypassed through the buffer, Eric – overland flow, groundwater flow, subsurface flow, but all will depend on topo crenulations, soil type, etc Tara, eric, rich – tiles & pipes should be treated the same way in the rule, Tara – drain tiles and pipes should be removed when possible, no doubt about it. But does support a way around it when the landowner or the project isn't adaptable to removing these. Michael – credits “may” be reduced. , the mitigation provider shall provide/demonstrate the performance efficiency or the “functional uplift (eric)” of the mitigation site Katie(silent) – there should be something in the text that states that “if” they don't provide/demonstrate, then they get no credit in that area –

Decision Made: Everyone agrees that there could be an alternative proposed for mitigation projects where eliminating the drain tiles & SW conveyances isn't practicle as long as the provider provides/demonstrates the performance/efficiency of the buffer with those present. No specific method was identified on how to demonstrate this.

(g5) revised Language by Karen: Everyone is okay.

Michael – what would cause credit to be reduced? Language says “may” be reduced. (discussion)

h)

i)

j)

k) (2)(D) Narrower buffers on urban streams – Restoration and Enhancement

*Michael – rules needs to be changed to allow for narrower buffers.

*Karen proposed a table rather than the text that currently exists Urban buffers less than 20 feet (no credit), 20 – 29ft = 75% credit, 30 – 100 100% credit; Non Urban buffers less 30 feet (no credit), 30 – 100 = 100% credit

*Michael – multiple landowners to deal with near and around the streams, there is a benefit to getting buffer mitigation less than 30 feet;

*Michael & Norton – Need to eliminate the stormwater (SW) management requirements (diffuse flow concern also came up here since SW management device would be installed to ensure diffuse flow through the buffer),

*Leilani & Tara - what is the benefit of the buffer then if the sw is discharging directly to a stream (as would be if there was a sw pipe bypassing buffer) – the whole diffuse flow criteria, which is important, is non-existent and the mitigated buffer has little to no value on stream

*Leilani – SW management is too vague as written in rules; fairly easy to see that a pipe bypassing the buffer would be discharging right into the buffer. DWR should be specific as to what they would describe as “SW management”. This type of buffer, one with a direct discharge to surface waters & no diffuse flow through buffer, shouldn’t be viable for mitigation,

*Michael – argues that urban areas need more shading on streams and buffering, large or small, is still a substantial benefit to water quality regardless of the absence of a sw management device

*Eric – need to ask ourselves, “is stream better with or without the buffer if there is a sw discharging on it”? What is being mitigated?

*Tara – there is usually an easement over the area with the pipe anyway so it might be difficult putting another easement over it or plugging it

*Karen – As for diffuse flow/SW management issue, Restoration vs enhance definitions state that diffuse flow shall be maintained, this definition doesn’t carry over into section (k) for the alternative options & therefore it’s important to ask for an Alternative option to include SW treatment (which could be termed “aka Diffuse Flow” in some cases) So, if we leave (2)(D) in (k) we need the language for stormwater management This section takes a lot of (g) out of the equation since it’s “Alternative” to traditional mitigation options

*Michael & Tara – suggest that (g)(4) covers this mitigation site shall offer diffuse flow throughout the site. They want to add an exception though “except where there is an urban stream”? See g(4) comments

DECISION MADE 10/11: Karen’s suggested narrow buffer table is probably okay, but no final decision

made. Group did like idea of using a table for (2)(D) rather than text to show widths & credits. No final decision made on whether to leave SW management as a requirement for Narrow Buffers on Urban Streams

(k)(2)(B) – 1st sentence on enhancement and restoration part to move to (g)(3) (SEE ABOVE (g)(3)), and not be considered “Alternative” Keep preservation wording the same and in same location in (k)(2)(B)

k (1)(A) – John, Tara, Michael – remove “no practical alternative”?

* Jeff thinks that all alternatives are good for water quality

*Leilani – you need to keep in mind Like for Like and that you lose value when you aren’t mitigating like for like

*Karen – indicate a preference for what DWR wants to be in-kind mitigation ..but take out the language for NO PRACTICAL ALTERNATIVE.

*Eric – eliminate a

DECISION MADE: Eliminate (k)(1)(A)

L)

Agenda for 11/14/13

1 SL HB 74?

Karen

- 2 Review/approve rule revisions from Oct mtg - table footnote - see comments above,
- 3 Diffuse flow & existing SW conveyances - see comments above
- 4 Buffering ditches & ephemeral reaches

from memo. *"The ability to conduct rest or enhancement on all watercourses, including ditches"*

Michael – any channel that expedites the delivery of nutrients to receiving waters (Norton just came in to conversation) should be allowed to be mitigated for buffer mitigation

Jeff – maybe we should separate ephemeral channel from ditch since ephemeral are more "natural" than "ditches" are. Headwaters are actually being supported for coastal plains, and those are usually ephemeral channels ..

Eric – usace and dwr are wanting those headwater channels to be at least intermittent, not ephemeral Stream Id form is not to be used on headwater systems not designed for that so we can't do a e/i/p call on those features in the field When the usace and dwr talk about "ephemeral reaches good for accepting mitigation, is more than likely ok in Piedmont

Rich – application is difficult when determining an ephemeral reach to be ephemeral. Aspects of ephemerals: significantly smaller drainage area being received by the channel, how well to they function in denitrification process compared to the I/P channels. Research part – Rich doesn't really know that they have been studied enough to say they can do what a buffer can do.

Tara – there is value to protecting some ephemerals in perpetuity

Eric –previous hearings really harped into In-Kind Mitigation. Do we really want to buffer ephemerals? If we do, would they warrant the same credit?

Karen – could develop criteria for what ephemeral reaches could qualify and define what the

crediting would be

Eric – same as earlier change where we stated only a percentage of the project area could be mitigated along ephemerals. Should we limit projects to only be ephemerals that correlate real streams?

Eric – stream has to be stable, is there a deep gully on ephemeral? If so, denitrification may not occur and no water quality benefit

Rich – nutrient load reducing project offsets load requirements for SW and we are looking for other activities that could possibly qualify for nutrient reduction. Developing practice standards for nutrient crediting tied to these new practices. Do not want to buffer an unstable stream. Need to address N & P in lbs to see what the ephemeral channel is actually reducing in nutrients and what the benefit to water quality really is or isn't.

Michael – mitigation provider could provide the improvement of the channel on water quality to determine it's viability.

Karen – we don't have the timeframe to iron out all of the science, the details, the specifics, the crediting, etc. It's not necessarily a bad idea, but we can't possibly reach a conclusion that makes much sense in the timeframe we have right now. Hard to identify the extent of the ephemeral channel. Maybe it could be allowed in the alternative mitigation option and only approved on a case by case basis. Perianne was looking at geomorphology to determine how to rate an ephemeral and what should be the minimum score? Will talk to perianne aside from this group.

Tara – ephemerals should be allowed and maybe provided for in k(2)(b) – maybe remove intermittent and perennial from the (b) and just say streams, including ephemerals

Eric – very hesitant to offer ephemerals unless we say they “may provide credit if they contribute to the quality of a downstream mitigation project”

Michael – see it as an issue in Jordan and Randman with lack of available sites

Norton – likes tying it to another buffer mitigation to alleviate any uncertainty of the ephemeral channel as Eric said. Does agree with Eric that it will be hard to determine an ephemeral channel

onsite

Michael – can agree that it will connect to an existing buffer mitigation project on the site
Maybe only 50 feet full credit can be provided on ephemerals and drainage must go towards it?

Sue Ephemeral channels can be impacted and then they can get credit for mitigating it? if
we aren't careful, we could open a nightmare of uncertainties.

Eric there would be no net gain if that happens and agrees with Sue

Decision Made: Ephemeral Channel will be defined differently than Ditch. Everyone is okay with some ephemerals being possibly viable for mitigation, but no decision was made on this. Everyone agreed that if they were viable, then the easement would have to be contiguous and the channel is contiguous with a buffer mitigation on the same site and/or the Receiving buffered water has to have some conservation easement to be viable. (for example: Donated buffer for mitigation)

Rich – feels drainage area is going to have to be considered for crediting, we aren't there yet.

Tara – feels it should be a 1:1 ratio to buffered streams

Eric – ephemerals are formed by the drainage area whereas ditches are not.

Notes from 12/12/13

Item III from Memo Streams calls on Mapped Streams

Michael arbitrary and capricious calls by field staff DWR onsite is a problem with him Let's wait till we figure out ephemeral stuff and then come back to this discussion

Tara can we have a credit ratio table or provide a credit ratio to explain better, the last sentence of k(2)(c)

Michael maybe we can say 5:1?

