

## NPDES Phase II and North Carolina Counties

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## Table of Contents

Executive Summary	4
Introduction	5
A Basic Description of the Regulations	5
Map of Federally Designated Urban Areas	7
Purpose Statement	8
NPDES Statement	8
Problems Particular to North Carolina	9
What is to Follow	10
Methodology and County Selection	10
The Importance of Phase II Regulations	12
EPA Phase II Rules	12
Phase II in Greater Detail	14
<i>MS4s</i>	14
Definition	14
Federally Designated MS4s	14
State Designation Process	15
Local Government Cooperation	16
Summary of County Designation	17
<i>Post-Construction Control Requirement</i>	17
<i>Maximum Extent Practicable</i>	17
Case Studies	18
<i>Guilford County</i>	
Coverage Area	18
Current Storm Water Controls	20
Organizational Arrangements	20
Comparison with Phase II	20
Summary	21
<i>Brunswick County</i>	
Coverage Area	21
Current Storm Water Controls	21
Comparison with Phase II	23

Organizational Arrangements	23
Summary of Brunswick County	23
<i>Randolph County</i>	
Coverage Area	24
Existing Land Use Controls	24
Organizational Arrangements	25
Summary of Randolph County	26
<i>Davidson County</i>	
Coverage Areas	26
Current Land Use Controls	27
Organizational Arrangements	27
Summary of Davidson County	27
<i>Stokes County</i>	
Coverage Areas	28
Current Land Use Controls	28
Conclusions	31
References	32
Appendix A	34
List of state-designated counties	
Appendix B	35
Phase II permanent rules	
Appendix C	45
Phase II rules intended to cover gaps in coverage	

## Executive Summary

The federal laws governing water quality are still changing to meet the challenge set out by the Clean Water Act. Storm water runoff, which is regulated under the National Pollutant Discharge Elimination System (NPDES), is one of the main contributors to water quality problems. The Environmental Protection Agency (EPA), which is responsible for administering NPDES, has begun Phase II of the program. This phase targets smaller storm water conveyance systems than did the first phase.

This paper discusses a problem that North Carolina has had in implementing Phase II rules. Although counties are responsible for the storm water drainage systems that they own, most storm water drainage systems exist in road right-of-ways, and these right-of-ways are not owned by county governments. The roads, and their drainage systems, are owned by the North Carolina Department of Transportation (NCDOT); yet DOT does not have the land use authority to regulate the developments that send water into these drainage systems.

An examination of the laws makes it clear that the state should hold counties with Phase II permits accountable for storm water runoff conveyance systems in unincorporated areas, despite the confusion over who owns the storm water runoff conveyance systems. The paper looks at five different counties to assess the level of burden the regulations will place on county governments, if counties are given responsibility for Phase II permits throughout their jurisdiction. The five counties represent different levels of urbanization and land use or storm water controls.

# Introduction

Although it has been several decades since the Clean Water Act was passed, the need for tighter regulations protecting our nation's surface waters continues. Currently, regulations concerning storm water runoff are being improved. New regulations are being implemented to cover storm water conveyance systems of a smaller size than previous regulations covered. In early 2002, the state issued temporary rules to give local governments a general idea of what to expect from the new regulations. The state has now proposed permanent rules, which are undergoing public hearings during 2003. These proposed permanent rules are being discussed in this paper

Storm water runoff is regulated under the control of the National Pollutant Discharge Elimination System. The National Pollutant Discharge Elimination System (NPDES), created in 1972 as part of the Clean Water Act, was originally designed to stop point-source pollution from entering surface water. Part of NPDES established that storm water runoff is a point source of pollution and, therefore, entities that discharge storm water are required to get permits for doing so. NPDES is currently entering a second phase (Phase II), which requires permits for less populated areas than before. The permit comes with requirements that help ensure storm water discharge does not harm water quality.

## A Basic Description of the Regulations

The following section briefly sketches the key issues involved with Phase II. Questions about the law not answered in this section will be answered later in the paper, when parts of the regulations are discussed in more detail. To begin with, there are six basic requirements a public entity regulated by Phase II must meet to get a permit. Briefly, the rules require the establishment of programs in the following areas:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection
- Construction site runoff control
- Post-construction runoff management
- Pollution prevention and good housekeeping for municipal operations

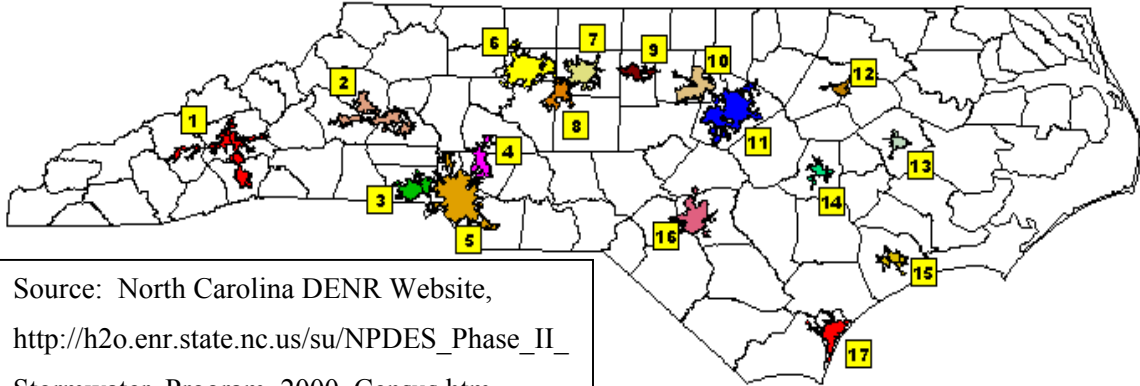
The post-construction requirement will be examined in some length, as this is potentially the most problematic requirement. Most of the other requirements are straightforward and easy to understand; differences between federal rules and rules proposed for North Carolina will be brought out.

Phase II targets smaller local governments. The object of the regulation is the municipal separate storm sewer system (MS4). NPDES Phase I targeted large and medium MS4s, and Phase II targets small MS4s. Questions regarding MS4s, such as what constitutes an MS4, which MS4s are regulated, and who is responsible for regulating MS4s that are outside municipal boundaries are key issues in the paper, and will be examined fully.

There are three methods by which small communities can be required to get a Phase II permit in North Carolina. The first is by federal designation, based on overall population and density according to 2000 census data. The map on the next page shows which areas in the state are designated as regulated based on federal criteria. The second is state designation, which has more complex criteria than federal designation. The list of counties included in Phase II is in Appendix A. The third is inclusion by public petition.

The primary area of concern for this paper involves how to regulate MS4s in areas outside municipal boundaries. Although EPA Phase II requires compliance to storm water discharge rules in unincorporated areas, it has been difficult to determine who is responsible for storm water collection systems in unincorporated areas that discharge to North Carolina Department of Transportation (NCDOT) storm water ditches. EPA language states that local governments that are regulated are responsible for the MS4s that they own. Most rural roads in North Carolina are owned by the NCDOT. However, NCDOT does not have the necessary authority to regulate land uses for these areas; this authority resides with the county. Many counties, however, insist that since the counties do not own the roads or the rights-of-way, they are not responsible for the runoff, either; EPA regulations suggest that cooperative agreements be reached in such a case. The permanent rules proposed by the North Carolina Department of Environment and Natural Resources (DENR) require that counties designated for Phase II permits must establish programs throughout the entire county. This is particularly pertinent in the case of post-construction maintenance; runoff control requirements during the construction phase can largely be met by adhering to the sediment control act. Post-construction controls, however, will impose some level of burden on county governments if they have responsibility in the whole county. This paper provides information on this subject by looking at five different counties and assessing what the impact on counties would be if they were given responsibility for Phase II

## Federally Designated Phase II Areas



Source: North Carolina DENR Website,  
[http://h2o.enr.state.nc.us/su/NPDES\\_Phase\\_II\\_Stormwater\\_Program\\_2000\\_Census.htm](http://h2o.enr.state.nc.us/su/NPDES_Phase_II_Stormwater_Program_2000_Census.htm)

Number	Urbanized Area Name
<a href="#">1</a>	Asheville
<a href="#">2</a>	Hickory
<a href="#">3</a>	Gastonia
<a href="#">4</a>	Concord
<a href="#">5</a>	Charlotte
<a href="#">6</a>	Winston-Salem
<a href="#">7</a>	Greensboro
<a href="#">8</a>	High Point
<a href="#">9</a>	Burlington
<a href="#">10</a>	Durham
<a href="#">11</a>	Raleigh
<a href="#">12</a>	Rocky Mount
<a href="#">13</a>	Greenville
<a href="#">14</a>	Goldsboro
<a href="#">15</a>	Jacksonville
<a href="#">16</a>	Fayetteville
<a href="#">17</a>	Wilmington

county-wide. The county assessments follow a more in-depth description of the problem and of Phase II rules on the federal and state level.

## Purpose Statement

The purpose of this paper is to analyze the impact of Phase II implementation on county governments, particularly as it regards post-construction maintenance in areas outside of municipal control. Five counties have been selected for use as case studies. The selection is intended to cover a broad array of counties, both in the degree of regulations currently in use and the degree of urbanization in the county. The paper is not meant for a general audience, but for the use of those involved with creating legislation regarding Phase II in North Carolina.

The paper does not discuss the effect the rules will have on water quality, nor does it address the science or reasoning behind the rules; the regulations in the rules have already been set by EPA. The regulations themselves are not to be analyzed, instead the analysis will be on the impact the implementation of the program will have on county governments. The paper will look at recent development patterns and county regulations to illustrate the difference in county actions with and without the temporary rules. The paper is not an attempt to create a statistically significant survey, in part due to the wide variability in methods used by different counties and the variety of challenges that each county faces in controlling storm water.

Five counties were selected for close examination. These counties were Guilford, Brunswick, Davidson, Randolph and Stokes. The reasons for picking these particular counties are given in the methodology section. By examining these counties, the paper will provide some idea of the level of burden Phase II puts on county governments. The paper will do this by examining existing storm water regulations and by describing what developments might fall under the new rules that are currently not regulated.

## NPDES Background

In 1972, the federal government established the Federal Water Pollution Control Act Amendments. This act was amended in 1977 and become known as the Clean Water Act. This act gave EPA broad authority to clean up the nation's waters. The original mandate was for swimmable and fishable water nationwide by 1983, and to stop the discharge of all pollutants by 1985. The act requires that anyone discharging pollutants into the waters of the United States needs to have a permit to do so. In order to get a permit, the applicant needs to meet the regulations that the permit requires. Many different amendments have been attached to the Act,



pertaining to such water quality issues as the Chesapeake Bay, the Mississippi, and municipal storm and sewer pipe systems, and revolving funds for state programs (Environmental Reporter, 71:5079).

NPDES Phase I (from section 402 of the Clean Water Act), implemented in the early 1990's, primarily covers larger storm water discharges (EPA Fact Sheet 1). This includes large and medium municipal separate storm sewers (MS4s), which are defined as storm water conveyances in municipalities with populations larger than 100,000. In North Carolina, there are six areas designated for Phase I permits. NPDES Phase I permits are also required for construction sites that disturb greater than five acres of land, and for eleven different types of industrial activities.

However, many small areas also discharge storm water runoff that is detrimental to surface water quality. This not only is true of small municipalities, but of the many small rural developments throughout the state. Taken in aggregate, these sites add up to a large contributor to storm water runoff, and pollution, in the state. NPDES Phase II is designed to address these smaller MS4s and developments.

North Carolina crafted its own temporary version of the Phase II rules in early 2002, and sought public opinion in a series of meetings across the state. These rules were changed and became the proposed permanent rules (15A NCAC 2H.1014). However, these rules still had gaps in coverage due to the peculiarities found in North Carolina's road ownership discussed in this paper. To cover these gaps, the state proposed another version of the permanent rules, which will be analyzed in this paper (15A NCAC2H. 0126). These rules are listed in appendix C and B, respectively. Opinions on these proposed rules will be sought in public hearings this summer.

The basic unit of Phase II is the small MS4. EPA defines small MS4s as any MS4s not counted as either medium or large. EPA defines *regulated* small MS4s as "urbanized areas" (UA). EPA uses this definition: "*An **urbanized area** is a land area comprising one or more central place(s) and the adjacent densely settled surrounding area urban fringe that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.*" Data from the 2000 census is used to make this determination (EPA Fact Sheet 2.1, Page 2). This rule definition applies only to federally designated small MS4s; the criteria for state designation are discussed below.

## Problems Particular to North Carolina

Many aspects of the new law are straightforward and can be adapted from EPA language without trouble. However, some aspects of Phase II are of particular concern in North Carolina,

such as the previously mentioned problem in assigning responsibility in unincorporated areas. The federal rules for Phase II implicitly assume that counties own all MS4's outside cities, and assigns small, local governments (such as a county) responsibility for issuing permits to small MS4s. However, that is not the case in North Carolina, where the Department of Transportation owns most of the roadways and related drainage networks, but does not have adequate regulatory authority to control the developments that drain to their storm water ditches. To provide insight into this problem, several questions need to be addressed.

