

**AGREEMENT TO ESTABLISH THE NEVILLE FARMS MITIGATION BANKING
INSTRUMENT FOR RIPARIAN BUFFER MITIGATION AND NUTRIENT OFFSET
CREDITS PURSUANT TO THE JORDAN WATER SUPPLY NUTRIENT STRATEGY**

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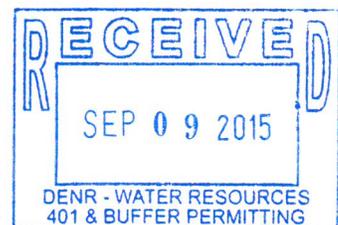
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- A – Division of Water Resources Authority document
- B – Rule Text 15A NCAC 02B .0240
- C – Rule Text 15A NCAC 02B .0295 (Effective October 24, 2014)
- D – Jordan Buffer Ledger Template
- E – Jordan Nutrient Offset Ledger Template



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I. PREAMBLE

This Mitigation Banking Instrument (“Instrument”) regarding the establishment, use, operation, and maintenance of the Neville Farms Nutrient and Buffer Mitigation Bank Parcel (“Bank Parcel”) to provide Jordan Lake Riparian Buffer Mitigation Units (“Riparian Buffer Credits”) and Jordan Lake nutrient load reduction credit (“Nutrient Offset Credits”) is made and entered into by and among Watershed Investments NC, LLC, acting as the Bank Sponsor (“Sponsor”), and the North Carolina Department of Environment and Natural Resources – Division of Water Resources (“DWR”). This Instrument is in accordance with 15A NCAC 02B .0240 (see Attachment B), and the temporary Consolidated Mitigation Rule 15A NCAC 02B .0295 (see Attachment C), which became effective on October 24, 2014.

The purpose of the Bank is:

- A. To improve water quality in Neville Creek and downstream waters through the restoration and preservation of riparian buffer habitat and adjacent riparian areas; and
- B. To provide mitigation and sell Riparian Buffer Credits and Nutrient Offset Credits, nitrogen and/or phosphorous, to third parties in the Upper New Hope Sub-watershed for development (both existing and proposed) requiring such mitigation.

II. LOCATION AND GEOGRAPHIC SERVICE AREA

- A. The Geographic Service Area (“GSA”) is the designated area wherein a Bank can reasonably be expected to sell Riparian Buffer Credits and/or Nutrient Offset Credits for impacts due to development activities.
- B. The Bank Parcel is comprised of two rural tracts (Tract 1 and Tract 2) in Orange County, South of Chapel Hill, North Carolina and in the 14-digit Hydrologic Unit Code 03030002060070 of the Upper New Hope Sub-watershed of Jordan Lake. Tract 1 is accessed from a right-of-way entrance at 1426 Old Greensboro Highway. Tract 2 is accessed from Stansbury Rd which intersects Bowden Rd. The Site’s longitude and latitude in decimal degrees are -79.129 W and 35.892 N, respectively.
- C. The land uses on Tract 1 of this Bank Parcel comprise of agriculture, and the land uses on Tract 2 of this Bank Parcel comprise of managed grass lawn.

- D. Neville Creek is the receiving body of water for stormwater runoff from these two parcels.
- E. The GSA for this Instrument is limited to the Upper New Hope Sub-watershed of Jordan Lake as defined in rule 15A NCAC 02B .0262.
- F. Sale or transfer of credits shall be limited to the Upper New Hope Sub-watershed of the Jordan Lake watershed, as defined in Rule 15A NCAC 02B .0262.

III. AUTHORITIES

- A. The Bank Parcel will be used to provide Riparian Buffer Credit and Nutrient Offset Credit in accordance with the requirements in the DWR Authority document referenced herein as “Attachment A” and attached to this Instrument.
- B. Projects eligible for utilization of the credits are those requiring authorization under the requirements of Attachment A and any new approved North Carolina (“State”) statutes and rules for the Jordan Lake Nutrient Sensitive Waters Management Strategy.
- C. All activities, including the sale of mitigation credits, shall be consistent with approved North Carolina statutes and rules for the Jordan Lake Nutrient Sensitive Waters Management Strategy.

IV. ESTABLISHMENT OF NEVILLE FARMS BANK PARCEL(S)

- A. The Bank Parcel proposed for inclusion under this Instrument shall require a Bank Parcel Development Package (“BPDP”) be submitted to, and approved by, the DWR prior to use of the Bank Parcel for mitigation purposes or sale or transfer of any associated credits. The contents of the BPDP are provided in Section (V).
- B. The BPDP will be placed on public notice and made available for public commenting for 15 calendar days.
- C. Riparian Buffer Credit may be achieved through restoration and preservation of the DWR riparian buffers, as defined in 15A NCAC 02B .0267 and other riparian areas as allowed per 15A NCAC 02B .0295.
- D. The Bank Parcel is expected to provide Jordan Riparian Buffer mitigation as follows:

1. Planting hardwood trees and shrubs on a Restoration Site, as defined in 15A NCAC 02B .0295 (b) and per 15A NCAC 02B .0295 (i), along Neville Creek.
 2. Maintaining a Preservation Site, as defined in 15A NCAC 02B .0295 (b) and per 15A NCAC 02B .0295 (m) along Neville Creek.
- E. Nutrient Offset Credit may be achieved through restoration of the riparian area adjacent to Neville Creek, which is a perennial stream and is subject to the buffer protection rule 15A NCAC 02B .0267. The width of the restoration area begins at the most landward limit of the top of bank or the rooted herbaceous vegetation and extends landward a maximum distance of 200 feet on all sides of the surface water.
- F. The Bank Parcel is expected to provide Nutrient Offsets as follows:
1. Planting hardwood trees and shrubs on a Restoration Site, as defined in 15A NCAC 02B .0295 (b) and per 15A NCAC 02B .0295 (i) (4), along Neville Creek. Land uses on the Restoration Sites are hay/wheat cultivation on Tract 1 and managed grassed lawn on Tract 2.
- G. The total area of mitigation on the Bank Parcel is expected to be less than 10 acres.