Item IV from Memo Vegetation

Eric. most abundant species on both natural and mitigated riparian wetlands, were red maple, sweet gum (and ash?) Don't see benefit of sweet gum and red maple Are we having a problem with using oaks? Why is it a big deal to plant these rather than other species>>

Jeff USACE won't allow counting sweet gum and red maple They are early successional species so of course they will be there

Michael red maple & sweet gum grow the best and fastest and have best survival

Eric: sites are surviving Why wouldn't we continue that and keep diversity Doesn't see the problem for why we need change it Why not allow the site be a higher quality? There are other functions of the buffer

Michael function per the rule is only water quality

Eric: native volunteers may be allowed to count volunteers towards the 260 success criteria Would be willing to add this language

Jeff. would like to see eric's proposed language added to the report

Tara doesn't think the language as proposed in the rule needs to be changed thinks it provides enough flexibility

Eric need diversity and wildlife

Norton: we need to be planting more than 2 species Especially if one species planted becomes affected by predators Prefers 5

Tara preference is to plant hardwoods to jumpstart succession Too expensive to plant larger trees

Norton to satisfy Michael what about 4 species and eric's language

Tara what's the difference between 4 or 5, to us it's none Tag Alder needs to be allowed

Karen we will discuss the Tag Alder at the next mtg, will have to be in the rule if we are going to allow for it If we don't allow it, it will be in the rule

Jeff wants 4 species

Vote Diversity Species ##? 4 species agreed upon

Vote

Eric – what we have allowed volunteers and the site becomes a monoculture?

Tara who cares if it's a monoculture if it meets the 260 criteria?

Michael issue with "planted"

Norton sees no problem leaving it as "planted" Let's defined "planted" in the definition. Could planted be "acorn" or "manually"?

Decision Made change planted to established in Item g(6)B

Michael Item g(6)(d) fertilizer implementation should be eliminated from the plan, it's a federal requirement anyway so it's redundant

Vote we will keep (d) but only the first sentence and say "if applicable" See notes on rules

Item VI of memo

Karen criteria of rest Vs enhancement

Tara

Michael what about remove enhancement all together n just leave preservation & restoration

Eric there should be ratios between enhancement and restoration

Tara may lose good sites because incentives aren't there for 3:1 ratio

Eric, Tara, & Norton change enhancement to 2:1

Vote: all agree to change from 3:1 to 2:1

Eric do a table for mitigation to credit example

Resto = 1 sf to 1 credit

Vote change g to h and make a new item called "Mitigation Unit" and provide a table showing how the ratios apply to credits R, E; P (3, 5, 10)

Karen & Eric will propose language and table. Probably not allowed to put a table to define a term within a definition section

Jeff why do we talk about %cover on enhancement?

Eric because we have clumps of large trees that have a closed canopy, but could count as a restoration site if not enough trees meet the criteria

Sue we got that from Forestry, to stay consistent with something more clear and already incorporated

Michael % canopy should be "across the site" rather than clumps See #12 Restoration definition

Vote we will add "across the mitigation site" to the end of the sentence of definition #12 All agrees

Definitions from Michael

#11 Physiographic Province ((f)(e)(2) referred to in Coastal Headwater streams mitigation)

Michael remove this definition and replace with "physiographic ecoregion"

VOTE: (f)(2) change physiographic province to level III ecoregion

VOTE remove #11 definition

Michael Locational Ratios must go away Item (e)

Eric: EMC wanted the mitigation as close to the impact site as possible

Jeff & Karen more incentives to be in a 12 digit HUC, you would eliminate the incentives if this locational ratio goes away Would help applicant provided mitigation

Eric: Zonal does not go away and neither does the geographic ratio

No decision was made on removing the locational multipliers. Most felt it was okay to leave since it provided incentives for both banks competing for a sale where less credits could be purchased than going farther away to a 8 digit HUC

Vote remove e(1)(A) because it's the same as B

Michael – wants to place restrictions on what lands can be donated to EEP. Wants just preservation and thinks that if someone needs one acre of buffer mitigation, then they can donate 5 acres of preserved buffer land to EEP. Then, we can remove everything else. Michael doesn't want Rest or Enh Sites.

Katie stream calls should be necessary!!! Involvement up front, too many issues in the past with EEP calling a non subject stream subject. Also need to be the regulator that is what we do!! Also, what if there is a violation?? We always determine streams for violation purposes. How else can we say "yes"? appeals? Way too sketchy.

From 1-14-14

Leilani – add a table to (e) just like in (g) for ratios

Karen – will add rule references for each WS in (f)

Michael – “locational ratios” in (e)?

Eric – tag alder is being discouraged since it’s a nitrogen fixer.

Tara – no clear research on using tag alder, but warnings are everywhere to not using it since it’s a nitrogen fixing plant and could impair water quality.

Karen – not going to put it in the rule that we aren’t going to allow them since no one in the room really cared about it

Topic: Should we allow mitigation on ephemeral channels?

Eric – APU has regulations on spray fields and what they discharge to ephemeral channels. They mainly use BPJ. Forms are to identify “streams” and an ephemeral channel is not a “stream”. We don’t regulate ephemerals so we aren’t going to use the term ephemeral “stream”.

Michael – need to define channels supportive of buffer mitigation options to expand opportunities

Eric – either way, DWR will be approving the sites and the plans for buffer mitigation, so nothing should just get “slipped in”.

Leilani – can’t you just say, “non subject channel”?

Eric- no, there is already a definition for ephemeral channel in the regular buffer rule.

Michael – no (to Leilani) cause we already voted to use ditch and ephemeral separate

Periann – should probably not use the watershed/drainage area as a factor if you want to keep it “simple”

Michael & Eric – we should be required to show that the ephemeral is receiving pollutants and delivering to the system, so contributing drainage area is important

Karen – arbitrary to use 5 acres for the drainage area, we need the science to purpose that in the rule

Periann -we aren't always going to find the origin of the intermittent stream

Eric – need to find a point where the benefit to buffering the channel on water quality is determined?

Karen – the statute on “construction of alternative measure” 143-214.20 (a1)(4) means the alternative should be equivalent to a regular buffer mitigation site, so equivalent to an intermittent stream and what it can provide to water quality.

Periann – evidence suggests nutrient removal on ephemeral channels (shallow evaporated zone rather than a watertable or a perched water table)

Mountains vs coast, piedmont, you will have different things to consider.

Discussions: Ditched channel in a topographic crenulation (Michael), contributing watershed (eric), might not have a lot of natural ephemeral channels in the coast (periann), thinks 5 acres will cover the drainage area on the coast, but not in the piedmont or mtns. Topographic crenulations (channels) can provide a benefit to water quality if mitigated, cause pollutants are getting to the system (Michael says that perianne's research may support that). Periann (must be “at least” 5 acres on the coast, but fears 5 acres is too low, not too high for drainage area).

Periann – does see some benefit on buffering natural ephemerals in a natural system, joining to intermittents or per. that are found within a topographic crenulation (ditch will probably not be in a topographic crenulation, so not talking about ditch here), but, in some areas, wrapping the buffer should occur in the ephemeral (trees in the channel planted) so that there is an intercept of pollutants through a buffer (see drawing on page 7),

Tara – agrees with periann, & feels the need to capture the part of the channel that is actually a channel (not sheet flow).

Rich, Leilani, Periann do not feel a # should be placed in the rule for watershed drainage,

Rich - but the DWR should establish criteria for determining the extent of the runoff generation and delivery to a point in the catchment (channel) that could be the following and then have some criteria checklist.

Rich does not favor simple and predictable because that may not make since, regardless of what

Michael wants. We should define a set of criteria.

Tara – suggests that we require a “watershed delineation” for ephemerals/conveyances

Periann – “topographic crenulations that would require discernible banks & show flows”

Rich – concerned with the “ridge” scenario, what is the buffer actually capturing? You are losing like for like mitigation

Michael & all others: ephemeral has to connect directly to a protected inter/peri channel

Discussion: the mitigation derived from the contributing drainage area of the channel...

Decision Made: Karen & Eric will derive language for ephemeral channels based on the recommended discussions & terms used in the meeting.

Karen – needs to be part of the whole project. The intermittent channel must be mitigated & protected along with the feature it connects to. To use ephemerals, the channel has to be protected by a conservation easement, whether existing or proposed (may still need to think about this one, could be covered under the “alternative option”, could end up being the entire mit bank project is just ephemerals). Katie meant that the bank would have to actually “preserve” the stream the channel flows into and pay for the easement on the preserved channel). **Katie to Karen & Eric – need to consider that the rule says it should be “perpetual” & there should be an endowment and long term steward; the existing easement (example, CWM trust fund) may not be “perpetual, especially if we don’t have a long term steward assigned to it, we may have to say “case by case basis” to exclude what might be typical of our accepted “perpetual easements where long term stewards are assigned the project. This cost money on the mit provider, so giving them full credit for not paying into a steward for that stream buffer may not be fair to those who pay for the long term steward to maintain that stream buffer (consistent with D240). Katie (maybe we should just require the provider to protect the site and if there is an existing easement they didn’t put \$\$ into, that could be proposed as “alternative” and covered in the “alternative” portion of the rule. What wouldn’t be considered alternative, would be a project where the ephemeral channel & the inter stream were mitigated by the provider and the provider paid for the easement and the long term steward is identified and is the same for the ephemeral & the stream.**

Karen – we should limit the mitigation area that is solely ephemeral channels

John – “contiguous easement”

Eric – the ephemeral has to flow directly to the buffered stream (be contiguous)



Periann- they should put in wells (maybe for increased credit) to that we can quantify the benefits

Vote: 25% of the length of stream protected under adjacent or contiguous conservation easement captures the majority of the site (Tara, Michael, John agree)

John – want to encourage better sites, not ephemerals.