- Do such storm water systems in unincorporated areas constitute an MS4? What are the reasons that less populous counties are required to regulate over the entire county, instead of just regulating MS4s they own or that drain to county-owned MS4s?
- What are the methods that the state uses to designate counties as regulated?
- What are the options counties can use meet the Phase II requirements?
- What other land use and water quality regulations are in place that might have an impact on Phase II implementation?
- Who will provide the permits for developments in counties that are not able to provide permits, or will the development not be allowed to be built?
- Should the state assign responsibility to county governments for storm water from developments that discharge to NCDOT rights-of-way? Does EPA provide guidance on this specific issue?
- What happens in counties where unregulated MS4s drain to regulated MS4s?

## What is to Follow

The first section to follow will outline the methodology used in this project and the rationale for the particular county selection. The next section will briefly outline the importance of Phase II for surface water quality. This will be followed by a description of the proposed permanent Phase II rules. The federal rules will be explained and any differences with North Carolina rules spelled out. The definition of MS4s, including the difference between regulated and non-regulated MS4s, and the importance of assessing where MS4s drain will be discussed. Post-construction requirements will be discussed thoroughly, as this is the part of the regulations that represent the greatest change. The final sections will deal with county case studies.

## Methodology and County Selection

The analysis of Phase II impacts will be based on case studies from five specific counties. Five counties are selected in an effort to find examples for a broad range of county types. Although the findings cannot be generalized statistically, they do provide an opportunity to understand the impact to a broad range of counties across the state. All counties selected are designated for county-wide implementation, either by the federal rules or by the state. The basic method of picking counties for analysis is divided into two parts, one being the level of storm water or land use controls in the county, and the other being the level of urbanization in the county. This table shows how the selected counties compare based on those two headings.

	Urbanization	
Regulatory Control	High	Low
High	Guilford, Randolph	Brunswick
Low	Davidson	Randolph

For counties with current storm water regulations, the paper will compare the two sets of regulations to determine if the new rules represent a major change. This change could either be in the regulations themselves or in the amount of land that falls under the regulations. For counties with fewer storm water regulations the study will look at building practices and current development regulations to gauge the level of burden Phase II might impose, as well as any change in development patterns that the regulations might create. The county’s organizational structure will be looked at to see if the new regulations will represent the need for a higher level of engineering capacity, or if the regulations will simply represent a larger workload.

The selected counties are:

- **Guilford County** is included for use as an example of an urbanized county with a relatively large city. Much of the county is federally designated as a UA and to participate in Phase II. Guilford County currently has storm water-control regulations.
- **Brunswick County** is an example of a coastal county, and one that is facing heavy development pressure. Brunswick County currently has storm water-control regulations.
- **Randolph County** serves as an example of a county on the heavily urbanized I-85 corridor that is still largely rural in character. Development pressure exists in Randolph

County, but largely in rural areas outside of areas federally designated to meet Phase II guidelines. Sprawling development without storm water runoff controls could have adverse cumulative impacts on water quality.

- **Stokes County** is largely rural and without much development pressure. Land use controls in such counties tend to be lax, and sudden growth pressure could create water quality problems. Comparing the capacity level of rural county governments, which tend to be small, with the burden imposed by Phase II rules, will be important point in the deliberation of the proposed rules.
- **Davidson County** represents counties that primarily see scattered, residential developments, but that do not have strong stormwater runoff controls. Phase II rules could affect such counties more heavily than others.

## The Importance of Phase II Regulations

The purpose of Phase II is to improve water quality by limiting the pollutants contributed by smaller storm water systems. Controlling storm water runoff is a major focus for many water quality plans nation wide. Water quality is a significant issue in North Carolina, and water-related recreation is important to the state's economy. Although studies specifically linking small developments to degraded water quality are not common, there are some sources for this information. According to the 305b report (Water Quality Progress in North Carolina), urban and agricultural runoff degrade water quality over 834 and 1292 miles of North Carolina rivers, respectively. This amounts to 70 percent of the total pollution amounts in North Carolina river basins. Connections between increased runoff from impervious surface and water quality degradation in specific watersheds have also been made, for instance along the White Oak River.

## EPA Phase II Rules

This section describes the six requirements of the Phase II regulations. NPDES Phase II charges public bodies to reduce the level of pollutants in storm water runoff to the maximum extent practicable. Each requirement will be described as it exists on the federal level (EPA Fact Sheets 2.2 through 2.8), and then any differences in the North Carolina temporary rules will be listed (15A NCAC 2H.0126(7)(a)).

The first requirement is a **public outreach and education program**. The main goal of this program is to inform the public of the harm that storm water runoff does to local water bodies, and the types of measures that can prevent this runoff, and to determine the goals and best

management practices (BMP's) for this program. **North Carolina Rules:** the MS4 in question may participate in the statewide program or create their own.

The second requirement is a **public involvement and participation program**. This will encourage the public to participate in reviewing and developing storm water plans, with such measures as stream clean-ups, public meetings, volunteer monitoring and "Adopt a drain" programs to keep storm drains free and clear of debris.

The third requirement is an **illicit discharge detection and elimination program**. Illicit discharges include such things as septic tank overflow, car wash wastewaters, improper oil disposal and spills from roadway accidents. MS4s are not capable of handling such waste streams. Some few categories, such as landscaping irrigation and infiltration from uncontaminated groundwater, do not need correction unless they present a significant threat to water quality. **North Carolina Rules:** The proposed permanent rules state that "The program shall include a storm sewer system mapping component which at a minimum identifies storm water outfalls and the names and location of all waters within the jurisdiction of the public body"

The fourth category is **construction site runoff control**. This includes sediment, construction related waste and debris, and concrete truck washout. Developers are to submit site plans for review before ground is broken. This requirement is similar to the one in Phase I that covers construction sites of over five acres. If a site is covered under a locality's own runoff program, the site is considered to comply with Phase II. **North Carolina Rules:** Meeting the requirements of the Sediment Control Act in conjunction with the state NPDES permit will satisfy this requirement.

The fifth requirement is for **post-construction runoff control**. Redevelopments, defined as remodeling that creates a change in the structure's footprint of greater than one acre, are also included. Due to the amount of emphasis put on this requirement, it is discussed more fully later in the paper. However, on a basic level, the small MS4 operator is required to do four things:

1. Develop and implement strategies which include a combination of structural and/or nonstructural BMPs;
2. Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law,
3. Ensure adequate long-term operation and maintenance of controls;
4. Determine the appropriate BMPs and measurable goals for this minimum control measure.

**North Carolina:** North Carolina also requires permits for projects of less than one acre that are part of a larger common plan or development.

The sixth and final requirement is for **pollution prevention and good housekeeping**. EPA intends that this requirement reduce the amount of pollution produced by the municipality or MS4 operator in question, from parking lots, parks, maintenance sheds and any other operation sites.

## Phase II in Greater Detail

This section will create a clearer understanding of the issues that particularly concern this paper. The first matter is to further define what constitutes an MS4, and what does not. The connection between MS4s and systems that drain to MS4s needs to be made. The next subsection describes the method that the state uses to determine which counties will be designated for Phase II permits. Lastly, the post-construction requirement is spelled out in detail. This summation of the rules applies to normal waters, and not waters grouped under different programs such as trout or nutrient sensitive waters; where two or more sets of rules overlap, the more stringent set of rules takes precedence.

### MS4's

#### Definition

Important to our discussion is a clear definition of what an MS4 actually is. This is the definition offered by DENR: *“Municipal separate storm sewer system (MS4) pursuant to 40 CFR 122.26(b)(8) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains): (i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.*

*(ii) Designed or used for collecting or conveying stormwater;*

*(iii) Which is not a combined sewer; and*

*(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. “(15A NCAC 2H .1026 (1)(e)*

### **Federally Designated MS4s**

The definition of MS4, then, covers a wide variety of stormwater conveyances. Not all MS4s are regulated, however. As previously mentioned, federally designated UA's constitute regulated MS4s. A federally designated UA is a "*land area comprising one or more places central place(s) and the adjacent densely settled surrounding area urban fringe that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.*"(40 CFR 122.32) This is determined by the US Census.

### **State Designation Process**

Federal rules require that the state also investigate communities with populations greater than 10,000 and densities higher than 1,000 people per square mile. The criteria applied to these areas include a balanced assessment of the following factors:

- Discharge to sensitive waters;
- High population density;
- High growth or growth potential;
- Contiguity to a UA;
- Significant contributor of pollutants to waters of the United States; and
- Ineffective protection of water quality concerns by other programs.

Additionally, and importantly, the permitting authority is required to designate as regulated any MS4 that directly discharges to a regulated MS4 and contributes substantially to the pollutant loading of that MS4. This part of the regulations is important to all North Carolina counties, as each county is responsible for permits that drain to any county-owned properties.(15A NCAC 2H.0126 (2)(B))

North Carolina has proposed a rule, 15A NCAC 2H.1014, that is intended to close the gap in coverage created by the road ownership situation unique to the state. This law requires that controls similar to Phase II controls be required for permitting in certain areas. These areas are not subject to Phase II permits, but are required to get permits as regulated public entities (RPE's). RPEs are defined as any county (or municipality) that is located, even partially, in a federally designated UA, or is selected by a separate state designation process. (15A NCAC 2H.0126, 1(d)) Counties that are designated as RPE's are required to comply with all six minimum measures, and "The permit will cover the unincorporated areas of the county's jurisdictional area." (5(b)(ii)(A)). This applies to all MS4s in the county, not just the MS4s that the county owns.

Counties come under consideration for becoming RPEs if the county population (including municipalities) is over 45,000. The criteria for selecting RPEs are:

- Water quality—if the body discharges, or has the potential to discharge, to water providing habitat to threatened or endangered species; waters not meeting designated uses; and waters classified as high quality, outstanding resource, nutrient sensitive, shellfish or trout.
- High growth—an area that has a 10 year growth rate exceeding 1.3 times the state population growth rate or has a growth rate exceeding 15 percent annually.
- Pollution—if the area’s discharges are, or have the potential to be, a significant contributor of pollutants to waters of the United States.

### **Local Government Cooperation**

The EPA rules also address the question of MS4s that do not have the legal authority to regulate other MS4s that discharge to their conveyance system. EPA uses the example of a DOT that cannot regulate the MS4s that discharge to the DOT storm water system. It is suggested that the two entities cooperate, so that “As co-permittees, they could form a shared storm water management program in which each permittee is responsible for activities that are within their individual legal authorities and abilities.”(EPA Fact Sheet 4.1, page 4) Although this is not necessarily legally binding language, it does bear directly on the problem created by road ownership in North Carolina counties and is intended to provide guidance in the interpretation of the law in areas where the law is not clear.

The above rule would seem to give wide latitude to state authorities in deciding what constitutes an MS4. State owned (specifically by NCDOT) storm water ditches are MS4s, and are regulated under Phase I permits. They are not currently the responsibility of county governments. However, county owned or permitted property, draining to state roads, does constitute a county owned MS4. **The federal law clearly intends that counties are responsible for these systems.**

There are additional reasons for making the rules apply across a county, rather than just for MS4s on, or that drain to, county property. For one, it is difficult to distinguish where one MS4 is connected to a county owned MS4 and another is not; the confusion that this could create could be detrimental to the success of the regulations. Secondly, it is important that the regulations do not create an uneven playing field for different parts of the county; if one part had to comply with Phase II permit requirements and another did not, it is possible that development



could move to parts of the county without regulations, which could quite literally be right across the street. This could keep the regulations from working as intended by spreading development into areas without controls.

### **Summary of Regulated MS4s**

DENR has established that certain counties are required to meet Phase II regulations. These counties were designated based on both federal UA designation and criteria applied by the permitting agency as per federal guidelines. These counties are listed in the appendix A. All MS4s inside these county's boundaries are regulated MS4s, under either a city or the county. If a county is not regulated, then the MS4s that they own are not regulated MS4s, meaning that they do not need Phase II permits. If a development is built that threatens to pollute the MS4s to which they drain, these develops can be required to get permits either as RPEs that contribute pollution to waters of the United States, or under total daily maximum load (TMDL) state criteria. It is unclear from the proposed rules who would be the permitting agency in this particular situation. DENR or the county could approve the permit for the development. RPEs without ordinance making power could still receive permits by meeting the post-construction control requirements.

### **The Post-Construction Control Requirement**

Perhaps the most difficult issue in Phase II is that of post-construction control. This is where most of the worry over jurisdictional boundaries occurs. Issues of implementation are important, as are inspection and maintenance responsibility. The temporary rules spell out the requirement in some detail.

Regulated public entities must adopt by ordinance a post-construction management plan, which is to be approved by the Division of Water Quality (DWQ), with performance reviews conducted a minimum of every five years (15A NCAC 2H.1014 (7)(a)). Public entities without the power to write ordinances must demonstrate similar actions.

This requirement divides projects into two major types: high density and low density. Low density projects have densities of no more than two dwelling units per acre or 12 to 24 percent built-upon area (the exact figures are to be determined during the public hearing process); transport runoff by vegetated conveyance to the maximum extent practicable; and are at least 30 feet landward of any perennial or intermittent surface waters. Deed restrictions and protective covenants for future developments are required (15A NCAC.2H.1014 (7)(e)(A)).

Projects not meeting the requirements for the low-density category must meet five requirements (15A NCAC.2H.1014 (7)(e)(B)). The requirements are:

- Control and treat the difference between pre- and post-development runoff for the one year, 24 hour storm;
- Remove an annual average of 85 percent of total suspended solids; meet specified general engineering design criteria;
- Maintain a minimum of 30 feet between the built-upon area and perennial or permanent water;
- And record deed restrictions and protective covenants for future development.

