# Neuse and Tar-Pamlico Model Stormwater Ordinance for New Development

Updated By DWQ\*

For Use in Developing Neuse and Tar-Pamlico Stormwater Local Programs

\*(*Based on the Jordan Lake model ordinance developed by Richard Whisnant, UNC School of Government, and subsequently adapted for the Falls Lake Watershed*)

2-10-2021

Revision history

Original Draft Falls Ordinance dated 2/15/11 used as foundation of document

Ver. 4.0 Revised model ordinance to make to incorporate

Falls Lake Requirements

- Updated cover page

- Removed references to Falls Session law 2009-26 and 2009-484 from Section 102

- Removed reference to General Assembly Action in Section 103

- Added 1/2 acre and 12,000 sq/ft land disturbance thresholds to Section 105 (B)

- Updated state & federal comment box on page 12

- Updated Section 302 (A) and (B) with Falls lake nutrient targets and percent reduction objectives

- Revised Section 303 to remove reference to TSS requirements

- Revised Section 205 to incorporate Falls onsite treatment requirements

- Updated comment box in Section 308

- Updated comment box in Section 501

Neuse and Tar-Pamlico New Stormwater Rule Requirements – edits January 2021

Major modifications in Section 3: Standards for Neuse and Tar-Pamlico development requirement projects

Major modifications in Section1: Applicability and Jurisdiction for Neuse and Tar-Pamlico applicability and exclusions

Changes in State Stormwater Rules – edits January 2021

Major modifications in Section 4: Maintenance to align with new requirements

Smaller modifications throughout to have consistent references to “engineered stormwater controls” (assumed preferred term), Minimum Design Criteria, definitions, standards in Rule .1003, and other miscellaneous issues

Merger of 153A and 160A into 160D, changes to NCGS 143-214.7, WSW – edits January 2021

General Statutes and Rule references reviewed throughout in order to point to correct statutes

Major modifications to variance and enforcement sections to adapt to changes in WSW Rules, 160D, and other regulations, and that Neuse and Tar-Pam do not specify any variance or enforcement procedures

“Redevelopment” changed to “expansion of development” throughout, definitions updated, and additional explanation of project area and existing BUA where appropriate

Changes for Neuse/Tar-Pamlico specific guidance

Example text was added for a method of setting up BUA tracking and more flexible methods to manage development expansion.

**Table of Contents**

[Neuse and Tar-Pamlico Model Stormwater Ordinance for New Development 1](#_Toc64543986)

[SECTION 1: GENERAL PROVISIONS 8](#_Toc64543987)

[xx-101 Title 9](#_Toc64543988)

[xx-102 Authority 9](#_Toc64543989)

[xx-103 Findings 9](#_Toc64543990)

[xx-104 Purpose 10](#_Toc64543991)

[xx-105 Applicability and Jurisdiction 12](#_Toc64543992)

[(A) General 12](#_Toc64543993)

[(B) Exemptions 12](#_Toc64543994)

[(C) No Development or Expansion Until Compliance and Permit 13](#_Toc64543995)

[(D) Map 13](#_Toc64543996)

[xx-106 Interpretation 14](#_Toc64543997)

[(A) Meaning and Intent 14](#_Toc64543998)

[(B) Text Controls in Event of Conflict 14](#_Toc64543999)

[(C) Authority for Interpretation 14](#_Toc64544000)

[(D) References to Statutes, Regulations, and Documents 14](#_Toc64544001)

[(E) Computation of Time 14](#_Toc64544002)

[(F) Delegation of Authority 15](#_Toc64544003)

[(G) Usage 15](#_Toc64544004)

[(H) Measurement and Computation 15](#_Toc64544005)

[xx-107 Design Manual 15](#_Toc64544006)

[(A) Reference to Design Manual 15](#_Toc64544007)

[(B) Relationship of Design Manual to Other Laws and Regulations 16](#_Toc64544008)

[(C) Changes to Standards and Specifications 16](#_Toc64544009)

[(D) [Amendments to Design Manual] 16](#_Toc64544010)

[xx-108 Relationship to Other Laws, Regulations and Private Agreements 16](#_Toc64544011)

[(A) Conflict of Laws 16](#_Toc64544012)

[(B) Private Agreements 17](#_Toc64544013)

[xx-109 Severability 18](#_Toc64544014)

[xx-110 Effective Date and Transitional Provisions 18](#_Toc64544015)

[(A) Effective Date 18](#_Toc64544016)

[(B) Final Approvals, Complete Applications 18](#_Toc64544017)

[(C) Violations Continue 18](#_Toc64544018)

[SECTION 2: ADMINISTRATION AND PROCEDURES 19](#_Toc64544019)

[xx-201 Review and Decision-Making Entities 19](#_Toc64544020)

[(A) Stormwater Administrator 19](#_Toc64544021)

[xx-202 Review Procedures 20](#_Toc64544022)

[(A) Permit Required; Must Apply for Permit 20](#_Toc64544023)

[(B) Effect of Permit 20](#_Toc64544024)

[(C) Authority to File Applications 20](#_Toc64544025)

[(D) Establishment of Application Requirements, Schedule, and Fees 21](#_Toc64544026)

[(E) Submittal of Complete Application 22](#_Toc64544027)

[(F) Review 22](#_Toc64544028)

[xx-203 Applications for Approval 23](#_Toc64544029)

[(A) Concept Plan and Consultation Meeting 23](#_Toc64544030)

[(B) Stormwater Management Permit Application 24](#_Toc64544031)

[(C) As-Built Plans and Final Approval 25](#_Toc64544032)

[(D) Other Permits 25](#_Toc64544033)

[xx-204 Approvals 25](#_Toc64544034)

[(A) Effect of Approval 25](#_Toc64544035)

[(B) Time Limit/Expiration 25](#_Toc64544036)

[xx-205 Appeals 26](#_Toc64544037)

[(A) Right of Appeal 26](#_Toc64544038)

[(B) Filing of Appeal and Procedures 26](#_Toc64544039)

[(C) [Review by Superior Court] 27](#_Toc64544040)

[SECTION 3: STANDARDS 28](#_Toc64544041)

[xx-301 General Standards 28](#_Toc64544042)

[xx-302 [Built Upon Area Standards] 28](#_Toc64544043)

[xx-303 Nitrogen and Phosphorus Loading Rate Targets 29](#_Toc64544044)

[xx-304 Nitrogen and Phosphorus Standard is Supplemental 29](#_Toc64544045)

[xx-305 Control and Treatment of Runoff Volume 30](#_Toc64544046)

[xx-306 Methods to Meet Nutrient Control Requirements 30](#_Toc64544047)

[xx-307 Use of Permanent Nutrient Offset Credits 30](#_Toc64544048)

[xx-308 Evaluation of Standards for Stormwater Control Measures 31](#_Toc64544049)

[(A) Evaluation According to Contents of Design Manual 31](#_Toc64544050)

[(B) Determination of Adequacy; Presumptions and Alternatives 31](#_Toc64544051)

[xx-309 Dedication of BMPS, Facilities & Improvements 32](#_Toc64544052)

[xx-310 Variances 32](#_Toc64544053)

[SECTION 4: MAINTENANCE 34](#_Toc64544054)

[xx-401 General Standards for Maintenance 34](#_Toc64544055)

[(A) Function of Engineered Stormwater Controls As Intended 34](#_Toc64544056)

[(B) Annual Maintenance Inspection and Report 34](#_Toc64544057)

[xx-402 Operation and Maintenance of Engineered Stormwater Controls 35](#_Toc64544058)

[(A) Operation and Maintenance Plan 35](#_Toc64544059)

[(B) Operation and Maintenance Agreement 35](#_Toc64544060)

[(C) Special Requirement for Homeowners’ and Other Associations 36](#_Toc64544061)

[xx-403 Inspection Program 37](#_Toc64544062)

[xx-404 Performance Security for Installation and Maintenance 38](#_Toc64544063)

[(A) May Be Required 38](#_Toc64544064)

[(B) Amount 38](#_Toc64544065)

[(C) Uses of Performance Security 39](#_Toc64544066)

[xx-405 Notice to Owners 40](#_Toc64544067)

[(A) Deed Recordation and Indications On Plat 40](#_Toc64544068)

[(B) Signage 40](#_Toc64544069)

[xx-406 Records of Installation and Maintenance Activities 40](#_Toc64544070)

[xx-407 Nuisance 40](#_Toc64544071)

[xx-408 Maintenance Easement 40](#_Toc64544072)

[SECTION 5: ENFORCEMENT AND VIOLATIONS 42](#_Toc64544073)

[xx-501 General 42](#_Toc64544074)

[(A) Authority to Enforce 42](#_Toc64544075)

[(B) Violation Unlawful 42](#_Toc64544076)

[(C) Each Day a Separate Offense 42](#_Toc64544077)

[(D) Responsible Persons/Entities 42](#_Toc64544078)

[xx-502 Remedies and Penalties 43](#_Toc64544079)

[(A) Remedies 43](#_Toc64544080)

[(B) Civil Penalties 45](#_Toc64544081)

[(C) Criminal Penalties 45](#_Toc64544082)

[xx-503 Procedures 45](#_Toc64544083)

[(A) Initiation/Complaint 45](#_Toc64544084)

[(B) Inspection 45](#_Toc64544085)

[(C) Notice of Violation and Order to Correct 45](#_Toc64544086)

[(D) Extension of Time 46](#_Toc64544087)

[(E) Enforcement After Time to Correct 46](#_Toc64544088)

[(F) Emergency Enforcement 46](#_Toc64544089)

[SECTION 6: DEFINITIONS 47](#_Toc64544090)

[xx-601 Terms Defined 47](#_Toc64544091)

[Built-upon area (BUA) 47](#_Toc64544092)

[Department 47](#_Toc64544093)

[Design Manual 47](#_Toc64544094)

[Developer 47](#_Toc64544095)

[Development 48](#_Toc64544096)

[Development approval 48](#_Toc64544097)

[Division 48](#_Toc64544098)

[Engineered stormwater control 48](#_Toc64544099)

[Land disturbing activity 48](#_Toc64544100)

[Larger common plan of development or sale 48](#_Toc64544101)

[Load 48](#_Toc64544102)

[Loading rate 48](#_Toc64544103)

[Major variance 48](#_Toc64544104)

[Minimum Design Criteria 49](#_Toc64544105)

[Minor variance 49](#_Toc64544106)

[Nitrogen 49](#_Toc64544107)

[Nutrient, Nutrients 49](#_Toc64544108)

[1-year, 24-hour storm 49](#_Toc64544109)

[Outfall 49](#_Toc64544110)

[Owner 49](#_Toc64544111)

[Parcel 50](#_Toc64544112)

[Permanent nutrient offset credits 50](#_Toc64544113)

[Person 50](#_Toc64544114)

[Phosphorus 50](#_Toc64544115)

[Primary SCM 50](#_Toc64544116)

[Project 50](#_Toc64544117)

[Redevelopment 50](#_Toc64544118)

[Runoff treatment 50](#_Toc64544119)

[Runoff volume match 50](#_Toc64544120)

[Site Plan 50](#_Toc64544121)

[Stormwater 50](#_Toc64544122)

[Stormwater system 50](#_Toc64544123)

[Subdivision 50](#_Toc64544124)

[Substantial progress 51](#_Toc64544125)

[Total nitrogen 51](#_Toc64544126)

[Total phosphorus 51](#_Toc64544127)

SECTION 1: GENERAL PROVISIONS

Comment: **Context for this model ordinance—**This model ordinance, previously developed for implementing Jordan Lake Stormwater Rules and Falls Lake Rules, has been extensively reviewed and updated for use as guidance for local governments in the Neuse and Tar-Pamlico watersheds to develop or modify their own local ordinances for the implementation of the Neuse and Tar-Pamlico Stormwater Rules (15A NCAC 02B .0731 and .0711 respectively), effective April 1, 2020. We provide this model ordinance developed for another watershed since most of the regulatory structure of a local stormwater ordinance is expected to be similar across the State. The document has been reviewed for elements that implement nutrient and stormwater requirements, changes to statutes and Rules, modifications to comments and guidance, changes in definitions and uses of terms, and consistent terminology throughout.

NOTE: Some methods to implement or enforce Neuse or Tar-Pamlico Stormwater Rules that are considered Best Practices may not be represented in this model ordinance. Local governments should review their anticipated Rule implementation approaches to determine whether this Model Program or portions of it adequately cover all needed authorities.

The Falls model ordinance was developed in 2011, prior to changes in NC General Statutes that combine zoning regulations for cities and counties into a single Chapter 160D. This document has been reviewed for elements where we suspect changes to zoning regulations in NCGS 160D have an effect, but local governments should coordinate with their Planning departments to verify that all 160D elements are updated.