Rich – attributing nutrient removal of buffer and crediting has been overated so far...The methods need to be revised in determining nutrient removal of reforestation along features, a healthy amount of credit comes through thru-put treatment and ephemerals don't have as much, but Periann disagrees and says there is.

Topic: Should we allow buffer mitigation along ditches

Contributing drainage area on ditches?

Leilani – a ditch isn't going to have a contributing drainage area, Karen & Eric – that's one of the concerns we have of ditches and their benefits to water quality.

Michael – why don't we apply the ephemeral channel criteria to a ditch and just go with that to determine if a ditch can be mitigated for buffer mitigation, they have a benefit to water quality

Karen – mitigated ditches for buffer credit doesn't agree with the statute 143-214.2, mitigating the ditches does support the nutrient removal needed for allowing nutrient offset mitigation which is the concern in the Nutrient strategies (also quoted ag rules and allowing converting ag to forest to reduce nutrient reduction loads)

John – neuse & tar application, buffering ephemerals isn't going to get to what we need, it would be however, beneficial in Randleman

Tara – if it's allowed in randleman via kick in, it should be allowed everywhere...what is the reason it was allowed it Randleman?

John – ditch – meets the ephemeral def. minus the natural topographic crenulation, must be flow evident, can't be just dug for mitigation purposes (would be a buffer violation anyway, allowing for new sw discharges)

Rich – not sure we can define how much drainage is actually being captured by a particular conveyance, may could come up with a multiplier and a distance to conveyance, etc. We need more substance if we are going to be able to measure in order to quantify to determine crediting.

Leilani – put something for ditches in the alternative mitigation section and put some minimum criteria (depth, incision etc) out there for the provider to bring to the Division for provider, then, define some kind of ratio of how much of the project could be buffered ditches. Percentage of crediting would be determined by the contributing drainage area.

Karen – too many things would be proposed such that G.S. is not met as an “equivalent”. If it's an incredibly deep ditch that is never connected to the buffer, mitigating it wouldn't be equivalent to buffer that is loss on an impact site.

Katie to Karen & Eric: what if we just allow sites where there is just one ditch on the site connecting to the stream. That one ditch is receiving all the pollutants and carrying it all via one conveyance to the stream and therefore could be an obvious candidate for buffer mitigation rather than allowing a whole bunch of buffer mit along multiple perpendicular ditches that all feed into the same stream.

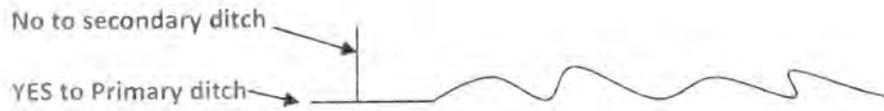
Eric – ditch has to be installed prior to the effective date of the buffer rule.

Michael – thinks the same date should be used for all ditches. Karen says each buffer rule is different and there are different criteria and the goals of the strategy are different. Baseline is important to keep in mind so we aren't going to use the same date for all the basins

Eric – says we can write out the effective dates of each of the rules in the rule to reduce confusion. But the effective dates will be required from the ditch. (SEE DRAWING ON PAGE 14)

Michael – proposes full credit (1:1), 25% of the linear feet of stream it connects to can be mitigated, but only 50 feet of buffer can be restored along the ditch,

Eric & Others – must be directly connected to the stream for mitigation opportunity



John – how are we factoring in multiple ditches carrying the same drainage area to the stream?

See my comment above

Karen - Depth – 3 feet? DWR folks will look into it. Either way, it has to meet the G.S.

KAREN – ONE MORE MEETING TO HASH OUT THE FINAL CHANGES AND TO DISCUSS THE TOPIC OF "STREAM CALLS ON MAPPED STREAMS"

EXHIBIT 3

DWR responses to the EEP document
"Reforms needed immediately in the regulation of riparian buffer mitigation"

General statement regarding potential changes to mitigation rules:

DWR has a responsibility to maintain the integrity of the mitigation credits being purchased. If DWR allows mitigation projects to be implemented that do not adequately offset the impact, then applicants are wasting their money on credits that do not provide commensurate water quality benefit. The DENR mission states that the agency's primary mission is to protect NC's environment and natural resources through:

- Operating within the confines of the regulations:
(Some of the requests made by EEP would require DWR to operate outside of the confines of the existing regulations. In such instances, this document recommends rule changes where necessary.)
- Being a resource of invaluable public assistance:
(DWR strives to provide public assistance to applicants ensuring that rules result in available credits that are commensurate with their permitted impacts.)
- Being cognizant that an economic cost/benefit analysis is an integral component:
(The proposed rule, in addition to the recommended modifications listed below, does consider the economic cost/benefit analysis. We believe we have balanced the need to keep mitigation costs low while still providing commensurate mitigation credits.)
- Making decisions with a respect and understanding for the science, which contains diversity of opinion.
(DWR developed the proposed rule, in addition to the recommended modifications listed below, using science and taking into consideration the diversity of opinions in the field.)

just responses

1 1.3
1 1
-3
-3

8-8-13

I. Riparian Buffer Mitigation Widths – the Ironclad 50’ Standard

There are two issues raised under this section: (a) provide mitigation credit for buffers wider than 50 ft and (b) provide mitigation credit for buffers narrower than 50 ft.

Response:

Under the current buffer mitigation rules, applicants may “restore or enhance a non-forested riparian buffer...” A riparian buffer is defined within each of the buffer rules. Each rule has an applicability paragraph that defines where the rule shall apply (e.g. in the Neuse “*This Rule shall apply to 50-foot wide riparian buffers directly adjacent to surface waters in the Neuse River Basin (intermittent streams, perennial streams, lakes, ponds, and estuaries), excluding wetlands.*” The rule further goes on to clarify that a subject feature must be depicted on either the USGS topo map or the NRCS soil survey and defines the Zones of the riparian buffer.)

To allow buffer mitigation to occur beyond 50-feet requires a rule change.

*allow credit
50-200 per
the table*

- (a) DWR agrees that mitigation credit should be granted for restored buffer widths in excess of 50 feet on a prorated basis, up to a maximum of 200 feet in the consolidated buffer mitigation rule (15A NCAC 02B .0295). See Table 1 below.
- (b) DWR also agrees that mitigation credit should be granted for restored buffer widths less than 50 feet on a prorated basis, down to a minimum of 30 feet in non-urban areas and 20-feet in urban areas in the consolidated buffer mitigation rule (15A NCAC 02B .0295). See Table 1 below.

The existing buffer rules require mitigation for a minimum of 50 ft of width in order to ensure replacement of impacted buffers. Scientific literature provides data to show that nutrient removal is a function of buffer width, along with other site factors such as soil type and subsurface hydrology. Similarly, scientific evidence supports that narrower buffers provide some nutrient reduction. For buffer widths below 20 ft however, nitrogen removal is highly variable and thus not proposed. Allowing for narrower buffers is especially important in urban areas, where available land for riparian buffers is limited. The draft consolidated buffer mitigation rules (15A NCAC 02B .0295) provided credit on a prorated basis for narrower buffers in urban areas in (k)(2)(D), and DWR proposes to expand this to cover non-urban areas also:

Table 1 - Proposed Buffer credit

Urban Areas (see Figure 1)		Non-Urban Areas (see Figure 2)	
Buffer width (ft)	Proposed Percentage of Full Credit	Buffer width (ft)	Proposed Percentage of Full Credit
< 20	0%	< 30	0%
20-29	75%	30-100	100%
30-100	100%	101-200	25% for area > 100 feet
101-200	25% for area > 100 feet		

Background: To develop this proposal, DWR evaluated several scientific resources. Mayer (2007) conducted an analysis based on available scientific literature (45 studies, 89 individual buffers) that contained data on riparian buffer and nitrogen (N) concentration in

streams and groundwater. The authors developed a nonlinear regression model to estimate nitrogen removal efficiency within three different buffer width ranges. Two distinct zones emerged, with 50-75% N removal for buffers up to 75 feet wide and a much lower increase in N removal between 75 and 200 feet (~16% increase between 76 and 200 feet). See Figure 3 at the end of this document for a summary of this data.

The Nitrogen Loss Estimation Worksheet (NLEW) Committee (Osmond et al. 2011) also reviewed several studies conducted primarily in North Carolina. The studies looked at the effect of buffer widths and riparian vegetation on subsurface nitrate reductions. The NLEW committee determined that credit should be based on net N reduction rather than gross reduction. Net N reduction refers to the additional nitrogen removal that will result from changing an area from some pre-existing use (such as row crops) to a forested riparian buffer. The authors identified % N reduction credit for four different ranges of buffer widths. These % N reduction credits were used to calculate nitrogen offset credit from riparian reforestation along a 1,000 linear foot stream segment – see Figure 4 at the end of this document for a summary of this data.