In addition, the program shall include operation and maintenance components geared to the adequate long-term operation of the BMPs. This includes annual inspections by qualified professionals and a program to control fecal coliform to the maximum extent practicable.

## Maximum Extent Practicable

One of the terms used in both the low- and high-density options is that of “maximum extent practicable”, or MEP. This is a somewhat vague term, and is that way on purpose. It is created to allow the responsible party some leeway in implementation, to increase compliance with the regulations. For instance, the low density option is charged with using vegetated conveyances as the only active requirement. This leaves a large amount of leeway for compliance, given that the large lot size is requirement is met.

The high density option carries with it more specific control levels. However, the both of the specific controls, one relating to runoff quantity and the other to sediment, are both design related. The only pollutant runoff guideline, for fecal coliform reduction, is to reduce to the MEP. Again, this is a design guideline that leaves some flexibility in implementation. (EPA, NPDES Office)

## Case Studies

The case studies take storm water and land use regulations for each county and compare them to Phase II requirements. Each of the counties falls under Phase II requirements over the entire land area of the county. Guilford and Brunswick counties both have storm water controls. For these counties, comparisons will be based on: the amount of land regulated before and after Phase II; existing storm water regulations, with comparison to specific points emphasized in Phase II; and the organizational structure of the county agencies responsible for Phase II implementation. Randolph, Davidson and Stokes counties do not have explicit storm water

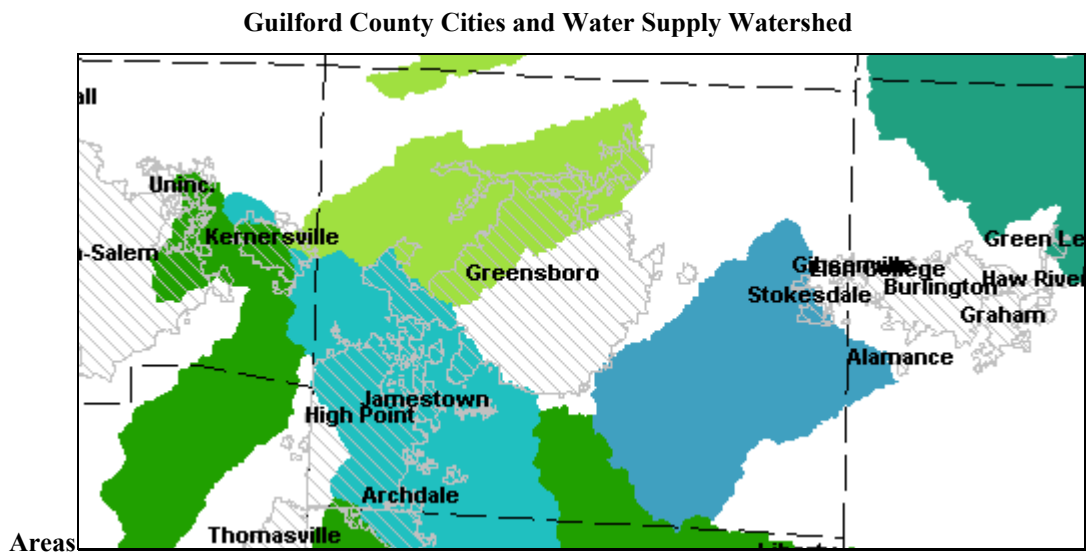
regulations. However, they do have varying degrees and types of land use controls; these will be used to judge how much Phase II will require the county to expand its technical capacity. The size of the area falling under county responsibility will also be examined. Water Supply Watershed Protection Program areas will be noted, due to the fact that the program includes stormwater runoff mitigation and that in many counties they take up a significant amount of land.

## Guilford County

### Coverage Area

Guilford County is one of the most populous in the state, with a high growth rate and two large, urbanized areas, Greensboro and High Point. Greensboro was one of the areas designated as needing Phase I permits. High Point and the outlying areas of Greensboro are designated as UAs. The entire county is designated as an RPE. It also has several Water Supply Watershed Protection areas.

The Guilford County ordinance currently only requires storm water controls for areas located in water supply watershed protection areas. The map of Guilford County below shows that little of the county is either unincorporated or is not covered by a Water Supply Watershed Protection Area. The areas not covered would represent increased coverage in the county due to Phase II implementation



*Current Storm Water Controls*

Guilford’s storm water runoff management regulations are based on the regulations used in Greensboro, which is under Phase I permits. This program stipulates the removal of pollutants to the Maximum Extent Practicable, as does Phase II. Greensboro has a storm water manual, also available on the web at

(<http://www.ci.greensboro.nc.us/stormwater/Planning/Technical%20Documents/swmanual.pdf>).

The manual includes a section on storm water impacts, a large list of suggested structural and non-structural BMP’s with detailed design guidelines, and methods to use to examine the impact of particular developments.

The particulars of Guilford County’s storm water ordinance are similar to Phase II requirements. Pollutant load reduction requires an 85 percent reduction in TSS from the first inch of rain, whereas Phase II requires annual reductions of 85 percent (Storm Water Manual, p. 23). Elaborate engineering controls are to be designed to keep the two and ten year 24 hour storm discharge post-construction the same as pre-construction (p. 24). Phase II is based on the one year, 24 hour storm.

*Organizational Arrangements*

The ordinance stipulates that post-construction responsibility lies with Soil and Water for agriculture, State Forest Service for silviculture. In residential areas, homeowners are responsible for the maintenance of structural storm water improvements. Residential areas are required to form a homeowner’s association if the drainage system drains more than one lot. The homeowners association is responsible for the maintenance of the improvement. If the homeowner’s association is found to be dissolved or has otherwise become defunct, the responsibility can be placed wholly or in part on landowners (Guilford County Development Ordinance, Section 5-8.2.D)

*Comparison With Phase II*

	<i>Phase II</i>	<i>Guilford County</i>
<i>Area Covered</i>	<i>Entire county</i>	<i>WSWS Protection Areas</i>
<i>Control Storm</i>	<i>1 year, 24 hour</i>	<i>2 and 10 year, 24 hour</i>

<i>TSS removal</i>	85%	85%
<i>Fecal Coliform</i>	MEP	

### *Summary of Guilford County*

Guilford County already has a well developed storm water runoff control program, but it applies only in the Water Supply Watershed Protection areas. The ordinance covers developments with more stringent BMP's than the water supply watershed protection program requires. The major change brought about by Phase II will be an increase in the amount of land that is covered, as shown in the above Guilford County map. The county also has rules for assigning post-construction responsibility. Given the plans and regulations the county has in place, the impact of Phase II would be relatively small. The ordinance would require a change in the scope of the coverage and workload, but not in technical capacity.

## Brunswick County

### *Coverage*

Brunswick County is a coastal county. As such, parts of the county are regulated as High Quality Waters, which occupy land along a thin stretch of the county's coastal edge. The county does not have any water that is protected under the Water Supply Watershed Protection program. Brunswick County passed a storm water runoff ordinance in 2002, which is used for comparison with Phase II regulations. The 2002 storm water ordinance covers the entire county. The entire county is regulated as a RPE under Phase II regulations.

### *Current Storm Water Controls*

The Brunswick County ordinance is comprehensive in scope, giving explanatory material for storm water impacts, how to calculate them, and a wide variety of BMPs and their effectiveness at mitigation. The ordinance gives relatively simple methods for determining the impact a development has on storm water runoff by allocating different types of land cover different pollutant loads and runoff quantities. These calculations are to be applied to the site plan for the development in question to estimate the impact of the development on water quality. It also includes descriptions of BMP's and their quantitative impact on removing pollutants and reducing the increase in runoff quantity and speed. An illustrated guide to low impact design is also given, although it does not include a quantitative estimate of the impact of such developments.

The county also stipulates that 30-foot wide riparian buffers be maintained on all sides of intermittent and perennial streams, ponds, lakes, and other water bodies in the County ( Storm Water Manual p.19). The ordinance also stipulates that diffuse flow shall be created and maintained in the riparian buffer (P. 20).

For controlling peak discharge, Brunswick County uses the one year, 24 hour storm and the ten year, 24 hour storm. For the one year, 24 hour storm the ordinance requires that there be no change in discharge except where the increase is less than or equal to five percent AND the site is 15 percent impervious or less, with the remaining pervious portions of the site used, to the greatest extent practicable, to control runoff (p. 26). These exceptions would not be allowed under Phase II rules. For the ten year, 24 hour storm, the ordinance requires no net increase in peak discharge. However, if this creates an undo hardship, then a variance can be granted with stipulations similar to the above if it can be shown to the satisfaction of the Storm Water Administrator that no damage to the public health or public facilities will result from the variance.

Similar instructions are included for pollutant control. The manual provides instructions on eliminating illicit discharges as per NPDES Phase II guidelines (p84 and 85). The program tracks four pollutants—phosphorus, nitrogen, total suspended solids (TSS) and fecal coliform. Although tracking the nutrients phosphorus and nitrogen are not required under Phase II, they do make sense for Brunswick county, which has slow moving water that would be sensitive to phosphorus (freshwater lakes) and nitrogen (estuarine waters). Additionally, the large number of golf courses and the shallow water table make tracking the nutrients prudent.

Pollutant loads are calculated by determining the resulting development's cover types, and using a table to determine the pollutant load from each type. BMP's and their resultant reductions in pollutant load are listed.

The amount of pollutant reduction is to the maximum extent practicable. This is not in strict keeping with Phase II guidelines, which stipulate 85 percent reductions in TSS. Additional inspections for fecal coliform reduction are also not mentioned in the Brunswick ordinance.

The Brunswick ordinance covers the entire county. The only exemption is for residential construction of less than one acre. This is similar to Phase II, except that the Brunswick ordinance does not refer to developments of less than one acre that are part of a larger development, as the temporary rules do. The Brunswick County plan also does not mention as redevelopments as Phase II does.

*Comparison With Phase II*

	<i>Phase II</i>	<i>Brunswick County</i>
<i>Area Covered</i>	<i>Entire county</i>	<i>Entire County</i>
<i>Control Storm</i>	<i>1 year, 24 hour</i>	<i>1 and 10 year, 24 hour</i>
<i>TSS removal</i>	<i>85%</i>	<i>MEP</i>
<i>Fecal Coliform</i>	<i>MEP</i>	<i>MEP</i>

*Organizational Arrangements*

The responsible party for enforcing the ordinance is the Storm Water Administrator, which is to be a county-appointed position. The county is to make annual inspections. The ordinance states that “The Program may provide procedures under which the County will accept responsibility by maintaining BMPs servicing residential properties and establishing the requirement that BMPs servicing non-residential properties be maintained by their owners.” (Storm Water Manual p. 6) Given the level of detail that exists in the rest of Brunswick County’s manual, and the difficulty that maintenance may pose on a county wide level, it is somewhat surprising that this provision is so open-ended. Although it provides for flexibility in determining who is responsible for a particular system, the manual should provide guidelines for the decision making process. Phase II regulations require inspections, regardless of the procedures the ordinance allows the county to adopt.

*Summary of Brunswick County*

The Brunswick ordinance is somewhat vague in its language, and in what it will require the majority of developers to do. Because of this, it is difficult to understand what the impact of the ordinance will be concerning overall reduction in storm water impacts (from conversation with SELC). The law does provide a method for determining whether or not a property fits into the low or high density category. For high density projects, the ordinance provides some good guidance, but will fit under Phase II regulations only if followed to the more strict reading of the ordinance. However, it can be assumed from the ordinance that the county is able to adopt the more stringent level of control, since allowing more leniencies in some instances still requires inspection and oversight.

Other differences with Phase II include:

- No mention of regulations for other water types (shellfish, etc);
- No mention of adjusting for cumulative impacts of variances;

- Manual does not specifically give guidance as to what constitutes the Maximum Extent Practicable; this phrase is used in the federal law to provide for flexibility in different regions, but does not seem necessary in an ordinance for a particular county.

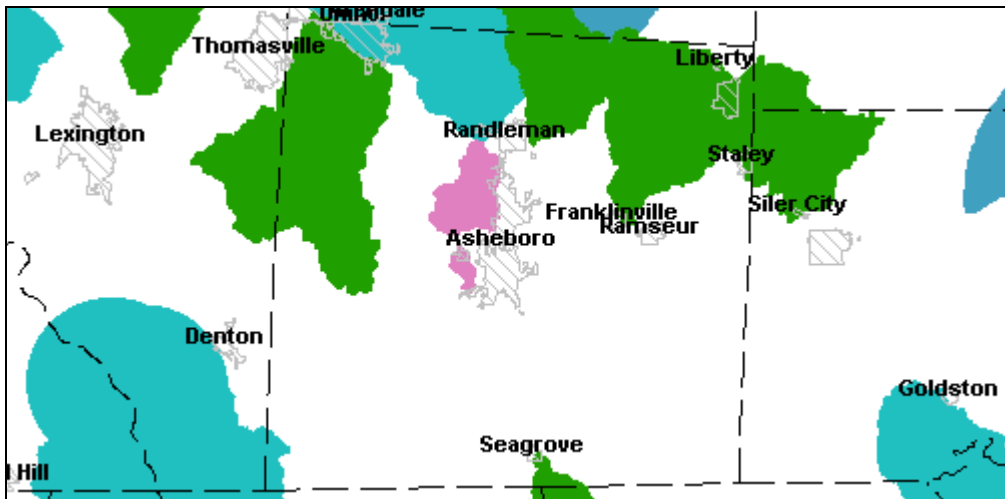
The differences that exist between the two laws are of degree and not of kind. Adoption on phase two will not require a change in the capacity of the department, nor of the workload. By reducing some of the ambiguity that exists in the Brunswick County ordinance, Phase II might make storm water controls easier to apply and more consistent.

