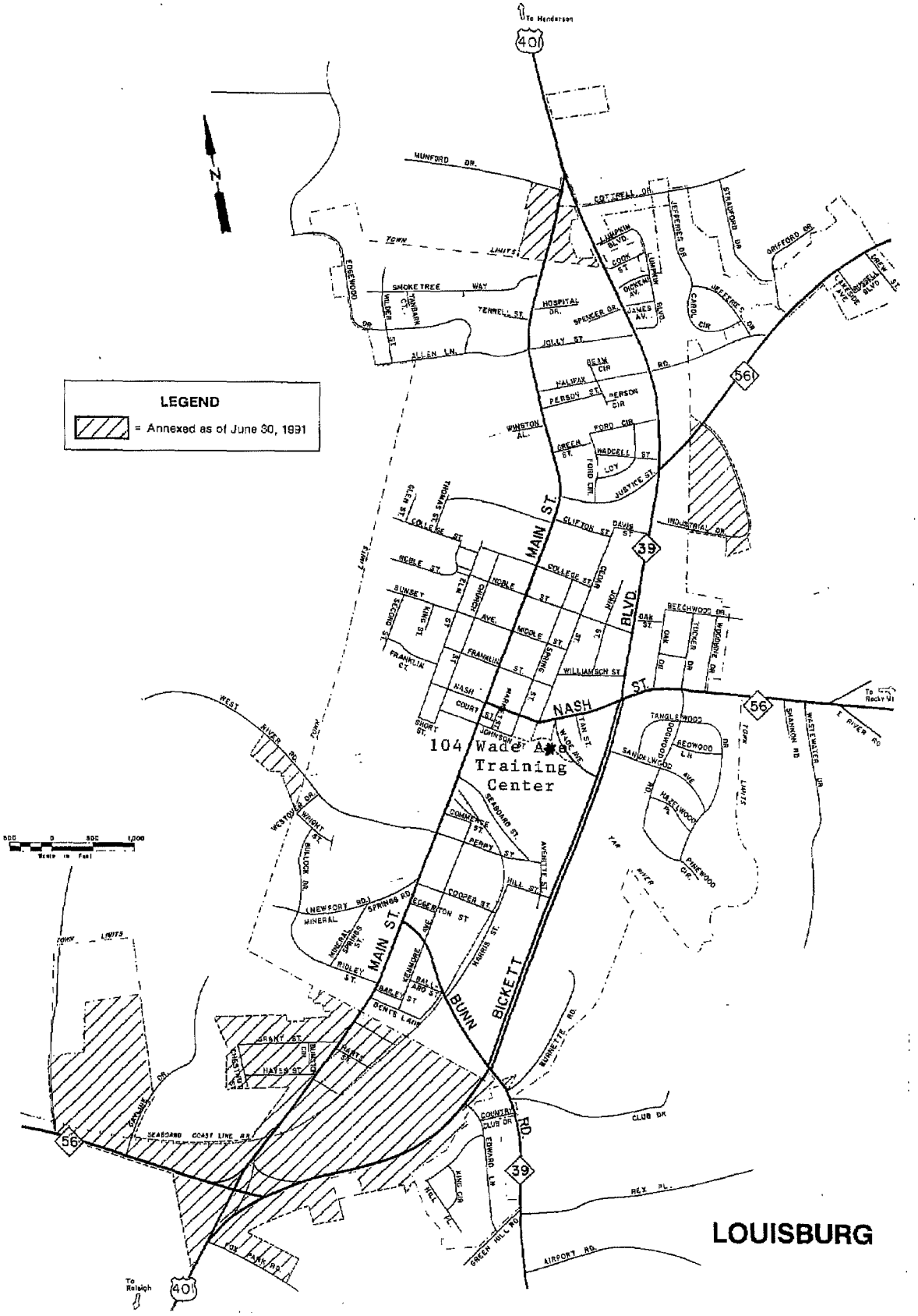
TAR-PAMLICO RIVER BASIN REGIONAL COUNCIL

