Model Program for Existing Development Stormwater

Falls Lake Nutrient Strategy

Cedar Creek Arm, Falls Lake

For the January 2021 Meeting
of the N.C. Environmental Management Commission

Developed by the N.C. Division of Water Resources
Nonpoint Source Planning Branch

ABBREVIATIONS

DWR	NCDEQ Division of Water Resources
EMC	Environmental Management Commission
IAIA	Interim Alternative Implementation Approach
NCDEMLR	N.C. Department of Energy, Mineral and Land Resources
NCDEQ	N.C. Department of Environmental Quality
SCM	Stormwater Control Measure
SNAP	Stormwater Nitrogen and Phosphorus Accounting Tool
UNRBA	Upper Neuse River Basin Association

Table of Contents

1.0 Introduction 5

1.1 Preliminary Estimate of Stage I Load Reduction Need 6

2.0 Required Elements of Local Programs 8

2.1 Estimated Stage I Load Reduction Needs 8

2.2 Load Reduction Practices Opportunity Assessment 8

2.2.1 Updated Set of Practices 8

2.2.2 Stormwater and Ecosystem Practices 10

2.2.3 Wastewater Practices 11

2.2.4 Optional Practices 11

2.3 Implementation Plan 12

2.3.1 Implementation Plan Elements Reorganized 13

3.0 Calculation of Stage I Load Reduction Needs 17

3.1 What is Existing Development 17

3.1.1 Interim Development Period 18

3.1.2 Spatial Extent of Development Analysis 18

3.2 Overview - Calculating Stage I Load Reduction Needs 18

3.3 Calculating Stormwater Loads 19

3.4 Calculating Onsite Wastewater Loads 20

3.4.1 Step 1: Determine number of onsite systems 20

3.4.2 Step 2: Determine system malfunctioning rate(s). 21

3.4.3 Step 3: Determine annual loads generated by malfunctioning septic systems. 21

3.4.4 Step 4: Determine the number, types, and sizes of discharging sand filter systems. 21

3.4.5 Step 5: Determine annual loads generated by discharging sand filter systems. 22

3.5 Adjusting Stage I Load Reductions For Annexations 22

4.0 Joint Compliance Option 23

4.1 Falls Combined Compliance - “Interim Alternative Implementation Approach” 23

4.2 Programs Outside the IAIA 25

4.3 Terminating Participation in Joint Compliance Approach 25

5.0 Process for Developing and Implementing Load Reduction Programs 26

5.1 Timeline for Developing Local and Joint Compliance Programs 26

5.2 Implementing Local Programs 27

5.2.1 Individual Practice Approvals, Site Visits and Credit Release for Local Programs 27
5.2.2 Practice Implementation, Verification, Documentation and Audits for Local Programs 27
5.3 Special Implementation Considerations for Local Programs 28
5.4 Updating Local Programs 29
6.0 Annual Reporting for Local Programs 30
6.1 Required Information 30
6.2 Requested Information 31
6.3 Report Due Date 31
7.0 Practice Design and Implementation Requirements for Local Programs 32
7.1 Design and Implementation Requirements 32
7.2 SCM Design and Credit Differences for Existing Development 33
7.3 Trading 34

Appendix A - Lists of Affected Parties 35
Appendix B - Applicable Rules 36
Appendix C - Falls Lake Rules Regulatory Background & History 57

1.0 Introduction

The Falls Existing Development Rule (15A NCAC 02B .0278) requires local governments to develop and implement load reduction programs to reduce nutrient loading from existing developed lands under their control in the watershed. Implementation is divided into two Stages, with Stage I calling for reductions in loading back to 2006 baseline levels, and additional reductions called for in Stage II that require all major sources of nutrients in the watershed to reduce their nitrogen and phosphorus loads by 40 and 77 percent, respectively.

The Rule calls on the Division of Water Resources to develop a model program that affected parties (Appendix A) can use to guide development of their mandated load reduction programs. This model program was developed with input from the regulated community to provide an organizing structure for affected parties to use as a guide to develop their local load reducing programs by identifying the minimum elements they are required by rule to include in their Stage I program submittals. This model also includes recommendations on how to meet those minimum elements as well as interpretive guidance for technical decisions associated with development of local programs.

Affected parties have the option to comply with the requirements of the Rule through either implementation of a local load reduction program, or by working together per Item (6) of the Rule, which allows for implementation through a joint compliance approach.

> *(6) "A municipality shall have the option of working with the county or counties in which it falls, or with another municipality or municipalities within the same subwatershed, to jointly meet the loading targets from all lands within their combined jurisdictions within a subwatershed. A local government may utilize private or third party sellers. All reductions involving trading with other parties shall meet the requirements of Rule 15A NCAC 02B .0282."*

The **required** elements for the local program and joint compliance options are discussed in Sections 2.0 and 4.0, respectively. Reporting elements for joint compliance are also described in Section 4.0.

The State & Federal Stormwater Rule (15A NCAC 02B .0281) also requires a model program to be developed for state and federal entities. This document is provided as a model for both local governments and state and federal entities. Much of its content will be useful for larger state & federal entities in the watershed, such as universities and state-owned hospitals and correctional facilities. State & federal entities with small parcel-sized holdings will have much simpler existing development implementation needs. Fundamentals of this model program's guidance will be useful to them as well, and the Division.

Once this model program is approved by the Commission, affected parties have six months to submit and begin implementing their local programs or joint compliance program. Load reduction programs submitted will be reviewed by Division staff for preliminary approval of how fully they meet the requirements and approval standards identified in the Rule and supported by the guidance provided in this Model Program. Staff will provide written feedback to parties identifying any further information needs or program deficiencies, and will request modifications accordingly. Implementation requirements for local programs are detailed in Section 5.

The following conventions will be used throughout this document, unless otherwise stated:

- References to "the Rule" mean the Falls Existing Development Rule, 15A NCAC 02B .0278
- References to "the Division" mean the Division of Water Resources
- References to "affected party" mean any local government or state and federal agency located within the Falls Lake Watershed that is subject to existing development stormwater requirements pursuant to 15A NCAC 02B .0278 and .0281, respectively.
- The Existing Development Rule and any other DWR rules referenced in the text are provided as appendices.
- Quoted rule text is set off with indents, italics, and quotation marks. Bold text is emphasis added by the Division.

1.1 Preliminary Estimate of Stage I Load Reduction Need

To provide an indication of the scale of reductions needed from existing development during Stage I of implementation, the Division developed a preliminary estimate of the combined reduction need for the fourteen local governments located in the watershed. This estimate, provided in Table 1, was generated using data compiled by the Falls local governments on development in their jurisdictions in the watershed during the Stage I "interim period", which is the time period between January 1, 2007 and when a jurisdiction began implementing their Falls New Development Stormwater rule requirements in 2012. It is a partial estimate, as it does not include estimates of loading from existing development attributed to state or federal entities, nor does it fully capture the interim period load from failing onsite wastewater and discharging sand filter systems.

Data on malfunctioning onsite wastewater systems installed during the interim period were provided by four of the six counties in the watershed. Division staff used the data to estimate onsite wastewater loading from these four counties, and included the results in the loading ranges provided in Table 1. System inventories will need to be completed by the remaining local governments in order to develop a complete loading estimate that includes the full contributions from the malfunctioning onsite systems and discharging sand filters installed during the interim period before their local load reduction programs can be approved.

The Falls Rules task the Division with providing the methods affected parties will use for calculating their load reduction needs. Section 3 of this Model Program provides the basic instructions for calculating load reduction needs and expectations for supporting documentation. The Division will provide assistance as needed as affected parties coordinate with staff to finalize their estimated load reduction assignments. Staff will review the Stage I estimates and work together with affected parties to resolve any issues before the load reduction needs are finalized.

Table 1. Combined Preliminary Estimate of Stage I Load Reduction Needs for Falls Local Governments

Total Nitrogen (lbs./yr.)	Total Phosphorus (lbs./yr.)
6,767 - 15,867	917 – 2,017

Any affected party choosing to meet the rule requirements through the implementation of a local program will need to collaborate with the Division to develop their final individual Stage I load reduction

needs following the methods discussed in Section 3.0 to include in their local program for Division review and Commission approval.

2.0 Required Elements of Local Programs

Item (4) of the Rule sets out required and optional elements of local programs. This section provides the required elements stated in the Rule along with interpretive guidance for meeting the rule's intent. For each requirement set out in the rule, rule text is cited here and followed with interpretive guidance on how to comply. Rule requirements fall into the following four areas:

- Stage I Load Reduction Needs
- Load Reduction Practices Opportunity Assessment
- Implementation Plan
- Annual Reporting Plan

2.1 Estimated Stage I Load Reduction Needs

Sub-Item (3)(a) of the Rule establishes the following load reduction requirement for Stage I of implementation:

> *(3)(a) "In Stage I, a local government subject to this Rule shall implement a load reduction program that provides estimates of, and plans for offsetting by calendar year 2020, nutrient loading increases from lands developed subsequent to the baseline period and not subject to the requirements of the local government's Falls Lake new development stormwater program."*

Thus, each local program shall include an estimate of the nitrogen and phosphorus loading, in pounds per year, from existing development to be offset during Stage I implementation, and shall provide supporting information and a description of how they calculated the loads in accordance with the Rule. **Section 3** provides detailed guidance on development of these load reduction targets.

Regarding the 2020 compliance date, subsequent legislation (S.L. 2016-94 and S.L. 2018-5) revised the end of Stage I implementation to correspond with the readoption of Stage II rules for Falls, which may occur in the 2026 -2027 timeframe, effectively giving parties the time between approval of the Model Program and readoption of the rules to achieve their Stage I load reduction needs.

2.2 Load Reduction Practices Opportunity Assessment

Per Sub-Items (4)(l) through (4)(n) of the Rule, affected parties shall include in their programs an evaluation of the nitrogen and phosphorus load reduction potential, as well as potential opportunities for, and overall feasibility of, available nutrient reducing activities. This section first provides current information on the range of practices listed in these rule sub-items, followed by the recommended process that affected parties can undertake to identify practice implementation options and priorities.

2.2.1 Updated Set of Practices

Table 2 provides the list of practices included in Sub-Items (4)(l) through (4)(n) of the Rule. Details of the nutrient credits and design standards for these practices and any additional practices developed by DWR or by a third party to be vetted by the Nonpoint Source Planning Program and approved by the Division

Director are located in the North Carolina Nutrient Catalog. A draft of the Nutrient Catalog was completed and provided to stakeholders for public comment in November 2020. Once finalized it will be signed by the Division Director and made available on the DWR's Nonpoint Source Planning Branch website at the following url: https://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information#approved-nutrient-reduction-practices

The Nutrient Catalog was developed in 2020 as a single reference resource and should be considered the most up to date list of eligible nutrient-reducing practices. For most practices to date, design standards reside with the originating program, such as DEMLR's Stormwater Program, and the Catalog provides reference information to those sources. The Upper Neuse River Basin Association (UNRBA), with the support of grant funding from DWR and input from subject matter experts, developed nutrient credits for several of these practices or their design variants. Additionally, it outlines a streamlined process for approving design standards and associated credit for future candidate types of nutrient load-reducing practices.

Some practices listed in Table 2 have changed in name since the Rule was adopted. For such cases, the new name for the practice directly follows the Rule name *in italics*. The table also identifies established credit methods, locations of credit methods, or other orienting practice information.

Table 2. Status of Practices Listed in Sub-Items (4)(l) through (4)(n) of Rule .0278

Stormwater & Ecosystem Restoration Activities *(4) (l) The program shall address the extent of load reduction proposed from the following stormwater and ecosystem restoration activities:*		
Practice Name (Updated name in *Italics*)	**Credit Status**	**Reference / Notes**
Bioretention / *Bioretention Cell*	Approved	SNAP Tool
Constructed Wetland / *Stormwater Wetland*	Approved	SNAP Tool
Sand Filter	Approved	SNAP Tool
Filter Strip / *Level Spreader-Filter Strip*	Approved	SNAP Tool
Grassed Swale / *Pollutant Removal Swale*	Approved	SNAP Tool
Infiltration Device / *Infiltration System*	Approved	SNAP Tool
Extended Dry Detention / *Dry Pond*	Approved	SNAP Tool
Rainwater Harvesting System / *Rainwater Harvesting*	Approved	SNAP Tool
Treatment of Redevelopment	Approved	SNAP Tool
Overtreatment of New Development	Approved	SNAP Tool
Removal of Impervious Surface / *Impervious Surface Conversion*	Approved	SNAP Tool
Retrofitting Treatment into Existing Stormwater Ponds / *Upfitting Existing SCMs*	Approved	SNAP Tool
Off-line Regional Treatment Systems	Not developed	n/a
Wetland Restoration	Not developed	n/a
Riparian Buffer Restoration / *Riparian Reforestation on Ag Land*	Approved	Ag Buffers Only
Reforestation w/ Conservation Easement or Protective Covenant	Under development	SNAP Tool
Wastewater Activities *(4) (m) The program shall evaluate the load reduction potential from the following wastewater activities:*		
Creation of Surplus Allocation	Approved	Per .0279
Surplus Allocation via Regionalization	Approved	Per .0279
Remedying Discharging Sand Filters	Approved	Director Approved
Remedying Malfunctioning Septic Systems	Under development	n/a
Removal of illegal discharges / *Remedying Illicit Discharges*	Approved	Director Approved
Improvement of Wastewater Collection Systems	Approved	Director Approved
Optional Practices *(4)(n) A local government may propose in its load reduction program the use of the following measures in addition to items listed in (l) and (m), or may propose other measures for which it can provide accounting methods acceptable to the Division:*		
Redirecting runoff away from impervious surface / *Disconnecting Impervious Surfaces (DIS)*	Approved	SCM Credit Document
Soil Amendments/ *Soil Improvements*	Approved	Director Approved
Stream Restoration	Under development	Developing separable components
Improved Street Sweeping/ *Street Sweeping*	Approved	Director Approved
Source control: Pet Waste and Fertilizer Ordinances	Not developed	n/a

Reference Documents:

NC DEMLR SCM Credit Document: https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Stormwater/BMP%20Manual/SCM-Credit-Doc-2018-11-7.pdf

NC DWR SNAP TOOL: https://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information#stormwater-nutrient-accounting-tools

2.2.2 Stormwater and Ecosystem Practices

Fourteen of the sixteen stormwater and ecosystem restoration activities listed in Sub-Item (4)(l) have been approved for nutrient reduction credit calculated with the Division's Stormwater Nitrogen and Phosphorus Accounting Tool (SNAP). Credit accounting for riparian revegetation is currently limited to the practice of restoring riparian forested buffers on agricultural lands. However, the Division is developing design standards and crediting for the practice of improving riparian zones in urban

landscapes. Regarding the remaining two stormwater or ecosystem activities, the Division does not intend to develop stand-alone credit accounting for wetland restoration at this time. This practice remains a highly site-specific activity with a highly varied research literature. Similarly, off-line regional treatment systems encompass several potential practices which would need to be addressed individually as implementation potential and interest dictate. Should a party be interested in implementing one of these practices, they have the option of proposing the practice for reduction credit on a site-specific basis by following the process laid out in Appendix III of the Division's Nutrient Catalog which addresses nutrient credit for unique practice installations.

2.2.3 Wastewater Practices

All five wastewater activities listed in Sub-Item (4)(m) of the Rule have approved nutrient accounting. The creation of surplus credit relative to point source allocations and expansion of surplus allocation through regionalization are activities that can be pursued under the requirements set forth in the Falls Wastewater Rule (15A NCAC 02B .0279). Removal of illegal discharges and improvements to wastewater collection systems, and the practice of remedying discharging sand filters were approved for credit by the Division in 2017 and 2019, respectively. Design specifications and nutrient crediting for remedying malfunctioning septic systems is currently under development and is expected to utilize results of additional watershed modeling being conducted by the Upper Neuse River Basin Association in the Falls watershed, which will provide updated data on the nutrient loading from these systems.

2.2.4 Optional Practices

The evaluation of practices listed in Sub-Item (4)(n) is optional for affected parties, unlike the practices listed in Sub-Items (4)(l) and (m). The practice of redirecting runoff away from impervious surfaces (now referred to as Disconnecting Impervious Surface) is credited through use of the 2018 NCDEMLR SCM Credit Document. Soil amendments (now referred to as Soil Improvement) as well as the practice of Street Sweeping were approved for credit by the Division in 2017 and 2019, respectively.