V. PRE-CONSTRUCTION DOCUMENTATION

Bank Parcel Development Package

- A. The Neville Farms Bank Parcel Development Package (BPDP) shall include detailed information consistent with the sections below concerning: 1) site location (14-digit HUC is required); 2) existing land use conditions; 3) proposed buffer mitigation and/or nutrient offset activities including a detailed vegetation plan; 4) monitoring and maintenance plans; 5) financial assurances; 6) associated buffer mitigation/nutrient credit calculations, which shall include credit generation, delivery factors, service area, and accounting as appropriate for each regulatory authority; 7) stream buffer determination letter from DWR (where applicable); (8) cost analysis; and (9) site viability letter from DWR.
- B. The Sponsor will obtain all applicable federal, state, and local documentation, permits, or authorizations needed to construct and

maintain the Bank Parcel. This Instrument does not qualify as, or substitute for, such documentation, permit or authorization.

- C. The restoration and preservation of riparian buffers and other riparian areas on the Bank Parcel to produce Riparian Buffer Credit or Nutrient Offset Credit must be approved by DWR prior to construction or renovation.
- D. Requests for deviation from the approved BPDP must be submitted to the DWR in writing. Written approval from the DWR must be received prior to implementing any deviation from the approved BPDP.

Property Disposition & Long Term Management

- E. Prior to the release of any credits, the Sponsor shall acquire a permanent conservation easement(s) at the County Register of Deed's office that is sufficient to ensure protection, operation and maintenance of restored riparian buffers and other riparian areas for the duration specified in the approved BPDP.
- F. The form of the conservation easement shall be consistent with the standards employed by the State of North Carolina in the protection of restored riparian buffers and riparian areas and shall be approved by the DWR prior to the release of any credits.
- G. The Sponsor shall not grant additional easements, right of ways, or any other property interest in or to the project areas without prior approval from the DWR.
- H. The Sponsor agrees to transfer or assign the conservation easement and its interests in perpetuity to a qualified holder under N.C. General Statute ("G.S.") 121-34 et seq. and 170(h) of the Internal Revenue Code prior to the submittal of the Year 4 Monitoring report. The holder shall be a land trust or stewardship program that will hold and enforce the conservation easement and the interests in perpetuity. The Sponsor shall choose a land trust or stewardship program that is accredited by the Land Trust Accreditation Commission and/or has been approved by DWR prior to the end of the fourth year monitoring period. A land trust must be certified under 501(c) (3) of the Internal Revenue Code.
- I. In the event that the Sponsor is also the owner of the underlying fee interest in the property, the conveyance of the conservation easement to a land trust or stewardship fund must be arranged at the outset of the approved BPDP.

Financial Assurance

- J. Following approval of the BPDP, the Sponsor shall provide a Performance/Maintenance Bond from a surety company that is rated no less than an "A-" as rated by A.M. Best. The Performance Bond amount shall be 100% of the estimated cost for implementation of the mitigation activities of the Bank Parcels described in the approved BPDP. No bond shall be less than \$50,000 to cover construction costs.
- K. Alternatively, in lieu of posting the Performance Bond, the Sponsor may elect to construct the project prior to the first credit release.
- L. The Sponsor must provide cost analyses in the BPDP as part of the review and acceptance of the amount of the performance bond, and must include all reasonably potential contingency costs associated with the establishment of the Bank.
- M. If the Bank Parcel does not meet all of the criteria set out in items 1 through 4 below, then the Bank Sponsor must provide a minimum performance/maintenance bond of \$150,000 to cover construction costs:
 - 1. Bank Parcel is primarily a buffer/nutrient offset riparian restoration project with only a small area of buffer preservation;
 - 2. The area proposed for mitigation within the Bank Parcel is 10 acres or less, as will be shown in a survey performed and sealed by a professional surveyor registered in North Carolina;
 - 3. The area proposed for mitigation within the Bank Parcel does not require fencing as part of the approval;
 - 4. The area proposed for mitigation within the Bank Parcel is not part of a larger mitigation area that includes stream or wetland mitigation.
- N. Once DWR has released all credits for completion of Task 2 according to the credit release schedule in Section VIII., and the DWR has received and approved the As-Built Report as described in Section VI, the Bank Sponsor can be released from its performance obligations under the performance bond required in "J" of this Section.

VI. POST CONSTRUCTION DOCUMENTATION

As-Built Report

- A. The Sponsor agrees to perform all necessary work, in accordance with the provisions of this Instrument, to establish, maintain, and monitor Jordan

Lake Riparian Buffers or other riparian areas until Items B (1) and (2) of Section X have been satisfied.

- B. The Sponsor will submit an as-built plan and report for the Bank Parcel within 30 calendar days after completing the establishment of the buffer area and nutrient offset area. The as-built report will describe any deviation from the approved BPDP and will document the following:
 1. Buffer restoration: planting details, invasive species control, monitoring device locations, vegetation plot locations, photo point locations, surface and groundwater elevations, as appropriate.
 2. Boundary Survey signed and sealed by a licensed surveyor, of the conservation easement area including an enumeration of the final mitigation area for Riparian Buffer and/or Nutrient Offset Credits in square feet and/or acres.
 3. As-Built aerial map of the mitigation area showing where restoration and preservation were performed.
 4. Aerial map of the mitigation area that was included in the approved Bank Parcel Development Package.
 5. Cost Analysis of Monitoring and Maintenance.