Louisburg Police Training Center
107 Wade Avenue
Louisburg, NC
919/496-4175

JULY 30, 1999

AGENDA

10:00	Welcome & Call to Order	Chairman Earl Bell
10:05	Introductions	ALL
10:10	Acceptance of Minutes from 4/9/99 Meeting in Plymouth	Chairman Bell
10:15	Applying Adaptive Management to the Neuse River Estuary	Dr. Kenneth Reckhow Water Resources Research Institute, NCSU
10:45	Harmful Algal Blooms	Gary Minter NC Dept of Health & Human Services
11:05	Demonstration Projects 1- Warren County Pasture Aeration and Precision Ag Demonstration Project 2- Innovative On-site Wastewater Disposal System Demonstration Project	ALL
12:00	WORKING LUNCH (provided by the Town of Louisburg)	
1:00	Old Business: - Status of Tar-Pamlico Education Team	Mary Jane Jennings
1:05	New Business & Public Comment	Chairman Bell
1:10	Plans for Next Meeting	ALL
1:15	Adjourn	



FROM ROCKY MOUNT:

(in on 56 West. Turn left on Bickett Blvd. At the stoplight. Go one block to the next light and turn right on Wade Avenue. The Police/Fire Training Center is one block on the left.

FROM RALEIGH:

Come in on 401 North. At D&J Automotive, bear to the right which is Bickett Blvd./401. Go through the first light and go past McDonald's to Wal-Mart. Cross the Tar River and turn left at the next light onto Wade Avenue. The

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MINUTES

The meeting was called to order by Chairman Earl Bell at 10:30. He welcomed those present and asked that self-introductions be made. He recognized the new members and acknowledged the guests and interested citizens in attendance. (See Attachment A and A.2)

Rich Gannon, NC Division of Water Quality, announced that the Tar-Pamlico River Basin Nutrient Rule-Making public hearings and comment period were being held on August 31, and September 2, at the Pitt Co. Ag. Ext. Center in Greenville and at the Nash Co. Ag. Ext Center in Nashville, respectively. Both gatherings will begin at 7:00pm. He encouraged those in attendance to consider attending either or both of these hearings. (See Attachment B)

The next order of business was the approval of the minutes from the last meeting (4/9/99). There being no changes, through a motion by Dan Wynne and second by Bruce Perkinson, the minutes were approved as mailed. Motion passed.

Dr. Ken Reckhow, WRRI (NCSU), addressed the group on the topic of "*Applying Adaptive Management in the Neuse River Estuary.*" He reported that WRRI and DENR/DWQ were engaged in 2 projects: a scoping project, which underscores the problems, and a modeling/ monitoring project the objective of which is to develop, test and apply a nutrient modeling approach for the evaluation of TMDLs in the Neuse estuary. A 30% reduction in nutrients is the target in the Neuse because of its NSW designation. Dr. Reckhow noted that nature, as well as man, plays a role in the dynamics of the estuary and that trade-offs will have to be made to make conditions more ideal. He defined Adaptive Management as learning by doing and noted it entailed large scale experimentation. The steps associated with this method include:

Model/Assessment (predicting the importance of management actions)
Decide (select the preferred action)
Implementation (take action)
Monitor (learn by doing)
Revising Model and Assessment (e.g. 5 yr. Basinwide Plans)
Revise Documentation and Action

The next presentation was given by Kathleen Buckheit, NC Dept. of Health and Human Services, on the "*NC Harmful Algal Blooms Program.*" Ms. Buckheit spoke to the program components:

Partnerships, Education, Surveillance and Research

and the program's focus on *Pfiesteria*. She added that while *Pfiesteria* has 24 life stages, only 4 of them are harmful to fish and humans. She recommended avoiding risky water, rinsing with clean water and calling the Hotline # (888) 823-6915 if it is thought that one has come in contact with this harmful algae.