Credit has not yet been established for source controls such as pet waste and fertilizer ordinances, but their potential will be evaluated through future collaborative efforts with affected parties and subject matter experts. Stream restoration is arguably the most challenging and complex credit determination of all the optional practices. The Division has conducted significant evaluation of this practice, starting with the Chesapeake crediting approach, which is really a group of related practices that aren't necessarily all implemented together, and has funded in-state research to address knowledge gaps. Based in part on the findings of this research, staff is still exploring the best approach for developing design specifications and credit accounting for the multiple components of this practice. Given the complex nature of this practice the Division plans to engage relevant subject matter experts and the NSAB to assist in the development and approval of by the end of 2021.

Affected parties may also propose using other practices beyond those they are required to evaluate per the Rule if they can provide accounting methods acceptable to the Division. The Division approval process for such practices is detailed in the Catalog. The Catalog also provides guidance on establishing

credit for novel practice installations where a practice's nutrient reduction performance may be insufficiently studied to provide a basis for assigning presumptive credit.

2.3 Implementation Plan

A central element of a local program is the implementation plan laying out a projected implementation schedule, annual implementation expectations regarding the number and type of practices and activities to be implemented and the nutrient reductions to be achieved. The complete list of elements to address in the plan are found in sub-items (4)(i) through (4)(k) and (4)(o) of the Rule. The requirements of these sub-items are all interrelated and in many cases require additional guidance. In order to provide affected parties a clearer understanding of the elements to be addressed in the implementation plan the applicable rule language is provided below. This is followed by a reorganization of the elements in a consolidated more logical order followed by guidance for addressing the specific requirements.

*(4)(i) "The program shall include a proposed **implementation schedule** that includes annual implementation expectations. The load reduction program shall identify the **types of activities** the local government intends to implement and **types of existing development** affected, a **prioritization of practices**, **magnitude of reductions** it expects to achieve from each, and the **costs and efficiencies** of each activity to the extent information is available. The program shall identify the **duration of anticipated loading reductions**, and may seek activities that provide long-term reductions;*

*(4)(j) "The load reduction program shall identify anticipated **funding mechanisms or sources** and discuss **steps taken or planned to secure such funding**;"*

*(4)(k) "The program shall address the **extent of load reduction opportunities** intended from the following **types of lands**:*
(i) Lands owned or otherwise controlled by the local government;
(ii) Each land use type of privately owned existing development including projected redevelopment, on which the local government's load reduction need is based as described in this Item; and
(iii) Lands other than those on which the local government's load reduction need is based as described in this Item, including lands both within and outside its jurisdiction and including the use of interlocal agreements and private third party sellers;"

*(4)(o) "The program shall include evaluation of **load reduction potential** relative to the following **factors**:*
(i) Extent of physical opportunities for installation;
(ii) Landowner acceptance;
(iii) Incentive and education options for improving landowner acceptance;
(iv) Existing and potential funding sources and magnitudes;
(v) Practice cost-effectiveness (e.g., cost per pound of nutrient removed);
(vi) Increase in per capita cost of a local government's stormwater management program to implement the program;

(vii) Implementation rate without the use of eminent domain; and
(viii) Need for and projected role of eminent domain."

2.3.1 Implementation Plan Elements Reorganized

The following is a list of the required implementation elements that need to be addressed in any local existing development load reduction implementation plan submitted for Division approval. These elements were pulled from the relevant rule language in Sub-Items (4)(i) through (4)(o) of the Rule and have been rearranged in order to provide clarity on how the different components of the Rule relate to one another. Affected parties are free to reorganize these elements in their proposed local plan in the manner that makes the most sense to them, as long as they address all of the elements listed.

Types of Lands

- Jurisdiction-owned
- Privately owned w/in jurisdiction
- Other

Types of Practices

- Prioritized set
- Associated with land type

Reductions Projected & Duration

- Extent of physical opportunities
- Landowner willingness and the local government's ability to improve willingness
- Cost-effectiveness
- Funding, cost to LG
- Potential role of eminent domain

Annual implementation schedule

- Pace of implementation

2.3.1.1 Types of Lands Affected

While affected parties may choose to implement practices on lands already under their control, the provisions in Sub-Items (4)(k)(ii) and (iii) of the Rule provide the flexibility of achieving reductions on both public and private lands. This may include lands other than those that their load reduction needs are based on. The implementation plan must address the extent to which public and private lands are intended to be used and the extent to which they are located outside of the affected parties' jurisdiction.

In some cases, the most cost-effective reduction opportunities may include implementing practices on lands located in another jurisdiction. In these cases, practices can be implemented through the use of legal agreements between jurisdictions or third party sellers such as nutrient offset banks. If reductions are proposed to be achieved outside the affected parties' jurisdiction the implementation plan must

address how these reductions will be administered and include descriptions and references to any interlocal agreement or similar legal instrument to be used to formalize the arrangements.

The options described in (4)(k) only need to be addressed to the extent that the affected party intends to use them. In cases where an option is identified for use, it will be necessary to provide the scale of reliance in load magnitude along with timeframes and evidence of necessary arrangements in order to avoid the possibility of double counting of credits.

2.3.1.2 Types of Practices

Per Sub-Item (4)(i) of the Rule, the Implementation Plan must identify the types of activities the affected party plans to implement and types of existing development affected. This includes a prioritization of practices that were identified in the practices opportunity assessment discussed in Section 2.2. The Divisions recommends that the initial opportunity assessment be followed by a more detailed planning level assessment focused on land cover patterns and the associated extent and locations of potential sites in watersheds within the jurisdiction in order to focus resources on a prioritized set of candidate sites and practices. Types of existing development treated by practices implemented should be broken down by category (.e.g., residential, commercial, or industrial acres affected). Affected parties may find it helpful to break down the development types into categories beyond the examples provided. In cases where different or more detailed categories are used it would be helpful to provide a brief description of each within the program.

Where affected parties have already conducted watershed planning and have already identified programs or practices for initial implementation, and have documents summarizing those planning efforts, those planning documents may be referenced in their local programs. Practices and programs identified by those plans that the affected party expects to implement can be provided as attachments to the implementation plan.

2.3.1.3 Reductions Projected and Duration

In evaluating the reductions projected and their duration, the Program shall use the evaluation factors set forth in Sub-Item (4)(o) of the Rule by considering the extent of physical opportunities along with the additional evaluation factors of that sub-item related to the extent of opportunity for each type of measure identified in the initial practice opportunity assessment.

The overall requirement for the practices implemented under Stage I is collectively equal the jurisdiction's load reduction target. The magnitude of reductions expected for each practice is the unit credit combined with the number of installations planned. Cumulatively, load reductions achieved in Stage I are to be maintained in perpetuity, thus longer-term, lower maintenance practices are more desirable. Conversely, the shorter-duration or higher maintenance the practice, the more detailed and well-developed the replacement or maintenance plans will need to be up front in the implementation plan.

Evaluating the factors listed in Sub-Item (4)(o) will help to provide an indication of the feasibility of available nutrient reduction opportunities as well as an assessment of any challenges they face. Documenting the extent of physical opportunities can be in the form of a list of suitable project sites or a screening list of potential sites for a given type of nutrient reducing practice that can be refined through further evaluation as the program is implemented. Since many suitable sites may be located on private land it may be necessary to reach out to landowners and document their willingness to allow practices to be implemented on their land. In cases where public outreach or incentives are used to encourage implementation on private lands these efforts shall be documented in the local program.

Estimated ranges of costs for each type of practice should attempt to capture the full costs to the greatest extent practicable. This would include the cost of planning, designing, land acquisition, construction, and maintenance for the duration of the credit life of the practice. Actual costs of practices can be site specific and highly dependent on landscape conditions and project design characteristics. For the purposes of developing Stage I local programs the Division would not require anything beyond planning-level (generally accurate when averaged across the jurisdiction or watershed) cost estimates for beyond the first 2 years of implementation.

Typically, local governments implementing stormwater programs have historically used local funding sources. In discussing anticipated funding mechanisms and sources for a local program the expectation here is a reasonably stable source of funds to cover projected installation costs over Stage I, and to plan for maintenance or replacement at levels anticipated to the extent possible now, considering chosen practice types and associated expenses and frequencies. In cases where funding sources have not yet been identified please discuss steps take or planned to secure such funding and address any anticipated increases in per capita costs for implementing the local program.

The use of eminent domain is not a requirement of the Rule, but Sub-Items (4)(o)(viii) and (viii) require it to be discussed in proposed local programs. The EMC recognizes that N.C. Gen. Stat. 143-214.7 was amended after the Rule was adopted and that the statute bars local governments from requiring private property owners from installing new or increased stormwater controls for preexisting development. In addition, the statute has been amended to expressly withhold from local governments the authority to include existing development's footprint of impervious surface from rebuilding or enlarging the impervious surface on a parcel. Consequently, paragraph (5)(a)-(c) or the Rule cannot be required of a local government in its review of the Plans. When a local government is without authority to require stormwater controls by statute, it has no authority to use eminent domain the achieve the same goal on a property. Plans should address whether any use of eminent domain is contemplated in light of these restrictions imposed by the General Assembly, and if so, what will be its use and its projected role, and their projected implementation rate of practices without its use.

2.3.1.4 Annual Implementation Schedule

Sub-Item (4)(i) of the Rule requires affected parties provide a proposed implementation schedule that includes annual implementation expectations with regard to practices implemented and estimated pounds of nutrients reduced for each year of Stage I implementation. This schedule is required out of a

desire to encourage a manageable distribution of costs over the implementation period and to avoid back-loading of implementation, particularly since the end date of Stage I is not fixed and depends on the duration of rulemaking.

As more cost-effective practices are identified, or more suitable sites become available, affected parties have the flexibility of modifying their implementation plan and submitting a revised local program to the Division for approval. The process for updating implementation plans is discussed in Section 5.0.

3.0 Calculation of Stage I Load Reduction Needs

Affected parties that choose to implement a local load reduction program will need to coordinate with the Division to finalize the Stage I load reduction assignments to include and address in their program submittals. This section of the Model Program provides basic instructions for calculating these loads and guidance on DWR's expectations for supporting documentation of decisions and assumptions related to each parties' calculations.

3.1 What is Existing Development

The general requirements for the type of development and sources to include in the calculation of Stage I load reduction needs are addressed by Sub-Items (4)(e) through (g) of the Rule.

> *(4)(e) "A local government's load reduction need shall be based on the developed lands that fall within its general police powers and within the Falls watershed;"*

Police powers are the general ordinance-making powers conferred by the legislature that allow local governments to govern their affairs and the conduct of people within their jurisdictions. For cities, police power jurisdiction coincides with municipal boundaries unless the legislature expressly authorizes an extension for specific purposes, which it has not for the purposes of stormwater control on existing development. Similarly, county police power applies to any part of a county not within a city. Developing and finalizing load reduction requirements for cities and counties that share jurisdictional boundaries under the Rule will be coordinated between the two jurisdictions prior to finalizing their respective local programs.

> *(4)(f) "The load reduction need shall not include lands under state or federal control, and a county shall not include lands within its jurisdictional boundaries that are under municipal police powers;"*

Existing development includes impervious and managed pervious covers, including those with tree canopy, of all types of development typically regulated, e.g. residential, commercial, industrial, institutional, mixed use, etc. This includes both private and public landholdings, although state and federal entities' existing development is regulated under separate rules from that of local governments.

Existing development does not include forest. Forest is considered land with a tree canopy and a vegetated understory/ground cover that is not at least occasionally maintained during a typical year. Forest does not require a specific tax status, management status, or protective zoning, regulatory or ownership status or other protective legal status. Developed land that is impervious or managed pervious cover with a well-developed tree canopy shall be treated as the underlying cover for estimating loads until a method can be established that adequately represents the loading benefits provided by that tree cover.

Existing development does not include agricultural land. For the purposes of the Falls Lake Rules, agricultural land would be land on which agricultural operations occur as defined in the Falls Agriculture rule, 15A NCAC 2B .0280 (4). Rural residential development is considered existing development, even where it is surrounded by agriculture lands as described here. The nutrient loading from this

development, including the residences of agricultural producers and workers and the roads and driveways accessing those residences shall be accounted for in the loads subject to the requirements of this Rule. However, structures and travelways that directly support agricultural activity are not to be included in the existing development footprint or the load calculations.

3.1.1 Interim Development Period

Falls Stage I Existing Development requirements are limited to offsetting loading increases from development that occurred since the baseline period of 2006 and that is not subject to the Falls New Development Stormwater Rule requirements. For convenience in this document, this time period is referred to as the "interim development period". The starting point for the interim development period is January 1, 2007, and all development that took place after that date, regardless of when it was approved, will be included in the analysis. Developments built after an entity's new development ordinance went into effect, but vested before, are also included in this set.

3.1.2 Spatial Extent of Development Analysis

Calculations are to include all development projects that received local approval during the interim period, including all expansion projects. Local programs will need to document how these development areas were identified from available records. If there are developments that were partway completed as of January 1, 2007, please describe how it was determined which portions to include or exclude from analysis.

Calculations shall include all land cover types in the spatial extent of issued permits (include roads to be dedicated to DOT), i.e. whole project areas (not just disturbed area). In situations where the project area includes forested land, only that which has some kind of protective legal status through either protective zoning or some other protection instrument should be included in the calculation. This approach is consistent with how forest is addressed in the SNAP Tool for projects subject to the Falls New Development Stormwater Rule.

In some cases, the exact areas of different land covers may not have been recorded. In these cases, the program will need to describe the process used to convert other information, such as lot sizes and land use type or zoning, to an estimate of amounts of the different land cover types used in the calculation. Note assumptions made, resources referenced such as aerial photography or stormwater utility records, or tools used such as lot size impervious calculators.

3.2 Overview - Calculating Stage I Load Reduction Needs

The determination of load reduction needs is based primarily on Item (4)(g) of the rule:

> *(4)(g) "Nitrogen and phosphorus loading from existing development, including loading from onsite wastewater treatment systems to the extent that accounting methods allow, shall be calculated by applying the accounting tool described in Sub-Item (7)(a) and shall quantify baseline loads of nitrogen and phosphorus to surface waters in the local government's jurisdiction as well as loading changes post-baseline. It shall also calculate target nitrogen and phosphorus loads and corresponding load reduction needs;"*

Stage I load reduction needs are based on the nitrogen and phosphorus load increases from the following sources to estimate the nutrient load increases expressed in units of pounds per year from lands developed during interim development period within the affected parties' jurisdiction.

- Stormwater Surface Runoff
- Malfunctioning Onsite Systems
- Discharging Sand Filter Systems

3.3 Calculating Stormwater Loads

Calculation of stormwater load increases due to development requires a comparison of the post-development condition to a pre-development condition. The preferred method for calculation of loads for pre- and post-development is to use one of the available DWR-approved calculation tools: Neuse method, Tar-Pamlico Piedmont tool, Jordan-Falls v2 tool, or the SNAP tool (please note version number), with the same tool used for both pre- and post-development calculations. Please describe which tool(s) were used, noting the version number and any custom modifications that may have incorporated in addition to all assumptions that were made and how they were applied to input data. Please note whether known local pre-development land cover data was used, or an estimate of pre-development condition based on likely land uses and describe if this required some conversion or assumptions to fit land cover types available in the tool used.

Developments without SCMs can be lumped together into a single calculation of load. Developments with SCMs shall be individually modelled in one of the DWR-approved calculation tools. Report the pre-development calculated load for the total area, and separately report the post-development load of areas not treated by SCMs (note area) and the post-development (with SCMs) load of areas that are treated by SCMs (note area). If an alternative method for SCMs is used, please describe it.

The Division's interpretation of the Falls Existing Development Rule with regard to calculation of the Stage 1 load reductions requires the use of similar calculation methods for developing pre-development and post-development loads for the interim period. Sub-Item (3)(a) of the Rule provides a specific option for determining the pre-development load:

> *(3)(a) "Alternatively, a local government may assume uniform pre-development loading rates of 2.89 pounds/acre/year N and 0.63 pounds/acre/year P for these lands."*

If a party elects to use the Rules' default pre-development loading rate in Sub-Item (3)(a), which is a total loading rate rather than stormwater loading rate, they will be required to provide a post-development total load estimate using a total-load calculation method in consultation with DWR. A total-load method will require estimating the combined load from both stormwater surface runoff and malfunctioning onsite systems and discharging sand filter systems in order to estimate the total load. Using such an approach will also require detailed documentation of assumptions and input variables.

Nutrient reduction credit will be recognized for early implementation of nutrient reducing practices. Where practices or other activities have already been implemented during the interim development period and for which credit is due, it is recommended that the affected party list the credit practice or programmatic practices in their local program, with documentation of credits to follow in annual reports.