All ordinances implementing the Neuse or Tar-Pamlico stormwater rules for new development, including ordinances that adopt this model with modifications, must be reviewed and approved by the Environmental Management Commission or, through delegated authority, the Division of Water Resources of the North Carolina Department of Environmental Quality before Neuse or Tar-Pamlico stormwater rule compliance is assured.

Many jurisdictions already have stormwater programs as a part of their development review process—some under Phase II of the federal stormwater program, others as part of the state Water Supply Watershed Program or other state stormwater programs. Such jurisdictions have the option to adopt this model, or similar language, with modifications as needed for implementing Neuse or Tar-Pamlico Stormwater Rules, but it is more likely they will wish to mesh the parts of this model that are new and different (mainly the standards for nutrient loading) with their existing stormwater review process. Either approach can work. Also, to the greatest extent possible, this model was originally written to match existing regulations for Phase II and Water Supply Watersheds.

Comment: **Format**--Throughout this model ordinance, the bold underlines serve as prompts where text that is appropriately customized for the locality should be inserted or the inapplicable text removed. For example, where “name of governing board” is indicated in the blank, the name of the local governing body – for example, “Tarheelville City Council” or “Dogwood County Commission” – should be inserted.

Commentary from the drafter of the model ordinance is placed in boxes such as this. These comments should be removed from the ordinance text actually adopted; they are not part of the ordinance itself.

Optional provisions are provided throughout this document and are intended to address the diverse needs of local government depending on characteristics such as population, financial resources, location in the watershed and staffing resources. Optional provisions are shown in [brackets] and generally are accompanied by some explanation in the commentary.

*Defined terms* are shown in italics. The definitions section of the ordinance is at the end.

Footnotes give information on the original source of the text language. Note that changes may have been made in the source language to better match North Carolina’s needs.

1. Title

This ordinance shall be officially known as “The Name of Watershed Stormwater Ordinance for New Development.” It is referred to herein as “this ordinance.”

1. Authority

The name of governing board is authorized to adopt this ordinance pursuant to North Carolina law, including but not limited to Article 14, Section 5 of the Constitution of North Carolina; [name of municipal charter, if relevant]; North Carolina General Statutes Chapter 143-214.7 and rules promulgated by the Environmental Management *Commission* thereunder; Chapter 143-215.6A; Chapter 153A-454; Chapter 160A, Chapter 160D, §§ 174, 185, 459 and [cite any special legislation applicable to the specific local government]. [; as well as Chapter 113A, Article 4 (Sedimentation Pollution Control)][; Article 21, Part 6 (Floodway Regulation) ];[;Chapter 143-214.5, Water Supply Watershed Protection][; Chapter 160A, Article 19 (Planning and Regulation of Development); Chapter 153A, Article 18].

Regarding this section which recites authority for this ordinance:

Some jurisdictions may wish to integrate this ordinance with a local erosion and sediment control ordinance, in which case adding the reference to Chapter 113A is appropriate.

Some jurisdictions may wish to integrate this ordinance with existing floodway regulations, in which case adding the reference to Chapter 143, Article 21, Part 6 is appropriate.

Chapter 143-214.5 is appropriate if the jurisdiction is also administering and is integrating this ordinance with a water supply watershed protection program. Note that the water supply watershed program, erosion and sediment control, and floodway regulations are appropriate for integration with Neuse or Tar-Pamlico stormwater controls, but each of these programs has particular requirements that are not covered in this model ordinance.

Local governments that anticipate including a program of open space acquisition as part of their stormwater program should include a reference to statutory authority for that function here as well (Article 19, Part 4, Chapter 160A, as well as N.C.G.S. 160A-372, and N.C.G.S 160D-501).

Jurisdictions that are adopting this ordinance as part of a land use ordinance or unified development ordinance should include a reference to statutory authority for planning and regulation of development (N.C.G.S. 160D Article 2, 3, 4), including particularly but not limited to N.C.G.S. 160D-404 (enforcement), G.S. 160D Article 8 (subdivision), and N.C.G.S. 160D Article 7 (zoning). In addition, when adopting this ordinance as part of land use regulations, local governments should follow the standards for adoption/amendment of such ordinances set out in N.C.G.S. 160D Article 6.

1. Findings

It is hereby determined that:

Development alters the hydrologic response of local watersheds and increases *stormwater* runoff rates and volumes, flooding, soil erosion, stream channel erosion, nonpoint and point source pollution, and sediment transport and deposition, as well as reducing groundwater recharge;

These changes in *stormwater* runoff contribute to increased quantities of water-borne pollutants and alterations in hydrology that are harmful to public health and safety as well as to the natural environment; and

These effects can be managed and minimized by applying proper design and well-planned controls to manage *stormwater* runoff from development sites.

Further, the *Commission* has identified the Name of Watershed Estuary, as *nutrient* sensitive waters; has identified all or a portion of the estuary as impaired waters under the federal Clean Water Act due to exceedances of the chlorophyll a standard; and has promulgated rules (the “Name of Watershed Rules” to reduce the average annual *load*s of nitrogen and *phosphorus* delivered to the estuary from all point and nonpoint sources of these *nutrients* located within its watershed, including *stormwater* from new development in this jurisdiction;

Therefore, the name of governing board establishes this set of water quality and quantity regulations to meet the requirements of state and federal law regarding control of *stormwater* runoff and discharge for *development*.

1. Purpose

The purpose of this ordinance is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of *nitrogen* and *phosphorus* in *stormwater* runoff and nonpoint and point source pollution associated with new development in the watershed of the Name of Watershed estuary. It has been determined that proper management of construction-related and post-development *stormwater* runoff will minimize damage to public and private property and infrastructure; safeguard the public health, safety, and general welfare; and protect water and aquatic resources.

Commentary: The locality adopting the ordinance may wish to supplement the objectives included below, depending on the nature of its stormwater program and specific local needs. This list is a general set of objectives to reduce the impacts of post-development stormwater runoff quantity and quality from land development activities. Not all items may be applicable to your jurisdiction, More specific objectives might be included by the locality adopting the ordinance based upon a watershed management plan, impervious surface targets, the findings of a watershed assessment or study, a local water quality problem or Total Maximum Daily Load (TMDL) requirement.

This ordinance seeks to meet its general purpose through the following specific objectives and means:

(1) Establishing decision-making processes for *development* that protects the integrity of watersheds and preserve the health of water resources;

(2) Requiring that new *development* not exceed export targets for *nitrogen* and *phosphorus* in *stormwater* runoff for the watershed through site layout, *engineered stormwater controls*, or *permanent nutrient offset credits*;

(3) Establishing minimum post-development *stormwater* management standards and design criteria for the regulation and control of *stormwater* runoff quantity and quality;

(4) Establishing design and review criteria for the construction, function, and use of *engineered stormwater controls* that may be used to meet the minimum post-development *stormwater* management standards;

(5) Encouraging the use of better management and site design practices, such as the use of vegetated conveyances for *stormwater* and the preservation of greenspace, riparian buffers and other conservation areas to the maximum extent practicable;

(6) Establishing provisions for the long-term responsibility for and maintenance of engineered stormwater controls to ensure that they continue to function as designed, are maintained appropriately, and pose no threat to public safety;

(7) Establishing administrative procedures for the submission, review, approval and disapproval of stormwater management plans, for the inspection of approved *projects*, and to assure appropriate long-term maintenance;

(8) Controlling illicit discharges into the municipal separate *stormwater system* and waters of the State.

(9) Providing education and outreach to the public regarding methods to prevent and minimize pollutant contributions to the municipal separate *stormwater system* and waters of the State.

[(10) Requiring that new development maintain the pre-development hydrologic response in their post-development state for the applicable design storm to reduce flooding, streambank erosion, nonpoint and point source pollution and increases in stream temperature, and to maintain the integrity of stream channels and aquatic habitats;]

[(11) Assigning responsibility and processes for approving the creation and maintenance of adequate drainage and flood damage prevention measures.]

[(12) Coordinating site design plans that include open space and natural areas with the (name of the open space and natural areas protection plan of the local government, or the section of its comprehensive plan dealing with open space/natural areas, if applicable).][[1]](#footnote-1)

[(13) Controlling erosion and sedimentation from construction activities.]

Commentary: Optional provisions (10, 11, 12, 13) are appropriate only if the jurisdiction is integrating this model ordinance with existing programs for hydrologic runoff volume matching, floodway and related drainage regulation, open space protection, and/or erosion and sediment control for construction. Any such existing programs may be good candidates for inclusion in an integrated stormwater ordinance, which would have the advantage of collecting most or all the relevant stormwater-related development requirements in a single place. However, this model ordinance does not attempt to provide comprehensive substantive provisions for these programs.

County-based IDDE and public education programs are oriented towards protection of the waters of the State, since they generally operate no municipal separate stormwater systems.

1. Applicability and Jurisdiction
   1. General

Beginning with and subsequent to its effective date, this ordinance shall be applicable to all development and expansion of development throughout the corporate limitsand extraterritorial jurisdiction of Name of City within the Name of Watershed | territorial jurisdiction of Name of County within the Name of Watershed watershed, including, but not limited to, *site plan* applications, subdivision applications, and grading applications, unless exempt pursuant to this ordinance.

* 1. Exemptions

(1) Single family and duplex residential and related recreational development and expansion of development that disturbs less than one acre is exempt from the provisions of this ordinance.

(2) Commercial, industrial, institutional, multifamily residential or local government *development* that disturbs less than one half acre and does not expand existing structures on a *parcel* is exempt from the provisions of this ordinance.

(3) Commercial, industrial, institutional, multifamily residential or local government *development* that disturbs less than one half acreand expands existing structures on a *parcel*, but does not result in a cumulative built-upon area for the *parcel* exceeding twenty-four (24) percent is exempt from the provisions of this ordinance.

(4) Development that disturbs less than the above thresholds are not exempt if such activities are part of a *larger common plan of* development *or* sale and the larger common plan exceeds the relevant threshold, even though multiple, separate or distinct activities take place at different times on different schedules.[[2]](#footnote-2)

(5) *Development* of an individual single-family or duplex residential lot that is not part of a larger common plan of development or sale and does not result in greater than five (5) percent built-upon area on the lot is exempt from the provisions of this ordinance.

[(6) A *project* subject to the requirements of the Falls Nutrient Strategy New Development Stormwater Rule, 15A NCAC 02B .0277 is exempt from the provisions of this ordinance.]

(7) *Existing development* or *redevelopment* is exempt from the provisions of this ordinance.

(8) Activities subject to requirements of the Name of Watershed Agriculture Rule, 15A NCAC 02B .0712 | .0732 is exempt from the provisions of this ordinance.

(9) *Development* or expansion of *development* with a vested right per the standards of N.C.G.S. 160D-108 is exempt from the provisions of this ordinance.

(10) *Development* or expansion of *development* for which the permit application was submitted prior to adoption of this ordinance is optionally exempt from the provisions of this ordinance per the requirements of N.C.G.S. 143-755.

General provision: cities have the option in the Neuse and Tar-Pamlico Rules to apply this Rule only within their city limits, or also including their Extraterritorial Jurisdiction. Counties have the option of applying this Rule in incorporated areas that are not named communities in 15A NCAC 02B .0711 or .0731, or not. The Stormwater Map (below) should clearly exclude or include non-named communities depending on the county’s approach.

Projects in Falls Watershed: Include this provision if this ordinance is created for the Neuse watershed.

The above exemptions are specific to the Neuse and Tar-Pamlico stormwater rules, such as the Agriculture exemption. Adjust as needed if adapting this ordinance for other watersheds.

State/Federal Projects: The Neuse and Tar-Pamlico Stormwater Rules have a statement requiring state and federal entities undergoing development that is not excluded above to obtain Department review and approval if the local government does not undertake review and approval, to the extent permitted by federal law, including 33 USC 26, and pursuant to N.C.G.S.160A-459 (cities) or N.C.G.S. 153A-454 (counties).

Note that cities and counties do have authority to regulate certain state and federal agency stormwater impacts under N.C.G.S. 160A-459 (cities) and N.C.G.S. 153A-454 (counties). A city or county that interprets this authority to require it to regulate non-NPDES permitted state and/or federal entities relative to the requirements of this rule should consider stating this in the ordinance.

* 1. No Development or Expansion Until Compliance and Permit

No development or expansion of *development* shall occur except in compliance with the provisions of this ordinance or unless exempted. No development or expansion of *development* for which a permit is required pursuant to this ordinance shall occur except in compliance with the provisions, conditions, and limitations of the permit.