Financial Assurance

- C. After completion of the restoration/construction, a separate Performance/Maintenance Bond will be secured for 100% of the estimated cost to implement the monitoring and maintenance plan as described in the approved BPDP. A Performance/Maintenance Bond shall be secured each year for a minimum of five years, and until DWR has released all mitigation credits to the Bank Sponsor. Upon DWR approval, the bond may be lowered each year based on the adjusted cost to complete the monitoring. No bond shall be less than \$25,000 to cover monitoring and maintenance costs.
- D. Once, DWR has released all credits for completion of Tasks 1-9 according to the credit release schedule in Section VIII. the Bank Sponsor can be released from its performance obligations under the performance bond required in "C" of this Section.
- E. The Sponsor must provide cost analyses in the As-Built report for monitoring and maintenance, as part of the review and acceptance of the amount of the performance bonds, and must include all reasonably potential contingency costs associated with the establishment of the Bank.

- F. If the Bank Parcel does not meet all of the criteria set out in items 1 through 4 below, then the Bank Sponsor must provide a minimum performance/maintenance bond of \$100,000 to cover monitoring and maintenance costs, respectively:
1. Bank Parcel is primarily a buffer/nutrient offset riparian restoration project with only a small area of buffer preservation;
 2. The area proposed for mitigation within the Bank Parcel is 10 acres or less, as will be shown in a survey performed and sealed by a professional surveyor registered in North Carolina;
 3. The area proposed for mitigation within the Bank Parcel does not require fencing as part of the approval;
 4. The area proposed for mitigation within the Bank Parcel is not part of a larger mitigation area that includes stream or wetland mitigation.

Monitoring & Maintenance Reports

- G. The Sponsor shall monitor and maintain the Bank Parcel as described in the BPDP until such time as DWR determines that the performance standards described below have been met. The monitoring period shall be a minimum of five consecutive years.
- H. Performance Standards for Vegetation: Native hardwood trees or native hardwood tree and shrub species should be planted at a density sufficient to provide 260 stems per acre after five years. A minimum of four (4) native hardwood trees or four (4) native hardwood tree and shrub species must be planted. No one species shall be greater than 50 percent of the planted stems. A list of species for planting will be detailed in the BPDP for approval. Native hardwood tree volunteer species may be included to meet performance standards as determined by the DWR.
- I. A “stem” means a woody seedling, sapling, shrub or tree, no less than 10 centimeters in height.
- J. If the performance standards of the vegetation are not met, supplemental plantings may be required. Supplemental plantings will be utilized until the required densities have been achieved and maintained for five years. Bank Parcel maintenance, such as ensuring diffuse flow, managing invasive species, and pest control will be included in the BPDP.
- K. **Monitoring Reports for Riparian Restoration and Preservation Sites:** Reporting criteria of the riparian buffer restoration shall be based on the Carolina Vegetation Survey (“CVS”) - EEP Protocol for Recording

Vegetation Level 2 Plot Sampling Only Version 4.0 or any updated versions of this protocol in place at the date of acceptance of the BPDP. The Sponsor shall submit to the DWR an annual monitoring report no later than December 31 of each year for a minimum of five consecutive years after the first full growing season. This report will describe the conditions of the Bank Parcel, including an evaluation of the performance standards of the vegetation contained within the approved BPDP. Reports shall contain the following:

1. A U.S. Geological Survey map and an aerial map showing the location of the Bank Parcel;
2. A detailed narrative summarizing the current condition of the Bank Parcel along with any maintenance or remediation performed during that year; and
3. A map, survey or other figure showing locations of sampling plots, permanent photo points, location of transects, etc.; and
4. Monitoring data, including specific vegetative counts showing that the trees or tree and shrub species planted are meeting performance standards (not required on the Preservation Sites) and updated photographs; and
5. A copy of the most recent Bank credit/debit ledgers; and
6. Corresponding verification letters from designated local governments upon request; and
7. Corresponding Mitigation Transfer Certificates upon request

Contingency Plans/Remedial Actions

- L. In the event the Bank Parcel fails to achieve the performance standards described in this Instrument and the approved BPDP, the Bank Sponsor shall develop necessary contingency plans in coordination with the DWR and implement appropriate remedial actions for the Bank Parcel and the Bank. Depending on the degree of remedial actions required, the DWR may modify the monitoring period.

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VII. CALCULATION OF MITIGATION CREDITS

Riparian Buffer Credits

- A. All Riparian Buffer Credits shall be determined based on the ratios and percentages provided in 15A NCAC 02B .0295 (h) and (i).
- B. Riparian buffer restoration on the Bank Parcel, as defined in 15A NCAC 02B .0295 may be used for *either* Riparian Buffer Credit or Nutrient Offset Credit, but not both.
- C. Riparian buffer preservation, as described in 15A NCAC 02B .0295 (m) can only be used for Riparian Buffer Credit. These credits are not transferrable into Nutrient Offset Credits.
- D. Riparian Buffer Credit is defined as one (1) buffer credit per one square foot or 43,560 buffer credits per one acre.

Nutrient Offset Credits

- E. All Nutrient Offset Credits will be determined by including the applicable ratio as provided in 15A NCAC 02B .0295 (h).
- F. The Nutrient Abatement of Restored Riparian Area on Agricultural Lands versus Residential-Managed Grass lawns: The Sponsor and DWR agree to the following:
 - 1. Pursuant to the Jordan Trading Rule Item 15A NCAC 02B .0273(2)(a), load reductions eligible for credit are only those that exceed reduction needs calculated by applying the strategy sub-watershed percentage reduction goals as provided in 15A NCAC 02B .0262 (5). For this Bank Parcel's location in the Upper New Hope, this requirement results in a reduction of credits yielded per acre of restored riparian buffers on agricultural land when compared with the credits given for agricultural lands in other river basins. The nutrient offset credit generation for riparian restoration of agricultural land on Tract 1 of this Bank Parcel is depicted in Table 1.0 below.
 - 2. The nutrient offset credit generation for riparian restoration of residential-managed grass lawn on Tract 2 of this Bank Parcel is depicted in Table 2.0, and is derived by using the Jordan Falls Lake Stormwater Nutrient Load Accounting Tool (JFSAT) Version 3.0 to calculate nutrient load reductions for nutrient

offset credit where the land use is residential-managed grass lawn.