DWR found that both the Mayer method and the NLEW method demonstrated a significant drop in the additional amount of nutrients removed for wider buffers beyond a certain point. DWR used this information to calculate the credits in Table 1 – see Figure 5 at the end of this document to see how the proposed credit ratio exhibits a similar pattern to the nutrient removal provided by buffers of varying widths.

II. Riparian Buffer Jurisdiction – Map Jurisdiction.

There are two issues raised under this section. (a) the ability to conduct restoration or enhancement on unmapped streams and (b) the ability to conduct restoration or enhancement on all watercourses, including ditches.

Response:

As stated above in I, the current mitigation rules require that restoration or enhancement take place on non-forested riparian buffers; “*riparian buffers*” as defined in each riparian buffer rule. To allow buffer mitigation to occur on non-subject features requires a rule change.

- (a) DWR agrees that buffer mitigation projects should be allowed on non-subject streams, which is why in 15A NCAC 02B 0295, there is an entire Part [(k)(2)(b)] that provides for restoration, enhancement and preservation on non-subject streams.
- (b) DWR does not agree that buffer mitigation projects should be allowed on ditches, except as provided for in the Randleman rules. The Randleman rules state that ditches or manmade conveyances that deliver untreated stormwater runoff from an adjacent source directly to an intermittent or perennial stream are subject to the Rule, so these types of ditches/manmade conveyances are eligible for mitigation projects.

Background: The nutrient offset rules do not explicitly allow for riparian buffers on ditches to offset upland development. The nutrient offset rules require that calculations be provided indicating the annual magnitudes of load reductions for a proposed measure. A historic calculation of credit was made assuming the riparian buffer functioned the same as a riparian wetland providing treatment during flood events. This resulted in a single per-acre credit value which was applied to restored buffers up to 200 feet and on both streams and ditches.

but define buffer
allow this
in Randleman

The historic calculation assumes a drainage area of 10.8 acres, which is unlikely for a ditch. It also assumes deposition from overbank flooding, which rarely occurs in ditches.

There are also many issues on potential project sites for ditches:

- Is the ditch hydrologically connected to an intermittent or perennial stream?
- Does stormwater runoff from overland flow drain toward the ditch?
- Does the ditch drain towards the intermittent/perennial stream?
- Was the ditch present before the buffer rules came into effect?
- How will the ditch be maintained?

DWR would consider allowing “mitigation projects” on ditches if the applicant/mitigation banker/EEP could demonstrate the net nutrient removal function of the mitigation project, similar to the requirements for stormwater BMPs.

III. Riparian Buffer Jurisdiction – Stream Calls on Mapped Streams

The issues raised under this section focus on the requirement to have a stream determination made by DWR staff. More specifically, there is a concern that the stream method is not appropriate for modified natural streams that may be severely degraded.

Response:

- DWR will continue to make on-site stream determinations using the *Methodology for Identification of Intermittent and Perennial Streams and Their Origins v 4 11*. state that severely impaired streams will be eligible.

Background As stated above in I, the current mitigation rules require that restoration or enhancement take place on non-forested riparian buffers, “riparian buffers” as defined in each riparian buffer rule. In G.S. 143-214.25A, the state general assembly required DWR to develop a program to train and certify individuals* to determine the presence of surface waters that would require the application of rules adopted by the EMC for the protection of riparian buffers. The statute goes on further to state that DWR shall develop standard forms for use in making and reporting determinations.

DWR developed the SWITC methodology in 1999, revised in 2004, 2005 and 2010. This methodology has been thoroughly tested over the years and with appropriate training, is robust enough to determine the difference between a modified natural stream and a ditch.

The 2008 buffer audit revealed that a number of sites had features that were determined by DWQ staff (including SWITC instructors with significant experience in applying the method) to be ditches, and therefore not eligible for Neuse riparian buffer mitigation. As a result, it was jointly agreed by DWQ and EEP that DWQ staff would make on-site stream determinations on 1st and 2nd order surface water features on all proposed mitigation sites to ascertain the applicability of the Rules.

IV. Restoration Success Criteria – Native Hardwood Trees

The issues raised under this section focus on the requirement to plant a minimum of at least two native hardwood tree species and the current DWR practice of not allowing Sweet Gum or Red Maple to be counted towards meeting this requirement.

* Individuals that may be certified include staff with DWR, NCFS (registered foresters only), and delegated local governments (pursuant to G.S. 143-214.25A)

Response:

- DWR agrees that as written, the use of Sweet Gum and Red Maple counts towards meeting the minimum requirement of the rule, however DWR prefers providers to use a mix of early and later successional species in order to ensure a diverse forest. Mitigation providers will be expected to meet planting criteria established by the IRT in buffer areas that are part of a stream mitigation site.

Background: Planting multiple species of hardwood trees has been standard mitigation practice in North Carolina for riparian buffer mitigation, and has also been standard mitigation practice by the U.S. Army Corps of Engineers on stream and wetland mitigation sites. It is supported by the other resource agencies on the Interagency Review Team (IRT), particularly the NC Wildlife Resources Commission and the US Fish and Wildlife Service.

DWR staff have visited hundreds of stream and buffer mitigation sites over the past eight years, and on the vast majority of these sites, the planted riparian zones consisted of a variety of oaks, green ash, sycamore and other species typical of riparian reference forest ecosystems with heights ranging from four to 10 feet. The majority of these sites also had abundant Red Maple and Sweet Gum volunteers (*i.e.* naturally established through seed dispersal). These sites were determined to be on a trajectory toward a diverse riparian forest, which included substantial amounts of Red Maple and Sweet Gum volunteers.

On sites where tree survival or vigor has been a concern, this has generally been a result of the soil conditions (e.g. "Priority 2 stream restoration", soil compaction, presence of plow pans, etc.). On such sites, it has been observed that Red Maple and Sweet Gum volunteers experienced similar difficulties as the oaks, ash and other hardwood tree species. Nonetheless, Red Maple has been used to replant problem areas during the monitoring period where other species had difficulties.

V. Restoration Success Criteria – Planted Stems

The issues raised under this section focus on the requirement to plant 320 trees per acre and the statement that DWR does not count trees derived from existing seed sources, planted seeds, stump sprouts or other volunteer species towards meeting that 320 requirement.

Response:

- DWR agrees that using 260 stems per acre at the end of the monitoring period would provide more consistency with the federal performance standards for stream and wetland projects, which is why this change is reflected in 15A NCAC 02B 0295 (g)(5)(B). Current practice is that DWR staff consider the presence of woody volunteers during closeout of buffer sites.

VI. Restoration and Enhancement Criteria – Measuring Density

The issues raised under this section focus on tree density for determining restoration or enhancement. More specifically, the issues include the inconsistency among rules, the lack of clarity on how to measure density which has resulted in inconsistent calls among DWR staff, and the use of a tree's dripline.

Response:

- DWR agrees that the inconsistency among rules has created confusion and inconsistency, which is why in 15A NCAC 02B .0295, there are clear definitions for restoration, enhancement and preservation to be used for all the buffer rules. The definitions were written to provide more clarity, while still allowing DWR staff to use best professional judgment in evaluating potential mitigation sites based on their many years of experience.

Restoration Site – 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)

Enhancement Site – riparian zone sites that are 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

Preservation Site – riparian zone sites that are characterized by a natural forest consisting of the forest strata and diversity of species appropriate for the physiographic province

Background The goal of buffer mitigation is to offset the buffer impact and its functions with a restored or enhanced buffer, where the restoration or enhancement activities restore nutrient removal and other functions to a buffer that did not have those functions, or to enhance a buffer with degraded function.

In the Neuse, Tar-Pamlico and Catawba rules, there is currently no definition for restoration or enhancement. In the Randleman and Jordan rules, there are definitions for restoration (site with less than 100 trees per acre) and enhancement (site with greater than 100 stems per acre but less than 200 stems per acre). A tree is defined as 5 inches DBH (diameter at breast height).

Because of the lack of definition or lack of a valuable definition, DWR has had providers propose “restoration” sites where a fully-functional or near-fully-functional (developing) buffer was already present. These sites had dense growth of woody stems with one to two-inch DBH, which is roughly equivalent to the size of the trees that would be planted.

Similarly, sites were proposed by mitigation providers (some instituted by EEP) for “restoration” with complete closed canopy cover with large, mature trees but minimal understory or ground cover due to livestock access. We determined that those sites did not meet the intent of 15A NCAC 02B .0242(9), which provides the applicant with the option to “*restore or enhance a non-forested buffer*”

Based on DWR’s experience regarding site-specific conditions and the variability related to existing versus potential buffer function, the need exists for DWR staff to make on-site assessments to verify the site’s suitability for buffer mitigation in support of the purposes of both the Riparian Buffer Protection Rules and the proposed Consolidated Buffer Mitigation Rule

- where there is a def, we will apply a fixed radius thing.