* 1. Map

The provisions of this ordinance shall apply within the areas designated on the map titled "Name of Watershed Watershed Stormwater Map of name of local government, North Carolina" ("the Stormwater Map"), which is adopted simultaneously herewith. The Stormwater Map and all explanatory matter contained thereon accompanies and is hereby made a part of this ordinance.[[3]](#footnote-3)

The Stormwater Map shall be kept on file by the Stormwater Administrator and shall be updated to take into account changes in the land area covered by this ordinance and the geographic location of all *engineered stormwater controls* permitted under this ordinance. In the event of a dispute, the applicability of this ordinance to a particular area of land or *engineered stormwater control* shall be determined by reference to the North Carolina Statutes, the North Carolina Administrative Code, and local zoning and jurisdictional boundary ordinances.

1. Interpretation

Commentary: Each local government should consider whether to use existing rules of interpretation, if any are in current use for other ordinances, or whether to adopt the ones provided here. If the local government uses existing rules, they should be fully reviewed for their potential effect on the application of this ordinance.

* 1. Meaning and Intent

All provisions, terms, phrases, and expressions contained in this ordinance shall be construed according to the general and specific purposes set forth in Section 104, Purpose. If a different or more specific meaning is given for a term defined elsewhere in name of municipality’s or county’s code of ordinances, the meaning and application of the term in this ordinance shall control for purposes of application of this ordinance.[[4]](#footnote-4)

* 1. Text Controls in Event of Conflict

In the event of a conflict or inconsistency between the text of this ordinance and any heading, caption, figure, illustration, table, or map, the text shall control.

* 1. Authority for Interpretation

The Stormwater Administrator has authority to determine the interpretation of this ordinance. Any *person* may request an interpretation by submitting a written request to the Stormwater Administrator, who shall respond in writing within 30 days. The Stormwater Administrator shall keep on file a record of all written interpretations of this ordinance.

* 1. References to Statutes, Regulations, and Documents

Whenever reference is made to a resolution, ordinance, statute, regulation, manual (including the Design Manual), or document, it shall be construed as a reference to the most recent edition of such that has been finalized and published with due provision for notice and comment, unless otherwise specifically stated.

* 1. Computation of Time

The time in which an act is to be done shall be computed by excluding the first day and including the last day. If a deadline or required date of action falls on a Saturday, Sunday, or holiday observed by the name of local government, the deadline or required date of action shall be the next day that is not a Saturday, Sunday, or holiday observed by the name of local government. References to days are calendar days unless otherwise stated.

* 1. Delegation of Authority

Any act authorized by this Ordinance to be carried out by the Stormwater Administrator of name of local government may be carried out by his or her designee.

* 1. Usage
     1. Mandatory and Discretionary Terms

The words “shall,” “must,” and “will” are mandatory in nature, establishing an obligation or duty to comply with the particular provision. The words “may” and “should” are permissive in nature.

* + 1. Conjunctions

Unless the context clearly indicates the contrary, conjunctions shall be interpreted as follows: The word “and” indicates that all connected items, conditions, provisions and events apply. The word “or” indicates that one or more of the connected items, conditions, provisions or events apply.

* + 1. Tense, Plurals, and Gender

Words used in the present tense include the future tense. Words used in the singular number include the plural number and the plural number includes the singular number, unless the context of the particular usage clearly indicates otherwise. Words used in the masculine gender include the feminine gender, and vice versa.

* 1. Measurement and Computation

Lot area refers to the amount of horizontal land area contained inside the lot lines of a lot or site.

1. Design Manual
   1. Reference to Design Manual

The Stormwater Administrator shall use the policy, criteria, and information, including technical specifications and standards, in the Design Manual as the basis for decisions about stormwater permits and about the design, implementation and performance of engineered stormwater controls and other practices for compliance with this ordinance.

The Design Manual includes a list of acceptable *stormwater* treatment practices, including specific design criteria for each *stormwater* practice. Stormwater treatment practices that are designed, constructed, and maintained in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards of the Name of Watershed Rules.[[5]](#footnote-5)

* 1. Relationship of Design Manual to Other Laws and Regulations

Commentary: This provision is intended to prevent a situation where another, less stringent standard has the force of law, and might be interpreted as overriding the design manual if the manual does not have the force of law – for example, where a community has an enacted standard for storm sewers that are to be accepted into the public maintenance system, and this enacted standard is less stringent than the guidelines in the design manual.

If the specifications or guidelines of the Design Manual are more restrictive or apply a higher standard than other laws or regulations, that fact shall not prevent application of the specifications or guidelines in the Design Manual.

* 1. Changes to Standards and Specifications

If the standards, specifications, guidelines, policies, criteria, or other information in the Design Manual are amended subsequent to the submittal of an application for approval pursuant to this ordinance but prior to approval, the applicant shall have the choice of using the new Design Manual in reviewing the application and in implementing this ordinance with regard to the application, or using the old Design Manual.

* 1. [Amendments to Design Manual]

Commentary: This optional section would be relevant if a special local design manual is in use.

[The Design Manua*l* may be updated and expanded from time to time, based on advancements in technology and engineering, changes to State *Minimum Design Criteria*, improved knowledge of local conditions, or local monitoring or maintenance experience.[[6]](#footnote-6)

Prior to amending or updating the Design Manual, proposed changes shall be generally publicized and made available for review, and an opportunity for comment by interested *person*s shall be provided.]

1. Relationship to Other Laws, Regulations and Private Agreements
   1. Conflict of Laws

Commentary: This is a standard legal provision that generally provides that the stricter law or regulation will control in the event of conflict.

From a policy rather than a legal perspective, it should be noted that ordinances and standards in many communities may interfere with effective site design and planning for stormwater management. Some examples may include:

▪ Excessive curb & gutter requirements that increase directly connected impervious areas discharging directly into the stormwater conveyance system

▪ Street design standards that provide for overly generous pavement widths in low-traffic areas

▪ Minimum residential lot sizes and other ordinance provisions that hinder sensitive site layout designed around riparian buffers, conservation of open space and clustered development.

▪ Oversized minimum parking requirements that result in large paved parking lots

▪ Building codes that add to the cost of rehabilitating older buildings prevent adaptive re-use in existing urbanized areas or promote greenfield development

▪ Nuisance code provisions that limit vegetation height and restrict wildlife habitat

Thus, many common development standards tend to promote the creation of impervious surface and encourage sprawling, low-density land use patterns that actually worsen stormwater problems, especially when viewed at the watershed scale.

Each jurisdiction will need to consider its standards and ordinances in light of their effects on stormwater runoff. For example, curb & gutter policies may need to be reformulated to allow alternatives that let stormwater flow across vegetative strips before it is sent to the stormwater conveyance system; planting islands may be required to limit the impervious surface in cul-de-sacs; and smaller lot sizes with cluster provisions can permit open space in yards to be reconfigured as preserved common open space. A number of North Carolina cities and counties have adopted the new “Rehab Code” which provides adjusted building code standards to promote the re-use of older buildings (information available at www.ncrehabcode.com).

If possible, communities should undertake a comprehensive review of their policies and standards with the involvement of planning and zoning staff, public works or engineering personnel, and the Stormwater Administrator, with the goal of reducing regulatory barriers and enabling designers to develop plans that deal with stormwater in the most environmentally sound and cost-effective ways.

This ordinance is not intended to modify or repeal any other ordinance, rule, regulation, or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law. Where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare shall control.[[7]](#footnote-7)

* 1. Private Agreements

This ordinance is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of this ordinance are more restrictive or impose higher standards or requirements than such an easement, covenant, or other private agreement, the requirements of this ordinance shall govern. Nothing in this ordinance shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not legitimize any failure to comply with this ordinance. In no case shall name of local government be obligated to enforce the provisions of any easements, covenants, or agreements between private parties.[[8]](#footnote-8)

1. Severability

If the provisions of any section, subsection, paragraph, subdivision, or clause of this ordinance shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision, or clause of this ordinance.

1. Effective Date and Transitional Provisions
   1. Effective Date

This Ordinance shall take effect on \_\_\_\_\_\_\_, 202\_\_\_.

* 1. Final Approvals, Complete Applications

All *development* and expansion of *development* *projects* for which complete and full applications were submitted to the name of local government prior to the effective date of this ordinance may be exempted from complying with all provisions of this ordinance dealing with the control and/or management of stormwater by the choice of the developer.

A phased development plan shall be deemed complete prior to the effective date of this ordinance and it shows:

(1) For the initial or first phase of *development* or expansion of *development*, the type and intensity of use for a specific *parcel* or *parcels*, including at a minimum, the boundaries of the *project* and a *subdivision* plan that has been approved.

(2) For any subsequent phase of *development* or expansion of *development*, sufficient detail so that implementation of the requirements of this ordinance to that phase of *development* would require a material change in that phase of the plan.[[9]](#footnote-9)

* 1. Violations Continue

Any violation of provisions existing on the effective date of this ordinance shall continue to be a violation under this ordinance and be subject to penalties and enforcement under this ordinance unless the use, development, construction, or other activity complies with the provisions of this ordinance.[[10]](#footnote-10)

SECTION 2: ADMINISTRATION AND PROCEDURES

Commentary: Jurisdictions should consider how to coordinate the stormwater review process with local land development approval procedures. Activities that trigger stormwater review can occur earlier than activities that trigger a zoning permit or preliminary subdivision plat, and so the stormwater permit review should occur earlier than a building permit or a zoning permit (sometimes called a “change-in-use approval,” “certificate of zoning compliance” or similar name). Communities that administer their own grading permit, or that rely on a state-issued erosion and sedimentation control plan approval, should ensure that stormwater permit review occurs prior to or in conjunction with that grading or sediment and erosion control plan approval.

In some cases, a stormwater plan for a subdivision may require revision when the preliminary subdivision plan is finalized. One approach to managing the process would be to require an initial stormwater approval as a prerequisite for preliminary plat approval; then after the preliminary plat has been approved, the final stormwater permit can be approved, provided that nothing has happened in the preliminary plat stage to compromise the stormwater design. Alternatively, the final stormwater permit could be obtained in advance, and the subdivision review process could require a signoff from the Stormwater Administrator affirming that the plat is consistent with approved stormwater plans.

1. Review and Decision-Making Entities
   1. Stormwater Administrator
      1. Designation

A Stormwater Administrator shall be designated by the name of governing board to administer and enforce this ordinance.

Commentary: The person designated as the Stormwater Administrator will need to have the technical background and expertise to carry out the duties outlined in the ordinance. It may be necessary for some communities to contract out the position either to another local government or possibly to a private entity.

* + 1. Powers and Duties

In addition to the powers and duties that may be conferred by other provisions of the name of local municipal or county code and other laws, the Stormwater Administrator shall have the following powers and duties under this ordinance:

1. To review and approve, approve with conditions, or disapprove applications for approval of plans pursuant to this ordinance.
2. To make determinations and render interpretations of this ordinance.
3. To establish application requirements and schedules for submittal and review of applications and appeals, to review and make recommendations to the name of governing board on applications for development or expansion of development approvals.
4. To enforce the provisions of this ordinance in accordance with its enforcement provisions.
5. To maintain records, maps, forms and other official materials as relate to the adoption, amendment, enforcement, and administration of this ordinance.
6. To provide expertise and technical assistance to the name of governing board and, if a stormwater board is established, the name of that board as well, upon request.
7. To designate appropriate other *person*(s) who shall carry out the powers and duties of the Stormwater Administrator.
8. To take any other action necessary to administer the provisions of this ordinance.
9. Review Procedures
   1. Permit Required; Must Apply for Permit

A stormwater permit is required for all *development* and expansion of *development* unless exempt pursuant to this ordinance. A permit may only be issued subsequent to a properly submitted and reviewed permit application, pursuant to this section.

* 1. Effect of Permit

A stormwater permit shall govern the design, installation, and construction of stormwater management and control practices on the site, including *engineered stormwater controls* and elements of site design for stormwater management other than *engineered stormwater controls*.

The permit is intended to provide a mechanism for the review, approval, and inspection of the approach to be used for the management and control of stormwater for the *development* site consistent with the requirements of this ordinance, whether the approach consists of *engineered stormwater controls* or other techniques such as low-impact or low-density design. The permit does not continue in existence indefinitely after the completion of the *project*; rather, compliance after *project* construction is assured by the maintenance provisions of this ordinance.

Commentary: This provision mandates a permit for stormwater management on all non-exempt sites. Both engineered stormwater controls and site design are covered by the permit review and approval. For example, if a site uses primarily low-impact development rather than specific SCMs to manage and control stormwater runoff, the design and layout are subject to review and approval under a stormwater permit, just as are the design and layout of SCMs.

However, as the provision makes clear, the permit is for the construction period only and does not normally endure past post-inspection approval. Ongoing maintenance of SCMs is ensured by Section 4, Maintenance, which gives specific requirements for ongoing operation and maintenance, including a recorded O&M agreement that is binding on subsequent owners, annual inspections, reporting, and record-keeping requirements.