Table 1.0 Generated credit yields for riparian restoration of Agricultural land

	Credit Generated (pounds/30 year/acre)	
Jordan Sub-watershed	Nitrogen	Phosphorus
Upper New Hope	2,169.26	143.81

Table 2.0 Generated credit yields for Tract 2 of Neville Farms.

	Credit Generated (pounds/30 year/acre)	
Jordan Sub-watershed	Nitrogen	Phosphorus
Upper New Hope	1,091.10	243.00

G. As required under Jordan Trading Rule Item 15A NCAC 02B .0273 (2)(d)(i), the party seeking to sell credits must account for differences in instream nutrient losses between the location of the reduction need and excess loading reduction being delivered to the affected arm of Jordan lake.

1. Delivered credits are calculated by applying the delivery factors to the generated credit yields from Tables 1.0 and 2.0 above. Specific delivery factors for Total Nitrogen (TN) and Total Phosphorus (TP) will be included in the BPDP.
2. The Bank Sponsor shall report the pounds of nitrogen and phosphorus credit per acre of restored riparian areas in their BPDP for both credits generated at the site of the nutrient reduction activity and the credits delivered to Jordan Lake.

H. The Sponsor and DWR agree that the methodology and calculations for determining nitrogen and total phosphorous reduction, including delivery factors, associated with the restoration of riparian areas, shall be fixed as part of the approval of the MBI and corresponding BPDP, with the fixed amount not changing during the development of or credit release schedule for the Bank Parcel.

VIII. CREDIT RELEASE SCHEDULE

- A. Credit Release: Upon submittal of all appropriate documentation by the Sponsor, and subsequent approval by DWR, it is agreed that the mitigation credits associated with the Bank Parcel will become available for sale to a third party in accordance with the following credit release schedule:

Task	Project Milestone	% Credit Available for Sale
1	MBI and BPDP Approved by DWR, Conservation Easement Recorded* and Financial Assurance Posted	20
2	Mitigation Site Earthwork, Planting and Installation of Monitoring Devices Completed	20
3	Monitoring Financial Assurance Posted and Approval of As-Built Report	10
4	Monitoring Report #1: Approved by the DWR**	10
5	Monitoring Report #2: Approved by the DWR**	10
6	Monitoring Report #3: Approved by the DWR**	10
7	Item B (1) of Section X in this Instrument has been completed and approved by DWR.	5
<i>No remaining credits will be released until Task 7 has been satisfied</i>		
8	Monitoring Report #4: Approved by the DWR**	5
9	Monitoring Report #5: Approved by the DWR** and final site visit by DWR has been conducted	10
Total		100%

* For specification, please see Section V in this Instrument

** DWR Approval provided upon a determination that the site is meeting performance standards contained within the approved BPDP

- B. DWR may modify the credit release schedule based on the information submitted or the order in which required information is received. DWR will notify the Sponsor of any modification to the credit release schedule.

IX. PROCEDURE FOR DEBITING AND CREDITING MITIGATION CREDITS

Credit Ledgers

- A. The Bank Sponsor shall maintain four (4) credit ledgers for the Bank Parcel under this Instrument: one accounting for buffer restoration credits in square feet and acres, one accounting for buffer preservation credits in square feet and acres, one accounting for nitrogen offset credits in pounds and acres, and one accounting for phosphorus offset credits in pounds and acres.

- B. Each credit ledger shall be submitted on a separate 8 ½in X 11in spreadsheet with legible font style and font size. All ledgers shall be submitted using the templates provided in Attachment D and E of this Instrument or any updated versions to these templates as provided by DWR.

Credit Processing

- C. Riparian Buffer and Nutrient Offset credits generated on this Bank Parcel can only be provided to offset buffer impacts within the Upper New Hope Sub-watershed of Jordan Lake, as defined in 15A NCAC 02B .0262.
- D. Available mitigation credits (credits that have been released by DWR but not sold by the Sponsor) that are generated from riparian restoration, as defined in 15A NCAC 02B .0295 (b) and described in 15A NCAC 02B .0295 (i), can be converted and transferred from Riparian Buffer Credits to Nutrient Offset Credits and from Nutrient Offset Credits to Riparian Buffer Credits upon written approval from DWR. Ratios and percentages of full credit will be applied to Riparian Buffer Credits according to 15A NCAC 02B .0295 (h) and (i) and ratios will be applied to Nutrient Offset Credits according to 15A NCAC 02B .0295 (h).
- E. Riparian buffer preservation credits are not transferrable into nutrient offset credits.
- F. The Bank Sponsor shall obtain written verification of buffer mitigation required from the delegated local government in the Upper New Hope Sub-watershed or DWR prior to debiting Riparian Buffer Credits from the Bank Parcel.
- G. The Bank Sponsor shall obtain written verification of nutrient offset need from a designated local government in the Upper New Hope Sub-watershed prior to debiting Nutrient Offset Credits from the Bank Parcel.
- H. All credit and debit transactions for each Bank Parcel under this Instrument shall be accurately depicted in the credit ledgers. DWR shall be notified of each credit sale within thirty (30) calendar days by electronically submitting an updated credit ledger to DWR. At a minimum, DWR shall receive a hard copy of updated credit ledgers along with the corresponding Mitigation Credit Transfer Certificates and all corresponding letters from the designated local governments twice a year. Notification of all credit sales shall be provided to DWR until all credits that have been released have been sold.