## Randolph County

### *Coverage Areas*

Randolph is a largely rural county that faces some development pressure, especially in the northern edge of the county. The county has a large number of Water Supply Watershed Protection areas; in fact, most of the northern half of the county falls under some water-related state regulations. Other features of the county include the towns of Asheboro and several smaller municipalities, the Zoo Environmental Area and the Uwharrie National Forest. The Water Supply Watershed Protection program areas in the county are shown below. The entire county is identified as a Phase II area as a state designated RPE.

### **Randolph County Cities and Water Supply Watershed Protection Areas**



### *Existing Land Use Controls*

The balance of the county is divided into primary, secondary, and rural growth areas. No subdivisions are allowed in any of these areas without approval by the planning board (for



subdivisions into four or more tracts) or by the planning director (for subdivisions into two or three tracts). Most of the county is targeted for rural growth, which entails three-acre minimum lot size to ensure that wells are adequately recharged. A rezoning is difficult to get, requiring a neighborhood informational meeting and two public hearings. It is difficult to gauge the ability of the county to use the low-density Phase II option, since the rule has not been firmly set. However, Minimum lot sizes for the county are 20,000 acres at their smaller, which is larger than is likely to be required for the low-density level of Phase II rules (Citizens Guide to Land Development).

The county government currently has a fair level of control over storm water runoff by way of strong controls over development. No subdivisions that result in more than three lots can be developed by-right except in the primary growth areas. As a result, no development creating an MS4 could be built with out county permission. In addition, these land controls have considerable political backing, as the laws are the result of citizen concern over rapid urbanization, which was beginning to occur in parts of the county. Protection of water quality, for both surface and ground water, is recognized as a goal of land use controls. The protection of well water, which a source of drinking water for many in rural areas of the county, was one of the reasons for establishing stringent development controls. In addition to the above land use controls, Randolph County is one of nine local governments that have worked on a storm water management plan for the Randleman Lake watershed. The other governments involved in this effort are the cities of High Point, Jamestown, Kernersville, Archdale, Randleman, Greensboro, and Forsyth and Guilford counties. The goal of this group effort is to find ways to control storm water runoff in the Randleman Watershed. Randleman Lake is a large lake, currently under construction, that will be an important component in the water supply of the upper-Cape Fear basin. The area is heavily urbanized, and the storm water runoff poses a significant threat to water quality in the lake, which is already compromised by other causes. While not specifically aimed at satisfying Phase II requirements, the planning involved does represent an effort to implement strong runoff control laws (Stormwater Management Plan).

#### *Organizational Arrangements*

The county planning department is currently responsible for insuring that the appropriate land use controls and guidelines are followed. As most of Phase II implementation would be met by meeting the low-density option, the planning would be responsible for this as well. The planning department feels that it has the necessary expertise to implement changes caused by Phase II, due to the number of storm water issues already existing in the counties watersheds.

The current growth management process calls for development impact analysis and technical review and site analysis, both of which are preformed by the staff.

### *Randolph County Summary*

Randolph County has developed a good set of water quality controls integrated with land use planning. These measures are supported by the public, and tie together other community goals. Also, the county has had to adopt many land use controls in the many different sensitive areas present, such as water supply watersheds, the zoo environmental area and the Uwharrie National Forest. Currently, regulations for storm water in the county would not be sufficient to meet Phase II regulations. However, based on these facts and the land use controls in place, the planning department does not feel that Phase II represents a major challenge to the county (conversation with Hal Johnson).

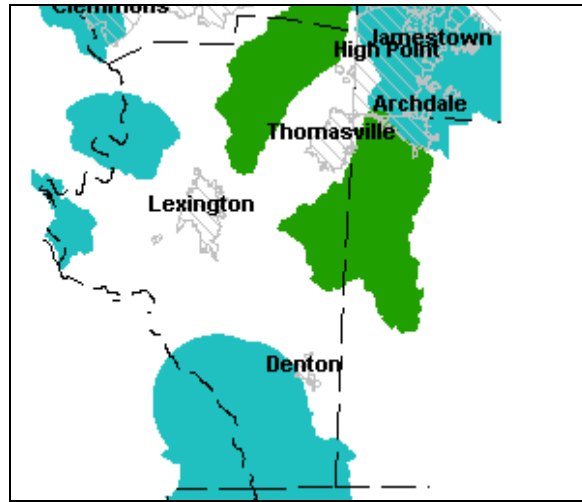
## **Davidson County**

### *Coverage Areas*

Davidson County is bisected by the I-85 corridor and has several medium-sized urbanized areas. The county also has several water supply watershed protection areas, shown on the map below. The watershed areas combined comprise almost 50 percent of the county. Most of the development in the county has taken place in the northern half, which is also the area with the most water supply watershed protection areas.

Under the permanent rules, the entire county would be an RPE. A large portion of the county is unincorporated and outside of the ETJ's of the various municipalities. Although the county owns very few properties outside of these municipalities, the amount of land covered by the permanent rules is relatively large. Below is a map of the Water Supply Watershed Protection program areas.

## Davidson County Cities and Water Supply Watershed Protection Areas



*Current Land Use Controls*

Davidson County lacks any storm water controls. Land use controls in the county do provide some protection from major runoff, and provide a building pattern for most developments that probably will fall under the low-density Phase II requirements.

In Water Supply Watershed areas regulations permit only large lot design, even larger than state standards require. Minimum lot size is 40,000 square feet, or approximately 1 dwelling unit per acre. Davidson County minimum width is 125 feet. Only 30 percent or less of the site can be impervious surface. This percentage may change this summer, and will probably be in the 12 to 24 percent range for BUA. If a lower percentage is picked, this could represent a large change from current land use regulations. Fifty foot buffers are required if the plan includes a perennial stream. Phase II requires 30 foot buffers landward of perennial and intermittent waters in the low density option.

In other areas, large lot development is the only type permitted by right. The minimum lot size is 30,000 acres, or approximately 1.5 du per acre. No curb-and-gutter or other storm water control method is required. Up to 30 percent of the site can be used for the building itself, although there are no rules governing the amount of impervious service otherwise on the lot. Again, these regulations are similar to Phase II regulations, with the amount of BUA the only major difference.

### *Organizational Arrangements*

If Davidson County lacked the ability to give Phase II permits, it is unclear what options the county could pursue. Permits have been given in the county by DENR, but that was in the water supply watershed area for developments that requested curb and gutter.

If Davidson County is required to treat all new developments as MS4s that require permits, staff is unsure that the level of technical expertise necessary to implement the rule currently exists. The staff does not currently feel that it possess the engineering capability to make decisions on Phase II related matters. This being the case, Phase II would necessitate the development of the capacity to evaluate storm water plans for plan approval, inspections, and potentially maintenance for storm water BMP's. If the majority of developments continue to be large lot developments that fall under the low density heading, the additional technical capacity might not be warranted; the engineering for sites that needed storm water BMP's could either contracted out or it could be done by the developer. However, most of the developments in the county, as it is currently developing, would either fit under the low-density option or are already taking place in Water Supply Watershed Protection areas.

#### *Davidson County Summary*

Given the standard development pattern in the county, Phase II would appear to have little direct impact on most developments in the county. Developments built as per the standard rules would fit under the probable low-density option. Most of the development in the county is currently taking place in the Water Supply Watershed Protection area, and 90-95% of this development is large lot single family home type.

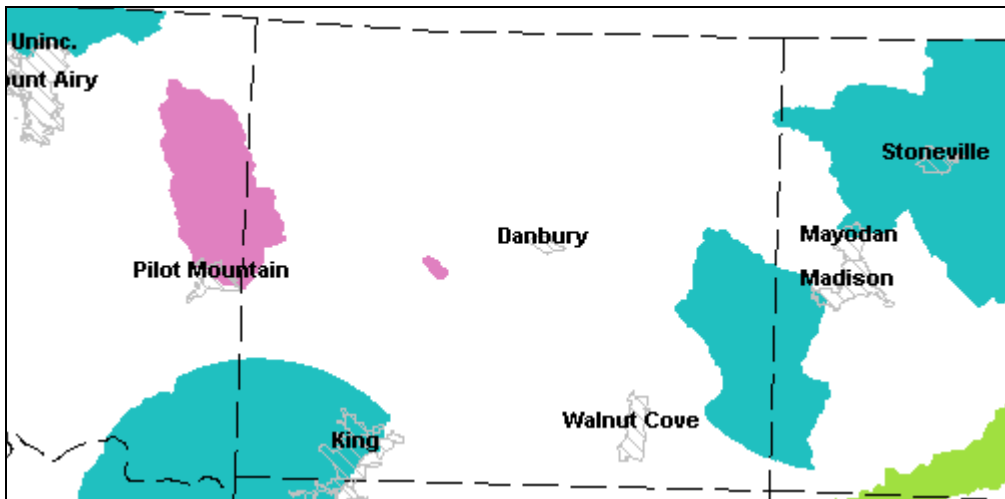
There are exceptions to the above generalizations. In one instance, a developer in the Water Supply Watershed Protection area wanted to use curb and gutter. In this case, the permit included plans drawn by an engineer hired by the developer, and the permit was approved by DENR. In a second instance, also in the Water Supply Watershed zone, approval was given for a project that originally planned large lot residential and a golf course. Currently, the developer is preparing plans for a mixed-use development with some clustered building, still around a golf course. This type of development would have to meet more stringent requirements after Phase II, since it probably would not fit under the low-density option. However, since it is in a water supply watershed protection area, the developer would need to meet other storm water requirements that are part of the Water Supply Watershed Protection program. This would be the case with or without Phase II (conversation with Davidson county Planning Department).

# Stokes County

## Coverage Areas

Stokes is a largely rural county. The population in the 2000 census was slightly under 45,000. The largest towns in the county, King, has a population of under 6,000, and the next largest town of Walnut cove has a population of 1,470. The county has several Water Supply Watershed protection areas as shown below. The Pilot Mountain area is a class II water supply watershed protection area, and the rest are class IV. King is part of the Winston-Salem UA. The entire county would be classified as an RPE under the proposed Phase II permanent rules.

Stokes County Cities and Water Supply Watershed Areas



## Current Land Use Controls

Stokes County development rules specify a minimum lot size of 30,000 square feet. The only exception to this is in the water supply watershed II area around Pilot Mountain, where state regulations stipulate a minimum lot size of one acre. As such, the county will probably meet the low-density option requirements of Phase II post-construction rules. County planners do not think that the county will have a problem with the new requirements because of the use of low-density development patterns. Any commercial or industrial developments that take place will be dealt with on a case-by-case basis.

As for problems that might occur if developers wanted to build developments that would require permits, the county would be able to choose such developments or not. Other factors in

the decision making process would steer developments toward the large-lot standards currently in place.

It is possible, of course, that development pressure may develop in the county in the future. The population of the county is predicted to top 51,000 by 2010, and to be greater than 58,000 by 2020. It is conceivable that higher growth rates in Guilford or Forsyth County's could spur more growth in Stokes County. At the present time, however, growth pressure is not predicted to be particularly large in the future (conversation with David Sutterth).

## Conclusions

This paper has attempted to explain the NPDES Phase II regulations and what the impact of these regulations is likely to be on county governments. The most pertinent section of the law deals with post-construction BMP maintenance and responsibility, due to fact that inspections and maintenance may impose a high level of burden and because most of the other requirements can be satisfied by the state's programs under the "permitted by rule" option.

An examination of EPA language makes it clear that the federal rules expect counties to be a part of the overall program. The fact that North Carolina's road system does not easily lend itself to a direct interpretation of federal Phase II language does not mean that counties should not be held accountable for storm water conveyances in areas where they are responsible for other local government matters. NC DENR has proposed regulations for North Carolina that require local governments to accept the appropriate level of responsibility.

As for the impact of the permanent rules on counties, it is clear that counties will face some increase in workload. Some counties do have storm water runoff control measures, but they may only have these regulations in certain areas (such as is the case in Guilford County) or the regulations may not match Phase II in some aspects (such as in Brunswick County). However, the additional level of responsibility in these cases does not represent an increase in technical capacity, only in workload.

For counties without storm water regulations, there is some possibility that the added regulations could pose a more significant challenge. Counties with strong land use controls (such as Randolph County) may find it easy to adopt the new regulations. Counties with little development pressure (such as Stokes County) may find that the low-density option, which is the predominate land use pattern currently in the county, will eliminate problems involved with Phase II compliance. Counties with higher development rates (such as Davidson County) may find it more difficult to meet Phase II regulations without expanding their technical capacity, especially if they lack strong land use controls. Many developments may meet the low-density threshold. For those that do not, the county may ask for the developers to create a storm-water plan that can be approved internally or by consultants. In such cases, it may make sense for DENR to provide technical assistance. Many small counties may want large developments that are atypical in size and pattern, but that may be economically important. This may also be true for individual developments in counties not otherwise regulated by Phase II, but that need permits for other criteria such as discharge to sensitive water. In such isolated instances, technical support from DENR could allow needed developments to be built in an environmentally sound manner.