* 1. Authority to File Applications

All applications required pursuant to this Code shall be submitted to the Stormwater Administrator by the land owner, a lessee or person holding an option or contract to purchase or lease land, or an authorized agent of the landowner. An easement holder may also apply for development approval for such development as is authorized by the easement.

Commentary: The local government may choose to treat stormwater applications by persons other than the owner/sole owner in the same way that other such applications (such as zoning requests and variances) are treated.

* 1. Establishment of Application Requirements, Schedule, and Fees
     1. Application Contents and Form

The Stormwater Administrator or Stormwater Advisory Board shall establish requirements for the content and form of all applications and shall amend and update those requirements from time to time. At a minimum, the stormwater permit application shall describe in detail how post-*development* stormwater runoff will be controlled and managed, the design of all *engineered stormwater controls*, and how the proposed *project* will meet the requirements of this ordinance.

* + 1. Submission Schedule

The Stormwater Administrator or Stormwater Advisory Board shall establish a submission schedule for applications. The schedule shall establish deadlines by which complete applications must be submitted for the purpose of ensuringthat there is adequate time to review applications~~,~~ and that the various stages in the review process are accommodated.

[*Optional provision*: Replace first sentence with “The Stormwater Administrator shall establish a submission schedule for applications, which shall be reviewed and approved by the name of governing board | Stormwater Advisory Board.]

* + 1. Permit Review Fees

The name of governing board shall establish permit review fees as well as policies regarding refund of any fees upon withdrawal of an application, and may amend and update the fees and policies from time to time.

Commentary: Fees for application review should be distinguished from fees or user charges that a jurisdiction may want to impose as a means of paying for its ongoing stormwater program as a “public enterprise” (also known as a “stormwater utility”). North Carolina law allows the imposition of such fees and charges, but only with the process and limits set out at G.S. § 160A-314. The best practice for all jurisdictions adopting this ordinance or similar for a Nutrient Management Strategy, NPDES program, or a Water Supply Watershed Protection would be to schedule and hold a public hearing in accordance with § 160A-314, whether or not user fees will be assessed to pay for the stormwater program. This ordinance does not attempt to set out the additional provisions that would be needed to create a stormwater utility.

* + 1. Administrative Manual

For applications required under this Code, the Stormwater Administrator shall compile the application requirements, submission schedule, fee schedule, a copy of this ordinance, and information on how and where to obtain the *Design Manual* in an Administrative Manual, which shall be made available to the public.

Commentary: The Administrative Manual may be as simple as a three-ring binder containing in one place the updated master versions of the ordinance, fee schedule, application requirements, submission schedule, and so on. Copies of the information can be made available to the public as photocopied handouts or simple brochures at the permit counter, clerk’s office, or other convenient location.

* 1. Submittal of Complete Application

Applications shall be submitted to the Stormwater Administrator pursuant to the application submittal schedule in the form established by the Stormwater Administrator, along with the appropriate fee established pursuant to this section.

An application shall be considered as timely submitted only when it contains all elements of a complete application pursuant to this ordinance, along with the appropriate fee. If the Stormwater Administrator finds that an application is incomplete, the applicant shall be notified of the deficient elements and shall be provided with an opportunity to submit a complete application. However, the submittal of an incomplete application shall not suffice to meet a deadline contained in the submission schedule established above.

* 1. Review

Within \_\_\_\_\_\_ working days after a complete application is submitted, the Stormwater Administrator shall review the application and determine whether the application complies with the standards of this ordinance.

Commentary: The time limitation here and in subsection above is optional. The adopting local government may wish to consider allowing increased flexibility in review times for a period of time immediately following adoption of the ordinance, as both staff and applicants adjust to the new requirements.

* + 1. Approval

If the Stormwater Administrator finds that the application complies with the standards of this ordinance, the Stormwater Administrator shall approve the application. The Stormwater Administrator may impose conditions of approval as needed to ensure compliance with this ordinance. The conditions shall be included as part of the approval.

* + 1. Fails to Comply

If the Stormwater Administrator finds that the application fails to comply with the standards of this ordinance, the Stormwater Administrator shall notify the applicant and shall indicate how the application fails to comply. The applicant shall have an opportunity to submit a revised application.

* + 1. Revision and Subsequent Review

A complete revised application shall be reviewed by the Stormwater Administrator within \_\_\_\_\_\_ working days after its re-submittal and shall be approved, approved with conditions or disapproved.

If a revised application is not re-submitted within thirty (30) calendar days from the date the applicant was notified, the application shall be considered withdrawn, and a new submittal for the same or substantially the same *project* shall be required along with the appropriate fee for a new submittal.

One re-submittal of a revised application may be submitted without payment of an additional permit review fee. Any re-submittal after the first re-submittal shall be accompanied by a permit review fee additional fee, as established pursuant to this ordinance.

Commentary: Some local governments may prefer not to allow the first re-submittal without requiring the additional fee. The policy choice is up to the local government and may be adjusted to be consistent with re-submittal policies for other types of permit applications.

1. Applications for Approval
   1. Concept Plan and Consultation Meeting

Commentary: This section allows a pre-application conference and conceptual discussion between the developer and the Stormwater Administrator at the discretion of the Stormwater Administrator. It creates some additional steps in the review process, thus imposing costs, and so may not be appropriate for all applications and for all time. However, for large development projects, those with substantial impact, or for developers, engineers or stormwater administrators who are new to the jurisdiction’s processes and rules for handling stormwater, the conference may be a useful way to focus and improve the application and the project itself.

Smaller communities or those with fewer staff resources may feel that providing the option of concept plans and consultation meetings would be unduly burdensome, given their present limitations. However, the option may become useful as the community grows or adds staff – even if it is rarely utilized in the beginning. Also, concept plan review may be kept very informal if this would help to limit costs. For this reason the provision should be included in the adopted ordinance. Note that the suggested submittal of materials outlined in (1), (2), and (3) below is permissive, not mandatory.

Finally, because stormwater management is best addressed as early as possible in the site design and approval process, communities with more staff resources should consider whether an informal consultation meeting should be mandatory or at least strongly encouraged. This would allow dialogue and information sharing before “hardlining” of site design begins. It could result in cost savings to applicants in terms of more efficient site design (working with a site’s existing vegetation or topography, for example, as stormwater management components).

Before a stormwater management permit application is deemed complete, the Stormwater Administrator or *developer* may request a consultation on a concept plan for the post-construction stormwater management system to be utilized in the proposed development *project*. This consultation meeting should take place at the time of the preliminary plan of *subdivision* or other early step in the development process. The purpose of this meeting is to discuss the stormwater management measures necessary for the proposed *project*, as well as to discuss and assess constraints, opportunities and potential approaches to stormwater management designs before formal site design engineering is commenced. Local watershed plans, the name of locality’s open space or natural area protection plan, or section of its comprehensive plan dealing with open space/natural resources, if applicable, and other relevant resource protection plans should be consulted in the discussion of the concept plan.

To accomplish this goal, the following information should be included in the concept plan, which should be submitted in advance of the meeting:

* + 1. Existing Conditions / Proposed Site Plans

Existing conditions and proposed site layout sketch plans, which illustrate at a minimum: existing and proposed topography; perennial and intermittent streams; mapping of predominant soils from soil surveys (if available); stream and other buffers and features used in designing buffers and meeting any applicable buffer requirements; boundaries of existing predominant vegetation; proposed limits of clearing and grading; and location of existing and proposed roads, buildings, parking areas and other impervious surfaces.

* + 1. Natural Resources Inventory

A written or graphic inventory of natural resources at the site and surrounding area as it exists prior to the commencement of the *project*. This description should include a discussion of soil conditions, forest cover, geologic features, topography, wetlands, and native vegetative areas on the site, as well as the location and boundaries of other natural feature protection and conservation areas such as lakes, ponds, floodplains, stream buffers and other setbacks (e.g., drinking water well setbacks, septic setbacks, etc.). Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development and stormwater management.

* + 1. Stormwater Management System Concept Plan

A written or graphic concept plan of the proposed post-development stormwater management system including: preliminary selection and location of proposed *engineered stormwater controls*; low-impact design elements; location of existing and proposed conveyance systems such as grass channels, swales, and storm drains; flow paths; location of floodplain/floodway limits; relationship of site to upstream and downstream properties and drainages; and preliminary location of any proposed stream channel modifications, such as bridge or culvert crossings.

* 1. Stormwater Management Permit Application

The stormwater management permit application shall detail how post-development stormwater runoff will be controlled and managed and how the proposed *project* will meet the requirements of this ordinance, including Section 3, Standards. All such plans shall be prepared by a qualified registered North Carolina professional engineer, surveyor, soil scientist or landscape architect, and the engineer, surveyor, soil scientist or landscape architect shall perform services only in their area of competence, and shall verify that the design of all stormwater management facilities and practices meets the submittal requirements for complete applications, that the designs and plans are sufficient to comply with applicable standards and policies found in the Design Manual, and that the designs and plans ensure compliance with this ordinance.

The submittal shall include all of the information required in the submittal checklist established by the Stormwater Administrator. Incomplete submittals shall be treated pursuant to Section xx-202(D).

* 1. As-Built Plans and Final Approval

Upon completion of a *project*, and before a certificate of occupancy shall be granted, the applicant shall certify that the completed *project* is in accordance with the approved stormwater management plans and designs, and shall submit actual “as built” plans for all stormwater management facilities or practices after final construction is completed.

The plans shall show the final design specifications for all stormwater management facilities and practices and the field location, size, depth, and planted vegetation of all measures, controls, and devices, as installed. The designer of the stormwater management measures and plans shall certify, under seal, that the as-built stormwater measures, controls, and devices are in compliance with the approved stormwater management plans and designs and with the requirements of this ordinance. A final inspection and approval by the Stormwater Administrator shall occur before the release of any performance securities.

* 1. Other Permits

No certificate of compliance or occupancy shall be issued by the insert name of local official, department, or agency responsible for issuing building permits and certificates of occupancy without final as-built plans and a final inspection and approval by the Stormwater Administrator, except where multiple units are served by the stormwater practice or facilities, in which case the name of local official, department, or agency that issues building permits may elect to withhold a percentage of permits or certificates of occupancy until as-built plans are submitted and final inspection and approval has occurred.

1. Approvals
   1. Effect of Approval

Approval authorizes the applicant to go forward with only the specific plans and activities authorized in the permit. No deviations from the terms of the application or the approval shall be made until written approval of proposed changes or deviations has been obtained through permit revision and review. The approval shall not be construed to exempt the applicant from obtaining other applicable approvals from local, state, and federal authorities.

* 1. Time Limit/Expiration

Commentary: An expiration date or validity period for permits/approvals to require that construction begin and be completed within certain time periods should be included for a number of reasons, such as preventing obsolete approvals from persisting indefinitely. This ordinance allows for a single, one-year extension upon written request. Where possible, the time limit should run concurrently with the erosion and sedimentation control plan approval to avoid staggered expirations.

An approved plan shall become null and void if the applicant fails to make substantial progress on the site within one year after the date of approval. The Stormwater Administrator may grant a single, one-year extension of this time limit, for good cause shown, upon receiving a written request from the applicant before the expiration of the approved plan.

In granting an extension, the Stormwater Administrator may require compliance with standards adopted since the original application was submitted unless there has been substantial reliance on the original permit and the change in standards would infringe the applicant’s vested rights.

1. Appeals
   1. Right of Appeal

Except as provided in N.C.G.S. 160D-1403.1, any aggrieved *person* affected by any decision, order, requirement, or determination relating to the interpretation or application of this ordinance made by the Stormwater Administrator, may file an appeal to the Board of Adjustment or governing board within 30 days from receipt of the notice of a determination. Appeals of variance requests shall be made as provided in the section on Variances. In the case of requests for review of proposed civil penalties for violations of this ordinance, the Board of Adjustment or governing board shall make a final decision on the request for review within 90 days of receipt of the date the request for review is filed.

Commentary: It is recommended that appeals be routed to Board of Adjustment if the community has one, and the procedures for stormwater appeals dovetailed as far as possible with procedures for handling other kinds of appeals to that board (such as appeals of zoning determinations). This recommendation is for both policy and legal reasons: (1) it avoids the problem of creating and managing another specialized board; and (2) Boards of Adjustment are accustomed to conducting quasi-judicial procedures, which must also be applied to stormwater appeals.

If the community does not have a Board of Adjustment, appeals should be routed to the same board to which other appeals from decisions of administrative staff are sent (which may be the governing board, as long as it is acting in a quasi-judicial capacity). For those communities which do not have an existing quasi-judicial procedure that is already being followed by a Board of Adjustment or other body, optional subsections (B) and (C) below should be added to provide basic procedural rules.