Mitigation Credit Transfer Certificates

- I. All credit sales will include a Mitigation Credit Transfer Certificate (“Certificate”) that is required to be provided to the buyer of Riparian Buffer and/or Nutrient Offset credits, that will include, at a minimum, the following information:
 1. Bank Details: (1) sponsor Name, (2) name of the approved banking instrument as it appears on the instrument document, (3) bank parcel name as it appears on the BPDP, (4) DWR project number for the BPDP.
 2. Credit Details: (1) date of receipt, (2) identify if full or partial payment, (3 – when applicable) amount of nitrogen credits purchased in pounds and confirmation from the designated local government of the amount required, (4 – when applicable) amount of phosphorous credits purchased in pounds and confirmation from the designated local government of the amount required, and (5 – when applicable) amount of Riparian Buffer Credits purchased in square feet and the confirmation from DWR or the local government of the amount required.
 3. Project Details: (1) project name as it appears on DWR or local government permits and/or certifications, (2) 14-digit HUC and the sub-watershed for the Jordan Lake Nutrient Strategy), (4) nutrient strategy applicable to the project, (5 – when applicable) designated local government requiring Nutrient Offset Credits, and/or (6) DWR Authorization or Variance number or delegated local government requiring Riparian Buffer Credits for this project.
- J. If the DWR determines that the Bank is operating at a deficit (e.g. the Sponsor is closing on sales and/or transferring credit that is not available), or the Bank is selling credits out of compliance with statutes, rules or this Agreement, the sale/transfer of credits will immediately cease, and the DWR, in consultation with the Sponsor, will determine what remedial actions are necessary.

X. BANK PARCEL CLOSURE

- A. Bank Parcel Closure shall be identified as the event when the Sponsor is relieved of all of its responsibilities to the Bank Parcel and there are no mitigation credits left to sell.

- B. Bank Parcel Closure shall commence only after all of the following events have occurred:
1. Transfer or assign the conservation easement and all of its interests, in perpetuity, to a land trust or stewardship program as described in Section V of this instrument.
 2. All five years of monitoring completed and all monitoring reports submitted and approved by DWR.
 3. All credits have been released and debited and updated ledgers showing a zero credit balance have been submitted and approved by DWR.

XI. GENERAL PROVISIONS

- A. Upon the presentation of proper credentials, and during normal business hours, the Sponsor and the landowner shall grant permission to the Director of DWR, or an authorized representative of the Director of DWR to enter the property containing the Bank Parcel(s).
- B. Amendments: This Banking Instrument may be amended or modified only with written approval of all signatory parties.
- C. Any transfer of the Sponsor's rights or obligations outlined in this Instrument or any other agreement referenced in this Instrument to a third party must be approved by DWR prior to the transfer.
- D. Force Majeure: After Bank Parcel Closure, the Sponsor will not be responsible for Bank failure that is attributed to natural catastrophes including but not limited to flood, drought, disease, regional pest infestation, etc. that are beyond the control of the Sponsor.
- E. However, if an event occurs before Bank Parcel Closure, the Sponsor shall take remedial action to restore the property to its condition prior to the event, in a manner sufficient to provide adequate mitigation to cover credits that were sold prior to the occurrence of the event. Such remedial action shall be taken by the Sponsor only to the extent necessary and appropriate, as determined by DWR and the Sponsor.

DWR must concur in writing that a force majeure event has occurred for this provision to apply.

- F. Oversight: Actions taken by DWR may include, but are not limited to, the following:

1. Site visits.
2. BPDP review and approval of items listed in Section V of this instrument.
3. Monitoring Report review and approval of items listed in Section VI of this instrument.
4. As-Built Report review and approval of items listed in Section VI of this instrument.
5. Credit Ledger review and approval of items listed in Section IX of this instrument.
6. Certificate review of items listed in Section IX of this instrument and cross analysis to credit ledgers.
7. Information requests, file reviews and audits

Reports, ledgers, files and other information shall be made available to DWR upon request, unless otherwise specified in this or any other document.

- G. Validity of the Banking Instrument: This Instrument will become valid on the date of the last party's signature.
- H. Specific Language of Banking Instrument Shall Be Controlling: To the extent that specific language in this document changes, modifies, or deletes terms and conditions contained in those documents that are incorporated into the Instrument by reference, and that are not legally binding, the specific language within the Instrument shall be controlling.
- I. Any disputes over decisions regarding this Instrument, shall be referred to the Director of DWR for a decision. The Director's decision is subject to review as provided in Articles 3 and 4 of G.S. 150B.
- J. This Agreement shall be binding upon the parties and is entered into knowingly, intelligently, and voluntarily.
- K. Notices: All notices and other communications which may be or are required to be given or made by any party to the other shall be in writing and shall be deemed to have been properly given and received on the date delivered in person or deposited in the United States mail, registered or certified, return receipt requested, to the addresses set out below, or at such other addresses as specified by written notice delivered in accordance herewith.

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ATTACHMENT A

Authorities pertaining to the Neville Farms Mitigation Banking Instrument

All Basins

General Statutes:

G.S. §143-214.11 Ecosystem Enhancement Program
G.S. §143-214.26 Nutrient Offset Credits
G.S. §143-214.20-24 Riparian Buffer Protection Program
G.S. §143-214.7 Stormwater runoff rules and programs

G.S. §143-215.8B Basinwide Water Quality Management Plans

Session Laws

S.L. 2012-200 (Amendment to G.S. §143-214.23 and G.S. §143-215.1)
S.L. 2011-343 (Amendment to G.S. §143-214.11)
S.L. 2009- 337 (Amendment to G.S. §143-214.11)

Administrative Rules:

15A NCAC 02B .0202 Definitions
15A NCAC 02B .0223 Nutrient Sensitive Waters
15A NCAC 02B .0237 Best Management Practice Cost-Effectiveness Rate
15A NCAC 02B .0240 Nutrient Offset Payments
15A NCAC 02B .0295 Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers

Jordan Buffer and Jordan Water Supply Nutrient Strategy

General Statutes and Session Laws:

G.S. §143-214.5 Water Supply Watershed Protection)
S.L. 2013-395
S.L. 2012-201
S.L. 2012-200S.L. 2012-187
S.L. 2009-216
S.L. 2009-484
S.L. 2006-259 (Section 31(a))
S.L. 2005-190
S.L. 1999-329 (part of G.S. 143B-282)