Figure 1. Example Proposed Mitigation Credit for 1,000 linear feet (LF) of stream in Urban Areas

- Total credit for a 20 ft buffer = 15,000 ft²
- Total credit for a 30 ft buffer = 30,000 ft²
- Total credit for a 100 ft buffer = 100,000 ft²
- Total credit for a 200 ft buffer = 100,000 + 25,000 = 125,000 ft²

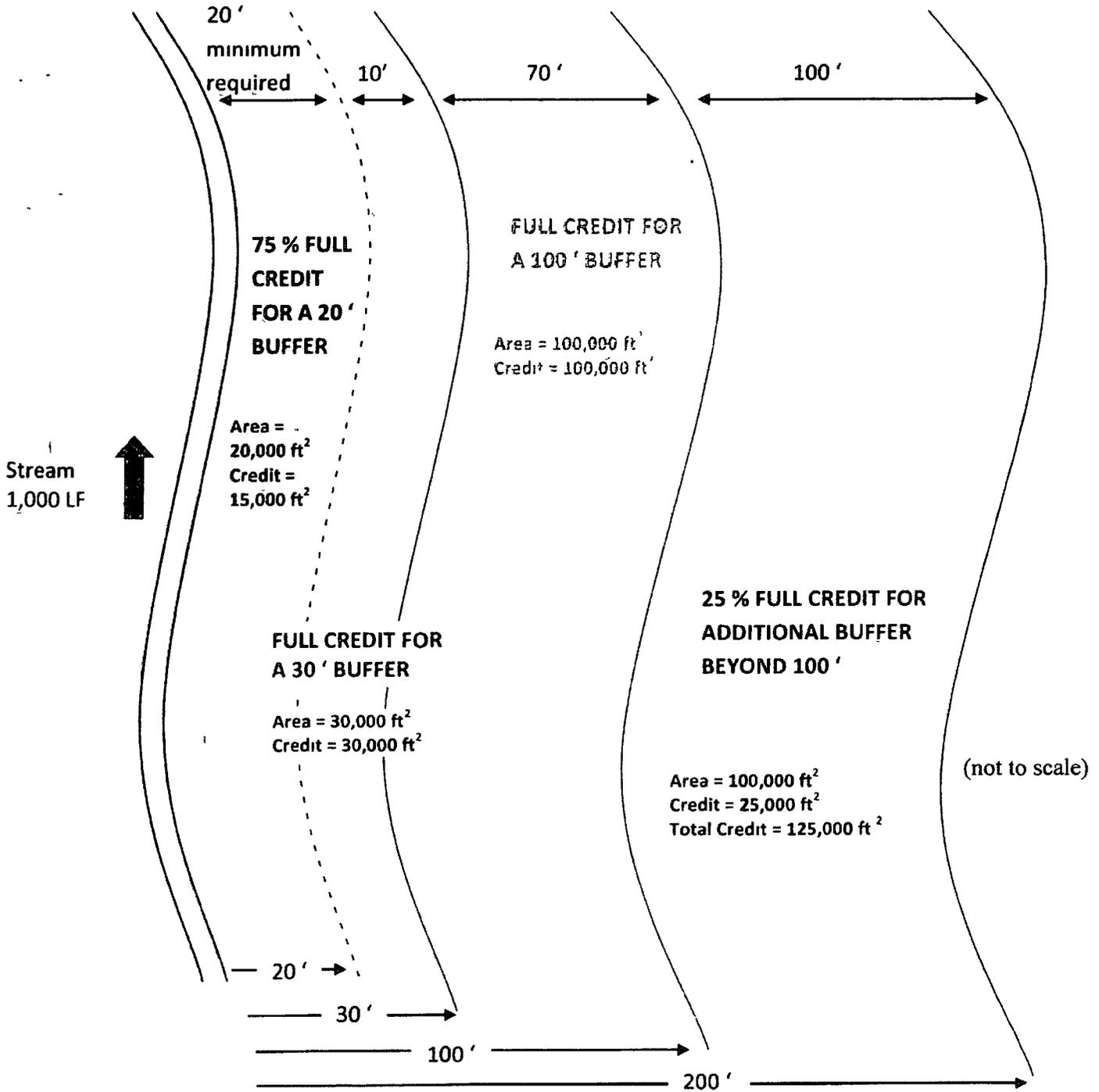


Figure 2. Example Proposed Mitigation Credit for 1,000 linear feet (LF) of stream in Non-Urban Areas

- Total credit for a 30 ft buffer = 30,000 ft²
- Total credit for a 100 ft buffer = 100,000 ft²
- Total credit for a 200 ft buffer = 100,000 + 25,000 = 125,000 ft²

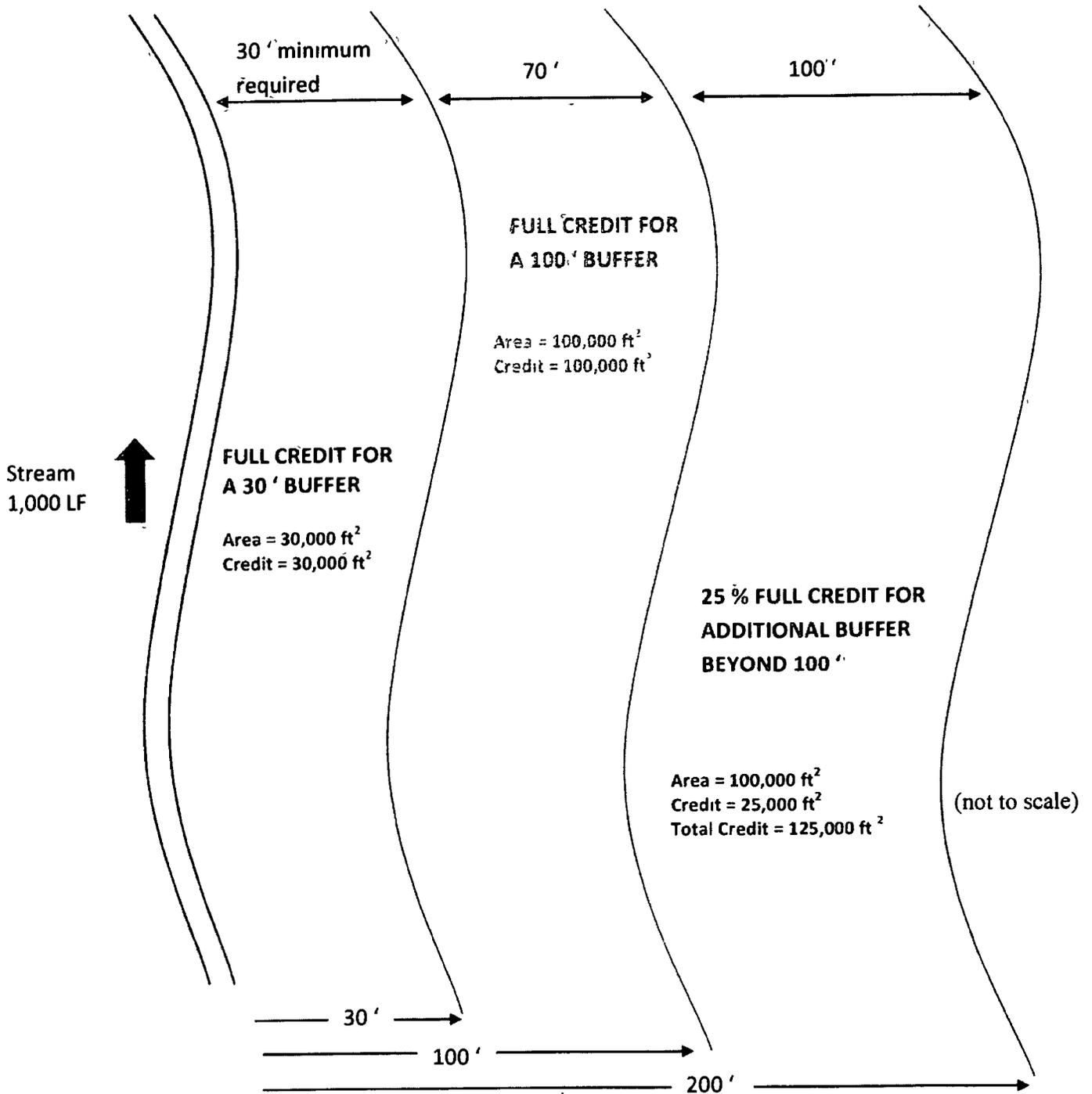


Figure 3 – Gross Nitrogen Removal (%) as a Function of Buffer Width (ft) – Mayer Curve