The 90 day time limit for appeals from civil penalties is set by statute: see N.C.G.S. 143-215.6A(k).

See below for variance and variance appeal procedures.

* 1. Filing of Appeal and Procedures

Appeals shall be taken within the specified time period by filing a notice of appeal and specifying the grounds for appeal on forms provided by name of local government. The Stormwater Administrator shall transmit to the name of board that will hear appeals all documents constituting the record on which the decision appealed from was taken. The Stormwater Administrator shall also provide a copy of the record to the appellant and to the owner of the property that is the subject of the appeal if the appellant is not the owner.

The hearing conducted by the name of board that will hear appeals shall be conducted in the nature of a quasi-judicial proceeding as provided in N.C.G.S. 160D-406 with all findings of fact supported by competent, material evidence.

* 1. [Review by Superior Court]

[Every decision of the name of board that will hear appeals shall be subject to Superior Court review by proceedings in the nature of certiorari. Petition for review by the Superior Court shall be filed with the Clerk of Superior Court within thirty (30) days after the latter of the following:

(1) The decision of the name of board that will hear appeals is filed; or

(2) A written copy of the decision is delivered to every aggrieved party who has filed a written request for such copy with the Chair or Secretary of the board that will hear appeals at the time of its hearing of the case.]

SECTION 3: STANDARDS

1. General Standards

All projects to which this ordinance applies shall comply with the standards of this section. The approval of the stormwater permit shall require an enforceable restriction on property usage that runs with the land, such as a recorded deed restriction or protective covenants, to ensure that future *development* and expansion of *development* maintains the site consistent with the approved *project* plans.

Comment: the following optional section, sets up a method of limiting built-upon area by zone.

This could be used in new development or expansion-only situations where the city has set a maximum BUA by zone. The rule exemption for isolated lots that do not exceed 5% cumulative BUA in the Neuse and Tar-Pamlico Rules is a very simple example of this. A & B below are an **example** for isolated lots with examples of absolute square foot limitation, BUA density limitation, and dwelling unit limitation with some flexibility in how BUA overages are handled with regard to stormwater and nutrients.

C, D, E below are an example for subdivisions and have requirements beyond this ordinance added for higher density. This example uses “absolute BUA tracking” by requiring lot-level BUA recordation on the deed as a method of addressing BUA addition beyond the original subdivision plan. With adequate data on lot size as it relates to average BUA or dwelling unit density as it relates to BUA, those measurements could be used for a BUA limitation without BUA recordation on the deed.

1. [Built Upon Area Standards]
2. [All lots or portions of lots in existence prior to date of ordinance adoption and established outside subdivisions after that date, additional built upon area (BUA) may be added to the property which would result in BUA coverage equal or less than allowed by the following table:

|  |  |  |
| --- | --- | --- |
| **Area** | **BUA (sqft or density or DU) limitation** | **BUA Overage Requirements** |
| Uptown A | 24% BUA or 2 units of single-unit living per acre or 20,000sqft per lot (EXAMPLE TEXT) | Lot-level stormwater control Type X as described in Design Manual (may include capturing first inch, total volume, nutrients, etc.) Acquire nutrient offset credits. |
| Deep Rural B | 6% BUA or 1 dwellling unit per acre or 10,000sqft per lot (EXAMPLE TEXT) | Lot-level stormwater control Type Y as described in Design Manual. |

1. Additional BUA and expansions of BUA beyond the above limitations must comply with the stormwater treatment and nutrient requirements of the above table. Only BUA on the lot, and that existing after, or proposed to be added after, the date of ordinance adoption is included in BUA calculations.
2. For all lots, portions of lots, planned rights-of-way, and common areas established within subdivisions after the date of ordinance adoption, new built upon area may be added to the property which would results in BUA coverages equal to or less than allowed by the following table:

|  |  |  |
| --- | --- | --- |
| **Area** | **BUA (sqft or density or DU) limitation** | **BUA Overage Requirements** |
| A2 | 24% BUA (EXAMPLE TEXT) | Requirements as specified in this section. |
| A1 | 36% BUA (EXAMPLE TEXT) | Requirements as specified in this section, rate control as described in the Design Manual. |

1. New BUA beyond the above limitations must comply with the stormwater treatment and nutrient requirements of the above table. BUA calculations include all proposed lots, portions of lots, planned rights-of-way, and common areas.
2. Prior to the conveyance or transfer of any lot the BUA on that lot will shall be referenced on the final plat and shall be recorded with the county Register of Deeds as the BUA Limitation. The BUA Limitation shall be binding on all subsequent *owners* of the site and portions of the site.]
3. Nitrogen and Phosphorus Loading Rate Targets
4. The *project* shall meet either a *nitrogen* stormwater *loading rate* target of 4.0 | 3.6 pounds per acre per year (lb/ac/yr) and a *phosphorus* stormwater *loading rate target* of 0.8 lb/ac/yr, or meet “runoff volume match” as defined in 15A NCAC 02H .1002.
5. The *project* area used for *nutrient* calculation and stormwater requirements includes the site area less any *existing built-upon area*. The *project* density used for determining stormwater requirements is the amount of *built-upon area* subject to this ordinance at *project* completion divided by the *project* area.
6. The *developer* shall determine the *nitrogen* and *phosphorus* load and loading rate generated from the *project* area without *engineered stormwater controls* and determine the needed *nitrogen* or *phosphorus* load reduction to meet nutrient targets by using the *approved accounting tool*.

Comment: the Division of Water Quality has developed a tool that allows developers to account for nutrient loading from development lands and loading changes due to SCM implementation to meet these requirements.

1. Nitrogen and Phosphorus Standard is Supplemental

The *nitrogen* and *phosphorus* loading standards in this ordinance are supplemental to, not replacements for, stormwater standards otherwise required by federal, state or local law, including without limitation any riparian buffer requirements applicable to the location of the *development.* This includes, without limitation, the riparian buffer protection requirements of 15A NCAC 02B .0714 | .0734 and .0295.

Comment: For purposes of this model ordinance, Stormwater Rules require that, where a project qualifies as “high-density”, the volume of runoff from at least all impervious surfaces, or an equivalent volume, is to be captured and treated for nutrient removal in one or more SCMs, along with resulting attendant pervious areas within the drainage envelope of the stormwater practices. This would include any offsite run-on that is not diverted around or through the site. Offsite run-on should be calculated assuming that the offsite drainage envelope will be built out to the maximum built-upon area based on zoning or a specific development plan. This policy is consistent with 15A NCAC 02H .1002(43) and .1003(3), Phase II NPDES stormwater and WSW stormwater.

1. Control and Treatment of Runoff Volume
2. All projects shall meet the stormwater system design requirements set forth in 15A NCAC 02H .1003. Projects shall use a project density threshold of greater than twenty-four (>24%) percent built-upon area, whereupon high-density stormwater design is required. All *engineered stormwater controls* will meet the standards set in the Design Manual and the State’s Minimum Design Criteria, 15A NCAC 02H .1050 through .1062.
3. Where high-density stormwater design is required, stormwater systems shall meet the standards set forth in 15A NCAC 02H .1003(3) and be designed to control and treat the volume of runoff generated from all built-upon area by one inch of rainfall or equivalent runoff volume in one or more Primary SCMs. These projects may utilize offsite Primary SCMs dedicated to treating an area encompassing the project.
4. Where high-density stormwater design is not required, stormwater systems shall meet the low-density stormwater design standards set forth in 15A NCAC 02H .1003(2).
5. Methods to Meet Nutrient Control Requirements

*Projects* subject to this ordinance shall meet *nitrogen* and *phosphorus* loading targets through a combination of the following methods:

1. Projects may reduce export of *nitrogen* or *phosphorus* through any combination of *engineered stormwater controls* treating runoff on the site, in an approved offsite regional *engineered stormwater control, or through the acquisition of permanent nutrient offset credits*. The *developer* shall calculate the *nitrogen* and *phosphorus* reduction provided by these controls using the approved *accounting tool*.
2. Proposed development undertaken by a local government solely as a public road expansion or public sidewalk project, or proposed development subject to the jurisdiction of the Surface Transportation Board, may meet *nitrogen* and *phosphorus* reduction needs for the *project* entirely through the use of *permanent* *nutrient offset* *credits* pursuant to the Nutrient Offset Credit Trading Rule, 15A NCAC 02B .0703.
3. Use of Permanent Nutrient Offset Credits
4. Sufficient *permanent nutrient offset credits* to meet *project* nutrient reduction needs not provided by *engineered stormwater controls* serving the *project* shall be acquired prior to approval of the development plan. The Stormwater Administrator shall issue an approval letter for the *development* that documents the needed nitrogen or phosphorus credits and where the development is located relative to the Name of Watershed Rules’ geographic requirements. All *permanent nutrient offset credits* permitted by this ordinance shall meet the requirements of 15A NCAC 02B .0703.
5. *Permanent nutrient offset credits* shall be acquired pursuant to N.C.G.S. 143-214.26 and 15A NCAC 02B .0703 prior to the start of construction of the project. Persons
6. A *developer* subject to this ordinance may acquire *permanent nutrient offset credits* through one of the following methods:

(1) Through a private nutrient bank;

(2) Through offsite offset provided by the *developer* and approved by name of local government;

(3) [Through an offset option provided by name of local government;]

(4) Through payment into the Riparian Buffer Restoration Fund established in N.C.G.S. 143-214.21.

1. Excess *permanent nutrient offset credits* acquired beyond what is required for the *development* may not be applied to any other *development*.

Comment: 15A NCAC 02B .0703, the Nutrient Offset Trading Rule, spells out options and requirements for nutrient trading within the Neuse and Tar-Pamlico watersheds. The Rule which establishes procedural requirements for nutrient offset payments, regulates the sellers of offset credits, and provides for an accounting tool to ensure that credits are genuine.

1. Evaluation of Standards for Stormwater Control Measures
   1. Evaluation According to Contents of Design Manual

All *engineered stormwater controls* and *stormwater systems* required under this ordinance shall be evaluated by the Stormwater Administrator according to the policies, criteria, and information, including technical specifications and standards and the specific design criteria for each stormwater practice in the Design Manual. The Stormwater Administrator shall determine whether proposed *engineered stormwater controls* will be adequate to meet the requirements of this ordinance.

* 1. Determination of Adequacy; Presumptions and Alternatives

*Engineered stormwater controls* that are designed, constructed, and maintained in accordance with the criteria and specifications in the Design Manual will be presumed to meet the minimum water quality and quantity performance standards of this ordinance. Whenever an applicant proposes to utilize a practice or practices not designed and constructed in accordance with the criteria and specifications in the Design Manual, the applicant shall have the burden of demonstrating that the practice(s) will satisfy the minimum water quality and quantity performance standards of this ordinance. The Stormwater Administrator may require the applicant to provide the documentation, calculations, and examples necessary for the Stormwater Administrator to determine whether such an affirmative showing is made.

1. Dedication of BMPS, Facilities & Improvements

Commentary: If the local government accepts any SCMs into public maintenance pursuant to this section, at the time of acceptance a binding agreement or process should be established by which the locality will recover costs from the owner for carrying out maintenance activities on the SCMs. Before accepting SCMs for maintenance, the jurisdiction should weigh the costs and benefits of so doing and identify a way to pay for maintenance.

The name of local government may accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this ordinance and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.[[11]](#footnote-11)

1. Variances

Commentary: The Neuse and Tar-Pamlico Stormwater Rules do not specify the use of any particular variance procedure. The following procedures are based on the Falls Lake Stormwater Rules, which require use of the variance procedures from the water supply watershed program, 15A NCAC 02b .104(r), although these allow the use of Board of Adjustment variance standards and process for “*minor variances*.”

It is recommended that the provisions for *minor variances* that follow be changed to dovetail with the unit’s existing board of adjustment variance procedure, if one exists. The Falls rules, consistent with the water supply watershed rules, call for the local Watershed Review Board to make certain findings, and if the unit of government adopting this ordinance has a Watershed Review Board that is separate from its Board of Adjustment and governing board, the Watershed Review Board is the appropriate entity to hear and make findings on variance requests to meet the letter of the rules. Rule 15A NCAC 02B .0623 defines *major* and *minor variance* in the context of water supply watershed protection, and these definitions have been incorporated into this ordinance; there are different processes set out for action on these two types of variances. The Rule codifying water supply watershed variance procedures, 15A NCAC 02B .0623, requires that:

“When local ordinances are more stringent than the state's minimum water supply protection rules and Falls rules, a variance to the local government's ordinance is not considered a major variance as long as the result of the variance is not less stringent than the state's minimum requirements.”