Administrative Rules:

15A NCAC 2B .0262 Purpose and Scope
15A NCAC 2B .0263 Definitions
15A NCAC 2B .0264 Agriculture
15A NCAC 2B .0265 Stormwater Management for New Development
15A NCAC 2B .0267 Jordan Water Supply Nutrient Strategy
15A NCAC 2B .0270 Wastewater Discharge Requirements
15A NCAC 2B .0271 Stormwater Requirements for State and Federal Entities
15A NCAC 2B .0272 Fertilizer Management
15A NCAC 2B .0273 Options for Offsetting Nutrient Loads

ATTACHMENT B

15A NCAC 02B .0240 NUTRIENT OFFSET PAYMENTS

(a) The purpose of this Rule is to establish procedures for the optional payment of nutrient offset fees to the NC Ecosystem Enhancement Program, subsequently referred to as the Program, or to other public or private parties where the Program or such parties implement projects for nutrient offset purposes and accept payments for those purposes, and where either of the following applies:

- (1) The following rules of this Section allow offsite options or nutrient offset payments toward fulfillment or maintenance of nutrient reduction requirements:
 - (A) .0234 and .0235 of the Neuse nutrient strategy,
 - (B) .0258 of the Tar-Pamlico nutrient strategy, and
 - (C) applicable rules of the Jordan nutrient strategy, which is described in Rule .0262; and
- (2) Other rules adopted by the Commission allow this option toward fulfillment of nutrient load reduction requirements.

(b) Offset fees paid pursuant to this Rule shall be used to achieve nutrient load reductions subject to the following geographic restrictions:

- (1) Load reductions shall be located within the same 8-digit cataloguing unit, as designated by the US Geological Survey, as the loading activity that is being offset;
- (2) The Division shall track impacts by 10-digit watershed, as designated by the US Geological Survey and providers shall locate projects proportional to the location of impacts to the extent that the projects would meet the least cost alternative criterion per S.L. 2007-438. The location of load reduction projects shall be reviewed during the approval process described in Paragraph (c) of this Rule;
- (3) Impacts that occur in the watershed of Falls Lake in the upper Neuse River Basin may be offset only by load reductions in the same watershed; Impacts in the Neuse 01 8-digit cataloguing unit below the Falls watershed, as designated by the US Geological Survey, may be offset only by load reductions in that same lower watershed;
- (4) Restrictions established in the Jordan nutrient strategy, which is described in Rule 15A NCAC 02B .0262; and
- (5) Any further restrictions established by the Commission through rulemaking.

(c) The Program and other parties shall obtain Division approval of proposed nutrient offset projects prior to construction. Other parties shall sell credits in compliance with approved credit release schedules and with the requirements of this Rule. Project approval shall be based on the following standards:

- (1) Load reductions eligible for credit shall not include reductions used to satisfy other requirements under the same nutrient strategy;
- (2) The Program and other parties shall agree to provide adequate financial assurance to protect and maintain load reductions for the stated duration, including for maintenance, repair and renovation of the proposed measure;
- (3) The Program and other parties shall agree that once credits are established for a measure and until they are exhausted, they shall provide a credit/debit ledger to the Division at regular intervals;
- (4) The Program and other parties shall agree that the party responsible for a measure shall allow the Division access to it throughout its lifetime for compliance inspection purposes;
- (5) The Program or other party seeking approval shall obtain a site review from Division staff prior to Division approval to verify site conditions suitable to achieve the proposed load reductions through the proposed measure; and
- (6) The Program shall submit a proposal, and other parties shall submit a proposal or a draft banking instrument, addressing the following items regarding a proposed load-reducing measure:
 - (A) Identify the location and site boundaries of the proposed measure, the geographic area to be served by credits in compliance with the requirements of Paragraph (b) of this Rule, existing conditions in the contributing drainage area and location of the measure, and the nature of the proposed measure with sufficient detail to support estimates of load reduction required in this Paragraph;
 - (B) Provide calculations of the annual magnitudes of load reductions and identify final credit values incorporating any delivery factors or other adjustments required under rules identified in Paragraph (a) of this Rule;
 - (C) Define the duration of load reductions, and provide a conservation easement or similar legal mechanism to be recorded with the County Register of Deeds and that is sufficient to ensure protection and maintenance of load reductions for the stated duration;

- (D) Identify the property owner and parties responsible for obtaining all permits and other authorizations needed to establish the proposed measure, for constructing and ensuring initial performance of the proposed measure, for reporting on and successfully completing the measure, for holding and enforcing the conservation easement, and for ensuring protection and maintenance of functions for its stated duration;
- (E) Provide a plan for implementing the proposed measure, including a timeline, a commitment to provide an as-built plan and report upon establishment of the measure, elements to be included in the as-built plan and report, a commitment to provide a bond or other financial assurance sufficient to cover all aspects of establishment and initial performance prior to the release of any credits, and criteria for successful completion; and
- (F) Provide a monitoring and maintenance plan designed to achieve successful completion, that commits to annual reporting to the Division until success is achieved, that recognizes the Division's authority to require extension or re-initiation of monitoring depending on progress toward success, and that commits to a final report upon completion. The final report shall reaffirm the party that shall hold and enforce the conservation easement or other legal instrument.