Following Ms. Buckheit's presentation, lunch was served, compliments of the Town of Louisburg

After lunch, Bruce Perkinson reported on the final draft of the demonstration project proposal entitled "*Warren Co. Pasture Aeration and Precision Ag Demonstration Project*" (See Attachment C) and Guy Stefanski reported (for Dr. David Lindbo) on the second demonstration project proposal selected by the group for funding, "*Alternative On-Site Wastewater Treatment System.*" (See Attachment D). These versions will be sent to the Demonstration Project Committee of the Coordinating Council for review and evaluation.

OLD BUSINESS

Mary Jane Jennings reported on the status of the Tar-Pam Education Team. While it could not be funded this year (according to Sen. Wellons because of pending lawsuits dealing with the refund of money to retired state employees unlawfully charged personal property tax on retirement benefits) there still remains good support for it.

NEW BUSINESS

Cliff Edwards, representing Premier Ponds, Inc., spoke briefly about pond management systems. He made the group aware of a device he is pioneering which will keep nutrients contained in (agricultural) ponds, thus relieving the possibility of escape to other water bodies where they could cause unnecessary, and sometimes harmful, algal blooms. Cheryl Byrd suggested that reporting on this technology would make a good newsletter article.

Mary Jane Jennings reported that the NC DOT is looking for projects in 11 counties where it could dedicate $12M in each of the next three years. While she recognized a project for this year as being unreasonable, she recommended that we remember it for next year.

Ms. Jennings also remarked that formal thank-you notes should be sent to our "host" counties when meetings are conducted there.

Chairman Earl Bell expressed his regret at having to resign his membership (effective 7/31/99) on the TPRBRC due to new work responsibilities. Guy Stefanski and Joan Giordano thanked him for his service as an original RC member and also for his tenure as Chairman.

The next meeting date was set for **September 17th in Nash Co.** at the Rose Hill Plantation. Larry Odom agreed to pursue reserving the location. **NOTE**: This location is not available on the date determined for the next meeting, therefore an alternate location will be arranged. There being no further business, the meeting was adjourned.

Attachment A

Attendance
T-P RC
7/31/99

NAME	AFFILIATION
Ken Reckhow	UNC Water Resources Research Institute
Cheryl Byrd	Dare County Commissioner
Robert W Miller	Town of Nags Head
Jay W. Van Hoose	City of Rocky Mount
Joan Giordano	APNEP

Attachment A.2

Name	representing
Earl Bell	Agriculture
Joe Sherron	Town Council Louisburg NC
Jason Falls	Granville County
Bruce Perkinson	Warren County
DAN WYNNE	Pitt County
Erline Wynne	Pitt Co. visitor
Jeffrey Reed	Beaufort County
JOHN HARRIS	FRANKLIN COUNTY CATTLEMEN
MARY JANE JENNINGS	CONSERVATION (Franklin)
RALPH WILLOUGHBY	FRANKLIN Co. PLANNING DEPT.
[illegible]	Franklin Co - Rep.
Jeffrey Wood	NC Cooperative Ext. (Franklin)
LARRY S. ODOM	NASH County
Rich Gannon (visitor)	DWQ, Planning Branch (Raleigh)
[illegible] (visitor)	Premier Pond
Cliff [illegible]	Premier Ponds INC
W. Edwards	" " "
Guy Stefanski	APNEP
Lucy Allen	Mayor, Louisburg

Attachment B

ANNOUNCEMENT OF PUBLIC HEARINGS AND COMMENT PERIOD FOR TAR-PAMLICO RIVER BASIN NUTRIENT RULE-MAKING

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

The Issue

The Pamlico River estuary has had a history of nutrient-related water quality problems as evidenced by excessive algal blooms, low dissolved oxygen, and fish kills. To curb these problems, the state is proposing new rules that are intended to reduce the levels of nutrients entering the river.

Actions Before Now

In 1989, the North Carolina Environmental Management Commission (EMC) designated the Tar-Pamlico River basin as "Nutrient Sensitive Waters". The EMC initially adopted a strategy that required nutrient reductions from point sources, such as wastewater treatment plants. It addressed nonpoint, or runoff-related, pollution sources voluntarily through the state's agriculture cost share program. In 1994, the EMC established overall goals of a 30 percent reduction in nitrogen inputs and holding of phosphorus loads at 1991 levels. At that time, the EMC expanded the strategy to include all nonpoint source categories, such as agriculture, urban stormwater, forestry, on-site wastewater, and others, but kept actions largely voluntary.