1. Any *person* may petition the name of local government for a variance granting permission to use the *person's* land in a manner otherwise prohibited by this ordinance. For all proposed major and *minor variances* from the requirements of this ordinance, the local Watershed Review Board, or quasi-judicial body shall make findings of fact in accordance with the procedures of N.C.G.S 160D-406 showing that:

(1) there are practical difficulties or unnecessary hardships that prevent compliance with the strict letter of the ordinance;

(2) the variance is in harmony with the general purpose and intent of the local watershed protection ordinance and preserves its spirit; and

(3) in granting the variance, the project will ensure equal or better protection of waters of the State than the requirements of 15A NCAC 02B .0711 (Neuse Stormwater Rule) | .0711 (Tar-Pamlico Stormwater Rule), and that the public safety and welfare have been assured and substantial justice has been done.

1. In the case of a request for a *minor variance*, the name of local government may vary or modify any of the regulations or provisions of the ordinance so that the spirit of the ordinance shall be observed, public safety and welfare secured, and substantial justice done may impose reasonable and appropriate conditions and safeguards upon any variance it grants.
2. The name of local government may attach conditions to the major or *minor variance* approval that support the purpose of the local watershed protection ordinance. If the variance request qualifies as a *major variance*, and the name of local government decides in favor of granting the *major variance*, the Board shall then prepare a preliminary record of the hearing and submit it to the *Commission* for review and approval. If the *Commission* approves the *major variance* or approves with conditions or stipulations added, then the *Commission* shall prepare a *Commission* decision which authorizes name of local government to issue a final decision which would include any conditions or stipulations added by the *Commission*. If the *Commission* denies the *major variance*, then the *Commission* shall prepare a decision to be sent to name of local government. Name of local government shall prepare a final decision denying the *major variance*.
3. Appeals from the local government decision on a major or *minor variance* request are made on certiorari to the local Superior Court. Appeals from the *Commission* decision on a *major variance* request are made on judicial review to Superior Court.

SECTION 4: MAINTENANCE

1. General Standards for Maintenance

Commentary: The long-term effectiveness of any engineered stormwater control relies, above all, on appropriate maintenance. This section is intended to provide a full array of provisions to ensure that such maintenance occurs, including identifying who will be responsible for maintenance over the long term as well as during development, and ensuring that funds for maintenance and repair are available when appropriate.

* 1. Function of Engineered Stormwater Controls As Intended

The *owner* of each *engineered stormwater control* installed pursuant to this ordinance shall ensure adequate maintenance and operate it so as to preserve and continue its function in controlling stormwater quality and quantity at the degree or amount of function for which the *engineered stormwater control* was designed.

* 1. Annual Maintenance Inspection and Report

The *person* responsible for maintenance of any *engineered stormwater control* installed pursuant to this ordinance shall submit to the Stormwater Administrator an inspection report from a qualified professional certified by the North Carolina Cooperative Extension Service for stormwater treatment practice inspection and maintenance. The inspection report shall contain all of the following:

(1) The name and address of the land *owner*;

(2) The recorded book and page number of the lot of each *engineered stormwater control*;

(3) A statement that an inspection was made of all *engineered stormwater controls*;

(4) The date the inspection was made;

(5) A statement that all inspected *engineered stormwater control*s are performing properly and are in compliance with the terms and conditions of the approved maintenance agreement required by this ordinance; and

(6) The original signature and seal of the engineer, surveyor, or landscape architect.

All inspection reports shall be on forms supplied by the Stormwater Administrator. An original inspection report shall be provided to the Stormwater Administrator beginning one year from the date of as-built certification and each year thereafter on or before the date of the as-built certification.[[12]](#footnote-12)

1. Operation and Maintenance of Engineered Stormwater Controls
   1. Operation and Maintenance Plan

There shall be an Operation and Maintenance Plan (O&M Plan) for every *engineered stormwater control*. The O&M Plan shall specify all operation and maintenance work necessary for the function of all *engineered stormwater control* components, including the stormwater conveyance system, perimeter of the device, inlet(s), pretreatment measures, main treatment area, outlet, vegetation, and discharge point.

The O&M Plan shall require the *owner* to maintain, repair and, if necessary, reconstruct the *engineered stormwater controls*, and shall state the terms, conditions, and schedule of maintenance for the *engineered stormwater controls*. The O&M Plan shall specify methods to be used to maintain or restore the *engineered stormwater controls* to design specifications in the event of failure.

The O&M Plan shall be signed by the *owner* and notarized. The *owner* shall keep maintenance records and these shall be available upon request by the Stormwater Administrator. [[13]](#footnote-13)

* 1. Operation and Maintenance Agreement

Prior to the conveyance or transfer of any lot or building site to be served by *engineered stormwater controls* pursuant to this ordinance, and prior to issuance of any permit for development requiring *engineered stormwater controls* pursuant to this ordinance, the applicant or *owner* of the site must enter into an Operation and Maintenance Agreement (O&M Agreement) with the Stormwater Administrator. The O&M Agreement shall require the applicant or *owner* to maintain, repair, or reconstruct the *engineered stormwater controls* in accordance with the approved design plans and the Operation and Maintenance Plan. The O&M Agreement shall be binding on all subsequent *owners* of the site, portions of the site, and lots, or *parcels* served by the *engineered stormwater control*. Until the transference of all property, sites, or lots served by the *engineered stormwater control*, the original *owner* or applicant shall have primary responsibility for carrying out the provisions of the O&M Agreement.

The O&M Agreement shall grant to name of local government a right of entry in the event that the Stormwater Administrator has reason to believe it has become necessary to inspect, monitor, maintain, repair, or reconstruct the *engineered stormwater control*; however, in no case shall the right of entry, of itself, confer an obligation on name of local government to assume responsibility for the *engineered stormwater controls*.

The O&M Agreement must be approved by the Stormwater Administrator prior to development plan approval, and it shall be referenced on the final plat and shall be recorded with the county Register of Deeds upon final plat approval. A copy of the recorded O&M Agreement shall be given to the Stormwater Administrator within fourteen (14) days following its recordation. [[14]](#footnote-14)

* 1. Special Requirement for Homeowners’ and Other Associations

For all *engineered stormwater controls* required pursuant to this ordinance and that are to be or are owned and maintained by a homeowners’ association, property *owners*’ association, or similar entity, the required O&M Agreement shall include all of the following provisions:

(1) Acknowledgment that the association shall continuously operate and maintain the *engineered stormwater controls* according to the specifications laid out in the Operation and Maintenance Plan.

(2) Establishment of an escrow account, which can be spent solely for sediment removal, structural, biological or vegetative replacement, major repair, or reconstruction of the *engineered stormwater controls*. If *engineered stormwater controls* are not performing adequately or as intended or are not properly maintained, the name of local government, in its sole discretion, may remedy the situation, and in such instances the name of local government shall be fully reimbursed from the escrow account. Escrowed funds may be spent by the association for sediment removal, structural, biological or vegetative replacement, major repair, and reconstruction of the *engineered stormwater controls*, provided that the name of local government shall first consent to the expenditure.

(3) Both *developer* contribution and annual sinking funds shall fund the escrow account. Prior to plat recordation or issuance of construction permits, whichever shall first occur, the *developer* shall pay into the escrow account an amount equal to fifteen (15) per cent of the initial construction cost of the *engineered stormwater controls*. Two-thirds (2/3) of the total amount of sinking fund budget shall be deposited into the escrow account within the first five (5) years and the full amount shall be deposited within ten (10) years following initial construction of the *engineered stormwater controls*. Funds shall be deposited each year into the escrow account. A portion of the annual assessments of the association shall include an allocation into the escrow account. Any funds drawn down from the escrow account shall be replaced in accordance with the schedule of anticipated work used to create the sinking fund budget.

(4) The percent of *developer* contribution and lengths of time to fund the escrow account may be varied by the name of local government depending on the design and materials of the *engineered stormwater controls*.

(5) Granting to the name of local government a right of entry to inspect, monitor, maintain, repair, and reconstruct *engineered stormwater controls*.

(6) Allowing the name of local government to recover from the association and its members any and all costs the name of local government expends to maintain or repair the *engineered stormwater controls* or to correct any operational deficiencies. Failure to pay the name of local government all of its expended costs, after forty-five days written notice, shall constitute a breach of the agreement. In case of a deficiency, the name of local government shall thereafter be entitled to bring an action against the association and its members to pay, or foreclose upon the lien hereby authorized by the agreement against the property, or both. Interest, collection costs, and attorney fees shall be added to the recovery.

(7) A statement that this agreement shall not obligate the name of local government to maintain or repair any *engineered stormwater controls*, and the name of local government shall not be liable to any *person* for the condition or operation of *engineered stormwater controls*.

(8) A statement that this agreement shall not in any way diminish, limit, or restrict the right of the name of local government to enforce any of its ordinances as authorized by law.

(9) A provision indemnifying and holding harmless the name of local government for any costs and injuries arising from or related to the *engineered stormwater controls*, unless the name of local government has agreed in writing to assume the maintenance responsibility for the *engineered stormwater controls* and has accepted dedication of any and all rights necessary to carry out that maintenance. [[15]](#footnote-15)

1. Inspection Program

Inspections and inspection programs by name of local government may be conducted or established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in the *engineered stormwater controls*; and evaluating the condition of *engineered stormwater controls*.[[16]](#footnote-16)

If the *owner* or occupant of any property refuses to permit such inspection, the Stormwater Administrator shall proceed to obtain an administrative search warrant pursuant to N.C.G.S. 15-27.2 or its successor. No *person* shall obstruct, hamper or interfere with the Stormwater Administrator while carrying out his or her official duties.

1. Performance Security for Installation and Maintenance
   1. May Be Required[[17]](#footnote-17)

The name of local government may, at its discretion, require the submittal of a performance security or bond with surety, cash escrow, letter of credit or other acceptable legal arrangement prior to issuance of a permit in order to ensure that the *engineered stormwater controls* are:

(1) installed by the permit holder as required by the approved stormwater management plan**,** and/or

(2) maintained by the *owner* as required by the Operation and Maintenance Agreement.

* 1. Amount
  2. Installation

The amount of an installation performance security shall be the total estimated construction cost of the *engineered stormwater controls* approved under the permit, plus 25%.

* 1. Maintenance

The amount of a maintenance performance security shall be the present value of an annuity of perpetual duration based on a reasonable estimate of the annual cost of inspection, operation and maintenance of the *engineered stormwater controls* approved under the permit, at a discount rate that reflects the jurisdiction’s cost of borrowing minus a reasonable estimate of long-term inflation.

Commentary: Use of this approach to maintenance security creates an incentive to choose the engineered stormwater controls that are expected to have the least costly maintenance. An example for calculating the amount of maintenance performance security is as follows: suppose the expected annual cost of inspection, operation and maintenance of the SCMs covered by the permit is $500 in current dollars. The security amount is the present value of a perpetuity in the amount of $500, which is simply $500 divided by the real (inflation adjusted) discount rate. The real discount rate, for these purposes, is calculated by taking a reasonable estimate of the jurisdiction’s expected return on moderately risky investments, such as the return on corporate bonds rated Aa by Moody’s, and subtracting the expected rate of inflation. So if the jurisdiction’s expected return on moderately risk investments is 7% and a reasonable estimate of long term inflation is 2%, then the maintenance security amount would be: $500/(.07-.02) = $500/.05 = $10,000.

Some annual maintenance cost estimates for BMPs in North Carolina are available in Wassick and Hunt, “An Evaluation of Costs and Benefits of Structural Stormwater Best Management Practices in North Carolina,” N.C. Extension Service, available online as of 5/1/2010 at <http://www.bae.ncsu.edu/people/faculty/hunt/bmpcosts&benefits.pdf>. The authors find a range from $4,411 annually for wet ponds to $583 for bioretention in clay or sandy soils for BMPs controlling a 10-acre watershed, presumably in 2003 dollars. The jurisdiction should evaluate whether it will have additional costs for inspection time and possible operation of the SCM should the owner fail to maintain the SCM.

* 1. Uses of Performance Security
  2. Forfeiture Provisions

The performance security shall contain forfeiture provisions for failure, after proper notice, to complete work within the time specified, or to initiate or maintain any actions which may be required of the applicant or *owner* in accordance with this ordinance, approvals issued pursuant to this ordinance, or an Operation and Maintenance Agreement established pursuant to this ordinance.

* 1. Default

Upon default of the *owner* to construct, maintain, repair and, if necessary, reconstruct any *engineered stormwater control* in accordance with the applicable permit or Operation and Maintenance Agreement, the Stormwater Administrator shall obtain and use all or any portion of the security to make necessary improvements based on an engineering estimate. Such expenditure of funds shall only be made after requesting the *owner* to comply with the permit or Operation and Maintenance Agreement. In the event of a default triggering the use of installation performance security, the name of local government shall not return any of the unused deposited cash funds or other security, which shall be retained for maintenance.[[18]](#footnote-18)

* 1. Costs in Excess of Performance Security

If name of local government takes action upon such failure by the applicant or *owner*, the name of local government may collect from the applicant or *owner* the difference between the amount of the reasonable cost of such action and the amount of the security held, in addition to any other penalties or damages due.