(4)(h) "The Commission shall recognize reduction credit for early implementation of policies and practices implemented after January 1, 2007 and before timeframes required by this Rule, to reduce runoff and discharge of nitrogen and phosphorus per Session Law 2009-486. The load reduction program shall identify specific load-reducing practices implemented to date subsequent to the baseline period and for which the local government is seeking credit. It shall estimate load reductions for these practices and their anticipated duration using methods provided for in Sub-Item (5)(a);"

Nutrient offsets (buy-down credits) shall be reported separately in the annual report regardless of where in the Neuse watershed the credit-generating project was located. Offset credits can only be factored into post-development loading estimate if all parts of the project are included in export calculations.

Stage I stormwater loads shall be expressed as loads delivered to stream only. Assume that nutrient delivery to the lake for all land cover changes and installed SCMs is 100% for purposes of calculating Stage 1 loads.

3.4 Calculating Onsite Wastewater Loads

As described in Section 3.3 above, if an affected party elects to use the total load method for calculating their pre-development interim period loading estimate they will also be required to include the loading from onsite wastewater treatment systems as part of their post-development total load. In accordance with Sub-Item (7)(a)(iii) of the Rule, the Division has provided accounting methods for these systems as explained in the step-by-step instructions included in Sub-sections 3.4.1 through 3.4.5 below.

(7)(a)(iii) of the rule directs DWQ to provide "Methods to account for discharging sand filters, malfunctioning septic systems, and leaking collection systems;" in the model program.

The following are step-by-step instructions for calculating nutrient loads contributed by onsite wastewater systems installed during the interim period. These guidelines are based on the TetraTech report prepared for the Piedmont Triad Regional Council, NC DWR (as "NC Division of Water Quality"), and the Nutrient Scientific Advisory Board BMP Subcommittee, dated September 2013, "North Carolina Piedmont Nutrient Load Reducing Measures Technical Report". A copy of this report can be downloaded from the DWR website. https://files.nc.gov/ncdeq/2013-TetraTech-NC-Piedmont-Nutrient-Load-Reducing-measures-report-20130930.pdf

3.4.1 Step 1: Determine number of onsite systems

Each affected party needs to first determine the number of onsite systems installed in its jurisdiction during the interim period and provide documentation of how this number was determined. In many cases the rule required local governments to conduct inventories in 2013; each jurisdiction's inventory report described in detail how this was done. It is sufficient to refer to that inventory if it describes all the details.

For the interim load estimate, an estimate of household size (measured as number of bedrooms or number of persons is needed. Jurisdictions may use known or estimated household sizes but shall document how these values were determined and any assumptions made.

3.4.2 Step 2: Determine system malfunctioning rate(s).

During the process of completing the 2013 inventories, Falls Lake jurisdictions took variable approaches to determining a rate of onsite system malfunctions. Some jurisdictions estimated malfunction rates for all systems in their jurisdictions, others estimated rates for newly-installed systems. In some cases, these rates were further broken down by type of malfunction. The 2013 TetraTech report lists loading rates for three different kinds of system malfunction:

- Direct Septic Tank Effluent (STE) Discharge
- Illicit Greywater (e.g. laundry) Discharge
- Drainfield Malfunction (e.g. surfacing effluent, effluent < 1' below trench bottom, system backup into the house).

In developing their Stage I load reduction program, local governments that have not already done so will need to refine their inventories to account for all onsite and discharging sand filter systems installed in the interim period. They will also need to develop the malfunction rate for the systems installed during that time period. DWR also recommends jurisdictions characterize the proportions of malfunctions that they determine and how that determination was made.

3.4.3 Step 3: Determine annual loads generated by malfunctioning septic systems.

Apply the onsite system malfunction rate (Step 2) to the number of onsite systems installed in the interim period (Step 1) to determine the number of malfunctioning septic systems. Since there are three different major kinds of malfunction, it may be necessary to estimate three different malfunction rates. Please note whether household size is implicated in malfunction rate, or whether it is assumed that malfunctions occur evenly across all household sizes.

Using the estimate of the number, type, and household sizes of malfunctioning septic systems, refer to the 2013 TetraTech report for estimation of baseline annual nitrogen and phosphorus loads:

- Table 3-3 (pg 21) for Direct Septic Tank Effluent Discharges
- Table 3-4 (pg 22) for Illicit Greywater Discharges
- Table 3-9 (pg 27) for Drainfield Malfunctions

3.4.4 Step 4: Determine the number, types, and sizes of discharging sand filter systems.

Determine the number of discharging sand filter systems installed in the jurisdiction during the interim period. The TetraTech document provides actual nutrient load delivery rates for four different types of discharging sand filter systems:

- Single-pass filters with regular discharges
- Single-pass filters with infrequent discharges
- TS-II or equivalent systems
- Malfunctioning sand filter systems of all types.

Affected parties shall document how the numbers and types of systems in use were determined or estimated and any assumptions made.

For all interim load estimates, an estimate of household size (measured as number of bedrooms or number of persons) is needed. Jurisdictions may use known or estimated household sizes but shall document how these values were determined and any assumptions made.

3.4.5 Step 5: Determine annual loads generated by discharging sand filter systems.

Using the estimate of the number of discharging sand filter systems and household sizes from Step 5, refer to the TetraTech report for estimation of baseline annual nitrogen and phosphorus loads:

- Table 4-3 (pg 46) for Single-Pass Filters with Regular Discharges
- Table 4-4 (pg 46) for Single-Pass Filters with Irregular Discharges
- Table 4-5 (pg 47) for TS-II and Equivalent Systems
- Table 4-6 (pg 48) for malfunctioning sand filter systems of all types

3.5 Adjusting Stage I Load Reductions For Annexations

Load reduction needs are tied to the timeframe on which the estimates are based. As jurisdictional boundaries are moved by way of annexation, control over that lands follows and any transfer of interim development lands between jurisdictions necessitates the transfer of associated load reduction needs. As a result, the load reduction portion of reduction needs based on the previous jurisdictional boundaries will need to be updated accordingly.

In cases where annexation of interim developed lands occurs load increases from such development shall be added to the overall reduction needs of the annexing municipality and deducted from the overall reduction needs of the annexed county. The affected parties will be required to address the jurisdictional boundary change and resulting load transfers in their annual reports for the Division to review.

4.0 Joint Compliance Option

Joint compliance is a voluntary implementation option where regulated entities may choose to merge individual nutrient reduction within a compliance "bubble." So long as the terms of the joint compliance approach are met, the individual nutrient reduction requirements are not enforced. In such an arrangement, participating members are free to negotiate among themselves the terms by which each contributes to jointly meeting requirements.

The Rule, Item (6), provides the option for local governments to group together to meet obligations, an option often, and herein, referred to as group compliance. Also, the Falls trading rule (2B .0282(4)) allows an individual local government that has both wastewater and existing development nutrient reduction obligations to combine those obligations and meet them jointly. The Division interprets these two separate rule provisions together as allowing the creation of a single joint compliance bubble for combined Wastewater rule and Existing Development rule purposes. This option will be referred to as combined compliance.

4.1 Falls Combined Compliance - "Interim Alternative Implementation Approach"

The Upper Neuse River Basin Association, with collaborative input from the Division and other stakeholders, has proposed a combined compliance option for Stage I known as the Interim Alternative Implementation Approach (IAIA). This approach recognizes that the major wastewater treatment plants in the Falls Lake watershed have, as of 2019, exceeded their required Stage I nutrient load reductions by approximately 50,000 pounds of nitrogen per year and 10,000 pounds of phosphorus per year. When compared to preliminary estimates of Stage I existing development load reduction requirements, the Stage I credits at the wastewater treatment plants exceed total Stage I existing development load reduction requirements by close to a factor of 10.

The three major wastewater treatment plants in the basin (North Durham Water Reclamation Facility, South Granville Water and Sewer Authority, and Town of Hillsborough) operate in good standing with performance records that provide reasonable assurance to DWR that Stage I nutrient load reductions would be met under a combined compliance system. The IAIA is intended to focus on implementation of additional practices to further offset nutrient loading impacts from existing development or to undertake actions that provide water quality benefits within the watershed and Falls Lake. This integrated watershed approach includes a broad set of actions that expand the state's existing set of approved nutrient reduction practices.

The IAIA is an investment-based approach that relies on a list of approved, eligible practices and minimum funding commitment levels by participating jurisdictions. The eligible practices have been identified and included in the IAIA Program Document in consultation with DWR and other stakeholders, including environmental advocacy groups, to ensure their implementation will result in nutrient reductions or water quality benefits. The eligible practices under the IAIA expands the list of practices provided Table 2 to add actions that have a known water quality benefit but for which nutrient calculation methods have not been approved (e.g., land conservation in high priority areas, repair and replacement of leaky wastewater infrastructure, septic system inspection and pump out programs, fertilizer application education programs, pet waste education and pick-up stations). Taking into consideration actions on point source nutrient reductions already achieved and the provisions of the

IAIA, this approach provides reasonable assurance to DWR that Stage I loading reduction requirements have been met and that continued progress toward nutrient reductions will be made. It is anticipated that participants in the IAIA will develop projects through their own jurisdictional authority, under an interlocal agreement where two or more jurisdictions collaborate on a project, or through local organizations such as Soil and Water Conservation Districts, County Health Departments, conservation trusts, etc. (as specified in the IAIA program guidelines). Nutrient offset credits can also be obtained from private nutrient offset banks or the Division of Mitigation Services. The costs for acquisition of these credits would also apply to the participating jurisdiction's financial commitment under the IAIA.

To demonstrate compliance with the Rule, participants of the IAIA or any similar combined compliance approach shall submit the following information to the Division in lieu of local program content requirements in Section 2 but adhering to the implementation process timeline discussed in Section 5.1:

- A joint statement of intent approved by all participating jurisdictions or entities.
- A joint program description with general guidelines and a list of practices and activities that are eligible for IAIA implementation
- A commitment of minimum funding levels by each participant within a fiscal year (July 1 to the following June 30) with ongoing participation based on annual renewals
- An estimate of the **combined** watershed-wide Stage I existing development load reduction needs and an estimate of the **combined** watershed-wide post-baseline reductions already achieved for participating jurisdictions pursuant to the Falls Lake Wastewater and Existing Development Stormwater rules. All wastewater reductions achieved since the baseline period will be included.
- A summary of the previous three years of point source nutrient loading compared to baseline loading and Stage I wasteload allocations to provide reasonable assurance that the combined nutrient reductions will continue to meet or exceed the combined Stage I loading offset needs for the duration of the IAIA.
- Demonstration of compliance with Sub-Items (4)(a) or (b) of Rule .0278, which can be accomplished with a brief description of relevant programs or activities being implemented (e.g., heightened permitting or land use requirements, education programs, recurring program expenditures, expenditures to conserve land making significant contribution to the maintenance of existing water quality against new sources of nutrient loading) by the applicable jurisdictions. Programs or activities implemented to meet these requirements are considered eligible practices under the IAIA and therefore recognized in the combined compliance approach.

Upon implementation, IAIA participants shall provide the following information annually:

- An updated list of membership for the preceding year, and any resulting changes to funding levels, and an updated list of membership for the coming year.
- An updated summary of point source loading for the previous three years.
- Annual reports from each participant documenting the investment amounts, the practices funded, location of projects, funding partners, anticipated project implementation duration in years, and in-kind matches for technical service hours or equipment use if claimed as part of the investment, and

- Joint annual reports summarizing the compliance for each individual local government and the group.

4.2 Programs Outside the IAIA

Jurisdictions in the Falls Lake Watershed that do not participate in the IAIA will be required to comply with the Rule by submitting an individual local program to the Division that meets the requirements described in Section (2) and following the process outlined in Section (5).

4.3 Terminating Participation in Joint Compliance Approach

A local government participating in an approved joint compliance approach may seek to terminate its participation under certain conditions with respect to Rule compliance. Because rule compliance is reviewed annually, withdrawal from the joint compliance group will require a jurisdiction to complete its commitment in the year the jurisdiction withdraws. Specifically regarding the IAIA, this expectation is consistent with its design, which is premised on annual participation commitments. The local government shall provide advance written notice to the Division of the year in which it intends to assume individual compliance, and will be required to have a Division-approved individual local program in place at the start of that year. Division approval will be based on meeting the requirements of Items (3) and (4) of the Rule as outlined in Section 2.0. This will ensure that there will be no lapse in implementing the requirements of the rule. Parties interested in making a major implementation change such as this are encouraged to reach out to the Division as early as possible to coordinate the transition from a joint compliance approach to a local program approach.

5.0 Process for Developing and Implementing Load Reduction Programs

Pursuant to the Rule Implementation section of the Rule, Item (7)(a), Division Planning staff developed this model program in coordination with local governments and other watershed interests. Item (7) also sets out a timeline and process for implementing the rule.

For both individual local and joint compliance programs, following Commission approval of programs, the Division expects to assist them as needed, participate in implementation activities as available, review annual reports to monitor progress and conduct periodic audits of program performance to support continued compliance.

Once implementation is underway, Item (7)(e) of the Rule requires annual reporting from each jurisdiction, whether they are part of a joint compliance program or implementing individually. Annual reporting requirements for joint and individual programs are addressed in Sections 4 and 6, respectively.

5.1 Timeline for Developing Local and Joint Compliance Programs

Per the Rule, development of a local or joint compliance programs is triggered by Commission approval of the model program.

> *(7)(b) "Within six months after the Commission's approval of the Stage I model local program, subject local governments shall submit load reduction programs that meet or exceed the requirements of Items (3) and (4) of this Rule to the Division for review and preliminary approval and shall begin implementation and tracking of measures to reduce nutrient loads from existing developed lands within their jurisdictions;"*

Approval of the model program in January 2021 would mean affected parties will be required to submit ***and*** begin implementing their local programs (or joint program as described in Section 4) by July 2021 while the Division review of the programs for final approval is ongoing. The Rule provides at least 14 months for the Division to review and make recommendations to the Commission. If the Commission disapproves a program, the Rule provides follow-up timelines for revision, resubmittal and return to the Commission.

> *(7)(c) "Within 20 months of the Commission's approval of the Stage I model local program, the Division shall provide recommendations to the Commission on existing development load reduction programs. The Commission shall either approve the programs or require changes based on the standards set out in Item (4) of this Rule.* ***Should*** *the Commission require changes, the applicable local government shall have two months to submit revisions, and the Division shall provide follow-up recommendations to the Commission within two months after receiving revisions;"*
>
> *(7) (d) "Within three months after the Commission's approval of a Stage I local existing development load reduction program, the local government shall complete adoption of and begin implementation of its existing development Stage I load reduction program;"*

Once a local or joint compliance program is approved by the Commission, the affected party can formally complete adoption of their program. The final version of the adopted program may be significantly different than the initial submittal due to revisions based on feedback from the Division and the Commission. Even though the rule provides fourteen months for review by the Division, staff intend to expedite the review process and complete them in a much shorter timeframe in order to allow for more time to implement the approved program before the end of Stage I.

5.2 Implementing Local Programs

The following guidance only applies to the implementation of individual local programs. Implementation of joint programs is addressed in Section 4.

5.2.1 Individual Practice Approvals, Site Visits and Credit Release for Local Programs

The Division does not intend to review and approve individual practice installations. Local programs are invited to notify Division staff of new installations as they see fit for potential site visit interests. Otherwise, the Division may contact programs after review of annual reports to seek further information or to arrange site visits. Notification is not required to the Division for installation stages.

Credit release is currently required only for the *Riparian Reforestation on Agricultural Land* practice, as specified in the Nutrient Offset rule, 2B .0703. Future ecosystem restoration practices may also involve a credit release schedule to provide assurance of functional establishment.

Local programs are expected to calculate presumptive credit for each practice implemented using the approved method in place at the time, to retain that information and make it available for Division review as requested, and to provide summary information on practices implemented in each annual report as detailed in Section 6. Once crediting is submitted to the Division, installed practices retain that credit value for their agreed lifetime, provided they are operated and maintained according to practice specifications (refer to the Nutrient Catalog for fuller discussion of credit stability). Where the function of a practice becomes compromised by determination of the local program or the Division, the parties will need to reconsider the associated credit assignment accordingly.

5.2.2 Practice Implementation, Verification, Documentation and Audits for Local Programs

Local programs are expected to maintain all necessary documentation on practice installations and to make it available for Division review upon reasonable notice. For SCMs, this would include the range of documentation required for new development installations, including certification from the designer that the practice was installed according to plan and that the plans met minimum design requirements. For all practices, this would include nutrient credit calculations and inspection and maintenance records.