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2. EPA Fact Sheet; Storm Water Phase II Final Rule Fact Sheet Series 1.0. U.S. Environmental Protection Agency, Office of Water;  
<http://cfpub.epa.gov/npdes/stormwater/swphase2.cfm>
3. Environmental Reporter, Bureau of National Affairs, 1231 25th St. NW Washington DC
4. Water Quality Progress in North Carolina, 1998-1999 305b report, North Carolina Division of Water Quality, Water Quality Section, Raleigh, North Carolina,
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6. “Storm Water Manual”, City of Greensboro, Storm Water Services.
7. “Guilford County Development Ordinance”, Guilford County, North Carolina.
8. “Storm Water Management Manual”, Brunswick County, North Carolina
9. “Conversations with SELC”, conversations with Trip Van Noppen and Ansley Samson of the Southern Environmental Law Center on Brunswick County Storm Water Ordinance and Manual.
10. “Citizen’s Guide to Land Development County of Randolph” Planning and Zoning Department, Randolph County
11. “Stormwater Management Plan Randleman Lake Watershed” Randolph County Planning and Development, Randolph County
12. “Conversation with Hal Johnson”, conversation with Hal Johnson, Planning Director, Randolph County Department of Planning and Development.
13. “Conversation with Scott Leonard”, conversation with Scott Leonard, Watershed Administrator, Davidson County Planning and Zoning Department.



14. "Conversation with David Sutterth" conversation with David Sutterth, Stokes County Planning/Inspections.

# Appendix A

## State Designated Phase II Counties

1990 Census		2000 Census
Alamance	Randolph	Alexander
Brunswick	Rowan	Caldwell
Buncombe	Union	Chatham
Burke	Wake	Davie
Cabarrus	Wayne	Franklin
Catawba		Haywood
Davidson		Hoke
Durham		Stokes
Edgecombe		
Forsyth		
Gaston		
Guilford		
Harnett		
Henderson		
Mecklenburg		
Nash		
New Hanover		
Onslow		
Orange		
Pitt		

# Appendix B

## Phase II Permanent Rules

15A NCAC 2H .0126 is proposed for amendment as follows:

### **.0126 Stormwater Discharges**

Stormwater picks up pollutants as it drains to waters of the State. When man alters stormwater drainage, the pollutants carried by stormwater to waters of the State may be concentrated or increased, resulting in water pollution. The juncture at which stormwater reaches the waters of the State will either be a terminus of a pipe, ditch, or other discrete outlet, or in a diffuse sheet flow manner. Stormwater discharges subject to NPDES permitting are addressed in this section, which incorporates, supplements and expands the federal rules on stormwater NPDES discharges. Other stormwater control requirements are mainly addressed in Section 2H .1000 entitled "Stormwater Management", but may also be addressed in sections dedicated to particular water classifications or circumstances. If there is an overlap, the more stringent requirements apply. Regulated Public Entities, subject to NPDES permitting permits for stormwater discharges to surface waters shall receive NPDES permits for stormwater discharges to surface waters be issued in accordance with these Rules and United States Environmental Protection Agency regulations 40 CFR 122.21, 122.26, and 122.28 through 122.37 which are hereby incorporated by reference including any subsequent amendments. Copies of this publication are available from the Government Institutes, Inc. 4 Research Place, Suite 200, Rockville, MD 20850-1714 for a cost of sixty-nine dollars (\$69.00) each plus six dollars (\$6.00) shipping and handling. Copies are also available at the Division of Water Quality, Archdale Building, 512 N. Salisbury Street, Raleigh, North Carolina 27604. These federal regulations can also be accessed on the world wide web at <http://www.gpo.gov/nara/cfr/index.html> \_

(1) For the purpose of this Rule, these terms shall be defined as follows: \_

(a) Built-upon area (BUA) means that portion of a development project that is covered by impervious or partially impervious cover including buildings, pavement, gravel areas (e.g. roads, parking lots, paths), recreation facilities (e.g. tennis courts), etc. (Note: Wooden slatted decks and the water area of a swimming pool are considered pervious.)

(a)(b) Department means the North Carolina Department of Environment and Natural Resources

(c) Existing development means those projects that are built or those proposed that at a minimum have established a vested right under North Carolina zoning law as of the date of the local government ordinance, or such earlier time that an affected local government's ordinance shall specify, based on at least one of the following criteria:

(i) Substantial expenditure of resources (time, labor, money) based on a good faith reliance upon having received a valid local government approval to proceed with the project, or

(ii) Having an outstanding valid building permit in compliance with G.S. 153A-344.1 or G.S. 160A-385.1, or

(iii) Having an approved site specific or phased development plan in compliance with G.S. 153A-344.1 or G.S. 160A-385.1.

(b)(d) Regulated public entities (RPE) means all municipalities and counties identified by a decennial U.S. Census as being located in whole or in part within a Urbanized Area, all federally designated public bodies, and all state designated public bodies.

(c)(e) Municipal separate storm sewer system (MS4) pursuant to 40 CFR 122.26(b)(8) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

(d)(f) 1 year, 24 hour storm means the surface runoff resulting from a rainfall of an intensity expected to be equaled or exceeded, on average, once in 12 months.

(e) Permitted by Rule means an entity is considered permitted pursuant to G.S. 143-215.1 and subject to judicial review pursuant G.S. 143-215.5. It shall not be necessary for the Department to issue separate permits, provided such entities comply with Item (11) of this Rule. Such entities shall be subject to enforcement remedies pursuant to G.S. 143-215.6A, 143-215.6B and 143-215.6C.

(f)(g) Population Density means the population of an area divided by the area's geographical measure in square miles, equal to persons per square mile. For the purposes of this definition, the population shall equal the sum of the permanent and seasonal populations, or be calculated from a measure of housing unit density.

(g)(h) Public body means the United States, the State of North Carolina, city, village, township, county, school district, public college or university, single purpose governmental agency; or any other governing body which is created by federal or state statute or law.

(h)(i) Redevelopment means any rebuilding activity other than a rebuilding activity that;

(i) Results in no net increase in built-upon area, and

(ii) Provides equal or greater stormwater control than the previous development.

(i)(j) Significant contributor of pollutants means an MS4 or a discharge that,

(i) Contributes to a pollutant loading(s) which may reasonably be expected to exert detrimental effects on the quality and uses of that water body; or

(ii) That destabilizes the physical structure of a water body such that the discharge may reasonably be expected to exert detrimental effects on the quality and uses of that water body.

Uses of the waters shall be determined pursuant to 15A NCAC 2B .0211 - .0222 and 15A NCAC 2B .0300.

(j)(k) Small municipal separate storm sewer system "small MS4" pursuant to 40 CFR 122.26(b)(16) means all separate storm sewers that are:

(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.

(ii) Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to 40 CFR 122.26(b), or designated under Sub-Item (2)(b) of this Rule.

This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

(k)(l) Total maximum daily load (TMDL) means a written, quantitative plan and analysis for attaining and maintaining water quality standards in all seasons for a specific waterbody and pollutant.

(2) Designation: Designation consists of an automatic federal designation of public entities as described by Sub-Item (2)(a) of this Rule and a two step state designation process as described by Sub-Item (2)(b) of this Rule. All regulated public entities shall comply with the permit application schedule set forth in Item (6) of this Rule.

(a) Federal designation.

In accordance with 40 CFR 122.32, all small MS4s located in whole or in part within an urbanized area as determined by the most recent Decennial Census by the Bureau of the Census must seek coverage under a NPDES permit for stormwater management.

(b) State designation process.

The department shall identify additional public bodies that have the potential to discharge stormwater resulting in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including adverse habitat and biological impacts. As a first step, the public bodies shall be identified based on the categories listed at Sub-Item (2)(b)(i) of this Rule. Once a public body has been identified, the designation of that body, step two, as subject to the requirement to apply for permit coverage will be made based on the criteria at Sub-Item (2)(b)(ii) of this Rule.

(i) Step One: Identification of public bodies potentially subject to regulation.

(A) Municipality. A municipality, outside of an urbanized area as determined by the most recent Decennial Census by the Bureau of the Census, will be identified as a potential regulated MS4 if:

- (I) The population is greater than 10,000; and
- (II) The population density is at least 1,000 people per square mile.
- (B) County. A County, outside of an urbanized area as determined by the most recent Decennial Census by the Bureau of the Census, will be identified as a potential regulated public body if the county municipal and non-municipal population (including permanent and seasonal population) is greater than 45,000 persons. The seasonal population will be determined from the most recent data available from local, state and/or federal sources.
- (C) Other public bodies. A public body may be designated if:
  - (I) They are a municipality located within a regulated county, and have not been designated under any other category; or
  - (II) They are a municipality and have not been designated under any other category; or
  - (III) They are a MS4 such as, but not limited to, state and federal facilities, universities, community colleges, local sewer districts, hospitals, military bases, and prisons.
- (ii) Step Two: Criteria for designation of public bodies. In making designations, the department will evaluate the public bodies identified as per Sub-Item (2)(b)(i) of this Rule for designation using the following criteria:
  - (A) Whether the public body discharges or has the potential to discharge stormwater to sensitive waters, including:
    - (I) Waters classified as high quality, outstanding resource, shellfish, trout or nutrient sensitive waters in accordance with 15A NCAC 2B .0101(d) and (e);
    - (II) Waters which have been identified as providing habitat for federally-listed aquatic animal species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service under the provisions of the Endangered Species Act, 16 U.S.C. 1531-1544; or
    - (III) Waters for which the designated use, as set forth in the classification system at 15A NCAC 2B .0101(c), (d) and (e); have been determined to be impaired in accordance with the requirements of 33 U.S.C. 1313(d); and
  - (B) Has exhibited high population growth or population growth potential, where
    - (I) High growth shall be defined as a 10 year rate of growth exceeding 1.3 times the state population growth rate for that same period or a 2 year rate of growth which exceeds fifteen percent (15%); or
    - (II) An area having growth potential shall be defined as a jurisdictional area adjoining an area determined to have high growth in accordance with Sub-Item (2)(B)(I) of this Rule or an area having a projected growth rate exceeding 1.3 times the state growth rate for the previous 10 years;
  - (C) Whether the public body discharges are, or have the potential to be, a significant contributor of pollutants to waters of the United States.
- (3) State Designation Administration: Review and finalization of public body designation shall be handled under the following guidelines.
  - (a) The department will implement the designation process in accordance with the department schedule for Basinwide Plans starting January 01, 2004.
  - (b) The department shall publish a list of public bodies identified in accordance with Sub-Item (2)(b)(i) of this Rule. Lists shall be developed for a river basin area in accordance with North Carolina's Basinwide Planning Schedule. Publication of this list may be coordinated with public notices issued through basinwide planning efforts.
  - (c) All public bodies identified shall be notified in writing by the department prior to publication of the list in Sub-Item (3)(b) of this Rule.
  - (d) The department shall accept public comment on the application of the evaluation criteria in Sub-Item (2)(b)(ii) of this Rule for each of the identified public bodies. A public comment period of not less than 30 days will be provided.
  - (e) After review of the evaluation criteria in Sub-Item (2)(b)(ii) of this Rule and review of public comments received, the department will review the effectiveness of any existing water quality protection programs. The effectiveness will be determined based upon the water quality of the receiving waters, and whether the waters have been determined to be supporting the uses as set forth in the classifications pursuant to 15A NCAC 2B .0101(c), (d) and (e) and the specific classification of the waters pursuant to 15A NCAC 2B .0300. The Department shall then make a final determination on

designation for each of the listed public bodies.

(f) The department shall notify a public body of its designation for NPDES stormwater coverage in writing. This notification shall include the category under which the public body was designated, the basis(es) of the designation and the date on which the application for coverage shall be submitted to the Department.

(4) Other State designations

(a) Total Maximum Daily Load (TMDL) MS4s. TMDL MS4s include public bodies discharging pollutants that are contributing to the impairment of a water body's use, as determined in accordance with 33 U.S.C 1313 (d). TMDL MS4s shall be designated if the MS4 is specifically listed by name for urban stormwater Total Maximum Daily Load development.

(b) Designated by petition. Entities subject to a petition shall be designated by the department based on the process and procedures identified in Item (5) of this Rule.

(5) Petitions

(a) In accordance with 40 CFR 122.26(f),

(i) Any operator of a MS4 may petition the department to require a separate NPDES stormwater permit for any discharge into the MS4, and

(ii) Any person may petition the department to require a NPDES stormwater permit for a discharge composed entirely of stormwater which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(b) Petition Submittal. Petitions to designate a small MS4 or discharge for NPDES stormwater permit coverage must meet the following requirements:

(i) Petitions must be submitted on department approved forms.

(ii) A separate petition must be filed for each petitioned entity.

(iii) The petition must be complete prior to consideration by the department.

(iv) Petitions must demonstrate the need for NPDES stormwater permit coverage for the petitioned entity based on the following standards:

(A) For stormwater discharges to impaired waters, monitoring data must be submitted to demonstrate that the petitioned entity is the source of or a significant contributor of pollutants to the impairment.

(B) For stormwater discharges to non-impaired waters, monitoring data must be submitted to demonstrate that the petitioned entity is a significant contributor of pollutants to the receiving waters.