(d) The Program shall establish and revise nutrient offset rates as set out in Rule .0274 of this Section. Offset payments accepted by the Program shall be placed into the Riparian Buffer Restoration Fund administered by the Department pursuant to G.S. 143-214.21

(e) Persons who seek to pay nutrient offset fees under rules of this Section shall do so in compliance with such rules, the requirements of Paragraph (b) of this Rule, and the following:

- (1) A non-governmental entity shall purchase nutrient offset credit from a party other than the Program if such credit is available in compliance with the criteria of this Rule at the time credit is sought, and shall otherwise demonstrate to the permitting authority that such credit is not available before seeking to make payment to the Program;
- (2) Offset payments made to the Program shall be contingent upon acceptance of the payment by the Program. The financial, temporal and technical ability of the Program to satisfy the mitigation request will be considered to determine whether the Program will accept or deny the request;
- (3) Where persons seek to offset more than one nutrient type, they shall make payment to address each type;
- (4) The offset payment shall be an amount sufficient to fund 30 years of nutrient reduction.
- (5) Persons who seek offsets to meet new development stormwater permitting requirements shall provide proof of offset credit purchase to the permitting authority prior to approval of the development plan; and
- (6) A wastewater discharger that elects to purchase offset credits for the purpose of fulfilling or maintaining nutrient reduction requirements shall submit proof of offset credit acquisition or a letter of commitment from the Program or third party provider with its request for permit modification. Issuance of a permit that applies credits to nutrient limits shall be contingent on receipt of proof of offset credit acquisition. A discharger may propose to make incremental payments for additional nutrient allocations, contingent upon receiving a letter of commitment from the Program or third party provider to provide the offset credit needed for permit issuance. In that event the Division may issue or modify that permit accordingly, and shall condition any flow increase associated with that incremental purchase on payment in full for the additional allocation. Offset responsibility for nutrient increases covered under this Paragraph shall be transferred to the Program or third party provider when it has received the entire payment.

(f) Credits associated with load reducing activities funded under this Rule shall be awarded exclusively to the person, municipality, discharger, or group of dischargers who paid the offset fee.

History Note: Authority G.S. 143-214.1; 143-214.20; 143-214.21; S.L. 1995, c. 572; S.L. 2007, c. 438; S.L. 2009, c. 337; S.L. 2009, c. 484; S.L. 2009, c. 486;
Eff. August 1, 1998;
Amended Eff. August 1, 2006;
Amended Eff. September 1, 2010.

ATTACHMENT C

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 Rules .0233, .0243, .0250, .0259, .0267 or .0607 of this Subchapter; or
- (2) The applicant has received a variance pursuant to Rules .0233, .0243, .0250, .0259, .0267 or .0607 of this Subchapter 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 pursuant to Rules .0233, .0243, .0250, .0259, .0267 or .0607 of this Subchapter to implement the riparian buffer program.
- (2) "Division" means the Division of Water Resources of the North Carolina Department of Environment and Natural Resources.
- (3) "Enhancement Site" means a riparian zone site characterized by conditions between that of a restoration site and a preservation site such that the establishment of woody stems (i.e., tree or shrub species) will maximize nutrient removal and other buffer functions.
- (4) "Hydrologic Area" means the Watershed Boundary Dataset (WBD), located at <http://data.nconemap.com/geoportal/catalog/search/resource/details.page?uuid={16A42F31-6DC7-4EC3-88A9-03E6B7D55653}> using the eight-digit Hydrologic Unit Code (HUC) prepared by the United States Geological Survey.
- (5) "Locational Ratio" means the mitigation ratio applied to the mitigation requirements based on the location of the mitigation site relative to the impact site as set forth in Paragraph (f).
- (6) "Monitoring period" means the length of time specified in the approved mitigation plan during which monitoring of vegetation success and other anticipated benefits to the adjacent water as listed in the authorization certification is done.
- (7) "Non-wasting endowment" means a fund that generates enough interest to cover the cost of the long term monitoring and maintenance.
- (8) "Outer Coastal Plain" means the portion of the state shown as the Middle Atlantic Coastal Plain (63) on Griffith, et al. (2002) "Ecoregions of North and South Carolina." Reston, VA, United States Geological Survey available at no cost at http://www.epa.gov/wed/pages/ecoregions/ncsc_eco.htm.
- (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 percent 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:
 - (A) in a geomorphic floodplain;
 - (B) in a natural topographic crenulation;
 - (C) contiguous with an open water equal to or greater than 20 acres in size; or
 - (D) 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 available at no cost at <http://www.census.gov/> 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) of this Rule.

(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 approves the

mitigation plan and issues 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:

- (1) 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;
- (2) a commitment to provide a non-wasting endowment or other financial mechanism for perpetual stewardship and protection; and
- (3) 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 shall 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; and
- (3) The area of any ongoing maintenance corridors within the riparian buffer associated with the use.

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

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

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

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

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

Location	Ratio
Within the 12-digit HUC ^A	0.75:1
Within the eight-digit HUC ^B	1:1
In the adjacent eight-digit HUC ^{B,C}	2:1

^A Except within the Randleman Lake Watershed. Within the Randleman Lake Watershed the

ratio is 1:1.

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

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

(g) **GEOGRAPHIC RESTRICTIONS ON LOCATION OF MITIGATION.** Mitigation shall be performed in the same river basin where 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 .0275 of this Section;
 - (B) Goose Creek Watershed, as defined in Rule .0601 of this Subchapter;
 - (C) Randleman Lake Water Supply Watershed, as defined in Rule .0248 of this Section;
 - (D) Each subwatershed of the Jordan Lake watershed, as defined in Rule .0262 of this Section; 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 available at no cost at http://www.epa.gov/wed/pages/ecoregions/level_iii_iv.htm 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 as defined 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 percent 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. 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; the Division may reduce credit proportionally.