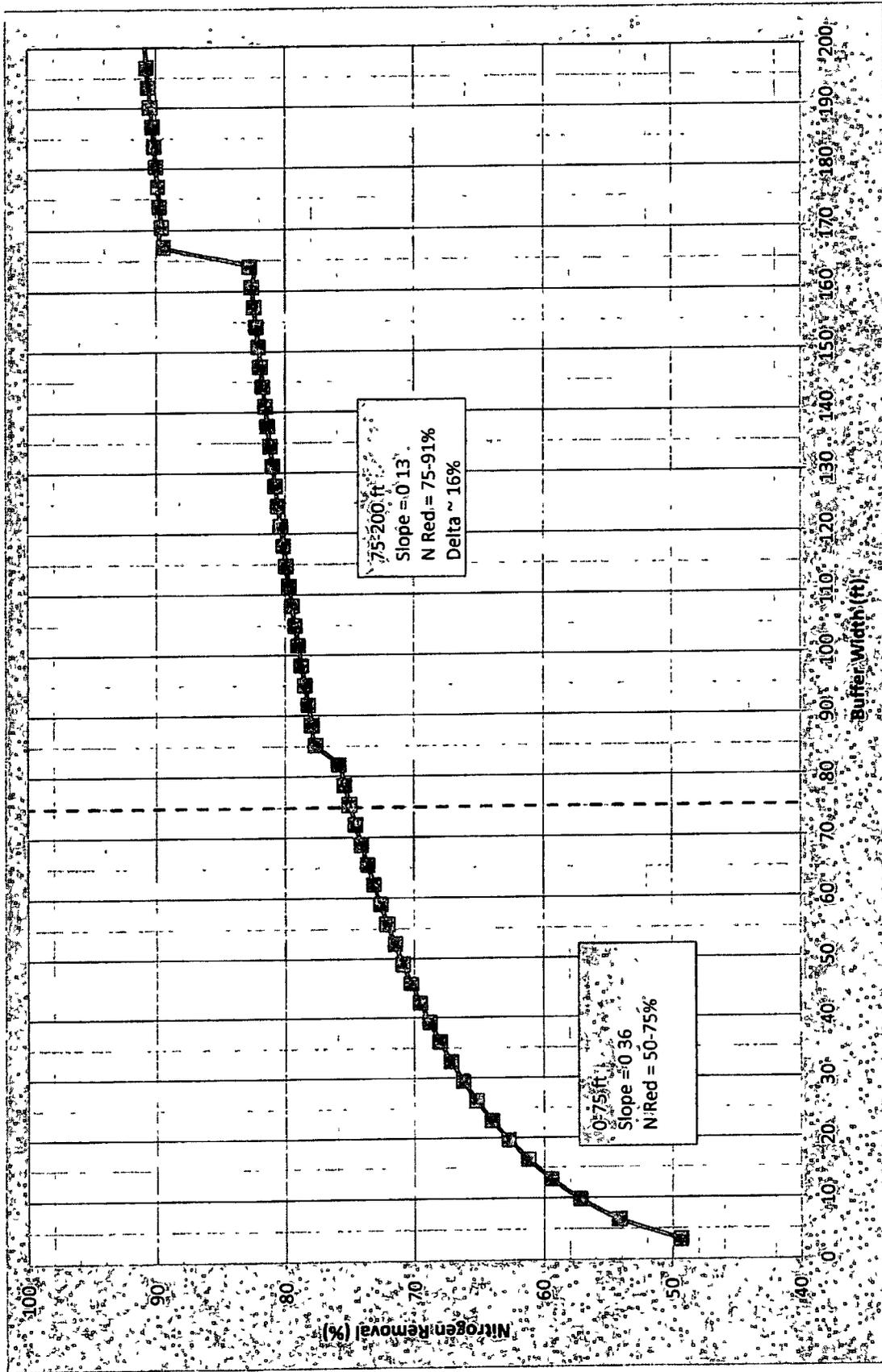


Figure 4 – Net Nitrogen Removal (lbs) as a Function of Buffer Width (ft) – NLEW Method

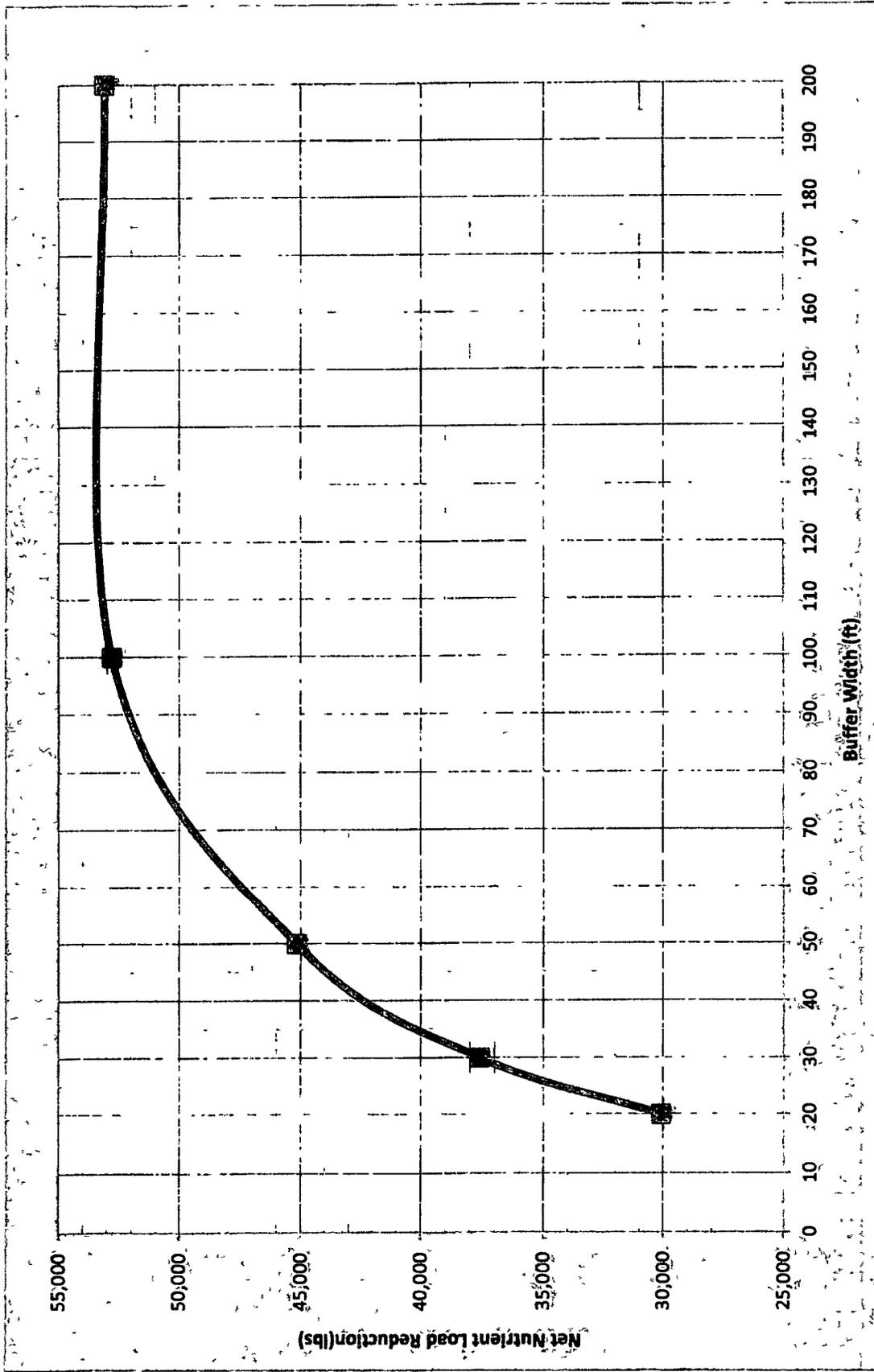


Figure 5 – Proposed Buffer Credits (example is for 1,000 linear feet of stream)