(C) Monitoring data must include, at a minimum, representative sampling of the stormwater discharges subject to the petition; and

(D) The petitioner must present information documenting how the sampling may be considered representative of the stormwater discharges. The petitioner may present technical scientific literature to support the sampling methods.

(E) The Petitioner shall notify the potential petitioned entity in advance of stormwater discharge monitoring activities.

(v) The petitioner must certify that a copy of the petition and any subsequent additional information submitted by the petitioner has been provided to the chief administrative officer of the petitioned entity within 48 hours of submitting said petition and additional information to the department.

(vi) Petitions must include the following to be eligible for consideration:

(A) Completed set of petition form(s);

(B) In accordance with Sub-Item (5)(b)(iv) of this Rule, a demonstration of the need for NPDES stormwater permit coverage. These data may be supplemented with technical study information on land uses in the drainage area and the characteristics of stormwater runoff from these land uses;

(C) Documentation of receiving waters impairment or degradation;

(D) A map delineating the drainage area of the petitioned entity, the location of sampling stations, the location of the stormwater outfalls in the adjacent area of the sampling locations and general features such as, surface waters, major roads and political boundaries to appropriately locate the area of concern for the reviewers; and

(E) Certification of petitioned entity notification.

(vii) On a case by case basis the department may request additional information necessary to evaluate the petition.

(c) Petition Administration. All petitions received by the department will be processed under the following guidelines:

- (i) The department will make a determination on the completeness of the petition and acknowledge receipt of the petition within 90 days of receipt. The petition is considered complete if the department does not notify the petitioner of receipt within 90 days.
- (ii) Substantially incomplete petitions will be returned to the petitioner with guidance on what is needed to complete the petition package.
- (iii) Pursuant to 40 CFR 122.26(f)(5), the department must make a final determination on any petition within 180 days of receipt. The 180-day period begins upon receipt of a complete petition application. The department will draft the designation decision pursuant to the applicable designation criteria from Sub-Item (2)(b)(ii) of this Rule.
- (iv) The petition will be sent to public notice, which includes a public comment period of at least 30 days.
- (v) The department may hold a public hearing on any petition and shall hold a public hearing if the department receives a written request for a public hearing on the petition within 15 days after the notice of the petition is published and the department determines that there is a significant public interest in holding such hearing. The hearing date will be no less than 15 days from the receipt of the request for public hearing.
- (vi) Information on the petitioned entity will be accepted until the end of the public comment period and will be considered in making the final determination on the petition. New petitions for the same entity received during this time will become a party to the original petition.
- (vii) New petitions for the same entity received after the public comment period ends and before the final determination is made will be considered incomplete and placed on administrative hold pending a final determination on the original petition.
  - (A) If the department designates the petitioned entity, any new petitions placed on administrative hold will be considered in the development of the NPDES permit.
  - (B) If the department makes the final determination that the petitioned entity should not be designated, new petitions for the previously petitioned entity must present new information or demonstrate that conditions have changed substantially in order to be considered. If new information is not provided, the petition shall be returned as substantially incomplete.
- (viii) If the final determination is that the petitioned entity shall be designated, then the department will notify the petitioned entity of its designation and will require a stormwater permit application. The application shall be required to be submitted no later than 18 months from the date of notification.
- (6) Application schedule. Regulated public entities must submit applications on department approved forms. Designated small MS4The applications shall include program descriptions for the minimum measures identified in Item (7) of this Rule. The application for regulated public entities that do not own or operate a small MS4 shall certify the lack of ownership or operation of a small MS4. Regulated public entities that do not own or operate a small MS4 may elect to implement a stormwater management program pursuant the options available in this Rule.
  - (a) The application deadline will not be less than 18 months from the date of designation notification, except for:
    - (i) 1990 Decennial Census regulated public entities, which must apply by March 10, 2003.
    - (ii) Municipally operated industrial activities, which must apply by March 10, 2003.
  - (b) Regulated public entities that are newly identified based upon the 2000 Decennial Census, or a future decennial census, must apply for permit coverage within 18 months of State notification. The Department, within 3 months of federal verification of decennial census data, will notify in writing all the public entities identified.
- (7) Stormwater Management Requirements
  - (a) All regulated public entities subject to this Rule shall develop, implement and enforce a stormwater management plan approved by the department in accordance with Sub-Items (7)(b)-(7)(e) of this Rule. The plan shall be designed to reduce discharge of pollutants to the maximum extent practicable and, except as otherwise provided, shall include but not be limited to the following minimum measures:
    - (i) A public education and outreach program on the impacts of stormwater discharges on water bodies to inform citizens of how to reduce pollutants in stormwater runoff. The public body may satisfy this requirement by developing a local education and outreach program; by participating in a statewide education and outreach program coordinated by the department; or a combination of those approaches.
    - (ii) A public involvement and participation program consistent with all applicable state and local requirements.

(iii) A program to detect and eliminate illicit discharges within the MS4. The program shall include a storm sewer system mapping component which at a minimum identifies stormwater outfalls and the names and location of all waters within the jurisdiction of the public body.

(iv) A program to reduce pollutants in any stormwater runoff to the MS4 from construction activities resulting in a land disturbance of greater than or equal to one acre. Implementation and enforcement of the Sedimentation Pollution Control Act, G.S. 113A-50 et seq., By either the Department or through a local program developed pursuant to G.S. 113A-54(b), in conjunction with the states NPDES permit for construction activities, may be used to meet this minimum measure either in whole or in part.

(v) A program to address post-construction stormwater runoff from new development and redevelopment projects that cumulatively disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4 or into an interconnected MS4, pursuant to Item (10) of this Rule; and

(vi) A pollution prevention/good housekeeping program for municipal operations that addresses operation and maintenance, including a training component, to prevent or reduce pollutant runoff from those operations.

(b) Minimum measures and permit coverage for regulated public entities:

(i) For municipalities which own and operate a small MS4:

(A) They shall implement all six minimum measures;

(B) Their permit will cover their jurisdictional area including any area where they have exercised their Extraterritorial Jurisdiction Authorities under General Statute G.S. 160A- 360. They shall implement the six minimum measures in their ETJ areas to the extent allowable under existing rules and statutes.

(ii) For counties which own and operate one or more small MS4s:

(A) They shall implement all six minimum measures;

(B) The permit will cover the jurisdictional area of the small MS4(s). The county may elect to have the permit cover their entire jurisdictional area;

(C)The county may elect to implement the six minimum measures throughout the remaining unincorporated areas of the county that drain in whole or in part to publicly owned MS4's using the "permitted by rule" option pursuant to Item (11) of this Rule. The county may also elect to cover all unincorporated areas of the county.

(iii) For regulated public entities that do not own or operate a small MS4. These RPE's shall be permitted in accordance with 15A NCAC 2H .1014.

**NOTE: The Environmental Management Commission intends to address the gap in coverage created by North Carolina's unique road / drainage system structure through the use of existing state authorities. New state rule 15A NCAC 2H .1014 has been drafted to close the gap.**

(A)They may apply for a permit to implement all six minimum measures; or

(B)They may apply to implement the post construction control and good housekeeping /pollution prevention minimum measure using the "permitted by rule" option pursuant to Item (11).

(C)The permit coverage areas would be as follows:

(I)For municipalities, their permit will cover their jurisdictional area including any area where they have exercised their Extraterritorial Jurisdiction Authorities under General Statute G.S. 160A-360. They shall implement the six minimum measures in their ETJ areas to the extent allowable under existing rules and statutes.

(II)For counties, the permit would cover the unincorporated areas of the county that drain in whole or in part to publicly owned MS4's. The county may also elect to cover all unincorporated areas of the county.

(III)For all other public bodies, the permit would cover their jurisdictional area.

(c) Within the jurisdictional area of all regulated public entities, the post construction controls pursuant to Item (10) of this Rule, shall be required and implemented where the construction activity drains in whole or in part to a publicly owned MS4.

(c)(d) All public bodies designated by petition shall meet the requirements set out in Sub-Item (7)(b) of this Rule as applicable.

(d)(e) All public bodies designated by TMDL, pursuant to Item (4) of this Rule, shall meet the requirements as set out in Sub-Item (7)(b) of this Rule as applicable including, but not limited to additional requirements associated with the TMDL.

(e)(f) The Department may allow regulated public entities to use existing state and local programs to meet



the required permit minimum measures either in whole or in part.

(f) Within the jurisdictional area of all regulated public entities, the post construction controls pursuant to Item (10) of this Rule, shall be required and implemented where the construction activity drains in whole or in part to a publicly owned MS4.

(8) Waiver. The department may waive the requirements set out in Item (7) of this Rule pursuant to 40 CFR 122.32(d) or 40 CFR 122.32(e).

(9) Implementation Schedule.

(a) Regulated public entities, pursuant to Item (2) of this Rule, shall have permit conditions that establish schedules for implementation of each component of the stormwater management program based on the submitted application, and shall fully implement a program meeting the requirements set out in Item (7) and Item (10) of this Rule within five years from permit issuance.

(b) Regulated public entities electing to be permitted by rule shall adopt ordinances and fully implement the required post-construction program meeting the applicable requirements set out in Item (7) and Item (10). They will thereafter report annually on the implementation of the ordinance(s). They shall fully implement the pollution prevention / good housekeeping measure at their publicly owned facilities within two years of notification of approval of their application for permitted by rule status.

(10) Post-construction stormwater management

(a) All regulated public entities, required to implement the post construction stormwater management minimum measure, must develop, implement and adopt by ordinance a post-construction stormwater management program for all new development and redevelopment as part of their plan to meet the minimum requirements pursuant to Sub-Item (7)(a)(v) of this Rule. These ordinances, and subsequent modifications, will be reviewed and approved by the Department prior to implementation. The approval process will establish subsequent timeframes when the Department will review performance under the ordinance (s). The reviews will occur, at a minimum, every five years. Regulated public entities without ordinance making powers, shall demonstrate similar actions taken in their post construction stormwater management program to meet the minimum measure requirements.

(b) The post-construction program shall apply to all new development projects that cumulatively disturb one acre or more, and to projects less than an acre that are part of a larger common plan of development or sale. The post-construction program shall apply to all redevelopment projects that cumulatively disturb one acre or more, and to projects less than an acre that are part of a larger common plan of development or sale.

(c) The department shall submit a model ordinance including best management practices to control and manage stormwater runoff from development and redevelopment sites subject to this Rule to the Commission for approval. The department shall work in cooperation with local governments to develop this model ordinance. The model ordinance shall include both structural and non-structural best management practices adequate to meet the minimum requirements of this Rule.

(d) The deadlines for implementation of the local post-construction program are as follows:

(i) 1990 Decennial Census federally designated small MS4's, March 10, 2005.

(ii) 2000 Decennial Census and future decennial Census federally designated small MS4's, 12 months from date of permit issuance or 12 months from date of the granting of permit by rule status; and

(iii) All other regulated public entities, 12 months from date of permit issuance or 12 months from date of the granting of permit by rule status.

(e) A post construction stormwater management program shall be developed and implemented that meets the following requirements:

(i) The program shall require all projects as defined in Sub-Item (10)(B) of this Rule to apply for locally issued permit coverage under one of the following stormwater management options:

(A) Low Density Projects. Projects shall be permitted as low density if the project meets the following:

(I) No more than 2 XX dwelling units per acre or YY24 percent built-upon area BUA for all residential and non-residential development;

— NOTE: The Environmental Management Commission intends to revisit the issue of dwellings per acre / built-upon area during the permanent rule making process. At this time they intend to look at setting the value in the 12% to 24% range, but this is subject to change based on information received during the process. The Commission is interested in what values the public feels are appropriate. \_\_

(II) Stormwater runoff from the development shall be transported from the development by

vegetated conveyances to the maximum extent practicable;

(III) All BUA shall be at a minimum of 30 feet landward of all perennial and intermittent surface waters. For the purpose of this Rule, a surface water shall be present if the feature is approximately shown on either the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture or the most recent version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps prepared by the United States Geologic Survey (USGS). An exception to Relief from this requirement may be allowed when surface waters are not present in accordance with the provisions of 15A NCAC 2B .0233 (3)(a). An exception to this requirement may be pursued in accordance with Item (11) of this Rule; and

(IV) The permit shall require recorded deed restrictions and protective covenants to ensure that development activities maintain the development consistent with the approved project plans.

(B) High Density Projects. Projects exceeding the low density threshold established in Sub-Item (10)(e)(i)(A) of this Rule shall implement stormwater control measures that:

(I) Control and treat the difference in stormwater runoff volume leaving the project site between the pre and post development conditions for the 1 year 24 hour storm. Runoff volume drawdown time shall be a minimum of 24 hours, but not more than 120 hours;

(II) All structural stormwater treatment systems used to meet the requirements of the program shall be designed to have an 85% average annual removal for Total Suspended Solids;

(III) General Engineering Design Criteria for all projects shall be in accordance with 15A NCAC 2H .1008(c);

(IV) All BUA shall be at a minimum of 30 feet landward of all perennial and intermittent surface waters. For the purpose of this Rule, a surface water shall be present if the feature is approximately shown on either the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture or the most recent version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps prepared by the United States Geologic Survey (USGS). An exception to Relief from this requirement may be allowed when surface waters are not present in accordance with the provisions of 15A NCAC 2B .0233 (3)(a). An exception to this requirement may be pursued in accordance with Item (11) of this Rule; and

(V) The permit shall require recorded deed restrictions and protective covenants to ensure that development activities maintain the development consistent with the approved project plans;

(f) The program shall include an operation and maintenance component that ensures the adequate long-term operation of the structural BMP's required by the program. The program shall include a requirement that the owner of a permitted structural BMP, submit annually to the local program, a maintenance inspection report on each structural BMP. The inspection must be conducted by a qualified professional; and

(g) A program shall be developed to control, to the maximum extent practicable, the sources of fecal coliform. At a minimum, the program shall include the development and implementation of an oversight program to ensure proper operation and maintenance of on-site wastewater treatment systems for domestic wastewater. For municipalities, this program should be coordinated with the local county health department.