- (4) The applicant or mitigation provider shall submit to the Authority 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 the 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 percent 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 has been conducted showing that the trees or tree and shrub species planted are meeting success criteria and that diffuse flow through the riparian buffer has been maintained. The applicant or mitigation provider shall replace trees or shrubs and restore diffuse flow if needed during that five-year period. Additional years of monitoring may be required if the objectives under Paragraph (i) have not been achieved at the end of the five-year monitoring period.
 - (8) The mitigation provider shall provide a site specific credit/debit ledger to the Division at regular intervals once credits are established and until they are exhausted.
 - (9) The mitigation provider shall provide 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 shall 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 has 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 Rule .0269 of this Section. Payment made to the NC Ecosystem Enhancement Program (the Program) shall be contingent upon acceptance of the payment by the Program. The Program shall consider their financial, temporal, and technical ability to satisfy the mitigation request to determine whether they 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 Rule .0269 of this Section, 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 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 may 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, 16U.S.C. 470 as amended;
 - (E) The property shall not contain any hazardous substance or solid waste such that water quality may be adversely impacted, unless the hazardous substance or solid waste can be properly remediated before the interest is transferred;
 - (F) The property shall not contain structures or materials that present health or safety concerns to the general public. If wells, septic, water, or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations before the interest is transferred. Sewer connections in Zone 2 may be allowed for projects in accordance with Part (m)(2)(E) of this Rule;
 - (G) The property and adjacent properties shall not have prior, current, or known future land use that may 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 Rules .0233, .0243, .0250, .0259, .0267 or .0607 of this Subchapter;
 - (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 26 USC 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. However, when a local government has donated a perpetual conservation easement and entered into a binding intergovernmental agreement with the Program to manage and protect the property consistent with the terms of the perpetual conservation easement, that 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 of Subparagraph (l)(3) of this Rule;
 - (B) A 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 as set forth in 21 NCAC 56.1600.
- (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 as set forth in 21 NCAC 57A .0501; 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 the requirements of Paragraphs (c), (e), (f), and (g) of this Rule, the requirements set out in the named Subparagraph addressing that option, and 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 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 10 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 payable to the Division sufficient to ensure that land purchase, construction, monitoring, and maintenance are completed.
 - (D) A non-wasting endowment or other financial mechanism for perpetual maintenance and protection shall 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 may 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 shall 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. The mitigation provider shall monitor the site 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) available at no cost at <http://portal.ncdenr.org/web/wq/swp/ws/401/waterresources/streamdeterminations>. 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 permanently protect the buffer from cutting, clearing, filling, 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 Subparagraphs (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, grading, and similar activities that would affect the functioning of the buffer 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 Subparagraphs (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 of 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:
- (i) the applicant or mitigation provider restores or enhances the forested buffer in Zone 1 adjacent to the sewer easement;
 - (ii) the sewer easement is at least 30 feet wide;
 - (iii) the sewer easement is required to be maintained in a condition that meets the vegetative requirements of the collection system permit; and
 - (iv) diffuse flow is provided across the entire buffer width.
- The proposal shall meet all applicable requirements of Paragraph (i) of this Rule for restoration or enhancement. The proposal shall meet all applicable requirements of Part (m)(2)(C) of this Rule for preservation.
- (F) Enhancement of grazing areas adjacent to streams. Buffer credit at a 2:1 ratio shall be available for an applicant or mitigation provider who proposes permanent exclusion of grazing livestock that otherwise degrade the stream and riparian zone through trampling, grazing, or waste deposition by fencing the livestock out of the stream and its adjacent buffer. The applicant or mitigation provider shall provide an enhancement plan as set forth in Paragraph (i). The applicant or mitigation provider shall demonstrate that grazing was the predominant land use since the effective date of the applicable buffer rule.
- (G) Mitigation on ephemeral channels. For purposes of riparian buffer mitigation as described in this Part, an "ephemeral channel" is defined as a natural channel exhibiting discernible banks within a topographic crenulation (V-shaped contour lines) indicative of natural drainage on the 1:24,000 scale (7.5 minute) quadrangle topographic map prepared by the U.S. Geologic Survey, or as seen on digital elevation models with contours developed from the most recent available LiDAR data. Ephemeral channels only flow for a short period of time after precipitation in the immediate area and do not have periods of base flow sustained by groundwater discharge. The applicant or mitigation provider shall provide a delineation of the watershed draining to the ephemeral channel. The entire area proposed for mitigation shall be within the contributing drainage area to the ephemeral channel. The ephemeral channel shall 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 percent 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 shall meet all of the following criteria:
- (i) be directly connected with and draining towards an intermittent or perennial stream;
 - (ii) be contiguous with the rest of the mitigation site protected under a perpetual conservation easement;
 - (iii) stormwater runoff from overland flow shall drain towards the ditch;

- (iv) be between one and three feet in depth; and
- (v) the entire length of the ditch shall 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 shall 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 may 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 or permit. Stormwater Best Management Practices (BMPs), including bioretention facilities, constructed wetlands, infiltration devices and sand filters 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 percent total nitrogen and 35 percent 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. 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 available at no cost at <http://portal.ncdenr.org/web/lr/bmp-manual>. If a specific proposed structural BMP is not addressed in this Manual, the applicant or mitigation provider shall follow Chapter 20 in this Manual for approval;
- (E) All structural options are required to have Division approved operation and maintenance plans;
- (F) All structural options are required to have continuous and perpetual maintenance 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 shall certify that the system was inspected during construction and that the BMP 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 in a location as specified by Paragraph (f) and (g) of this Rule shall be constructed as a replacement;
- (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 than 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 gives written approval for another responsible party to operate and maintain them. 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 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 shall 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 used for buffer mitigation credit shall not be used for nutrient offset credits;
 - (2) Buffer mitigation or nutrient offset credit shall not be generated within wetlands that provide wetland mitigation credit required by 15A NCAC 02H .0506; and
 - (3) Either buffer mitigation or nutrient offset credit may be generated on stream mitigation sites as long as the width of the restored or enhanced riparian buffer meets the requirements of Subparagraph (i)(1).

History Note: Authority 143-214.1; 143-214.5; 143-214.7; 143-214.20; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8A; 143-215.8B; 143-282(c); 143B-282(d); S.L. 1998-221; S.L. 1999-329, s. 7.1; S.L. 2001-418, s. 4.(a); S.L. 2003-340, s. 5; S.L. 2005-190; S.L. 2006-259; S.L. 2009-337; S.L. 2009-486; S.L. 2014-95;
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