* 1. Refund

Within sixty days of the final approval, the installation performance security shall be refunded to the applicant or terminated, except any amount attributable to the cost (plus 25%) of landscaping installation and ongoing maintenance associated with the *engineered stormwater controls* covered by the security. Any such landscaping shall be inspected one (1) year after installation with replacement for compliance with the approved plans and specifications and, if in compliance, the portion of the financial security attributable to landscaping shall be released.

1. Notice to Owners
   1. Deed Recordation and Indications On Plat

The applicable Operations and Maintenance Agreement [, conservation easement, or dedication and acceptance into public maintenance (whichever is applicable)] pertaining to every *engineered stormwater control* shall be referenced on the final plat and shall be recorded with the county Register of Deeds upon final plat approval. If no *subdivision* plat is recorded for the site, then the Operations and Maintenance Agreement[, conservation easement, or dedication and acceptance into public maintenance, whichever is applicable] shall be recorded with the county Register of Deeds so as to appear in the chain of title of all subsequent purchasers under generally accepted searching principles.

* 1. Signage

Where appropriate in the determination of the Stormwater Administrator to assure compliance with this ordinance, *engineered stormwater controls* shall be posted with a conspicuous sign stating who is responsible for required maintenance and annual inspection. The sign shall be maintained so as to remain visible and legible.

Commentary: The intent of discretionary provision (B) is to create actual notice whenever reasonable and useful, rather than relying solely on constructive or record notice.

1. Records of Installation and Maintenance Activities

The *owner* of each *engineered stormwater control* shall keep records of inspections, maintenance, and repairs for at least five years from the date of creation of the record and shall submit the same upon reasonable request to the Stormwater Administrator.[[19]](#footnote-19)

1. Nuisance

The *owner* of each *engineered stormwater control*, whether *engineered stormwater control* or non-*engineered stormwater control*, shall maintain it so as not to create or result in a nuisance condition.

1. Maintenance Easement

Every *engineered stormwater control* and its associated maintenance accesses on privately owned land, except for those located on single family residential lots, installed pursuant to this ordinance shall be made accessible for adequate maintenance and repair by a permanent maintenance easement. The easement shall be recorded and its terms shall specify who may make use of the easement and for what purposes. The engineered stormwater control will be shown and labeled within the easement. The easement shall be granted in favor of the Stormwater Administrator.

Commentary: With regard to this provision for a maintenance easement, it is anticipated that few local governments will opt to maintain SCMs that serve private property. In the case of any communities that should wish to do so, those jurisdictions should carefully consider, in consultation with their attorney and engineer, public works director or other *person* familiar with drainage maintenance, whether they wish to have easements dedicated for the purpose of maintaining SCMs. While dedication in this manner facilitates maintenance by the jurisdiction, it also raises the risk of governmental liability for problems caused by flooding or other drainage issues, under North Carolina case law.

SECTION 5: ENFORCEMENT AND VIOLATIONS

1. General

Commentary: The Neuse and Tar-Pamlico Stormwater Rules do not provide any guidance on enforcement and violations. The following text is adapted from that prepared for the Falls Rules. The Falls Rules (15A NCAC 02B .0275) provide that violations of the stormwater provisions implemented by this ordinance (15A NCAC 02B .0277) are subject to enforcement as authorized by N.C.G.S. 143-215.6A (civil penalties), N.C.G.S. 143-215.6B (criminal penalties), and N.C.G.S.143-215.6C (injunctive relief). See particularly N.C.G.S. 143-215.6A(j) and (k) for authorization and process for an approved local stormwater program to take direct enforcement action using civil penalties.

Communities should consider whether a violation of the stormwater ordinance should also constitute a violation of the zoning or building regulations and may wish to make amendments to those regulations accordingly. For example, the zoning code could specify that compliance with stormwater regulations is required for issuance of any approvals issued under the zoning code, so that any development not complying with the stormwater regulations is also prohibited under zoning. See enforcement of zoning codes N.C.G.S. 160D-404.

* 1. Authority to Enforce

The provisions of this ordinance shall be enforced by the Stormwater Administrator, his or her designee, or any authorized agent of name of local government. Whenever this section refers to the Stormwater Administrator, it includes his or her designee as well as any authorized agent of name of local government.

* 1. Violation Unlawful

Any failure to comply with an applicable requirement, prohibition, standard, or limitation imposed by this ordinance, or the terms or conditions of any permit or other development *approval* or authorization granted pursuant to this ordinance, is unlawful and shall constitute a violation of this ordinance.[[20]](#footnote-20)

* 1. Each Day a Separate Offense

Each day that a violation continues shall constitute a separate and distinct violation or offense.[[21]](#footnote-21)

* 1. Responsible Persons/Entities

Any *person* who erects, constructs, reconstructs, alters (whether actively or passively), or fails to erect, construct, reconstruct, alter, repair or maintain any structure, SCM, *engineered stormwater control*, practice, or condition in violation of this ordinance shall be subject to the remedies, penalties, and/or enforcement actions in accordance with this section. *Person*s subject to the remedies and penalties set forth herein may include any architect, engineer, builder, contractor, *developer*, agency, or any other *person* who participates in, assists, directs, creates, causes, or maintains a condition that results in or constitutes a violation of this ordinance, or fails to take appropriate action, so that a violation of this ordinance results or persists; or an *owner*, any tenant or occupant, or any other *person*, who has control over, or responsibility for, the use or development of the property on which the violation occurs.[[22]](#footnote-22)

For the purposes of this article, responsible *person*(s) shall include but not be limited to:[[23]](#footnote-23)

* 1. Person Maintaining Condition Resulting In or Constituting Violation

An architect, engineer, builder, contractor, *developer*, agency, or any other *person* who participates in, assists, directs, creates, causes, or maintains a condition that constitutes a violation of this ordinance, or fails to take appropriate action, so that a violation of this ordinance results or persists.

* 1. Responsibility For Land or Use of Land

The *owner* of the land on which the violation occurs, any tenant or occupant of the property, any *person* who is responsible for stormwater controls or practices pursuant to a private agreement or public document, or any *person*, who has control over, or responsibility for, the use or development of the property.

1. Remedies and Penalties

The remedies and penalties provided for violations of this ordinance, whether civil or criminal, shall be cumulative and in addition to any other remedy provided by law, and may be exercised in any order.

* 1. Remedies
  2. Withholding of Certificate of Occupancy

The Stormwater Administrator or other authorized agent may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site and served by the stormwater practices in question until the applicant or other responsible *person* has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

* 1. Disapproval of Subsequent Permits and Development Approvals

As long as a violation of this ordinance continues and remains uncorrected, the Stormwater Administrator or other authorized agent may withhold, and the name of planning board, governing board, and/or other board(s) that review land development requests may disapprove, any request for permit ordevelopment *approval* or authorization provided for by this ordinance or the zoning, *subdivision*, and/or building regulations, as appropriate for the land on which the violation occurs.

* 1. Injunction, Abatements, etc.

The Stormwater Administrator, with the written authorization of the insert title of municipal or county manager, or, if there is no municipal manager, of the town clerk or the governing board, may institute an action in a court of competent jurisdiction for a mandatory or prohibitory injunction and order of abatement to correct a violation of this ordinance. Any *person* violating this ordinance shall be subject to the full range of equitable remedies provided in the General Statutes or at common law.

* 1. Correction as Public Health Nuisance, Costs as Lien, etc.

If the violation is deemed dangerous or prejudicial to the public health or public safety and is within the geographic limits prescribed by N.C.G.S. 160A-193, the Stormwater Administrator, with the written authorization of the title of municipal or county manager, or, if there is no manager, of the town clerk or the governing board, may cause the violation to be corrected and the costs to be assessed as a lien against the property.

* 1. Stop Work Order

The Stormwater Administrator may issue a stop work order to the *person*(s) violating this ordinance. A copy of the order shall be delivered to the holder of the *development* permit and to the *owner* of the property involved (if that person is not the holder of the *development* permit) by personal delivery, electronic delivery, or first-class mail. The stop work order shall remain in effect until the *person* has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein. The stop work order may be withdrawn or modified to enable the *person* to take the necessary remedial measures to cure such violation or violations.

Commentary: A stop work order is an important tool where, as in the case of stormwater violations, the consequences of delay in halting illegal activity can result in significant harm to the environment and public health, safety or welfare. Stop work orders and other enforcement mechanisms are enabled by N.C.G.S. 160D-404.

Except as provided by N.C.G.S. 160D-1112 and G.S. 160D-1208, a stop work order may be appealed pursuant to N.C.G.S. 160D-405. No further work or activity shall take place in violation of a stop work order pending a ruling on the appeal. Violation of a stop work order shall constitute a Class 1 misdemeanor.

If a local government chooses to include this stop work provision, it should do so in consultation with legal counsel, and an accelerated appeal process pursuant to Section xx-205, Appeals, should be provided for situations where a stop work order is applied. One way to accelerate the appeal process is to shorten the timeframe for review of appeals. A special or emergency Board of Adjustment meeting could be called, so that a party seeking to challenge a stop work order would achieve a speedy resolution of the matter.

* 1. Civil Penalties

The Stormwater Administrator may assess a civil penalty against any *person* who violates any provision of this ordinance or of a permit or other requirement pursuant to this ordinance. Civil penalties may be assessed up to the full amount of penalty authorized by N.C.G.S. 143-215.6A.

Commentary: The statutory civil penalty limit as of the drafting of this model ordinance is $25,000 per violation, and for continuous violations, $25,000 per violation per day; for a given violation.

The amount of a proposed civil penalty should be set in consideration of the factors set out at G.S. 143B‑282.1(b)

* 1. Criminal Penalties

Violation of this ordinance may be enforced as a criminal matter under North Carolina law.

1. Procedures
   1. Initiation/Complaint

Whenever a violation of this ordinance occurs, or is alleged to have occurred, any *person* may file a written complaint. Such complaint shall state fully the alleged violation and the basis thereof, and shall be filed with the Stormwater Administrator, who shall record the complaint. The complaint shall be investigated promptly by the Stormwater Administrator.

* 1. Inspection

The Stormwater Administrator shall have the authority, upon presentation of proper credentials, to enter and inspect any land, building, structure, or premises to ensure compliance with this ordinance.[[24]](#footnote-24)

* 1. Notice of Violation and Order to Correct

When the Stormwater Administrator finds that any building, structure, or land is in violation of this ordinance, the Stormwater Administrator shall notify, in writing, the property *owner* and the holder of the development permit or other *person* violating this ordinance. The notification shall indicate the nature of the violation, contain the address or other description of the site upon which the violation is occurring, order the necessary action to abate the violation, and give a deadline for correcting the violation. If civil penalties are to be assessed, the notice of violation shall also contain a statement of the civil penalties to be assessed, the time of their accrual, and the time within which they must be paid or be subject to collection as a debt.

The Stormwater Administrator may deliver the notice of violation and correction order by any means authorized for the service of documents by Rule 4 of the North Carolina Rules of Civil Procedure.[[25]](#footnote-25)

Note that if the administering unit is adopting this stormwater ordinance under its planning and zoning authority or is administering it as part of its building code enforcement program, it should consider whether it needs to follow the notice and opportunity to respond procedure set out in N.C.G.S. 160D-1101 *et seq*. Also see *Newton v. Winston-Salem*, 92 N.C. App. 446 (1988).

If a violation is not corrected within a reasonable period of time, as provided in the notification, the Stormwater Administrator may take appropriate action under this ordinance to correct and abate the violation and to ensure compliance with this ordinance.

* 1. Extension of Time

A *person* who receives a notice of violation and correction order, or the *owner* of the land on which the violation occurs, may submit to the Stormwater Administrator a written request for an extension of time for correction of the violation. On determining that the request includes enough information to show that the violation cannot be corrected within the specified time limit for reasons beyond the control of the *person* requesting the extension, the Stormwater Administrator may extend the time limit as is reasonably necessary to allow timely correction of the violation, up to, but not exceeding \_\_\_\_\_\_ days. The Stormwater Administrator may grant \_\_\_\_\_\_ -day extensions in addition to the foregoing extension if the violation cannot be corrected within the permitted time due to circumstances beyond the control of the *person* violating this ordinance. The Stormwater Administrator may grant an extension only by written notice of extension. The notice of extension shall state the date prior to which correction must be made, after which the violator will be subject to the penalties described in the notice of violation and correction order.[[26]](#footnote-26)

* 1. Enforcement After Time to Correct

After the time has expired to correct a violation, including any extension(s) if authorized by the Stormwater Administrator, the Stormwater Administrator shall determine if the violation is corrected. The Stormwater Administrator may act to impose one or more of the remedies and penalties authorized by this ordinance whether or not the violation has been corrected.[[27]](#footnote-27)

* 1. Emergency Enforcement

If delay in correcting a violation would seriously threaten the effective enforcement of this ordinance or pose an immediate danger to the public health, safety, or welfare, then the Stormwater Administrator may order the immediate cessation of a violation. Any *person* so ordered shall cease any violation immediately. The Stormwater Administrator may seek immediate enforcement, without prior written notice, through any remedy or penalty authorized by this article.