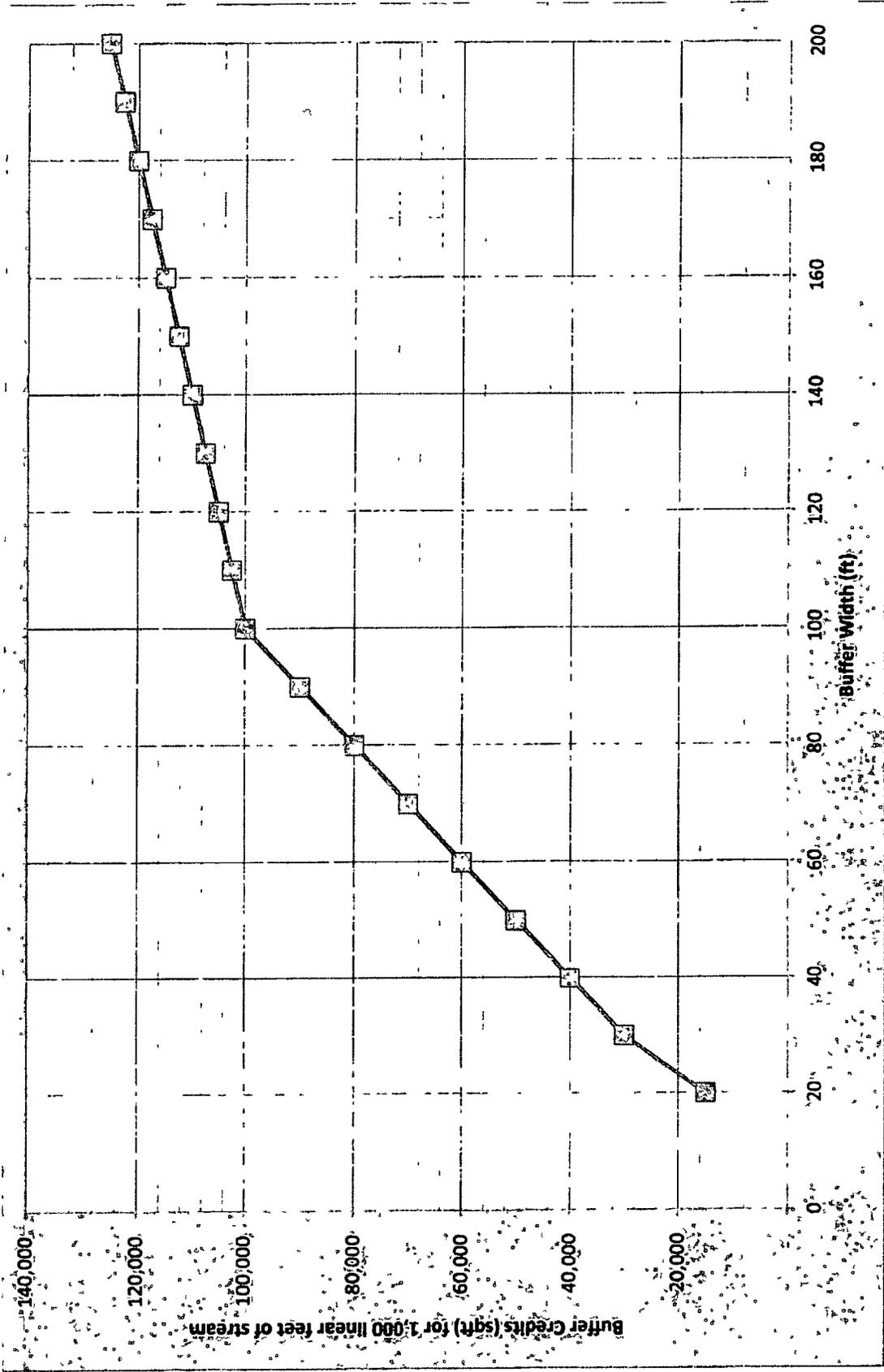


EXHIBIT 4

From: "Ellison, Michael" <Michael.Ellison@ncdenr.gov>
Date: June 20, 2014 at 11 33 19 AM EDT
To: "Rep. David Lewis" <David.Lewis@ncleg.net>, "Rep. Tom Murry" <Tom.Murry@ncleg.net>, "Rep. Chris Millis" <Chris.Millis@ncleg.net>, "Rep. John Torbett" <John.Torbett@ncleg.net>
Cc: "Greg Gebhardt (Rep. David Lewis)" <Lewisra@ncleg.net>, "McLamb, Carr" <carr.mclamb@ncdenr.gov>, "Robbins, Neal" <Neal.Robbins@ncdenr.gov>
Subject: **bill to replace consolidated buffer mitigation rules**

Gentlemen

So that you might better understand the context of the consolidated buffer mitigation issue, the following summary is provided

The buffer mitigation rules now operative are old, overly complex, and limited as to compliance options. New rules now at the Rules Review Commission were developed by the Division of Water Quality and worked their way through the EMC process in the last half of the Purdue administration. These rules reduce complexity by establishing consistent mitigation requirements across all regulated river basins. They also add flexibility in compliance by allowing contemporary stormwater quality practices to be used for mitigation. However, in doing so the new rules also tighten the grip around developers' necks: that's why we had to stop them with letters to the RRC.

The rules now at the RRC came out of the DWQ unit most loathed by developers for its heavy-handed regulation and capricious enforcement tendencies. They deviate from their legal water quality purposes to advance an unrelated and illegitimate environmental agenda to control land use and compel developers to restore wildlife habitat. No one writing the rules had ever implemented a mitigation project, and the results make buffer mitigation more difficult and uncertain. Private mitigation bank costs would skyrocket and the NC Ecosystem Enhancement Program would not be able to support the regulated public without massive fee increases. In some areas, NCEEP could not responsibly accept a mitigation request at any fee because acceptable sites would be arduous if not impossible to find.

The rules contained in the draft bill Carr sent you were developed by representatives from PCS Phosphate (NC's largest buffer impactor), DOT, DWR, EEP, and three different private mitigation providers. Our goals were to increase mitigation opportunities, reduce regulatory uncertainty, and control mitigation costs. We did make a few compromises with the regulators, but only after private mitigation providers assured that those compromises were cost-neutral. We also extracted concessions of substance from the regulators, usually to drastically increase the types of sites that can be used for mitigation. In sum, I believe the rules contained in the draft bill achieve all underlying water quality objectives while controlling costs to the greatest practicable extent and improving the long-term viability of buffer restoration as a tool to meet Federal mandates.

Thank you very much for your consideration. Please contact me if you have any questions.

Michael Ellison

NC DENR Ecosystem Enhancement Program

919-707-8414 (office)

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APPENDIX I

Hearing Officer's Final Recommended Rule

15A NCAC 02B .0295

1 15A NCAC 02B 0295 is proposed for adoption under temporary procedures as follows

2
3 **15A NCAC 02B .0295 MITIGATION PROGRAM REQUIREMENTS FOR PROTECTION AND**
4 **MAINTENANCE OF RIPARIAN BUFFERS**

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

8 (1) The applicant has received an authorization certificate for impacts that cannot be avoided or
9 practicably minimized pursuant to 15A NCAC 02B 0233, 15A NCAC 02B 0243, 15A NCAC
10 02B 0250, 15A NCAC 02B 0259, 15A NCAC 02B 0267 or 15A NCAC 02B 0607, or

11 (2) The applicant has received a variance pursuant to 15A NCAC 02B 0233, 15A NCAC 02B 0243,
12 15A NCAC 02B 0250, 15A NCAC 02B 0259, 15A NCAC 02B 0267 or 15A NCAC 02B 0607
13 and is required to perform mitigation as a condition of a variance approval.

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

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

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

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

22 (4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at
23 [http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-](http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653})
24 6DC7-4EC3-88A9-03E6B7D55653} using the eight-digit Hydrologic Unit Code (HUC) prepared
25 by the United States Geological Survey.

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

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

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

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

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

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

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

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

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

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

15 (c) APPLICATION REQUIREMENTS, MITIGATION SITE REQUIREMENTS AND MITIGATION OPTIONS

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

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

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

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

2 or

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

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

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

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

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

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

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

<u>Basin/Watershed</u>	<u>Zone 1 Ratio</u>	<u>Zone 2 Ratio</u>
<u>Neuse River Basin (15A NCAC 02B 0233)</u>	<u>3 1</u>	<u>1 5 1</u>
<u>Catawba River Basin (15A NCAC 02B 0243)</u>	<u>2 1</u>	<u>1 5 1</u>
<u>Randleman Lake Watershed (15A NCAC 02B 0250)</u>	<u>3 1</u>	<u>1 5 1</u>
<u>Tar-Pamlico River Basin (15A NCAC 02B 0259)</u>	<u>3 1</u>	<u>1 5 1</u>
<u>Jordan Lake Watershed (15A NCAC 02B 0267)</u>	<u>3 1</u>	<u>1 5 1</u>
<u>Goose Creek Watershed (15A NCAC 02B 0607)</u>	<u>3 1A</u>	

17 A The Goose Creek Watershed does not have a Zone 1 and Zone 2 The mitigation ratio in the Goose Creek
 18 Watershed is 3 1 for the entire buffer

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

<u>Location</u>	<u>Ratio</u>
<u>Within the 12-digit HUC A</u>	<u>0 75 1</u>
<u>Within the eight-digit HUC B</u>	<u>1 1</u>
<u>In the adjacent eight-digit HUC B,</u> <u>C</u>	<u>2 1</u>

22 A Except within the Randleman Lake Watershed Within the Randleman Lake Watershed the ratio is 1 1

23 B Except as provided in Paragraph (g) of this Rule

24 C To use mitigation in the adjacent eight-digit HUC, the applicant shall describe why buffer mitigation within the
 25 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 Rule 15A NCAC 02B 0601,

(C) Randleman Lake Water Supply Watershed, as defined in Rule 15A 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

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

(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

<u>Urban Areas</u>		<u>Non-Urban Areas</u>	
<u>Buffer width (ft)</u>	<u>Proposed Percentage of Full Credit</u>	<u>Buffer width (ft)</u>	<u>Proposed Percentage of Full Credit</u>
<u>Less than 20</u>	<u>0 %</u>	<u>Less than 20</u>	<u>0 %</u>
<u>20-29</u>	<u>75 %</u>	<u>20-29</u>	<u>0 %</u>
<u>30-100</u>	<u>100 %</u>	<u>30-100</u>	<u>100 %</u>
<u>101-200 A</u>	<u>50 % A</u>	<u>101-200 A</u>	<u>50 % A</u>