The following guidance is offered regarding documentation of practice implementation. The implementation of practices can be considered to involve three stages: Implementation and initial confirmation of performance, regular inspection, maintenance and repair and long-term re-verification of performance. Programs should establish protocols for documenting each of these stages, retaining their documentation and tracking this information for internal purposes, for annual reporting and for Division audits or other inquiries. Programs should be able to demonstrate that practices meet the appropriate Division-approved design standards for which nutrient credit accounting has been established. For example, parties should plan to conduct inspections to field-verify and document the

successful implementation of newly installed practices. For structural measures, this would include a field review that confirms the practice was properly constructed to Division design standards or Division-approved alternatives for such things as proper sizing for drainage area, proper routing of stormwater, demonstration of hydraulic or other key physical functions as intended and structural integrity as well as reasonable expectation of sustained function for life of practice. Management measures should also be assessed to determine successful implementation according to the approved design specifications for each measure.

Inspections should be conducted to provide periodic review of a practice's condition and functioning status. Requirements for regular inspections are usually laid out in Operation and Maintenance Manuals or Agreements. The program should keep records of these inspections along with records of maintenance and repair activities.

Reverification of practice performance to renew nutrient credit award is currently required for two practices: *Cattle Exclusion* and *Soil Improvement*. Both are 5-year, term practices that require reverification of performance to renew credit. Three other Division-approved practices are annual, retrospective credit in nature, and thus could be said to require annual renewal: Streetsweeping; Stormdrain Cleaning; and certain Remedies for Illicit Discharges. Regarding permanent practices such as SCMs and Riparian Reforestation on Agricultural Land, the Division encourages local programs to consider reverifying performance on a 10-year basis, and including notice of such for specific practices to the Division in their annual reports.

DWR expects to conduct periodic program audits to ensure implementation quality, consistency, and longevity. Staff will identify a set of interests in advance, coordinate schedule and time requirements with local programs accordingly, and provide documentation of findings. Findings may include request for corrective action.

5.3 Special Implementation Considerations for Local Programs

Sub-Items (4)(a) and (b) and (c) of the Rule include unique program requirements for jurisdictions located in the Eno River and Little River subwatersheds or any subwatershed with chlorophyll a levels exceeding 40 micrograms/liter in more than seventy-five percent of the monitoring events in a given year.

> *(a) "Jurisdictions in the Eno River and Little River subwatersheds shall, as a part of their Stage I load reduction programs, begin and continuously implement a program to reduce loading from discharging sand filters and malfunctioning septic systems discharging into waters of the State within those jurisdictions and subwatersheds;"*
>
> *(b) "Jurisdictions within any Falls subwatershed in which chlorophyll a levels have exceeded 40 micrograms/liter in more than seventy-five percent of the monitoring events in any calendar year shall, as part of their Stage I load reduction programs, begin and continuously implement a*

program to reduce nutrient loading into the waters of the State within those jurisdictions and that subwatersheds;"

(c) "The total amount of nutrient loading reductions in Stage I is not increased for local jurisdictions by the requirements to add specific program components to address loading from malfunctioning septic systems and discharging sand filters or high nutrient loading levels pursuant to Sub-Items (4)(a) and (b) of this Rule."

Demonstration of compliance with these provisions can be accomplished with a description of relevant programs or activities in the implementation program (e.g., heightened permitting or land use requirements, education programs, recurring program expenditures).

5.4 Updating Local Programs

As more cost-effective measures are identified, or more suitable sites become available, affected parties have the flexibility of modifying their implementation plan and submitting a revised local program, or addendum to the program, to the Division for approval.

(4)(g) A local government may, at any time after commencing implementation of its load reduction program, submit program revisions to the Division for approval based on identification of more cost-effective strategies or other factors not originally recognized;

When the model program is brought to the Commission, the Division plans to request delegation of authority from the Commission to the Director for such program revisions. This would allow for a shorter turnaround time on review and approval of revised plans.

Affected parties are encouraged to notify the Division as early as possible if they identify the need to update their plan so the Division can provide assistance and answer any questions that come up in the process. The Division will plan to notify the affected party of approval of a modified plan, or request more information to complete its review, within 30 days of receiving a revised plan. During review of a revised plan, to maintain compliance with the Rule, the affected party shall continue implementing their current approved plan.

6.0 Annual Reporting for Local Programs

Item (7)(e) of the Rule requires affected parties to track and report on their ongoing progress towards achieving their load reduction requirements by submitting annual reports to the Division.

> *(7)(e) "Upon implementation of the programs required under Item (4) of this Rule, local governments shall provide annual reports to the Division documenting their progress in implementing those requirements within three months following each anniversary of program implementation date until such time the Commission determines they are no longer needed to ensure maintenance of reductions or that standards are protected. Annual reports shall include accounting of total annual expenditures, including local government funds and any state and federal grants used toward load reductions achieved from existing developed lands. Local governments shall indefinitely maintain and ensure performance of implemented load-reducing measures;"*

These annual reports will document the details of implementation activities for the previous year, demonstrating ongoing compliance with the rule. Annual reports will also provide insight for future implementation planning efforts.

The remainder of this section outlines the types of information and analysis for individual local programs to include in annual report submittals. The proposed Falls IAIA combined compliance approach does not rely on the types of nonpoint source practices assumed in this section, and reporting requirements for that combined compliance program are described separately in Section 4. That said, any local government that may consider separating from the Falls IAIA compliance group at some point may want to consider compiling the following types of information to support their individual program.

6.1 Required Information

Annual Reports for local programs shall address activities conducted from July 1st through June 30th of each reporting cycle. To satisfy the Rule requirement to document progress, reports shall contain the following information. References to reductions and increases apply to both nitrogen and phosphorus:

Changes: Practices Initiated, Renewed, and Terminated during Reporting Cycle

- Types and numbers of activities initiated, renewed and terminated
  - Includes structural practices, programmatic practices, nutrient offsets and trades
- Estimated annual load reductions (and increases) from each new and renewed (and terminated) activity (lb/yr)
- Duration of anticipated loading reductions for each new and renewed activity (yrs)
- Type and number of practices planned for credit renewal, and annual load reductions affected (lb/yr)

Summary Tracking of Progress

- Summary of load reductions achieved by new and renewed practices, load increases from terminated practices, and net change for reporting cycle (lb/yr)
- Adjustments to allocations & load reduction needs via annexation (lb/yr)
- Summary tabulation of load reduction progress: previous reductions continued; net activity changes; and net adjustments via annexation (lb/yr)
- Comparison to planned load reduction target in approved program (lb/yr)
- Total annual expenditures (Including Local Government funds and State & Federal Grants)

6.2 Requested Information

To assist the Division's understanding of program implementation efforts and challenges, the Division requests that local governments also address the following additional aspects of program implementation in each reporting cycle:

Inspection and maintenance activities and issues

- Numbers of types of practices inspected relative to cumulative number of practices
- Summary of maintenance and repairs performed
- Parties performing the actions

Evaluation of implementation challenges or obstacles encountered

- Issues encountered
- Actions taken / Additional resource needs

Summary of anticipated activities for the next reporting period

- Practices planned for next reporting cycle
- Anticipated reductions (lb/yr)
- Comparison of current reductions & planned reductions to overall reduction needs

6.3 Report Due Date

To allow adequate time for affected parties to compile and process the information for each reporting cycle annual reports are to be submitted by October 31st of each year. The Division supports consolidating reporting requirements to the greatest extent feasible and believe an October timeframe would allow affected parties to report the information above as an addendum to their Phase II Stormwater or New Development Stormwater reports if they find that advantageous. Affected parties are encouraged to discuss alternative submittal ideas to consolidate reporting efforts as well as the need for an alternative due date with the Division and shall include the agreed upon date in their local program submittal.

7.0 Practice Design and Implementation Requirements for Local Programs

This section identifies requirements and supporting information sources for practice design and implementation for affected parties implementing individual local programs toward compliance with the Rule. As with annual reporting detailed in Section 6, this content does not pertain to the combined compliance approach described in Section 4 of this Model Program. The proposed Falls IAIA combined compliance approach does not rely on the types of practices addressed in this section, and the implementation requirements for that program are described separately in Section 4. That said, any local government that considers separating from the Falls IAIA compliance group at some point should be familiar with the following requirements for implementation of nonpoint source practices.

7.1 Design and Implementation Requirements

This section assembles known constraints on implementation of practices for credit under the Rule. These constraints derive from the Rule's requirements, from other rules of the Falls strategy, and from the Nutrient Offset rule.

Eligibility: The following threshold requirements apply for practices where nutrient credit is sought under the Rule:

- Reference Condition/Baseline:
    - Conceptually, the strategy baseline time period is the reference condition for estimating practice loading reductions. Any individual practice installed subsequent to the baseline time period is potentially eligible for nutrient credit, provided it meets the remaining constraints listed here.
    - For proposed practice installations:
        - On developed lands, the Division will accept the current loading condition at the time of practice installation as the reference condition;
        - On other lands and for programmatic activities, parties should seek best available evidence of baseline condition;
        - In any case, projects need to comply with any applicable regulatory requirements including state, federal and local rules (e.g. buffer rules).
- Eligible Practices:
    - A practice needs to be one of the Division-approved nutrient practice types included in the Nutrient Practices Catalog (in the current version and as amended periodically), and identified there as suitable for either direct Existing Development Rule compliance, New Development Rule compliance, or indirect compliance via trading/offset;
    - Alternatively, a party may seek Division approval for a measure following the Unique Practice Installations guidance in the Catalog.
- Trading/Offset:
    - Parties can utilize trading for the practices listed as trading/offset-eligible in the Nutrient Catalog, following the requirements of the Nutrient Offset rule, 2B .0703, and the Falls trading rule, 2B .0282. See Section 7.3 for further explanation;

    - Specifically regarding spatial concerns, trading/offset practices must follow the watershed geographic constraints identified in the Falls trading rule, 2B .0282 (2)(c);
- The following types of practices are not eligible for credit (consistent with credit-seeking under the Nutrient Offset rule):
    - Practices implemented to comply with another rule of the Falls strategy; and
    - Practices done for compensatory mitigation purposes.

Design and Implementation: With regard to practice design *and* implementation, the following requirements apply where nutrient credit is sought under the Rule:

- The Division's Nutrient Catalog provides a full, referenced listing of available nutrient practices.
- All state-approved nutrient practices have practice-specific design *and* implementation requirements set out in their practice specifications. An individual local program seeking nutrient credit for a practice under the Rule shall adhere to those requirements. Additional information and information references are provided in the Nutrient Catalog.
    - SCMs – Minimum design specifications for SCMs are found in rule 15A NCAC 2H .1050 and individual SCM rules 2H .1051 - .1062. Design elaboration and implementation requirements are provided in the DEMLR Stormwater Design Manual. Nutrient credit specifications are found in the SNAP Tool, SNAP User's Manual, and SCM Crediting Document. Individual local programs shall follow these standards for Existing Development rule compliance;
    - DWR-Approved Practices – documents provide practice-specific design and implementation requirements/references.
- With regard to practice implementation, the Rule, Item (7)(e), simply requires that local programs ensure ongoing maintenance and successful performance of the practices implemented. The practice design references identified above provide requirements to be met for operation, maintenance, repair and inspections.
- Trading/offset practices must follow the implementation requirements of the Nutrient Offset rule, 2B .0703, except for trading in the Falls watershed, where the Falls trading rule, 2B .0282;
- Both permanent and term practices may be used for credit. Practice durations are identified in their design specifications and are summarized in the Nutrient Practices Catalog;
- To claim credit for a practice, while a range of entities may install it, the regulated party(ies) seeking credit must ensure the continued performance of the practice for the duration of desired credit.

7.2 SCM Design and Credit Differences for Existing Development

When installing retrofit SCMs to receive nutrient reduction credit toward compliance with the Existing Development Rule, the following differences from new development post-construction requirements are recognized:

- The SCM sizing does not need to handle 100% of design storm volume. For Existing Development, many SCMs may deviate from the definition of "Runoff treatment" set forth in 15A NCAC 02H .1002 (43) in the fraction of the runoff generated by the required storm depth

over the catchment area that is handled by the SCM. Retrofit SCMs may be designed to handle a volume ranging between 50% and 200% of the design storm runoff for the catchment, and the SNAP Tool can calculate the associated credit. However, certain SCMs , as identified in the Tool, do not have this flexibility and must adhere to treating 100% of the design storm runoff volume. Practice-by-practice under- and over-sizing credit is detailed in the SCM Credit Document and programmed into the SNAP Tool.

- While the conceptual reference condition for crediting practices is the baseline time period, for the installation of SCMs on developed lands, the Division will accept the existing loading condition at the time of practice installation as the reference condition.
- Guidance for crediting of various scenarios involving older SCMs, SCMs nested in the landscape, and SCMs that do not meet MDC is provided in the Nutrient Catalog.

7.3 Trading

Parties subject to the Falls Existing Development Rule have the option of meeting their load reduction by obtaining or purchasing credits for nutrient load-reducing activities conducted by other parties or third party sellers. This allows flexibility for the regulated community to identify the most cost effective means to obtain their required nutrient reductions. The cross-strategy nutrient offset rule (15A NCAC 02B .0703) is the primary rule governing the creation of nutrient offset credits and includes procedural requirements for nutrient offset credit transactions. The Falls nutrient management strategy also contains a stand-alone trading rule (15A NCAC 02B .0282), that explicitly authorizes trading for all regulated parties according to specific conditions. Together these two rules provide the combined criteria guiding trades under the Existing Development Rule.

The details of any executed trades, including the type of nutrient reducing activity and duration and credit amount of the trade or nutrient offset credit purchase shall be included as part of the annual reporting process described in Section 6.0.

Appendix A - Lists of Affected Parties

Local Governments in Falls Lake Watershed

Municipalities	Counties
Butner	Durham
Creedmoor	Franklin
Durham	Granville
Hillsborough	Orange
Raleigh	Person
Roxboro	Wake
Stem	
Wake Forest	

State & Federal Entities in Falls Lake Watershed

State & Federal Entities	Acres		Acres
US Army Corps of Engineers	24,844	**Health & Human Services**	
Agriculture and Consumer Services		• Butner Town Complex	20
• Food Distribution Warehouse	13	**Division of Motor Vehicles**	
• Plant Industry Site Durham County	76	• Durham District Office	3
• Umstead Farm Unit	4,165	**State Hospitals**	
Crime Control & Prevention		• John Umstead Hospital	1,211
• Butner National Guard Armory	24	• Murdoch Center	240
• Butner Public Safety	2	**Juvenile Justice**	
• Durham National Guard Armory	5	• C A Dillion School	96
• Roxboro Highway Patrol Fuel Facility	3	• Training Center	3
• National Guard Training Site	4,980	**Education**	
• Roxboro National Guard Armory	5	School of Math and Science	27
Corrections		**North Carolina Central**	
• Butner Correctional Institution	161	Chancellor's Residence	2
• Durham Correction Center	19	North Carolina State University	3,160
• Orange Correction Center	35	Cattle Field Laboratory	2,391
• Roxboro Satellite Training Center	3	Hill Demonstration Forest	261
• Umstead Correctional Facility	38	Organic Farm Research Center	160
Parks & Recreation			
• Eno River State Park	3,790		
• Occoneechee Mountain Natural Area	32		
• Butner Falls Game Land	68		

Notes:

Does not include NC DOT lands which have separate requirements under the Falls Rules

Acres = Total acres of land NOT acres of development

Appendix B - Applicable Rules

15A NCAC 02B .0278 FALLS WATER SUPPLY NUTRIENT STRATEGY: STORMWATER MANAGEMENT FOR EXISTING DEVELOPMENT

This Rule establishes a staged, adaptive approach by which municipalities and counties shall contribute to achieving the nonpoint source loading objectives of the Falls Reservoir nutrient strategy by reducing or otherwise offsetting nutrient contributions from existing development. It provides local governments three years to develop programs that propose Stage I load reduction actions to the Division and requires local governments to begin and track measures to reduce nutrient loads from existing developed lands within their jurisdiction by January 15, 2014, as specified in Item (7). Local governments shall submit for approval and implement Stage II load reduction programs by January 15, 2021 and submit revised load reductions programs every five years thereafter. The following is the watershed stormwater strategy, as prefaced in Rule 15A NCAC 02B .0275, for existing development in the Falls watershed:

(1) PURPOSE. The purposes of this Rule are as follows:
   (a) To achieve and maintain the nonpoint source nitrogen and phosphorus percentage reduction objectives established for Falls Reservoir in Rule 15A NCAC 02B .0275 on nutrient loading from existing development in the Falls watershed relative to the baseline period defined in that rule. Existing development is defined in Rule 15A NCAC 02B .0276; and
   (b) To protect the water supply, aquatic life, and recreational uses of Falls Reservoir.

(2) APPLICABILITY. This Rule shall apply to municipalities and counties in the Falls watershed as identified in Rule 15A NCAC 02B .0275.