SECTION 6: DEFINITIONS

Commentary: [sources of definitions]

1. Terms Defined

When used in this Ordinance, the following words and terms shall have the meaning set forth in this section, unless other provisions of this Ordinance specifically indicate otherwise.

**Approved accounting tool**The most recent version of the accounting tool for calculating *nutrient* loading and reduction approved by the *Division* for the relevant geography and development type under review.

*Built-upon area (BUA)*

Means the same as defined in N.C.G.S. 143-214.7(b2).

Hard counting issues arise with, for example, campus-type developments in which multiple parcels are developed over time. Owners and developers of large, campus-type developments with phased development plans are encouraged to work out master plans with local and/or state regulators so that development phases for regulatory purposes match phases for actual building plans.

**Commission**

The North Carolina Environmental Management Commission, in the *Department*.

*Department*

The North Carolina Department of Environmental Quality.

Design Manual

The State Stormwater Design Manual approved by the Department for the proper implementation of the State Minimum Design Criteria for engineered stormwater controls. All references herein to the Design Manual are to the latest published edition or revision.[[28]](#footnote-28) [Change this definition to a local Design Manual if one is in use, provided that the local Design Manual provides instructions for proper implementation of State Minimum Design Criteria for engineered stormwater controls.]

*Developer*

Means the same as defined in N.C.G.S. 160D-102(11).

Commentary: Neuse and Tar-Pamlico Watershed jurisdictions may develop their own Design Manual to more carefully tailor stormwater management practices to local condition, or to explain to developers and engineers in a practical way to comply with a comprehensive local watershed plan, as long as designs meet State Minimum Design Criteria in 15A NCAC 02H .1050 through .1062. Jurisdictions wishing to pursue this route should consult with the *Division* on necessary elements of the manual and the state approval process. Jurisdictions should also consider and explain the process they will use to give notice and provide an opportunity to comment on the original manual and any changes in it.

*Development*

Means the same as defined in N.C.G.S. 143-214.7(a1)(1).

This model ordinance uses the language for “development” and “redevelopment” from statute (N.C.G.S. 143-214.7), without relying on a definition of “new development.” The definition is unnecessary in this ordinance since it simply is a catchall category for “*development*” that is not “*existing development*.” The definitions of *development* and *existing development* in this ordinance, when read with the applicability language, serve to define this catchall category.

*Development* approval

Means the same as defined in N.C.G.S. 160D-102(13).

*Division*

The Division of Water Resources in the Department.[[29]](#footnote-29)

**Existing development**

Means the same as defined in 15A NCAC 02H .1002(18).

*Engineered stormwater control*

A physical device designed to trap, settle out, filter, or otherwise remove pollutants from stormwater runoff; to alter or reduce stormwater runoff velocity, amount, timing, or other characteristics; to approximate the pre-development hydrology on a developed site; or to achieve any combination of these goals. Engineered stormwater control includes physical practices such as constructed wetlands, vegetative practices, vegetated conveyances, filter strips, grassed swales, and other methods installed or created on real property. “Engineered stormwater control” is synonymous with “structural practice,” “Primary SCM”, “stormwater control facility,” “stormwater control practice,” “stormwater treatment practice,” “stormwater management practice,” “stormwater control measures,” “structural stormwater treatment systems,” and similar terms used in this ordinance. It is a broad term that may include practices that do not require design by a professionally licensed engineer.

*Land disturbing activity*

Means the same as defined in 15A NCAC 02B .0202(33).

Larger common plan of *development* or sale

Means the same as defined in 15A NCAC 02H .1002(8).

Load

Means the mass quantity of a nutrient or pollutant released into surface waters over a given time period. Load in this ordinance refers to pounds of *nitrogen* or *phosphorus* per year.

Loading rate

Means the mass quantity of a nutrient or pollutant released from a given area into surface waters over a given time period. Loading rate in this ordinance refers to pounds of *nitrogen* or *phosphorus* per acre per year.

Major variance

A variance that is not a "minor variance" as that term is defined in this Rule. For provisions in this ordinance that are more stringent than the state's minimum water supply protection rules and Neuse | Tar-Pamlico rules, a variance to this ordinance is not considered a major variance as long as the result of the variance is not less stringent than the state's minimum requirements.[[30]](#footnote-30)

Minimum Design Criteria

Means the same as defined in 15A NCAC 02H .1002(24).

Minor variance

A variance from the minimum Neuse | Tar-Pamlico Stormwater rules that results in the relaxation of up to 10 percent of any vegetated setback, density, or minimum lot size requirement applicable to low density development, or the relaxation of up to five percent of any vegetated setback, density, or minimum lot size requirement applicable to high density development. For variances to a vegetated setback requirement, the percent variation shall be calculated using the footprint of built-upon area proposed to encroach within the vegetated setback divided by the total area of vegetated setback within the project. [[31]](#footnote-31)

*Nitrogen*

Means *total nitrogen* unless specified otherwise.

*Nutrient, Nutrients*

Means the combination of *total nitrogen* and *total phosphorus*.

*1-year, 24-hour storm*

Means the same as defined in 15A NCAC 02H .1002(30).

Outfall

A point at which stormwater (1) enters surface water or (2) exits the property of a particular *owner*.[[32]](#footnote-32)

Owner

The legal or beneficial owner of land, including but not limited to a mortgagee or vendee in possession, receiver, executor, trustee, or long-term or commercial lessee, or any other *person* or entity holding proprietary rights in the property or having legal power of management and control of the property. “Owner” shall include long-term commercial tenants; management entities, such as those charged with or engaged in the management of properties for profit; and every *person* or entity having joint ownership of the property. A secured lender not in possession of the property does not constitute an owner, unless the secured lender is included within the meaning of “owner” under another description in this definition, such as a management entity.

Parcel

Means the same as *project* in this list of definitions.

Permanent nutrient offset credits

Means the same as defined in 15A NCAC 02B .0701(38).

Person

Means the same as defined in N.C.G.S. 143-212(4).

Phosphorus

Means total *phosphorus* unless specified otherwise.

Primary SCM

Means the same as defined in 15A NCAC 02H .1002(37).

Project

Means the same as defined in 15A NCAC 02H .1002(38).

*Redevelopment*

Means the same as defined in N.C.G.S. 143-214.7(a1)(2).

*Runoff treatment*

Means the same as defined in 15A NCAC 02H .1002(43).

*Runoff volume match*

Means the same as defined in 15A NCAC 02H .1002(44).

Site Plan

A scaled drawing and supporting text showing the relationship between lot lines and the existing or proposed uses, buildings, or structures on the lot. The *site plan* may include site-specific details such as building areas, building height and floor area, setbacks from lot lines and street rights-of-way, intensities, densities, utility lines and locations, parking, access points, roads, and stormwater control facilities that are depicted to show compliance with all legally required development regulations that are applicable to the *project* and the *site plan* review. A *site plan* approval based solely upon application of objective standards is an administrative decision and a *site plan* approval based in whole or in part upon the application of standards involving judgment and discretion is a quasi-judicial decision. A *site plan* may also be approved as part of a conditional zoning decision.[[33]](#footnote-33)

Stormwater

Means the same as defined in N.C.G.S. 143-213(16a).

Stormwater system

All *engineered stormwater controls* and conveyances owned or controlled by a *person* that drain to the same *outfall*. A system may be made up of one or more *engineered stormwater controls*.

Subdivision

The division of land for the purpose of sale or development as specified in G.S. 160D-802.[[34]](#footnote-34)

*Substantial progress*

For the purposes of determining whether sufficient progress has been made on an approved plan, one or more of the following construction activities toward the completion of a *site plan* or *subdivision* plan shall occur: obtaining a grading permit and conducting grading activity on a continuous basis and not discontinued for more than thirty (30) days; or installation and approval of on-site infrastructure; or obtaining a building permit for the construction and approval of a building foundation. “Substantial progress” for purposes of determining whether an approved plan is null and void is not necessarily the same as “substantial expenditures” used for determining vested rights pursuant to applicable law. [[35]](#footnote-35)

Total nitrogen

Means the sum of the organic, nitrate, nitrite, and ammonia forms of *nitrogen* in water.

Total phosphorus

Means the sum of the orthophosphate, polyphosphate, and organic forms of *phosphorus* in water.

1. Adapted from Metropolitan North Georgia Water Planning District Model Ordinance. [↑](#footnote-ref-1)
2. Adapted from the North Georgia Model Ordinance. [↑](#footnote-ref-2)
3. Adapted from North Carolina Model Watershed Protection Ordinance. [↑](#footnote-ref-3)
4. Provisions A through H were adapted from Town of Cary Land Development Ordinance. [↑](#footnote-ref-4)
5. From Stormwater Center/EPA Model Ordinance. [↑](#footnote-ref-5)
6. Adapted from Metro North Georgia Water Management District and Stormwater Center/EPA Model Ordinances. [↑](#footnote-ref-6)
7. From Metro North Georgia Water Management District Model Ordinance. [↑](#footnote-ref-7)
8. Adapted from Town of Cary Land Development Ordinance. [↑](#footnote-ref-8)
9. SL 2006-246. [↑](#footnote-ref-9)
10. Adapted from Town of Cary Land Development Ordinance. [↑](#footnote-ref-10)
11. From Virginia Stormwater Management Model Ordinance. [↑](#footnote-ref-11)
12. Drawn from Wake County stormwater ordinance (based on Neuse Urban Stormwater program). [↑](#footnote-ref-12)
13. [↑](#footnote-ref-13)
14. Adapted from Metro North Georgia Water Management District and Stormwater Center/EPA Model Ordinances. Checked against State Stormwater Minimum Design Criteria or operation and maintenance agreements (15A NCAC .1050(11). [↑](#footnote-ref-14)
15. Most of the homeowners’ association requirements are adapted from Neuse model program provisions as adopted in Wake County. [↑](#footnote-ref-15)
16. Adapted from Stormwater Center/EPA and Metro North Georgia Water Management District Model Ordinances. [↑](#footnote-ref-16)
17. From Virginia Model Ordinance for Stormwater Management. [↑](#footnote-ref-17)
18. From Town of Cary Watershed Protection Ordinance. [↑](#footnote-ref-18)
19. Adapted from Metro North Georgia Water Management District Model Ordinance. [↑](#footnote-ref-19)
20. From Town of Apex Unified Development Ordinance. [↑](#footnote-ref-20)
21. Adapted from Town of Cary Land Development Ordinance. [↑](#footnote-ref-21)
22. Adapted from Hall County, Georgia, Unified Development Ordinance. [↑](#footnote-ref-22)
23. An inclusive approach to “responsible persons” drawn from the Town of Apex UDO. [↑](#footnote-ref-23)
24. From Town of Cary Land Development Ordinance. [↑](#footnote-ref-24)
25. From Town of Apex Unified Development Ordinance. [↑](#footnote-ref-25)
26. From Town of Apex Unified Development Ordinance. [↑](#footnote-ref-26)
27. From Town of Apex Unified Development Ordinance. [↑](#footnote-ref-27)
28. Adapted from North Georgia M.O. [↑](#footnote-ref-28)
29. [↑](#footnote-ref-29)
30. From 15A NCAC 02B .0621(14) with modification to apply to specific watershed Rules. [↑](#footnote-ref-30)
31. From 15A NCAC 02B .0621(16) with modification to apply to specific watershed Rules. [↑](#footnote-ref-31)
32. “Outfall” is used at various places in the N.C. General Statutes with reference to sewers, and always as a discharge point to surface water. “Stormwater outfall” is used in various places in title 15A of the North Carolina Administrative Code, but without a definition. Here the definition is intended to make clear that the term includes both the more familiar discharge to a stream, as well as the point at which stormwater leaves a piece of property under control of a particular owner. The term “surface water” is defined in 15A NCAC 02B .0701(46). [↑](#footnote-ref-32)
33. From N.C.G.S. 160D-102(29). [↑](#footnote-ref-33)
34. From N.C.G.S. 160D-102(31). [↑](#footnote-ref-34)
35. Adapted from Town of Cary Land Development Ordinance. [↑](#footnote-ref-35)