- 1 A The area of the mitigation site beyond 100 linear feet from the top of bank shall comprise no
2 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
4 (e), (f) and (g) of this Rule and in the Catawba watershed, buffer mitigation may be done along the
5 lake shoreline as well as along intermittent and perennial stream channels throughout the
6 watershed
- 7 (3) Diffuse flow of runoff shall be maintained in the riparian buffer Any existing impervious cover
8 or stormwater conveyances such as ditches, pipes or drain tiles shall be eliminated and the flow
9 converted to diffuse flow If elimination of existing stormwater conveyances is not feasible, then
10 the applicant or mitigation provider shall provide a delineation of the watershed draining to the
11 stormwater outfall and the percentage of the total drainage treated by the riparian buffer for
12 Division approval, credit may be reduced proportionally
- 13 (4) The applicant or mitigation provider shall submit a restoration or enhancement plan for written
14 approval by the Division The restoration or enhancement plan shall demonstrate compliance with
15 the requirements of Subparagraphs (1) through (3) of this Paragraph and shall contain the
16 following in addition to elements required in Paragraph (c) of this Rule
- 17 (A) A map of the proposed restoration or enhancement site,
- 18 (B) A vegetation plan that shall include a minimum of four native hardwood tree species or
19 four native hardwood tree and native shrub species, where no one species is greater than
20 50% of established stems, established at a density sufficient to provide 260 stems per acre
21 at the completion of monitoring Native volunteer species may be included to meet
22 performance standards The Division may approve alternative vegetation plans upon
23 consideration of factors including site wetness and plant availability to meet the
24 requirements of this Part,
- 25 (C) A grading plan (if applicable) The site shall be graded in a manner to ensure diffuse
26 flow through the entire riparian buffer,
- 27 (D) A schedule for implementation, including a fertilization and herbicide plan if applicable,
28 and
- 29 (E) A monitoring plan, including monitoring of vegetative success and other anticipated
30 benefits to the adjacent water as listed in the Authorization Certification
- 31 (5) Within one year after the Division has approved the restoration or enhancement plan, the applicant
32 or mitigation provider shall present documentation to the Division that the riparian buffer has been
33 restored or enhanced unless the Division agrees in writing to a longer time period due to the
34 necessity for a longer construction period
- 35 (6) The mitigation area shall be placed under a perpetual conservation easement or similar legal
36 protection mechanism to provide for protection of the property's nutrient removal and other water
37 quality functions

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

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

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

13 (j) PURCHASE OF BUFFER MITIGATION CREDITS FROM A PRIVATE OR PUBLIC MITIGATION BANK.

14 Applicants who choose to satisfy some or all of their mitigation by purchasing mitigation credits from a private or
 15 public mitigation bank shall meet the following requirements.

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

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

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

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

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

33 (1) The value of the property interest shall be determined by an appraisal performed in accordance
 34 with Part (1)(4)(D) of this Rule. The donation shall satisfy the mitigation determination if the
 35 appraised value of the donated property interest is equal to or greater than the required fee. If the
 36 appraised value of the donated property interest is less than the required fee calculated pursuant to
 37 15A NCAC 02B 0269, the applicant shall pay the remaining balance due.

- 1 (2) The donation of real property interests shall be granted in perpetuity
- 2 (3) Donation of real property interests to satisfy the full or partial payments under Paragraph (k) shall
3 be accepted only if such property meets all of the following requirements
- 4 (A) The property shall be suitable for restoration or enhancement to successfully produce
5 viable riparian buffer compensatory mitigation credits in accordance with Paragraph (i)
6 of this Rule or the property shall be suitable for preservation to successfully produce
7 viable riparian buffer compensatory mitigation credits in accordance with Part (m)(2)(C)
8 of this Rule,
- 9 (B) The property shall be located in an area where the Program can reasonably utilize the
10 credits, based on historical or projected use, to offset compensatory mitigation
11 requirements,
- 12 (C) The estimated cost of restoring or enhancing and maintaining the property shall not
13 exceed the projected mitigation credit value of the property minus land acquisition costs,
14 except where the applicant supplies additional funds acceptable to the Program for
15 restoration or enhancement and maintenance of the buffer,
- 16 (D) The property shall not contain any building, structure, object, site, or district that is listed
17 in the National Register of Historic Places established pursuant to Public Law 89-665, 16
18 U S C 470 as amended,
- 19 (E) The property shall not contain any hazardous substance or solid waste such that water
20 quality could be adversely impacted, unless the hazardous substance or solid waste can be
21 properly remediated before the interest is transferred,
- 22 (F) The property shall not contain structures or materials that present health or safety
23 concerns to the general public. If wells, septic, water or sewer connections exist, they
24 shall be filled, remediated or closed at owner's expense in accordance with state and local
25 health and safety regulations before the interest is transferred. Sewer connections in
26 Zone 2 may be allowed for projects in accordance with Part (m)(2)(E) of this Rule,
- 27 (G) The property and adjacent properties shall not have prior, current, or known future land
28 use that would jeopardize the functions of the compensatory mitigation,
- 29 (H) The property shall not have any encumbrances or conditions that are inconsistent with the
30 requirements of this rule or purposes of the buffer rules,
- 31 (I) Fee simple title to the property or a perpetual conservation easement on the property shall
32 be donated to the State of North Carolina, a local government or a qualified holder under
33 N C General Statute 121-34 et seq and 170(h) of the Internal Revenue Code as approved
34 by the Department and the donee, and
- 35 (J) The donation shall be accompanied by a non-wasting endowment or other financial
36 mechanism for perpetual maintenance and protection sufficient to ensure perpetual long-
37 term monitoring and maintenance, except that where a local government has donated a

1 perpetual conservation easement and has entered into a binding intergovernmental
 2 agreement with the Program to manage and protect the property consistent with the terms
 3 of the perpetual conservation easement, such local government shall not be required to
 4 provide a non-wasting endowment

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

7 (A) Documentation that the property meets the requirements laid out in Subparagraph (1)(3)
 8 of this Rule.

9 (B) US Geological Survey 1 24,000 (7 5 minute) scale topographic map, county tax map,
 10 USDA Natural Resource Conservation Service County Soil Survey Map, and county road
 11 map showing the location of the property to be donated along with information on
 12 existing site conditions, vegetation types, presence of existing structures and easements.

13 (C) A current property survey performed in accordance with the procedures of the North
 14 Carolina Department of Administration, State Property Office as identified by the State
 15 Board of Registration for Professional Engineers and Land Surveyors in "Standards of
 16 Practice for Land Surveying in North Carolina " Copies may be obtained from the North
 17 Carolina State Board of Registration for Professional Engineers and Land Surveyors,
 18 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609,

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

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

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

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

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

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

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

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

8 (A) Coastal Headwater Stream Mitigation Wooded buffers planted along Outer Coastal
 9 Plain headwater stream mitigation sites can be approved as riparian buffer mitigation as
 10 long as the site meets all applicable requirements of Paragraph (1) of this Rule In
 11 addition, all success criteria including woody species, stem density, diffuse flow and
 12 stream success criteria specified by the Division in any required written approval of the
 13 site must be met The area of the buffer shall be measured perpendicular to the length of
 14 the valley being restored The area within the proposed buffer mitigation shall not also
 15 be used as wetland mitigation Monitoring of the site must be for at least five years from
 16 the date of planting by providing annual reports for written Division approval

17 (B) Buffer Restoration and Enhancement on Non-Subject Streams Restoration or
 18 enhancement of buffers may be conducted on intermittent or perennial streams that are
 19 not subject to riparian buffer rules These streams shall be confirmed as intermittent or
 20 perennial streams by Division staff using the Division publication, Methodology for
 21 Identification of Intermittent and Perennial Streams and Their Origins (v 4 11, 2010)
 22 The proposal shall meet all applicable requirements of Paragraph (1) of this Rule

23 (C) Preservation of Buffer on Non-subject streams Preservation of buffers on intermittent or
 24 perennial streams that are not subject to riparian buffer rules may be proposed in order to
 25 protect permanently the buffer from cutting, clearing, filling and grading and similar
 26 activities that would affect the functioning of the buffer These streams shall be
 27 confirmed as intermittent or perennial streams by Division staff using the Division
 28 publication, Methodology for Identification of Intermittent and Perennial Streams and
 29 Their Origins (v 4 11, 2010) The preservation site shall meet the requirements of
 30 Subparagraph (1)(1), (1)(3), (1)(6) and Parts (1)(3)(D), (E), (F), (H) and (J) of this Rule
 31 Preservation shall be proposed only when restoration or enhancement with an area at
 32 least equal to the footprint of the buffer impact has been proposed

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

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

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

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

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

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

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

21 (3) ALTERNATIVE BUFFER STORMWATER TREATMENT OPTIONS

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

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

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

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

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

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

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

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

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

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

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

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