(3) STAGED AND ADAPTIVE IMPLEMENTATION REQUIREMENTS. Local governments shall employ the following staged and adaptive implementation program. All local governments subject to this Rule shall develop load-reducing programs for submission to and approval by the Commission that include the following staged elements and meet the associated minimum standards for each stage of implementation:
   (a) In Stage I, a local government subject to this Rule shall implement a load reduction program that provides estimates of, and plans for offsetting by calendar year 2020, nutrient loading increases from lands developed subsequent to the baseline period and not subject to the requirements of the local government's Falls Lake new development stormwater program. For these post-baseline existing developed lands, the current loading rate shall be compared to the loading rate for these lands prior to development for the acres involved, and the difference shall constitute the load reduction need in annual mass load, in pounds per year. Alternatively, a local government may assume uniform pre-development loading rates of 2.89 pounds/acre/year N and 0.63 pounds/acre/year P for these lands. The local government shall achieve this Stage I load reduction by calendar year 2020. This Stage I program shall meet the criteria defined in Item (4) of this Rule;
   (b) By January 15, 2021 and every five years thereafter, a local government located in the Upper Falls Watershed shall submit and begin implementing a Stage II load reduction program that meets the following requirements:
      (i) If a local government achieves the Stage I reduction objectives described in this Item, a local government's initial Stage II load reduction program shall, at the local government's election, either (A) achieve additional annual reductions in nitrogen and phosphorus loads from existing development greater than or equal to the average annual additional reductions achieved in the last seven years of Stage I or (B) provide for an annual expenditure that equals or exceeds the average annual amount the local government has spent to achieve nutrient reductions from existing development during the last seven years of Stage I. A local government's expenditures shall include all local government funds, including any state and federal grant funds used to achieve nutrient reductions from existing developed lands. The cost of achieving reductions from municipal wastewater treatment plants shall not be included in calculating a local government's expenditures. Notwithstanding this requirement, the EMC may approve an initial Stage II load reduction program based on a lower annual level of reduction or a lower annual

level of expenditure if the local government demonstrates that continuing the prior annual level of reduction or annual level of expenditure is not reasonable or cost-effective given the reductions that will be achieved, or the expenditure would cause serious financial hardship to the local government;

(ii) If Stage I reduction objectives are not achieved, a local government's initial Stage II load reduction program shall, at the local government's election, either (A) achieve additional annual reductions in nitrogen and phosphorus loads from existing development greater than or equal to the average annual additional reductions achieved in the highest three years of implementation of Stage I or (B) provide for an annual expenditure that equals or exceeds the average annual amount the local government has spent to achieve nutrient reductions from existing development during the highest three years of implementation of Stage I. Annual expenditures shall be calculated in accordance with Sub-Item (3)(b)(i) of this Item;

(iii) Subsequent five year programs shall be designed to achieve the Stage II percent load reduction goals from existing developed lands in a local government's jurisdiction, shall include timeframes for achieving these goals and shall meet the requirements of Item (4) of this Rule;

(4) ELEMENTS OF LOAD REDUCTION PROGRAMS. A local government's Stage I and Stage II load reduction program shall address the following elements:

(a) Jurisdictions in the Eno River and Little River subwatersheds shall, as a part of their Stage I load reduction programs, begin and continuously implement a program to reduce loading from discharging sand filters and malfunctioning septic systems discharging into waters of the State within those jurisdictions and subwatersheds;

(b) Jurisdictions within any Falls subwatershed in which chlorophyll a levels have exceeded 40 micrograms/liter in more than seventy-five percent of the monitoring events in any calendar year shall, as part of their Stage I load reduction programs, begin and continuously implement a program to reduce nutrient loading into the waters of the State within those jurisdictions and that subwatersheds;

(c) The total amount of nutrient loading reductions in Stage I is not increased for local jurisdictions by the requirements to add specific program components to address loading from malfunctioning septic systems and discharging sand filters or high nutrient loading levels pursuant to Sub-Items (4)(a) and (b) of this Item;

(d) In preparation for implementation of their Stage I and Stage II load reduction programs, local governments shall develop inventories and characterize load reduction potential to the extent that accounting methods allow of the following by January 2013:

(i) Wastewater collection systems;

(ii) Discharging sand filter systems, including availability of or potential for central sewer connection;

(iii) Properly functioning and malfunctioning septic systems;

(iv) Restoration opportunities in utility corridors;

(v) Fertilizer management plans for local government-owned lands;

(vi) Structural stormwater practices, including intended purpose, condition, potential for greater nutrient control; and

(vii) Wetlands and riparian buffers including potential for restoration opportunities;

(e) A local government's load reduction need shall be based on the developed lands that fall within its general police powers and within the Falls watershed;

(f) The load reduction need shall not include lands under state or federal control, and a county shall not include lands within its jurisdictional boundaries that are under municipal police powers;

(g) Nitrogen and phosphorus loading from existing development, including loading from onsite wastewater treatment systems to the extent that accounting methods allow, shall be calculated by applying the accounting tool described in Sub-Item (7)(a) and shall quantify baseline loads of nitrogen and phosphorus to surface waters in the local government's jurisdiction as well as loading changes post-baseline. It shall also calculate target nitrogen and phosphorus loads and corresponding load reduction needs;

(h) The Commission shall recognize reduction credit for early implementation of policies and practices implemented after January 1, 2007 and before timeframes required by this Rule, to reduce runoff and discharge of nitrogen and phosphorus per Session Law 2009-486. The load reduction program shall identify specific load-reducing practices implemented to date subsequent to the baseline period and for which the local government is seeking credit. It shall estimate load reductions for these practices and their anticipated duration using methods provided for in Sub-Item (5)(a);

(i) The program shall include a proposed implementation schedule that includes annual implementation expectations. The load reduction program shall identify the types of activities the local government intends to implement and types of existing development affected, a prioritization of practices, magnitude of reductions it expects to achieve from each, and the costs and efficiencies of each activity to the extent information is available. The program shall identify the duration of anticipated loading reductions, and may seek activities that provide long-term reductions;

(j) The load reduction program shall identify anticipated funding mechanisms or sources and discuss steps take or planned to secure such funding;

(k) The program shall address the extent of load reduction opportunities intended from the following types of lands:
  (i) Lands owned or otherwise controlled by the local government;
  (ii) Each land use type of privately owned existing development including projected redevelopment, on which the local government's load reduction need is based as described in this Item; and
  (iii) Lands other than those on which the local government's load reduction need is based as described in this Item, including lands both within and outside its jurisdiction and including the use of interlocal agreements and private third party sellers;

(l) The program shall address the extent of load reduction proposed from the following stormwater and ecosystem restoration activities:
  (i) Bioretention;
  (ii) Constructed wetland;
  (iii) Sand filter;
  (iv) Filter strip;
  (v) Grassed swale;
  (vi) Infiltration device;
  (vii) Extended dry detention;
  (viii) Rainwater harvesting system;
  (ix) Treatment of redevelopment;
  (x) Overtreatment of new development;
  (xi) Removal of impervious surface;
  (xii) Retrofitting treatment into existing stormwater ponds;
  (xiii) Off-line regional treatment systems;
  (xiv) Wetland or riparian buffer restoration; and
  (xv) Reforestation with conservation easement or other protective covenant;

(m) The program shall evaluate the load reduction potential from the following wastewater activities:
  (i) Creation of surplus relative to an allocation established in Rule 15A NCAC 02B .0279;
  (ii) Expansion of surplus allocation through regionalization;
  (iii) Connection of discharging sand filters and malfunctioning septic systems to central sewer or replacement with permitted non-discharge alternatives;
  (iv) Removal of illegal discharges; and
  (v) Improvement of wastewater collection systems;

(n) A local government may propose in its load reduction program the use of the following measures in addition to items listed in (l) and (m), or may propose other measures for which it can provide accounting methods acceptable to the Division:
  (i) Redirecting runoff away from impervious surfaces;

(ii) Soil amendments;
(iii) Stream restoration;
(iv) Improved street sweeping; and
(v) Source control, such as pet waste and fertilizer ordinances;

(o) The program shall include evaluation of load reduction potential relative to the following factors:
(i) Extent of physical opportunities for installation;
(ii) Landowner acceptance;
(iii) Incentive and education options for improving landowner acceptance;
(iv) Existing and potential funding sources and magnitudes;
(v) Practice cost-effectiveness (e.g., cost per pound of nutrient removed);
(vi) Increase in per capita cost of a local government's stormwater management program to implement the program;
(vii) Implementation rate without the use of eminent domain; and
(viii) Need for and projected role of eminent domain;

(5) The Commission shall approve a Stage I load reduction program if it is consistent with Items (3) and (4) of this Rule. The Commission shall Approve a Stage II load reduction program if it is consistent with Items (3) and (4) of this Rule unless the Commission finds that the local governments can, through the implementation of reasonable and cost-effective measures not included in the proposed program, meet the Stage II nutrient load reductions required by this Rule by a date earlier than that proposed by the local government. If the Commission finds that there are additional or alternative reasonable and cost-effective measures, the Commission may require the local government to modify its proposed program to include such measures to achieve the required reductions by the earlier date. If the Commission requires such modifications, the local government shall submit a modified program within two months. The Division shall recommend that the Commission approve or disapprove the modified program within three months after receiving the modified program. In determining whether additional or alternative load reduction measures are reasonable and cost effective, the Commission shall consider factors identified in Sub-Item (4)(o) of this Rule. The Commission shall not require additional or alternative measures that would require a local government to:
(a) Install or require installation of a new stormwater collection system in an area of existing development unless the area is being redeveloped;
(b) Acquire developed private property; or
(c) Reduce or require the reduction of impervious surfaces within an area of existing development unless the area is being redeveloped.

(6) A municipality shall have the option of working with the county or counties in which it falls, or with another municipality or municipalities within the same subwatershed, to jointly meet the loading targets from all lands within their combined jurisdictions within a subwatershed. A local government may utilize private or third party sellers. All reductions involving trading with other parties shall meet the requirements of Rule 15A NCAC 02B .0282.

(7) RULE IMPLEMENTATION. This Rule shall be implemented as follows:
(a) By July 2013, the Division shall submit a Stage I model local program to the Commission for approval that embodies the criteria described in Items (3)(a) and (4) of this Rule. The Division shall work in cooperation with subject local governments and other watershed interests in developing this model program, which shall include the following:
(i) Model local ordinances as applicable;
(ii) Methods to quantify load reduction requirements and resulting load reduction assignments for individual local governments;
(iii) Methods to account for discharging sand filters, malfunctioning septic systems, and leaking collection systems; and
(iv) Methods to account for load reduction credits from various activities;

(b) Within six months after the Commission's approval of the Stage I model local program, subject local governments shall submit load reduction programs that meet or exceed the requirements of Items (3) and (4) of this Rule to the Division for review and preliminary approval and shall begin implementation and tracking of measures to reduce nutrient loads from existing developed lands within their jurisdictions;

(c) Within 20 months of the Commission's approval of the Stage I model local program, the Division shall provide recommendations to the Commission on existing development load reduction programs. The Commission shall either approve the programs or require changes based on the standards set out in Item (4) of this Rule. Should the Commission require changes, the applicable local government shall have two months to submit revisions, and the Division shall provide follow-up recommendations to the Commission within two months after receiving revisions;

(d) Within three months after the Commission's approval of a Stage I local existing development load reduction program, the local government shall complete adoption of and begin implementation of its existing development Stage I load reduction program;

(e) Upon implementation of the programs required under Item (4) of this Rule, local governments shall provide annual reports to the Division documenting their progress in implementing those requirements within three months following each anniversary of program implementation date until such time the Commission determines they are no longer needed to ensure maintenance of reductions or that standards are protected. Annual reports shall include accounting of total annual expenditures, including local government funds and any state and federal grants used toward load reductions achieved from existing developed lands. Local governments shall indefinitely maintain and ensure performance of implemented load-reducing measures;

(f) By January 15, 2021 and every five years thereafter until accounting determines that assigned load reductions have been achieved, standards are met in the lake, or the Commission takes other actions per Rule 15A NCAC 02B .0275, local governments located in the upper Falls watershed as defined in Item (3) of Rule 15A NCAC 02B .0275 shall submit and begin implementation of a Stage II load reduction program or program revision to the Division. Within nine months after submittal, the Division shall make recommendations to the Commission on approval of these programs. The Commission shall either approve the programs or require changes based on the standards set out in this Rule. If the Commission require changes, the applicable local governments shall submit revisions within two months, and the Division shall provide follow-up recommendations to the Commission within three months after receiving revisions. Upon program approval, local governments shall revise implementation as necessary based on the approved program;

(g) A local government may, at any time after commencing implementation of its load reduction program, submit program revisions to the Division for approval based on identification of more cost-effective strategies or other factors not originally recognized;

(h) Once either load reductions are achieved per annual reporting or water quality standards are met in the lake per Rule 15A NCAC 02B .0275, local governments shall submit programs to ensure no load increases and shall report annually per Sub-Item (e) on compliance with no increases and take additional actions as necessary;

(i) At least every five years after the effective date, the Division shall review the accounting methods stipulated under Sub-Item (7)(a) to determine the need for revisions to those methods and to loading reductions assigned using those methods. Its review shall include values subject to change over time independent of changes resulting from implementation of this Rule, such as untreated export rates that may change with changes in atmospheric deposition. It shall also review values subject to refinement, such as nutrient removal efficiencies.

History Note: *Authority G.S. 143-214.1; 143-214.5; 143-214.7; 143-214.12; 143-214.21; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8B; 143B-282(c); 143B-282(d); S.L. 2005-190; S.L. 2006-259; S.L. 2009-337;*
Eff. January 15, 2011 (this permanent rule replaces the temporary rule approved by the RRC on December 16, 2010).

15A NCAC 02B .0281 FALLS WATER SUPPLY NUTRIENT STRATEGY: STORMWATER REQUIREMENTS FOR STATE AND FEDERAL ENTITIES

The following is the stormwater strategy, as prefaced in Rule 02B .0275, for the activities of state and federal entities within the Falls watershed.

(1) PURPOSE. The purposes of this Rule are as follows.
   (a) To achieve and maintain, on new non-road development lands, the nonpoint source nitrogen and phosphorus percentage reduction objectives established for Falls Reservoir in 15A NCAC 02B .0275 relative to the baseline period defined in Rule, to provide the highest practicable level of treatment on new road development, and to achieve and maintain the percentage objectives on existing developed lands by reducing loading from state-maintained roadways and facilities, and from lands controlled by other state and federal entities in the Falls watershed;
   (b) To ensure that the integrity and nutrient processing functions of receiving waters and associated riparian buffers are not compromised by erosive flows from state-maintained roadways and facilities and from lands controlled by other state and federal entities in the Falls watershed; and
   (c) To protect the water supply, aquatic life, and recreational uses of Falls Reservoir.

(2) APPLICABILITY. This Rule shall apply to all existing and new development, both as defined in 15A NCAC 02B .0276, that lies within or partially within the Falls watershed under the control of the NC Department of Transportation (NCDOT), including roadways and facilities, and to all lands controlled by other state and federal entities in the Falls watershed.

(3) NON-NCDOT REQUIREMENTS. With the exception of the NCDOT, all state and federal entities that control lands within the Falls watershed shall meet the following requirements:
   (a) For any new development proposed within their jurisdictions that would disturb one quarter acre or more, non-NCDOT state and federal entities shall develop stormwater management plans for submission to and approval by the Division;
   (b) The non-NCDOT state or federal entity shall include measures to ensure maintenance of best management practices (BMPs) implemented as a result of the provisions in Sub-Item (a) of this Item for the life of the development; and
   (c) A plan to ensure enforcement and compliance with the provisions in Sub-Item (4) of this Rule for the life of the new development.