(h) For programs with development/redevelopment draining to SA waters, the following additional requirements must be incorporated into their program:

(i) A local ordinance shall be developed, adopted and implemented to ensure that the best practice for reducing fecal coliform loading is selected. The best practice shall be the practice that results in the highest degree of fecal die off and controls to the maximum extent practicable sources of fecal coliform while still meeting the requirements of Sub-Item (10)(d)(e) of this Rule. The local ordinance(s) shall incorporate a program to control the sources of fecal coliform to the maximum extent practical, including:

(A) Implementation of a pet waste management program. Appropriate revisions to an existing litter ordinance can be used to meet this requirement; and

(B) Implementation of an oversight program to ensure proper operation and maintenance of on-site wastewater treatment systems for domestic wastewater. For municipalities, this program should be coordinated with the local county health department; and

(ii) New direct points of stormwater discharge to SA waters or expansion of existing points of discharge to any constructed stormwater conveyance system, or constructed system of conveyances that discharge to SA waters, shall not be allowed. Expansion is defined as an

increase in drainage area or an increase in impervious surface within the drainage area resulting in a net increase in peak flow or volume from the 1 year 24 hour storm. Overland sheetflow of stormwater or stormwater discharge to a wetland, vegetated buffer or other natural area capable of providing treatment or absorption will not be considered a direct point of stormwater discharge for the purposes of this Rule.

(i) For programs with development/redevelopment draining to trout (Tr) waters, the following additional requirements must be incorporated into their program:

A local ordinance shall be developed, adopted and implemented to ensure that the best management practices selected do not result in a sustained increase in the receiving water temperature, while still meeting the requirements of Sub-Item (10)(d)(e) of this Rule.

(j) For programs with development/redevelopment draining to Nutrient Sensitive waters, the following additional requirements must be incorporated into their program:

(i) A local ordinance shall be developed, adopted and implemented to ensure that the best management practice for reducing nutrient loading is selected while still meeting the requirements of Sub-Item (10)(d)(e) of this Rule. Where a Department approved NSW Urban Stormwater Management Program is in place, the provisions of that program fulfill this requirement; and

(ii) A nutrient application (both inorganic fertilizer and organic nutrients) management program shall be developed and included in the stormwater management program.

(k) Public bodies may develop and implement comprehensive watershed protection plans that may be used to meet part, or all, of the requirements of Item (10) of this Rule.

(l) The department may require more stringent stormwater management measures on a case-by-case basis where it is determined that additional measures are required to protect water quality and maintain existing and anticipated uses of these waters.

(m) The Department may develop guidance on the scientific and engineering standards for best management practices that shall be used to meet the post construction elements of this Rule.

Alternative design criteria may be approved by the Department where a demonstration is made that the alternative design will provide:

(i) Equal or better management of the stormwater;

(ii) Equal or better protection of the waters of the state; and

(iii) No increased potential for nuisance conditions.

#### (11) Exceptions

The Division or the appropriate delegated local authority may grant an exception to the requirements of Sub-Items (10)(e)(i)(A)(III) and (10)(e)(i)(B)(IV) of this Rule. Delegated local authorities must document the exception procedure and submit an annual report on all exception proceedings. The exception request procedure shall be as follows:

(a) For any exception request, the Division or the delegated local authority shall make a finding of fact as to whether the following requirements have been met:

(i) There are practical difficulties or unnecessary hardships that prevent compliance with the strict letter of the requirements or unnecessary hardships shall be evaluated in accordance with the following:

(A) If the applicant complies with the provisions of this Rule, he/she can secure no reasonable return from, nor make reasonable use of, his/her property. Merely proving that the exception would permit a greater profit from the property shall not be considered adequate justification for an exception. Moreover, the Division or delegated local authority shall consider whether the exception is the minimum possible deviation from the terms of this Rule that shall make reasonable use of the property possible.

(B) The hardship results from application of this Rule to the property rather than from other factors such as deed restrictions or other hardship.

(C) The hardship is due to the physical nature of the applicant's property, such as its size, shape, or topography, which is different from that of neighboring property.

(D) The applicant did not cause the hardship by knowingly or unknowingly violating this Rule.

(E) The applicant did not purchase the property after the effective date of this Rule, and then request an appeal

(F) The hardship is unique to the applicant's property, rather than the result of conditions that are widespread. If other properties are equally subject to the hardship created in the restriction, then granting an exception would be a special privilege denied to others, and would not promote equal justice;

(ii) The exception is in harmony with the general purpose and intent of this Rule and preserves its spirit; and

(iii) In granting the exception, the public safety and welfare have been assured, water quality has been protected, and substantial justice has been done.

(b) Exceptions. An exception request pertains to activities that are proposed to impact the area within 30 feet landward of all perennial and intermittent surface waters. Exception requests shall be reviewed and approved based on the criteria in Item (11) of this Rule by either the Division or the delegated local authority pursuant to G.S. 153A Article 18, or G.S. 160A-Article 19. The Division or the delegated local authority may attach conditions to the exception approval that support the purpose, spirit and intent of the Rule. Requests for appeals of decisions made by the Division shall be made to the Office of Administrative Hearings. Request for appeals made by the delegated local authority shall be made to the appropriate Board of Adjustment under G.S. 160A-388 or G.S. 153A-345.

(c) The following uses, where no practical alternative exists, do not require exception request. A lack of practical alternatives may be shown by demonstrating that, considering the potential for a reduction in size, configuration or density of the proposed activity and all alternative designs, the basic project purpose cannot be practically accomplished in a manner which would avoid or result in less adverse impact to surface waters. Also, these structures shall be located, designed, constructed, and maintained to have minimal disturbance, to provide maximum nutrient removal and erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent practical through the use of best management practices:

(i) Road crossings, railroad crossings, bridges, airport facilities, and utility crossings if conditions specified in Sub-Item(11)(c) of this Rule are met.

(ii) Stormwater management facilities and ponds, and utility construction and maintenance corridors for utilities such as water, sewer or gas as long as they are located 15 ft landward of all perennial and intermittent surface waters and the conditions specified in Sub-Item (11)(c) of this Rule are met.

(11) Permitted by Rule Option. To be "permitted by rule" the public body shall:

(a) Adopt ordinance(s) and implement programs addressing post-construction stormwater runoff throughout the public bodies entire jurisdictional area, pursuant to Item (10) of this Rule; and

(b) Institute the pollution prevention / good housekeeping measure at their publicly owned facilities, pursuant to Sub-Item (7)(a)(vi) of this Rule, in accordance with a separate NPDES permit for municipal operations. If the public body selects this option, the State will implement the remaining four minimum measure requirements throughout the public bodies entire jurisdictional area through existing programs and NPDES stormwater permits to the extent allowed under those programs and permits.

*History Note: Authority G.S. 143-214.1; 143-214.7; 143-215.1; 143-215.3(a)(1);* \_\_\_

*Eff. November 1, 1986;* \_\_\_

*Amended Eff. August 3, 1992;* \_\_\_

*Temporary Amendment Eff. November 1, 2002;* \_\_\_

*Amended Eff. August 1, 2004* \_\_\_

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## Appendix C

### Phase II Regulations Designed To Fill Gaps in Coverage

15A NCAC 2H .1014 is proposed for adoption as follows: 1

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#### **.1014 Stormwater Management – State RPE Stormwater Management Program 3**

Regulated Public Entity (RPE) stormwater discharges to the surface waters of the State, not subject to NPDES 4

permitting, shall be permitted in accordance with these rules. If these rules overlap other rules, the more stringent 5

requirements apply. 6

(1) For the purpose of this Rule, these terms shall be defined as follows: 7

(a) Built-upon area (BUA) means that portion of a development project that is covered by impervious or 8 partially impervious cover including buildings, pavement, gravel areas (e.g. roads, parking lots, paths), 9 recreation facilities (e.g. tennis courts), etc. (Note: Wooden slatted decks and the water area of a 10 swimming pool are considered pervious.) 11

(b) Department means the North Carolina Department of Environment and Natural Resources. 12

(c) Existing development means those projects that are built or those projects that at a minimum have 13 established a vested right under North Carolina zoning law as of the effective date of the local 14 government ordinance, or such earlier time that an affected local government's ordinances shall 15 specify, based on at least one of the following criteria: 16

(i) substantial expenditures of resources (time, labor, money) based on a good faith reliance upon 17 having received a valid local government approval to proceed with the project, or 18

(ii) having an outstanding valid building permit in compliance with G.S. 153A-344.1 or G.S. 160A- 19 385.1, or 20

(iii) having an approved site specific or phased development plan in compliance with G.S. 153A- 21 344.1 or G.S. 160A-385.1. 22

(d) Regulated public entities (RPE) means all municipalities and counties identified by a decennial U.S. 23 Census as being located in whole or in part within a Urbanized Area, all federally designated public 24 bodies, and all state designated public bodies. 25

(e) 1 year, 24 hour storm means the surface runoff resulting from a rainfall of an intensity expected to be 26 equaled or exceeded, on average, once in 12 months. 27

(f) Population Density means the population of an area divided by the area's geographical measure in 28 square miles, equal to persons per square mile. For the purposes of this definition, the population shall 29 equal the sum of the permanent and seasonal populations, or be calculated from a measure of housing 30 unit density 31

(g) Public body means the United States, the State of North Carolina, city, village, township, county, 32 school district, public college or university, single purpose governmental agency; or any other 33 governing body which is created by federal or state statute or law. 34

(h) Redevelopment means any rebuilding activity other than a rebuilding activity that; 35

(i) Results in no net increase in built-upon area, and 36

(ii) Provides equal or greater stormwater control than the previous development. 37

2

(i) Significant contributor of pollutants means a discharge that, 1

(i) Contributes to a pollutant loading(s) which may reasonably be expected to exert detrimental 2 effects on the quality and uses of that water body; or 3

(ii) That destabilizes the physical structure of a water body such that the discharge may reasonably be 4 expected to exert detrimental effects on the quality and uses of that water body. 5

Uses of the waters shall be determined pursuant to 15A NCAC 2B .0211 - .0222 and 15A NCAC 2B 6 .0300. 7

(2) Designation: Designation into the State RPE stormwater management program will be conducted in 8 accordance with the process defined in 15A NCAC 2H .0126, Sub-Item (2)(b). 9

(3) Designation Administration: Administration of the designation process will be conducted in accordance 10

with the process defined in 15A NCAC 2H .0126, Item (3). 11

(4) Application schedule. Regulated public entities must submit applications on department approved forms. 12

(a) The applications shall include program descriptions for the minimum measures identified in Item (5) of 13

this Rule. 14

(b) The application deadline will not be less than 18 months from the date of designation notification. 15

(5) Stormwater Management Requirements 16

(a) All regulated public entities subject to this Rule shall develop, implement and enforce a stormwater 17 management plan approved by the department in accordance with Sub-Items (5)(b)-(5)(d) of this Rule. 18

The plan shall be designed to reduce discharge of pollutants to the maximum extent practicable and, 19 except as otherwise provided, shall include but not be limited to the following minimum measures: 20

(i) A public education and outreach program on the impacts of stormwater discharges on water bodies 21 to inform citizens of how to reduce pollutants in stormwater runoff. The public body may satisfy 22

this requirement by developing a local education and outreach program; by participating in a 23 statewide education and outreach program coordinated by the department; or a combination of 24 those approaches. 25

(ii) A public involvement and participation program consistent with all applicable state and local 26 requirements. 27

(iii) A program to detect and eliminate illicit discharges within the RPE jurisdictional area. The 28 program shall include a storm sewer system mapping component which at a minimum identifies 29 stormwater outfalls and the names and location of all waters within the jurisdiction of the public 30 body. 31

(iv) A program to reduce pollutants in any stormwater runoff to waters of the State from construction 32 activities resulting in a land disturbance of greater than or equal to one acre. Implementation and 33

enforcement of the Sedimentation Pollution Control Act, G.S. 113A-50 et seq., By either the 34 Department or through a local program developed pursuant to G.S. 113A-54(b), in conjunction 35

with the states NPDES permit for construction activities, may be used to meet this minimum 36 measure either in whole or in part. 37

3

(v) A program to address post-construction stormwater runoff from new development and 1 redevelopment projects that cumulatively disturb greater than or equal to one acre, including 2 projects less than one acre that are part of a larger common plan of development or sale, that 3 discharge into waters of the State, pursuant to Item (7) of this Rule; and 4

(vi) A pollution prevention/good housekeeping program for municipal operations that addresses 5 operation and maintenance, including a training component, to prevent or reduce pollutant runoff 6 from those operations. 7