(4) PLAN APPROVAL REQUIREMENTS. A developer's stormwater plan shall not be approved unless the following criteria are met:
   (a) Nitrogen and phosphorus loads contributed by the proposed new development activity shall not exceed the following unit-area mass loading rates for nitrogen and phosphorus, respectively, expressed in units of pounds/acre/year: 2.2 and 0.33. Proposed development that would replace or expand structures or improvements that existed as of December 2006, the end of the baseline period, and that would not result in a net increase in built-upon area shall not be required to meet the nutrient loading targets or high-density requirements except to the extent that the developer shall provide stormwater control at least equal to the previous development. Proposed development that would replace or expand existing structures or improvements and would result in a net increase in built-upon area shall have the option either to achieve at least the percentage loading reduction objectives stated in 15A NCAC 02B .0275 as applied to nitrogen and phosphorus loading from the previous development for the entire project site, or to meet the loading rate targets described in this item. These requirements shall supersede those identified in 15A NCAC 02B .0104(q). The developer shall determine the need for engineered stormwater controls to meet these loading rate targets by using the loading calculation method called for in Sub-Item (4)(a) of 15A NCAC 02B .0277 or other equivalent method acceptable to the Division;
   (b) The developer shall have the option of offsetting part of their nitrogen and phosphorus loads by implementing or funding offsite offset measures. Before using an offsite offset option, a development shall implement onsite structural stormwater controls that achieve one of the following levels of reductions:
      (i) Proposed new development activity disturbing at least one quarter acre but less than one acre of land, except as stated in this Item, shall achieve 30 percent or more of the needed load reduction in both nitrogen and phosphorus loading onsite

and shall meet any requirements for engineered stormwater controls described in this item;

(ii) Except as stated in this Item, proposed new development activity that disturbs one acre of land or more shall achieve 50 percent or more of the needed load reduction in both nitrogen and phosphorus loading onsite and shall meet any requirements for engineered stormwater controls described in this Item; or

(iii) Proposed development that would replace or expand structures or improvements that existed as of December 2006, the end of the baseline period, and that increases impervious surface within a designated downtown area, regardless of area disturbed, shall achieve 30 percent of the needed load reduction in both nitrogen and phosphorus onsite, and shall meet any requirements for engineered stormwater controls described in this Item;

(c) Offsite offsetting measures shall achieve at least equivalent reductions in nitrogen and phosphorus loading to the remaining reduction needed onsite to comply with the loading rate targets set out in this Item. A developer may use any measure that complies with the requirements of Rules .0703 and .0282 of this Subchapter;

(d) Proposed new development subject to NPDES, water supply, and other state-mandated stormwater regulations shall comply with those regulations and with applicable permit limits in addition to the other requirements of this sub-item. Proposed new development in any water supply watershed in the Falls watershed designated WS-II, WS-III, or WS-IV shall comply with the density-based restrictions, obligations, and requirements for engineered stormwater controls, clustering options, operation and maintenance responsibilities, vegetated setbacks, land application, and landfill provisions described in Sub-Items (3)(b)(i) and (3)(b)(ii) of the applicable rule among 15A NCAC 02B .0214 through .0216. Provided, the allowance in water supply watershed rules for 10 percent of a jurisdiction to be developed at up to 70 percent built-upon area without stormwater treatment shall not be available in the Falls watershed;

(e) Stormwater systems shall be designed to control and treat at a minimum the runoff generated from all surfaces in the project area by one inch of rainfall. The treatment volume shall be drawn down pursuant to standards specific to each practice as provided in the July 2007 version of the Stormwater Best Management Practices Manual published by the Division, or other at least technically equivalent standards acceptable to the Division;

(f) To ensure that the integrity and nutrient processing functions of receiving waters and associated riparian buffers are not compromised by erosive flows, at a minimum, the new development shall not result in a net increase in peak flow leaving the site from pre-development conditions for the one-year, 24-hour storm event;

(g) New development may satisfy the requirements of this Rule by meeting the post-development hydrologic criteria set out in Chapter 2 of the North Carolina Low Impact Development Guidebook dated June 2009, or the hydrologic criteria in the most recent version of that guidebook; and

(h) Proposed new development shall demonstrate compliance with the riparian buffer protection requirements of 15A NCAC 02B .0233 and .0242.

(5) NON-NCDOT STAGED AND ADAPTIVE IMPLEMENTATION REQUIREMENTS. For existing development, non-NCDOT state and federal entities shall develop and implement staged load reduction programs for achieving and maintaining nutrient load reductions from existing development based on the standards set out in this Item. Such entities shall submit these load-reducing programs for approval by the Commission that include the following staged elements and meet the minimum standards for each stage of implementation:

(a) In Stage I, entities subject to this rule shall implement a load reduction program that provides estimates of, and plans for offsetting by calendar year 2020, nutrient loading increases from lands developed subsequent to the baseline (2006) and not subject to the requirements of the Falls Lake new development stormwater program. For these existing developed lands, the current loading rate shall be compared to the loading rate for these lands prior to development for the acres involved, and the difference shall constitute the load reduction need in annual mass load, in pounds per year. Alternatively, a state or federal entity may assume uniform pre-development loading rates of 2.89 pounds per acre per year

N and 0.63 pounds per acre per year P for these lands. The entity shall achieve this stage one load reduction by calendar year 2020. This Stage I program shall meet the criteria defined in Item (4) of 15A NCAC 02B.0278; and

(b) By January 15, 2021, and every five years thereafter, a state or federal entity located in the Upper Falls Watershed as defined in Item (11) of 15A NCAC 02B .0276 shall submit and begin implementing a Stage II load reduction program or revision designed to achieve the percent load reduction objectives from existing developed lands under its control, that includes timeframes for achieving these objectives and that meets the criteria defined in Items (5) and (6) of this Rule.

(6) ELEMENTS OF NON-NCDOT LOAD REDUCTION PROGRAMS. A non-NCDOT state or federal entity load reduction program shall address the following elements:

(a) State and federal entities in the Eno River and Little River subwatersheds shall, as part of their Stage I load reduction programs, begin and continuously implement a program to reduce loading from discharging sand filters and malfunctioning septic systems owned or used by state or federal agencies discharging into waters of the State within those subwatersheds;

(b) State and federal entities in any Falls subwatershed in which chlorophyll a levels have exceeded 40 ug/L in more than seventy-five percent of the monitoring events in any calendar year shall, as part of their Stage I load reduction programs, begin and continuously implement a program to reduce nutrient loading into the waters of the State within that subwatersheds;

(c) The total amount of nutrient loading reductions in Stage I is not increased for state and federal entities by the requirements to add specific program components to address loading from malfunctioning septic systems and discharging sand filters or high nutrient loading levels pursuant to Sub-Items (a) and (b) of this Item;

(d) In preparation for implementation of their Stage I and Stage II load reduction programs, state and federal entities shall develop inventories and characterize load reduction potential to the extent that accounting methods allow for the following:

(i) Wastewater collection systems;

(ii) Discharging sand filter systems, including availability of or potential for central sewer connection;

(iii) Properly functioning and malfunctioning septic systems;

(iv) Restoration opportunities in utility corridors;

(v) Fertilizer management plans for state and federally owned lands;

(vi) Structural stormwater practices, including intended purpose, condition, potential for greater nutrient control; and

(vii) Wetlands and riparian buffers including potential for restoration opportunities.

(e) A state or federal entities load reduction need shall be based on the developed lands owned or used by the state or federal entity within the Falls watershed;

(f) Nitrogen and phosphorous loading from existing developed lands, including loading from onsite wastewater treatment systems to the extent accounting methods allow, shall be calculated by applying the accounting tool described in Item (13) and shall quantify baseline loads of nitrogen and phosphorus to surface waters from the lands under the entity's control as well as loading changes post-baseline. It shall also calculate target nitrogen and phosphorus loads and corresponding reduction needs;

(g) Nitrogen and phosphorus loading from existing developed lands, including loading from onsite wastewater treatment systems to the extent accounting methods allow, shall be calculated by applying the accounting too described in Item (13) of this Rule and shall quantify baseline loads of nitrogen and phosphorus to surface waters from state and federal entities as well as loading changes post-baseline. It shall calculate target nitrogen and phosphorus loads and corresponding load reduction needs;

(h) The Commission shall recognize reduction credit for implementation of policies and practices implemented after January 1, 2007 and before January 15, 2011, to reduce runoff and discharge of nitrogen and phosphorus per Session Law 2009-486. The load reduction program shall identify specific load-reducing practices implemented subsequent to the

baseline period and for which the entity is seeking credit. It shall estimate load reductions for these practices and their anticipated duration using methods provided for in Item (13);

(i) The program shall include a proposed implementation schedule that includes annual implementation expectations. The load reduction program shall identify the types of activities the state or federal entity intends to implement and types of existing development affected, relative proportions or prioritization of practices, relative magnitude of reductions it expects to achieve from each, and the relative costs and efficiencies of each activity to the extent information is available. The program shall identify the duration of anticipated loading reductions, and may seek activities that provide long-term reductions;

(j) The load reduction program shall identify anticipated funding mechanisms or sources and discuss steps taken or planned to secure such funding;

(k) The program shall address the extent of load reduction opportunities intended from the following types of lands:
- (i) Lands owned or otherwise controlled by the state or federal entity; and
- (ii) Lands other than those on which the entity's load reduction need is based as described in this Item, including lands both within and outside its jurisdiction and third party sellers.

(l) The program shall address the extent of load reduction proposed from, at a minimum, the following stormwater and ecosystem restoration activities:
- (i) Bioretention;
- (ii) Constructed wetland;
- (iii) Sand filter;
- (iv) Filter Strip;
- (v) Grassed swale;
- (vi) Infiltration device;
- (vii) Extended dry detention;
- (viii) Rainwater harvesting system;
- (ix) Treatment of Redevelopment;
- (x) Overtreatment of new development;
- (xi) Removal of impervious surface;
- (xii) Retrofitting treatment into existing stormwater ponds;
- (xiii) Off-line regional treatment systems;
- (xiv) Wetland or riparian buffer restoration; and
- (xv) Reforestation with conservation easement or other protective covenant.

(m) The program shall evaluate the load reduction potential from the following wastewater activities:
- (i) Creation of surplus relative to an allocation established in 15A NCAC 02B .0279;
- (ii) Expansion of surplus allocation through regionalization;
- (iii) Connection of discharging sand filters and malfunctioning septic systems to central sewer or replacement with permitted non-discharge alternatives;
- (iv) Removal of illegal discharges; and
- (v) Improvement of wastewater collection systems.

(n) A state or federal entity may propose in its load reduction program the use of the following measures in addition to items listed in (l) and (m), or may propose other measures for which it can provide equivalent accounting methods acceptable to the Division:
- (i) Redirecting runoff away from impervious surfaces;
- (ii) Soil amendments;
- (iii) Stream restoration;
- (iv) Improved street sweeping; and
- (v) Source control, such as waste and fertilizer controls.

(o) The program shall include evaluation of load reduction potential relative to the following factors:
- (i) Extent of physical opportunities for installation;
- (ii) Landowner acceptance;
- (iii) Incentive and education options for improving landowner acceptance;
- (iv) Existing and potential funding sources and magnitudes;

(v) Practice cost-effectiveness (e.g., cost per pound of nutrient removed);
(vi) Increase in per capita cost of a non-NCDOT state or federal entity's stormwater management program to implement the program;
(vii) Implementation rate without the use of eminent domain; and
(viii) Need for and projected role of eminent domain.

(7) The Commission shall approve a non-NCDOT Stage I load reduction program if it meets the requirements of Items (5) and (6) of this Rule. The Commission shall approve a Stage II load reduction program if it meets the requirements of Items (5) and (6) of this Rule unless the Commission finds that the local non-NCDOT state or federal entity can, through the implementation of reasonable and cost-effective measures not included in the proposed program, meet the Stage II nutrient load reductions required by this Rule by a date earlier than that proposed by the non-NCDOT state or federal entity. If the Commission finds that there are additional or alternative reasonable and cost-effective measures, the Commission may require the non-NCDOT state or federal entity to modify its proposed program to include such measures to achieve the required reductions by the earlier date. If the Commission requires such modifications, the non-NCDOT state or federal entity shall submit a modified program within two months. The Division shall recommend that the Commission approve or disapprove the modified program within three months after receiving the modified program. In determining whether additional or alternative load reduction measures are reasonable and cost effective, the Commission shall consider factors including, but not limited to those identified in Sub-Item (6)(o) of this Rule. The Commission shall not require additional or alternative measures that would require a non-NCDOT state or federal entity to:
(a) Install a new stormwater collection system in an area of existing development unless the area is being redeveloped; or
(b) Reduce impervious surfaces within an area of existing development unless the area is being redeveloped.

(8) A non-NCDOT state or federal entity shall have the option of working with the county or counties in which it falls, or with a municipality or municipalities within the same subwatershed, to jointly meet the loading targets from all lands within their combined jurisdictions within a subwatershed. The entity may utilize private or third party sellers. All reductions involving trading with other parties shall meet the requirements of 15A NCAC 02B .0282.

(9) NCDOT REQUIREMENTS. The NCDOT shall develop a single Stormwater Management Program that will be applicable to the entire Falls watershed and submit this program for approval by the Division according to the standards set forth below. In addition, the program shall, at a minimum, comply with NCDOT's then-current stormwater permit. This program shall:
(a) Identify NCDOT stormwater outfalls from Interstate, US, and NC primary routes;
(b) Identify and eliminate illegal discharges into the NCDOT's stormwater conveyance system;
(c) Establish a program for post-construction stormwater runoff control for new development, including new and widening NCDOT roads and facilities. The program shall establish a process by which the Division shall review and approve stormwater designs for new NCDOT development projects. The program shall delineate the scope of vested projects that would be considered as existing development, and shall define lower thresholds of significance for activities considered new development. In addition, the following criteria shall apply:
(i) For new and widening roads, weigh stations, and replacement of existing bridges, compliance with the riparian buffer protection requirements of Rules 15A NCAC 02B .0233 and .0242 shall be deemed as compliance with the purposes of this Rule;
(ii) New non-road development shall achieve and maintain the nitrogen and phosphorus percentage load reduction objectives established in 15A NCAC 02B .0275 relative to either area-weighted average loading rates of all developable lands as of the baseline period defined in 15A NCAC 02B .0275, or to project-specific pre-development loading rates. Values for area-weighted average loading rate targets for nitrogen and phosphorus, respectively, are expressed in units of pounds per acre per year: 2.2 and 0.33. The NCDOT shall determine the need for engineered stormwater controls to meet these loading rate targets by using the loading calculation method called for in Item (13) of this Rule or other equivalent

method acceptable to the Division. Where stormwater treatment systems are needed to meet these targets, they shall be designed to control and treat the runoff generated from all surfaces by one inch of rainfall. Such systems shall be assumed to achieve the nutrient removal efficiencies identified in the July 2007 version of the Stormwater Best Management Practices Manual published by the Division provided that they meet associated drawdown and other design specifications included in the same document. The NCDOT may propose to the Division nutrient removal rates for practices currently included in the BMP Toolbox required under its NPDES stormwater permit, or may propose revisions to those practices or additional practices with associated nutrient removal rates. The NCDOT may use any such practices approved by the Division to meet loading rate targets identified in this Sub-item. New non-road development shall also control runoff flows to meet the purpose of this Rule regarding protection of the nutrient functions and integrity of receiving waters; and

(iii) For new non-road development, the NCDOT shall have the option of offsetting part of their nitrogen and phosphorus loads by implementing or funding offsite management measures. Before using an offsite offset option, a development shall implement structural stormwater controls that achieve 50 percent or more of the needed load reduction in both nitrogen and phosphorus loading onsite and shall meet any requirements for engineered stormwater controls described in this Item. Offsite offsetting measures shall achieve at least equivalent reductions in nitrogen and phosphorus loading to the remaining reduction needed onsite to comply with the loading rate targets set out in this Item. The NCDOT may use any measure that complies with the requirements of Rules .0703 and .0282 of this Subchapter.

(d) Establish a program to identify and implement load-reducing opportunities on existing development within the watershed. The long-term objective of this effort shall be for the NCDOT to achieve the nutrient load objectives in 15A NCAC 02B .0275 as applied to existing development under its control, including roads and facilities:

(i) The NCDOT may achieve the nutrient load reduction objective in 15A NCAC 02B .0275 for existing roadway and non-roadway development under its control by the development of a load reduction program that addresses both roadway and non-roadway development in the Falls watershed. As part of the accounting process described in Item (13) of this Rule, baseline nutrient loads shall be established for roadways and industrial facilities using stormwater runoff nutrient load characterization data collected through the National Pollutant Discharge Elimination System (NPDES) Research Program under NCS0000250 Permit Part II Section G;

(ii) The program shall include estimates of, and plans for offsetting, nutrient load increases from lands developed subsequent to the baseline period but prior to implementation of its new development program. It shall include a technical analysis that includes a proposed implementation rate and schedule. This schedule shall provide for proportionate annual progress toward reduction objectives as practicable throughout the proposed compliance period. The program shall identify the types of activities NCDOT intends to implement and types of existing roadway and non-roadway development affected, relative proportions or a prioritization of practices, and the relative magnitude of reductions it expects to achieve from each;

(iii) The program to address roadway and non-roadway development may include stormwater retrofits and other load reducing activities in the watershed including: illicit discharge removal; street sweeping; source control activities such as fertilizer management at NCDOT facilities; improvement of existing stormwater structures; use of rain barrels and cisterns; stormwater capture and reuse; and purchase of nutrient reduction credits;

(iv) NCDOT may meet minimum implementation rate and schedule requirements by implementing a combination of at least six stormwater retrofits per year for existing development in the Falls watershed or some other minimum amount

based on more accurate reduction estimates developed during the accounting tool development process;

(v) To the maximum extent practicable, retrofits shall be designed to treat the runoff generated from all surfaces by one inch of rainfall, and shall conform to the standards and criteria established in the most recent version of the Division-approved NCDOT BMP Toolbox required under NCDOT's NPDES stormwater permit. To establish removal rates for nutrients for individual practices described in the Toolbox, NCDOT shall submit technical documentation on the nutrient removal performance of BMPs in the Toolbox for Division approval. Upon approval, NCDOT shall incorporate nutrient removal performance data into the BMP Toolbox. If a retrofit is proposed that is not described in the NCDOT BMP Toolbox, then to the maximum extent practicable, such retrofit shall conform to the standards and criteria set forth in the July 2007 version of the Stormwater Best Management Practices Manual published by the Division, or other technically equivalent guidance acceptable to the Division;

(e) Initiate a "Nutrient Management Education Program" for NCDOT staff and contractors engaged in the application of fertilizers on highway rights of way. The purpose of this program shall be to contribute to the load reduction objectives established in 15A NCAC 02B .0275 through proper application of nutrients, both inorganic fertilizer and organic nutrients, to highway rights of way in the Falls watershed in keeping with the most current state-recognized technical guidance on proper nutrient management; and

(f) Address compliance with the riparian buffer protection requirements of 15A NCAC 02B .0233 and .0242 through a Division approval process.

(10) NON-NCDOT RULE IMPLEMENTATION. For all state and federal entities that control lands within the Falls watershed with the exception of the NCDOT, this Rule shall be implemented as follows:

(a) Upon Commission approval of the accounting methods required in Item (13) of this Rule, subject entities shall comply with the requirements of Items (3) and (4) of this Rule;

(b) By July 15, 2013, the Division shall submit a Stage I model local program to the Commission for approval that embodies the criteria described in Items (5) and (6) of this Rule. The Division shall work in cooperation with subject state and federal entities and other watershed interests in developing this model program, which shall include the following:

(i) Methods to quantify load reduction requirements and resulting load reduction assignments for individual entities;

(ii) Methods to account for discharging sand filters, malfunctioning septic systems, and leaking collection systems; and

(iii) Methods to account for load reduction credits from various activities;

(c) Within six months after the Commission's approval of the Stage I model local program, subject entities shall submit load reduction programs that meet or exceed the requirements of Items (5) and (6) of this Rule to the Division for review and preliminary approval and shall begin implementation and tracking of measures to reduce nutrient loads from existing developed lands owned or controlled by the responsible state or federal entity;

(d) Within 20 months of the Commission's approval of the Stage I model local program, the Division shall provide recommendations to the Commission on existing development load reduction programs. The Commission shall either approve the programs or require changes based on the standards set out in Item (4) of this Rule. Should the Commission require changes, the applicable state or federal entity shall have two months to submit revisions, and the Division shall provide follow-up recommendations to the Commission within two months after receiving revisions;

(e) Within three months after the Commission's approval of a Stage I existing development load reduction program, the affected entity shall complete adoption of and begin implementation of its existing development Stage I load reduction program;

(f) Upon implementation of the programs required under Item (4) of this Rule, state and federal entities subject to this Rule shall provide annual reports to the Division documenting their progress in implementing those requirements within three months

following each anniversary of program implementation date until such time the Commission determines they are no longer needed to ensure maintenance of reductions or that standards are protected. State and federal entities shall indefinitely maintain and ensure performance of implemented load-reducing measures;

(g) By January 15, 2021 and every five years thereafter until either accounting determines load reductions have been achieved, standards are met, or the Commission takes other actions per 15A NCAC 02B .0275, state and federal entities located in the upper Falls watershed as defined in Item (3) of 15A NCAC 02B .0275 shall submit and begin implementation of Stage II load reduction program or program revision to the Division. Within nine months after submittal, the division shall make recommendations to the Commission on approval of these programs. The Commission shall either approve the programs or require changes based on the standards set out in this Rule. Should the Commission require changes, the applicable state or federal entity shall submit revisions within two months, and the Division shall provide follow-up recommendations to the Commission within three months after receiving revisions. Upon approval, the state or federal entity shall adjust implementation based on its approved program;

(h) A state or federal entity may, at any time after commencing implementation of its load reduction program, submit program revisions to the Division for approval based on identification of more cost-effective strategies or other factors not originally recognized;

(i) Once either load reductions are achieved per annual reporting or water quality standards are met in the lake per 15A NCAC 02B .0275, state and federal entities shall submit programs to ensure no load increases and shall report annually per Sub-Item (10)(f) on compliance with no increases and take additional actions as necessary; and

(j) Beginning January 2016 and every five years thereafter, the Division shall review the accounting methods stipulated under Sub-Item (10)(a) to determine the need for revisions to those methods and to loading reductions assigned using those methods. Its review shall include values subject to change over time independent of changes resulting from implementation of this Rule, such as untreated export rates that may change with changes in atmospheric deposition. It shall also review values subject to refinement, such as nutrient removal efficiencies.

(11) NCDOT RULE IMPLEMENTATION. For the NCDOT, this Rule, shall be implemented as follows:

(a) By July 2013, the NCDOT shall submit the Stormwater Management Program for the Falls watershed to the Division for approval. This Program shall meet or exceed the requirements in Item (9) of this Rule;

(b) By January 15, 2014, the Division shall request the Commission's approval of the NCDOT Stormwater Management Program;

(c) By January 15, 2014, the NCDOT shall implement the Commission-approved Stormwater Management Program; and

(d) Upon implementation, the NCDOT shall submit annual reports to the Division summarizing its activities in implementing each of the requirements in Item (9) of this Rule. This annual reporting may be incorporated into annual reporting required under NCDOT's NPDES stormwater permit.

(12) RELATIONSHIP TO OTHER REQUIREMENTS. A party may in its program submittal request that the Division accept its implementation of another stormwater program or programs, such as NPDES stormwater requirements, as satisfying one or more of the requirements set forth in Items (4) or (5) of this Rule. The Division shall provide determination on acceptability of any such alternatives prior to requesting Commission approval of programs under this Rule. The party shall include in its program submittal technical information demonstrating the adequacy of the alternative requirements.

(13) ACCOUNTING METHODS. By July 15, 2012, the Division shall submit a nutrient accounting framework to the Commission for approval. This framework shall include tools for quantifying load reduction assignments on existing development for parties subject to this Rule, load reduction credits from various activities on existing developed lands, and a tool that will allow subject parties to account for loading from new and existing development and loading changes due to BMP implementation. The Division shall work in cooperation with subject parties and other watershed interests in developing this framework. The Division shall periodically revisit these accounting

methods to determine the need for revisions to both the methods and to existing development load reduction assignments made using the methods set out in this Rule. It shall do so no less frequently than every 10 years. Its review shall include values subject to change over time independent of changes resulting from implementation of this Rule, such as untreated export rates that may change with changes in atmospheric deposition. It shall also review values subject to refinement, such as BMP nutrient removal efficiencies.

History Note: *Authority G.S. 143-214.1; 143-214.3; 143-214.5; 143-214.7; 143-215.1; 143-215.3; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8B; 143B-282(c); 143B-282(d); S.L. 2005-190; S.L. 2006-259; S.L. 2009-337; S.L. 2009-486;*
Eff. January 15, 2011 (this permanent rule replaces the temporary rule approved by the RRC on December 16, 2010);
Amended Eff. April 1, 2020.

15A NCAC 02B .0282 FALLS WATER SUPPLY NUTRIENT STRATEGY: OPTIONS FOR OFFSETTING NUTRIENT LOADS

PURPOSE. This Rule provides parties subject to other rules within the Falls nutrient strategy with options for meeting rule requirements by obtaining or buying credit for nutrient load-reducing activities conducted by others (sellers). It provides the potential for parties who achieve excess load reductions under the Falls nutrient strategy to recover certain costs by selling such credits, and it provides opportunity for third parties to produce reductions and sell credits. Overall it provides the potential for more cost-effective achievement of strategy reduction objectives. Accounting is required to ensure and track the availability and use of trading credits. This accounting will be compared against compliance accounting required under other rules of the Falls nutrient strategy to ensure that crediting is properly accounted for. This Rule furthers the adaptive management intent of the strategy to protect the water supply, aquatic life, and recreational uses of Falls Reservoir. The minimum requirements for the exchange of load reduction credits are:

(1) PREREQUISITES. The following buyers shall meet applicable criteria identified here and in rules imposing reduction requirements on them before utilizing the option outlined in this Rule:
   (a) Agriculture Rule .0280: Owners of agricultural land shall receive approval from the Watershed Oversight Committee to obtain offsite credit pursuant to the conditions of Sub-Item (7)(b)(vii) of Rule .0280;
   (b) New Development Rule .0277: Developers shall meet onsite reduction requirements enumerated in Sub-Item (4)(b) of Rule .0277 before obtaining offsite credit;
   (c) Wastewater Rule .0279: New and expanding dischargers shall first make all reasonable efforts to obtain allocation from existing dischargers as stated in Sub-Items (7)(a)(ii) and (8)(a)(ii), respectively of Rule .0279; and
   (d) State and Federal Entities Stormwater Rule .0281:
      (i) Non-DOT entities shall meet onsite new development reduction requirements enumerated in Sub-Item (4)(b) of Rule .0281; and
      (ii) NC DOT shall meet onsite non-road new development reduction requirements enumerated in Sub-Item (9)(c) of Rule .0281 before obtaining offsite credit.

(2) The party seeking approval to sell load reduction credits pursuant to this Rule shall demonstrate to the Division that such reductions meet the following criteria:
   (a) Load reductions eligible for credit shall not include reductions that result from actions required to mitigate nutrient load-increasing actions under any regulation, except where a rule in this Section expressly allows such credit; and
   (b) The party seeking to sell credits shall define the nature of the activities that would produce reductions and define the magnitude and duration of those reductions to the Division, including addressing the following items:
      (i) Quantify and account for the relative uncertainties in reduction need estimates and load reduction estimates;
      (ii) Ensure that load reductions shall take place at the time and for the duration in which the reduction need occurs; and
      (iii) Demonstrate means adequate for assuring the achievement and claimed duration of load reduction, including the cooperative involvement of any other involved parties;
   (c) Geographic Restrictions. Eligibility to use load reductions as credit is based on the following geographic criteria:
      (i) Impacts in the upper Falls watershed as defined in Item (19) of 15A NCAC 02B .0276 may be offset only by load reductions achieved in the upper Falls watershed; and
      (ii) Impacts in the lower Falls watershed as defined in Item (20) of 15A NCAC 02B .0276 shall be offset by load reductions achieved anywhere within the Falls watershed.

(3) The party seeking approval to sell load reduction credits shall provide for accounting and tracking methods that ensure genuine, accurate, and verifiable achievement of the purposes of this Rule, and shall otherwise meet the requirements of Rule .0703 of this Subchapter, which establishes procedural requirements for nutrient offset payments. The Division shall work cooperatively with interested parties at their request to develop such accounting and tracking methods to support the requirements of Item (2) of this Rule.

(4) Local governments have the option of combining their reduction needs from NPDES dischargers assigned allocations in 15A NCAC 02B .0279 and existing development as described in 15A NCAC 02B .0278, including loads from properly functioning and malfunctioning septic systems and discharging sand filters, into one reduction and allocation requirement and meet them jointly.

(5) Proposals for use of offsetting actions as described in this Rule shall become effective after determination by the Director that the proposal contains adequate scientific or engineering standards or procedures necessary to achieve and account for load reductions as required under Items (2) and (3) of this Rule, and that specific accounting tools required for these purposes in individual rules have been adequately established. In making this determination, the Director shall also evaluate the potential for load offset elsewhere that results in localized adverse water quality impacts that contribute to impairment of classified uses of the affected waters.

(6) A party seeking to purchase nutrient offset credit from the NC Ecosystem Enhancement Program or from a public or private seller of reduction credit shall meet the applicable requirements of Rule .0703 of this Subchapter, which establishes procedural requirements for nutrient offset payments, in addition to applicable requirements of this Rule. Requirements of Rule .0703 include, but are not limited to, the requirement for non-governmental entities to purchase credit from a provider other than the NC Ecosystem Enhancement Program if such credit is available.

(7) The Watershed Oversight Committee under Rule 15A NCAC 02B .0280 may satisfy the seller requirements of Items (2) and (3) of this Rule and the trading provisions of Rule .0280 for individual agricultural land owners by submitting to the Division for approval a trading program, or revisions to such a program, that demonstrates how individual trades shall meet the requirements of this Rule and Rule .0280, and by subsequently including in annual reports required under Rule .0280 separate tracking and accounting for such trades.

History Note: *Authority G.S. 143-214.1; 1432-214.3; 143-214.5; 143-214.7; 143-215.1; 1432-15.3; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C; 143-215.8B; 143B-282(c); 143B-282(d); S.L. 2005-190; S.L. 2006-259; S.L. 2009-337; S.L. 2009-486;*
Eff. January 15, 2011 (this permanent rule replaces the temporary rule approved by the RRC on December 16, 2010);
Amended Eff. April 1, 2020.

15A NCAC 02B .0703 NUTRIENT OFFSET CREDIT TRADING

(a) PURPOSE. The purpose of this Rule is to establish standards and procedures applicable to providers for approval of nutrient reduction projects and associated nutrient offset credits that will be transferred to persons or entities subject to nutrient rules of this Subchapter. Nutrient offset credit is distinct from nutrient accounting for direct compliance with individual nutrient strategy rules, which is not governed by this Rule. Nutrient accounting includes joint compliance by multiple local governments as authorized in individual nutrient strategy rules. Nutrient offset credits represent a compliance option to the extent allowed by nutrient rules of this Subchapter, including:

(1) the Neuse Nutrient Strategy as set forth in Rule .0710 of this Section;
(2) the Tar-Pamlico Nutrient Strategy as set forth in Rule .0730 of this Section;
(3) the Jordan Lake Nutrient Strategy as set forth in Rule .0262 of this Subchapter, including to the extent that the requirements of this Rule related to the nutrient offset credits are incorporated by the Jordan Lake rules; and
(4) the Falls Lake Nutrient Strategy as set forth in Rule .0275 of this Subchapter, including to the extent that the requirements of this Rule related to the nutrient offset credits are incorporated by the Falls Lake rules.

(b) GEOGRAPHIC RESTRICTIONS. Nutrient offset credits may be used to satisfy regulatory obligations only when generated by a nutrient reduction project within an allowable geographic area identified in G.S. 143-214.26, as designated by the U.S. Geological Survey, with the following additional restrictions:

(1) Nutrient offset credits may be used to satisfy regulatory obligations incurred in the upper Falls watershed only if they were generated by a nutrient reduction project located within the upper Falls watershed, as this geographic area is described in 15A NCAC 02B .0276.
(2) Nutrient offset credits may be used to satisfy regulatory obligations incurred in the lower Falls watershed only if they were generated by a nutrient reduction project located within the Falls Lake watershed, as these geographic areas are described in 15A NCAC 02B .0276.
(3) Nutrient offset credits may be used to satisfy regulatory obligations incurred in the Jordan Lake watershed only if they were generated by a nutrient reduction project in the same subwatershed of the Jordan Lake watershed, as these geographic areas are described in 15A NCAC 02B .0262.
(4) Nutrient offset credits may be used to satisfy regulatory obligations incurred in the Neuse 01 8-digit cataloguing unit, as designated by the U.S. Geological Survey, outside of the Falls Lake watershed only if they were generated by a nutrient reduction project located outside of the Falls Lake watershed.
(5) Nutrient offset credits generated by nutrient reduction projects for compliance with an estuarine nutrient strategy shall be generated in an area that is within or drains to:
    (A) surface waters identified for restoration under the applicable nutrient-related TMDL or nutrient strategy; or
    (B) surface waters classified as SA, SB, or SC that fails to meet the chlorophyll-a water quality standard in a subsequent integrated report.

(c) NUTRIENT OFFSET CREDIT APPROVAL STANDARD. Providers shall demonstrate that a nutrient reduction project is designed, constructed, implemented, and sustained in a manner that, according to the best available scientific evidence, studies, and principles, will generate the estimated nutrient load reduction for the duration of time for which credits are approved. Nutrient offset credits shall be generated and transferred in accordance with G.S. 143-214.26.