(b) Minimum measures and permit coverage for regulated public entities: 8

(i) For municipalities: 9

(A) They shall implement all six minimum measures 10

(B) Their permit will cover their jurisdictional area including any area where they have exercised 11 their Extraterritorial Jurisdiction Authorities under General Statute G.S. 160A-360. They 12 shall implement the six minimum measures in their ETJ areas to the extent allowable under 13 existing rules and statutes. 14

(ii) For counties: 15

(A) They shall implement all six minimum measures 16

(B) The permit will cover the unincorporated areas of the county's jurisdictional area. 17

(iii) For all other regulated public entities: 18

(A) They shall implement all six minimum measures 19

(B) The permit will cover their jurisdictional area. 20

(c) All public bodies designated by petition shall meet the requirements set out in Sub-Items (5)(b) of this 21

Rule as applicable. 22

(d) The Department may allow regulated public entities to use existing state and local programs to meet 23 the required permit minimum measures either in whole or in part. 24

(6) Implementation Schedule. Regulated public entities, pursuant to Item (2) of this Rule, shall have permit  
25  
conditions that establish schedules for implementation of each component of the stormwater management  
26  
program based on the submitted application, and shall fully implement a program meeting the requirements  
27

set out in Item (5) and Item (7) of this Rule within five years from permit issuance. 28

(7) Post-construction stormwater management 29

(a) All regulated public entities must develop, implement and adopt by ordinance a post-construction 30  
stormwater management program for all new development and redevelopment as part of their plan to 31  
meet the minimum requirements pursuant to Sub-Item (5)(a)(v) of this Rule. These ordinances, and 32  
subsequent modifications, will be reviewed and approved by the Department prior to implementation. 33  
The approval process will establish subsequent timeframes when the Department will review 34  
performance under the ordinance (s). The reviews will occur, at a minimum, every five years. 35  
Regulated public entities without ordinance making powers, shall demonstrate similar actions taken in 36  
their post construction stormwater management program to meet the minimum measure requirements. 37  
4

(b) The post-construction program shall apply to all new development projects that cumulatively disturb 1  
one acre or more, and to projects less than an acre that are part of a larger common plan of 2  
development or sale. The post-construction program shall apply to all redevelopment projects that 3  
cumulatively disturb one acre or more, and to projects less than an acre that are part of a larger 4  
common plan of development or sale. 5

(c) The department shall submit a model ordinance including best management practices to control and 6  
manage stormwater runoff from development and redevelopment sites subject to this Rule to the 7  
Commission for approval. The department shall work in cooperation with local governments to 8  
develop this model ordinance. The model ordinance shall include both structural and non-structural 9  
best management practices adequate to meet the minimum requirements of this Rule. 10

(d) The deadline for implementation of the local post-construction program is 12 months from date of 11  
permit issuance. 12

(e) A post construction stormwater management program shall be developed and implemented that meets  
13  
the following requirements; 14

(i) The program shall require all projects as defined in Sub-Item (7)(b) of this Rule to apply for 15  
locally issued permit coverage under one of the following stormwater management options: 16

(A) Low Density Projects. Projects shall be permitted as low density if the project meets the 17  
following: 18

(I) No more than **XX** dwelling units per acre or **YY** percent built-upon area BUA for all 19  
residential and non-residential development 20  
21

NOTE: May need to be revised based on the permanent rule-making process deliberations 22  
23

(II) Stormwater runoff from the development shall be transported from the development by 24  
vegetated conveyances to the maximum extent practicable; and 25

(III) All BUA shall be at a minimum of 30 feet landward of all perennial and intermittent 26  
surface waters. For the purpose of this Rule, a surface water shall be present if the 27  
feature is approximately shown on either the most recent version of the soil survey map 28  
prepared by the Natural Resources Conservation Service of the United States Department 29  
of Agriculture or the most recent version of the 1:24,000 scale (7.5 minute) quadrangle 30  
topographic maps prepared by the United States Geologic Survey (USGS). Relief from 31  
this requirement may be allowed when surface waters are not present in accordance with 32  
the provisions of 15A NCAC 2B .0233 (3)(a). An exception to this requirement may be 33  
pursued in accordance with Item 8 of this Rule; and 34

(IV) The permit shall require recorded deed restrictions and protective covenants to ensure 35  
that development activities maintain the development consistent with the approved 36  
project plans. 37

5

(B) High Density Projects. Projects exceeding the low density threshold established in Sub-Item 1 (7)(e)(i)(A) of this Rule shall implement stormwater control measures that: 2

(I) Control and treat the difference in stormwater runoff volume leaving the project site 3 between the pre and post development conditions for the 1 year 24 hour storm. Runoff 4 volume drawdown time shall be a minimum of 24 hours, but not more than 120 hours. 5 6

NOTE: 1 yr 24 hour storm use may be revised based on the permanent rule-making process deliberations 7 8

(II) All structural stormwater treatment systems used to meet the requirements of the 9 program shall be designed to have an 85% average annual removal for Total Suspended 10 Solids. 11

(III) General Engineering Design Criteria for all projects shall be in accordance with 15A 12 NCAC 2H .1008(c). 13

(IV) All BUA shall be at a minimum of 30 feet landward of all perennial and intermittent 14 surface waters. For the purpose of this Rule, a surface water shall be present if the 15 feature is approximately shown on either the most recent version of the soil survey map 16 prepared by the Natural Resources Conservation Service of the United States Department 17 of Agriculture or the most recent version of the 1:24,000 scale (7.5 minute) quadrangle 18 topographic maps prepared by the United States Geologic Survey (USGS). Relief from 19 this requirement may be allowed when surface waters are not present in accordance with 20 the provisions of 15A NCAC 2B .0233 (3)(a). In addition, an exception to this 21 requirement may be pursued in accordance with Item 8 of this Rule; and 22

(V) The permit shall require recorded deed restrictions and protective covenants to ensure 23 that development activities maintain the development consistent with the approved 24 project plans 25

(f) The program shall include an operation and maintenance component that ensures the adequate long- 26 term operation of the structural BMP's required by the program. The program shall include a 27 requirement that the owner of a permitted structural BMP, submit annually to the local program, a 28 maintenance inspection report on each structural BMP. The inspection must be conducted by a 29 qualified professional; and 30

(g) A program shall be developed to control, to the maximum extent practicable, the sources of fecal 31 coliform. At a minimum, the program shall include the development and implementation of an 32 oversight program to ensure proper operation and maintenance of on-site wastewater treatment systems 33 for domestic wastewater. For municipalities, this program should be coordinated with the local county 34 health department. 35

(h) For programs with development/redevelopment draining to SA waters, the following additional 36 requirements must be incorporated into their program 37 6

(i) A local ordinance shall be developed, adopted and implemented to ensure that the best practice for 1 reducing fecal coliform loading is selected. The best practice shall be the practice that results in 2 the highest degree of fecal die off and controls to the maximum extent practicable sources of fecal 3 coliform while still meeting the requirements of Sub-Item (7)(e) of this Rule. The local 4 ordinance(s) shall incorporate a program to control the sources of fecal coliform to the maximum 5 extent practical, including: 6

(A) Implementation of a pet waste management program. Appropriate revisions to an existing 7 litter ordinance can be used to meet this requirement; and 8

(B) Implementation of an oversight program to ensure proper operation and maintenance of on- 9 site wastewater treatment systems for domestic wastewater. For municipalities, this program 10 should be coordinated with the local county health department; and 11

(ii) New direct points of stormwater discharge to SA waters or expansion of existing points of 12 discharge to any constructed stormwater conveyance system, or constructed system of 13 conveyances that discharge to SA waters, shall not be allowed. Expansion is defined as an 14 increase in drainage area or an increase in impervious surface within the drainage area resulting in 15 a net increase in peak flow or volume from the 1 year 24 hour storm. Overland sheetflow of 16 stormwater or stormwater discharge to a wetland, vegetated buffer or other natural area capable of 17 providing treatment or absorption will not be considered a direct point of stormwater discharge for 18



the purposes of this Rule. 19

(i) For programs with development/redevelopment draining to trout (Tr) waters, the following additional 20 requirements must be incorporated into their program: 21

(i) A local ordinance shall be developed, adopted and implemented to ensure that the best 22 management practices selected do not result in a sustained increase in the receiving water 23 temperature, while still meeting the requirements of Sub-Item (7)(e) of this Rule. 24

(j) For programs with development/redevelopment draining to Nutrient Sensitive waters, the following 25 additional requirements must be incorporated into their program. 26

(i) A local ordinance shall be developed, adopted and implemented to ensure that the best 27 management practice for reducing nutrient loading is selected while still meeting the requirements 28 of Sub-Item (7)(e) of this Rule. Where a Department approved NSW Urban Stormwater 29 Management Program is in place, the provisions of that program fulfill this requirement; and 30

(ii) A nutrient application (both inorganic fertilizer and organic nutrients) management program shall 31 be developed and included in the stormwater management program. 32

(k) Public bodies may develop and implement comprehensive watershed protection plans that may be used 33

to meet part, or all, of the requirements of Item (7) of this Rule. 34

(l) The department may require more stringent stormwater management measures on a case-by-case basis 35

where it is determined that additional measures are required to protect water quality and maintain 36 existing and anticipated uses of these waters. 37

7

(m) The Department may develop guidance on the scientific and engineering standards for best 1 management practices that shall be used to meet the post construction elements of this Rule. 2 Alternative design criteria may be approved by the Department where a demonstration is made that the 3 alternative design will provide: 4

(i) Equal or better management of the stormwater; 5

(ii) Equal or better protection of the waters of the state; and 6

(iii) No increased potential for nuisance conditions. 7

(8) Exceptions 8

The Division or the appropriate delegated local authority may grant an exception to the requirements of 9 Sub-Items (7)(e)(i)(A)(III) and (7)(e)(i)(B)(IV) of this Rule. Delegated local authorities must document the 10

exception procedure and submit an annual report on all exception proceedings. The exception request 11 procedure shall be as follows: 12

(a) For any exception request, the Division or the delegated local authority shall make a finding of fact as 13

to whether the following requirements have been met: 14

(i) There are practical difficulties or unnecessary hardships that prevent compliance with the strict 15 letter of the requirements or unnecessary hardships shall be evaluated in accordance with the 16 following: 17

(A) If the applicant complies with the provisions of this Rule, he/she can secure no reasonable 18 return from, nor make reasonable use of, his/her property. Merely proving that the exception 19 would permit a greater profit from the property shall not be considered adequate justification 20 for an exception. Moreover, the Division or delegated local authority shall consider whether 21 the exception is the minimum possible deviation from the terms of this Rule that shall make 22 reasonable use of the property possible. 23

(B) The hardship results from application of this Rule to the property rather than from other 24 factors such as deed restrictions or other hardship. 25

(C) The hardship is due to the physical nature of the applicant's property, such as its size, shape, 26 or topography, which is different from that of neighboring property. 27

(D) The applicant did not cause the hardship by knowingly or unknowingly violating this Rule. 28

(E) The applicant did not purchase the property after the effective date of this Rule, and then 29 request an appeal 30

(F) The hardship is unique to the applicant's property, rather than the result of conditions that are 31 widespread. If other properties are equally subject to the hardship created in the restriction, 32

then granting a exception would be a special privilege denied to others, and would not 33  
promote equal justice; 34

(ii) The exception is in harmony with the general purpose and intent of this Rule and preserves its 35  
spirit; and 36

8

(iii) In granting the exception, the public safety and welfare have been assured, water quality has been 1  
protected, and substantial justice has been done. 2

(b) Exceptions. An exception request pertains to activities that are proposed to impact the area within 30 3  
feet landward of all perennial and intermittent surface waters . Exception requests shall be reviewed 4  
and approved based on the criteria in Item (8) of this Rule by the either the Division or the delegated 5  
local authority pursuant to G.S. 153A Article 18, or G.S. 160A-Article 19. The Division or the 6  
delegated local authority may attach conditions to the exception approval that support the purpose, 7  
spirit and intent of the Rule. Requests for appeals of decisions made by the Division shall be made to 8  
the Office of Administrative Hearings. Request for appeals made by the delegated local authority shall 9  
be made to the appropriate Board of Adjustment under G.S. 160A-388 or G.S. 153A-345 10

(c) The following uses, where no practical alternative exists, do not require exception request. A lack of 11  
practical alternatives may be shown by demonstrating that, considering the potential for a reduction in 12  
size, configuration or density of the proposed activity and all alternative designs, the basic project 13  
purpose cannot be practically accomplished in a manner which would avoid or result in less adverse 14  
impact to surface waters. Also, these structures shall be located, designed, constructed, and maintained 15  
to have minimal disturbance, to provide maximum nutrient removal and erosion protection, to have the 16  
least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent 17  
practical through the use of best management practices: 18

(i) Road crossings, railroad crossings, bridges, airport facilities, and utility crossings if conditions 19  
specified in Sub-Item(8)(c) of this Rule are met. 20

(ii) Stormwater management facilities and ponds, and utility construction and maintenance corridors 21  
for utilities such as water, sewer or gas as long as they are located 15 ft landward of all perennial 22  
and intermittent surface waters and the conditions specified in Sub-Item (8)(c) of this Rule are 23  
met. 24

*History Note: Authority G.S. 143-214.1; 143-214.7; 143-215.3(a)(1) 25*

*Adopted Eff. August 1, 2004 26*