(d) QUANTIFYING NUTRIENT OFFSET CREDITS. The quantity of nutrient offset credits eligible to be generated by a nutrient reduction project shall be determined according to the following provisions:

(1) Nutrient reduction credit sought on developed lands shall be calculated in relation to load reductions achieved relative to the project site's current loading condition, as determined by the provider and verified by the Division;
(2) Nutrient load reductions shall be site-specific estimates of decreases in annual mass load of nitrogen or phosphorus to the nearest receiving surface water feature. Such estimates shall be supported by the weight of evidence from available, current and applicable research, may involve water quality modeling or engineering formulas and calculations, and shall reflect as closely as possible project design specifications.
(3) Unless specifically excepted in Rule, reductions shall not include those already implemented to satisfy other requirements under the same nutrient strategy; other local, State or federal requirements; or those resulting from State or federal compensatory mitigation requirements. Specifically, a nutrient reduction project shall not generate nutrient offset credits and buffer or wetland mitigation credits in spatially overlapping areas. However, restored forest buffer areas

associated with stream mitigation projects may generate both stream and nutrient offset credits in spatially overlapping areas within 50 feet from the top of the stream bank.

(4) Stream, buffer, or wetland mitigation credit that has not been used to satisfy a mitigation requirement may be converted into nutrient offset credit if the credit-generating project or portion thereof complies with this Rule.

(5) A nutrient reduction project may generate both nitrogen and phosphorus offset credits in the same area.

(6) A nutrient reduction project may be designed to generate permanent nutrient offset credit or term nutrient offset credit and shall specify which, or both, in the project plan. Permanent nutrient reduction credits and term nutrient reduction credits shall be maintained separately, even if associated with the same nutrient offset project.

(7) Permanent nutrient offset credits may be utilized for temporary compliance purposes. If so, for each pound of annual term compliance credit received, $1/30^{th}$ of one pound of permanent nutrient offset credit shall be utilized and retired by removal from the applicable ledger.

(8) Nutrient offset credits that were approved prior to the adoption of this Rule may make application to be reclassified. The Division shall approve the application associated with any nutrient offset project to reclassify credits as permanent that meet the requirements for permanent credits at the time of the application to be reclassified. Other nutrient offset credits that were approved prior to the adoption of this Rule or that were conditionally approved pursuant to a mitigation banking instrument or other agreement with DEQ prior to the adoption of this Rule, shall be considered term credits and may be transferred between term and permanent ledgers at a ratio of 30 years of term nutrient offset credit to one permanent nutrient offset credit.

(9) Term nutrient offset credits shall be associated with the calendar year or years in which the associated nutrient load reductions are generated.

(e) PROJECT APPROVAL STANDARDS. Providers shall comply with the following requirements to request approval from the Division to implement a nutrient reduction project for the purpose of generating nutrient offset credits.

(1) NUTRIENT OFFSET BANKING INSTRUMENT. Providers seeking approval of a nutrient offset bank shall submit their draft nutrient offset banking instrument to the Division prior to seeking approval of project plans. A nutrient offset banking instrument shall provide legal and financial assurances that a provider will implement, maintain, and sustain nutrient reduction projects as proposed in subsequent project plans and associated nutrient reduction practice design specifications.

(2) PROJECT PLAN REQUIREMENTS. Prior to initiating a nutrient reduction project, providers shall submit a project plan proposal to the Division for review and approval that includes the following elements:

(A) A site location and site boundaries of the proposed project.

(B) The geographic area eligible to be served by nutrient offset credits in accordance with Paragraph (b) of this Rule or in compliance with in-lieu fee nutrient offset requirements applicable at the time an in-lieu fee payment was accepted.

(C) Documentation of the conditions of the site at the time of the submittal of the project plan.

(D) Documentation of the condition of the site during the baseline period of the applicable nutrient strategy, unless excepted by Subparagraph (d)(1) of this Paragraph. The Division may accept more recent documentation if it determines such documentation establishes the probable loading condition of the site during the baseline period.

(E) A description of the proposed project that supports compliance with the standard in Paragraph (c) of this Rule. Projects conforming to minimum design criteria for stormwater control measures in 15A NCAC 02H .1050 through .1062 shall be deemed as meeting this requirement. Design criteria for stormwater control measure variants and additional nutrient reduction practices established in the Division's Catalog of Nutrient Reduction Practices also meet this requirement.

(F) Nutrient credit calculations determined in conformance with Paragraph (d) of this Rule.

(G) Identification of the property owner and parties responsible for obtaining all permits and other authorizations needed to:

(i) establish the proposed project;

(ii) construct and ensure initial performance of the project;

(iii) report on and successfully complete the project by completing all crediting milestones;
(iv) hold and enforce all easement or other protection mechanisms; and
(v) ensure maintenance of the project for its credited duration.

(H) A description of how the project will be implemented, which shall include a timeline and a commitment to provide an as-built report upon the full project construction or installation.

(I) A description of how the project will be maintained and monitored after it has been installed and for its duration.

(J) A description of how the project will be sustained for its credited life, including a commitment to repair and renovate it as needed to maintain its performance, to keep records of all such operation, maintenance, monitoring, repair and renovation, and to notify the Division of any significant performance remediation needs and plans.

(K) Identification of federal or State grant funding contributing to project implementation.

(3) FINANCIAL ASSURANCES. Providers seeking approval of a nutrient offset bank shall provide the financial assurance that a project plan will be constructed as proposed. The financial assurance shall be in the form of a completion bond, credit insurance, letter of credit, escrow, or other vehicle acceptable to the Division in accordance with this Subparagraph, payable to, or for the benefit of, the Division, to ensure the involved property is secured in fee title or by easement and that planting or construction, monitoring or maintenance are completed as necessary to meet the requirements of the project plan.

(4) PROJECT PLAN APPROVAL. The Division shall approve the provider's project plan proposal after verifying the provider's compliance with Subparagraphs (1), (2) and (3) of this Paragraph and completing an onsite review to verify that preconstruction site conditions are suitable to generate the credits proposed by the project plan. However, the Division may partially or fully waive these requirements for term practices or projects if it determines that the burden of compliance is disproportionate to the value of the credits being generated and alternative means are used to satisfy the basic credit approval standard set forth in Paragraph (c) of this Rule.

(f) RELEASE AND ACCOUNTING FOR NUTRIENT OFFSET CREDITS. The Division shall release nutrient offset credits from an approved project in the following manner:

(1) The Division shall release credits to providers upon confirmation that project-specific milestones reflected in the project plan's credit release schedule have been met. Project-specific milestones for permanent nutrient offset credits shall conform to the following requirements:

(A) Credits shall not be released until the property is secured in fee title or by easement and financial assurance is posted for planting or construction of the project.

(B) No more than 50 percent of the credits shall be released for a project until financial assurance is provided for monitoring and maintenance activities lasting until project completion.

(C) No more than 80 percent of the credits shall be released for a project until the provider complies with the requirements of Paragraph (g).

(2) Once credits are released for a nutrient offset bank and until bank closure, nutrient offset bank providers shall provide a credit/debit ledger to the Division at intervals no less frequently than quarterly.

(3) The Division shall not release any credits for a project if that project is financed in whole or in part by State grant funding or federal grant funding.

(g) MAINTAINING PERMANENT NUTRIENT OFFSET CREDITS. All permanent nutrient offset projects shall comply with the following requirements:

(1) A provider shall transfer responsibility for oversight of a completed permanent project to a perpetual steward in accordance with this Paragraph and the approved project plan. A perpetual steward may also transfer responsibility to another perpetual steward in accordance with the terms of this Paragraph, subject to DWR approval. Perpetual stewards may not assume project maintenance or restoration responsibilities.

(2) The provider shall create and transfer to the perpetual steward a non-wasting endowment or other dedicated financial surety to provide for the oversight of the completed permanent project. The endowment amount shall be proportionate to the duties accepted by the perpetual steward.

(3) For projects utilizing conservation easements, the provider shall acquire and then transfer a conservation easement to a perpetual steward in accordance with 26 U.S.C. 170(h) and the

Conservation and Historic Preservation Agreements Act, G.S. 121, Article 4. The terms of the conservation easement shall be consistent with a Division-approved template or be approved by the Division as conforming to Paragraph (c) of this Rule. Non-governmental perpetual stewards shall be accredited by the Land Trust Accreditation Commission or approved by the Division.

(4) For projects utilizing SCMs, they shall be placed in and protected by recorded drainage easements with recorded access easements to the nearest public right-of-way for purposes of operation and maintenance. These easements shall be granted in favor of the person or entity responsible for operating and maintaining the structures, with a note as to the responsible person or entity. Easements shall be of sufficient width for inspection and maintenance of the project.

The Division may temporarily or permanently invalidate permanent credits generated by an SCM if it determines that the SCM has been impacted due to failure to comply with the terms of an associated project plan, nutrient offset banking instrument, easement, maintenance agreement, other protective agreement, or this Rule.

(5) Projects designed to restore a natural ecological community at the project site, which are completed and then damaged by natural causes, may be passively restored exclusively through natural ecological processes.

(h) RENEWING TERM NUTRIENT OFFSET CREDITS. Expiring term nutrient offset credits may be renewed by the provider upon providing documentation to the Division that the project meets the credit approval standard set forth in Paragraph (c) of this Rule for the duration of the renewal period.

(i) ADDITIONAL PROVISIONS REGARDING THE DIVISION OF MITIGATION SERVICES.

(1) DMS shall establish and revise nutrient offset rates as set out in 15A NCAC 02R .0602. Offset payments accepted by DMS shall be placed into the Riparian Buffer Restoration Fund administered by the Department pursuant to G.S. 143-214.21.

(2) On or before November 30 of each year, DMS shall provide an annual report to the Division concerning the nutrient in-lieu fee program that includes a requirement ledger. The requirement ledger shall include all nutrient offset credit requirements paid by 8-digit cataloguing unit or for each geographic area identified in Paragraph (b) of this Rule, the date by which the requirement shall be satisfied by a project, and the projects and credits that have been applied to all requirements.

(3) Subject to the geographic restrictions in Paragraph (b) of this Rule, DMS may accept payments for nutrient offset credits prior to initiating projects. After accepting payment, DMS shall construct projects that, upon completion as described in the approved project plan, will generate nutrient offset credits sufficient to fulfill all new requirements generated by these payments. Projects shall be instituted before the end of the first full State fiscal year after DMS receives payment and constructed before the end of the third full State fiscal year after DMS receives payment. DMS may also acquire credits from another provider to apply toward its requirements.

(4) If DMS fails to meet deadlines associated with project institution or construction as specified in Subparagraph (3) of this Paragraph, then DMS shall develop an action strategy to include in the annual report specified in Subparagraph (2) of this Paragraph. Action strategies shall include all of the following:

(A) a list of factors resulting in delays or deficiencies in procurement, project implementation, or construction;

(B) specific actions and a timeline planned by DMS to satisfy outstanding credit requirements such that a project will be instituted before the end of the first full state fiscal year after the action strategy is submitted to the Division in the annual report and constructed before the end of the third full state fiscal year after the action strategy is submitted to the Division in the annual report, unless otherwise specified in the action strategy;

(C) the anticipated date by which all outstanding nutrient offset credit requirements will be satisfied; and

(D) an evaluation of current progress in relation to any prior action strategies.

(j) NUTRIENT OFFSET CREDIT TRANSACTIONS. Parties who seek to acquire nutrient offset credits under rules of this Subchapter shall do so in compliance with those rules, the requirements of Paragraph (b) of this Rule, G.S. 143-214.26, and the following:

(1) Offset payments made to DMS shall be contingent upon acceptance of the payment by DMS. DMS shall consider its financial, temporal, and technical ability to satisfy the request to make its determination.

(2) Where persons seek to satisfy regulatory obligations for more than one nutrient type, they shall acquire nutrient reduction credits to address each type.

(3) Projects shall be approved and the associated offset credits released by the Division before they may be utilized for NPDES wastewater permit compliance purposes.

(4) For offset credits used to meet NPDES wastewater discharge requirements, the applicant shall provide 50 percent additional credits to address the uncertainty factor for using unmonitored nonpoint source reductions to meet point source discharge limits. Application of this ratio is in addition to other ratios that may be applied, including delivery or transport factors where applicable. Exceptions to the application of this uncertainty factor are as follows:

(A) The uncertainty factor for wastewater dischargers in the Jordan Lake watershed shall instead be determined in accordance with 15A NCAC 02B .0273(2)(d)(ii) until final action is taken with respect to that rule's next readoption pursuant to G.S. 150B-21.3A, S.L. 2016-94, and S.L. 2018-5.

(B) The uncertainty factor for wastewater dischargers in the Falls Lake watershed shall instead be determined in accordance with 15A NCAC 02B .0282(2)(b)(i) until final action is taken with respect to that rule's next readoption pursuant to G.S. 150B-21.3A, S.L. 2016-94, and S.L. 2018-5.

(5) Delivery factors shall be applied to estimate nutrient reductions to an impaired water body subject to a nutrient strategy if required under rules of this Subchapter for that strategy.

(6) Term credits may be utilized for compliance only during the year in which they are generated and as described in Subparagraph (d)(2) of this Rule. They may not be cumulatively banked for future years.

(k) DEVELOPER-RESPONSIBLE NUTRIENT OFFSET PROJECTS. A developer subject to new development stormwater requirements of this Subchapter may satisfy its nutrient reduction obligations by generating its own offsite credits. It may do so by establishing a nutrient offset bank and generating credits in accordance with this Rule. Alternatively, the developer shall comply with all provisions of this Rule governing the generation of nutrient offset credits by a provider with the following modifications:

(1) Instead of a credit release schedule, credit for the project may be assigned upon construction of the project and submission to the Division of the as-built report as described in the project plan;

(2) Credit shall be assigned at a 50 percent rate based on the design specifications of the fully completed project(s); and

(3) Liability for the generation of credits as described in the project plan remains with the developer until the completion of all milestones associated with the project.

(l) NPDES WASTEWATER PERMITTEE-RESPONSIBLE NUTRIENT OFFSET PROJECTS. A locality, authority, utility, or sanitation district operating a permitted wastewater facility subject to wastewater rules of this Subchapter may generate nutrient offset credits by installing projects in accordance with this Rule. Any credits generated may then be utilized for compliance purposes as if acquired from another provider.

History Note: *Authority G.S. 143-214.1; 143-214.20; 143-214.21; 143-214.26;*
Eff. August 1, 1998;
Amended Eff. August 1, 2006;
Amended Eff. September 1, 2010;
Recodified from 15A NCAC 02B .0240 Eff. April 1, 2020;
Readopted Eff. April 1, 2020.

Appendix C - Falls Lake Rules Regulatory Background & History

Following an extensive stakeholder and rulemaking process the Falls Lake nutrient rules were adopted by the Environmental Management Commission in 2010 and went into effect in January 2011. In preparation for implementation of their Stage I load reduction programs, local governments were required to develop inventories and characterize load reduction potential of various nutrient reducing activities by January 2013. During that same year the Division developed a preliminary draft model program to assist local governments with developing their local load reduction programs. This model program was presented to the Commission in July 2013, at which time the Division requested more time to work with affected parties to continue developing credit accounting for additional nutrient reducing practices.

Over the next seven years the Division worked in collaboration with the Upper Neuse River Basin Association to develop nutrient credit for additional practices to add to the state's Nutrient Catalog expanding the available options and to help affected parties achieve loading reductions in the most cost effective manner possible. During this time Staff also consulted with member local governments on the calculation of their preliminary Stage I jurisdictional load estimates and updated the Stormwater Nitrogen and Phosphorus accounting tool (SNAP) to allow for crediting of over and under-sized stormwater control practices. The updated SNAP tool was approved by the Division Director in 2018 and is currently being used for compliance with the Falls New Development Stormwater Rules.

While work on practices was ongoing the North Carolina General Assembly passed HB 74 in 2014 which requires the periodic readoption of all of the Department's rules every ten years. In July 2016 S.L. 2016-94 was passed calling for an evaluation of the Falls and Jordan nutrient strategies and separating these rules from the rest of the periodic rules readoption process, setting later rulemaking timelines for these two watersheds. This legislation directed the University of North Carolina at Chapel Hill to oversee studies of the Jordan and Falls strategies and to provide recommendations to the Commission to guide further rulemaking. This was followed by S.L. 2018-5 which revised the due dates for the final UNC Falls study to December 2023 and extended the deadline for formally beginning the Falls rules readoption process to December 31, 2024. The UNC Collaboratory's Falls Lake Study is currently underway with interim reports due to the Commission in 2021 and 2022.

In addition to the work by the UNC Collaboratory, the UNRBA has been conducting a re-examination process of the lake and nutrient management strategy that included collecting additional water quality monitoring data from the Falls watershed between August 2014 and October 2018. This additional data along with DWR's annual lake monitoring data is being used by the UNRBA to remodel the lake and watershed and provide analyses to support the re-examination of Stage II of the Falls Lake Rules. The UNRBA's ongoing modeling effort is scheduled to be completed in 2023. The results of this re-examination effort will be made available for consideration by the UNC Collaboratory to help guide any

recommendations put forth in final UNC Falls Lake Study Report and will inform the Division's readoption of the Falls Lake nutrient management strategy.