Rule-making Actions

In September 1998, the EMC determined that progress under the "voluntary" approach was inadequate and that mandatory nonpoint measures were needed to reach the nutrient goals. A rule-making process began in November 1998, when the Division of Water Quality (DWQ) convened 7 stakeholder teams over 4 months to develop rule concepts and language. An initial comment period on the subject of these nonpoint rules ran from June 1 to July 30, 1999.

Public Hearings

The Division of Water Quality has scheduled two public hearings on proposed nonpoint source rules in four subject areas: agriculture, nutrient management (both agricultural and non-agricultural fertilizer application), riparian buffer protection, and urban stormwater. At the hearings, Division of Water Quality staff will provide a history and explanation of the rules and answer questions. The public will have opportunity to provide oral or written comments. Hearings have been set for the following dates and places:

Tuesday, August 31, 7:00 pm	**Thursday, September 2, 7:00 pm**
Greenville, NC Pitt County Agriculture Extension Auditorium Pitt County Extension Center 403 Government Circle On Old Creek Rd. on the north side of S.R. 33 east of U.S. 13	Nashville, NC Nash County Agriculture Center Auditorium Ag Center Drive On the north side of U.S. 64 Business (Eastern Ave.) Nash County Extension office: 252-459-9810

Submitting Comments

In addition to the hearings, a 60-day public comment period is now open on the draft text of these rules. You can provide comments to the Division of Water Quality **until September 30, 1999**.

Anyone who is potentially affected by the proposals is encouraged to attend the hearings and/or provide comments by mail.

Please submit comments to: Rich Gannon DENR, Division of Water Quality Planning Branch 1617 Mail Service Center Raleigh, NC 27699-1617	***Questions?*** You can direct questions about the proposed rules to Rich Gannon at (919) 733-5083 ext. 356, or rich_gannon@h2o.enr.state.nc.us.

Further Information

The rules are described briefly below. You can obtain a full copy, 46 pages, from DWQ staff. Staff has also prepared a detailed fiscal analysis of the impacts of the proposed rules (194 pages), and copies are available.

Here are some options for obtaining this information:

- If you have internet access, you can find a copy of the draft rules, a summary of the fiscal analysis, and other information on the Tar-Pamlico NSW Strategy on the DWQ web page at http://h2o.enr.state.nc.us/nps/tarp.htm.
- If you would like to be mailed materials, please contact Marsha Byrd at 919-733-5083 ext. 558.
- You can also find the official Notice of Text of the rules and comment procedures in the August 2nd edition of the NC Register, which is provided to each county and municipality in the state.

SUMMARY OF PROPOSED NONPOINT SOURCE NUTRIENT RULES FOR TAR-PAMLICO RIVER BASIN

Agricultural Best Management Practices for Nutrient Control

Under the proposal, persons engaging in agricultural operations in the Tar-Pamlico River Basin have **two options** for meeting the nitrogen and phosphorus loading goals. The options are to either participate in a local nutrient control strategy or implement standard Best Management Practices. The two options are as follows:

Option 1 - Local Nutrient Control Strategy

Farmers may choose to participate in the development and implementation of a countywide or watershed-wide strategy to reduce nitrogen loading by 30 percent and hold phosphorus loading to 1991 levels. Local Advisory Committees would review and approve site-specific plans for nitrogen and phosphorus, based on the overall county/watershed nitrogen and phosphorus control goals. Farmers who choose this option would be required to implement their plans within 5 years of the effective date of the rule. The Directors of the DSWC and the DWQ would solicit membership for the Local Advisory Committees from the local Soil and Water Conservation Districts (SWCD), local Natural Resources Conservation Service (NRCS), local N.C. Cooperative Extension Service (CES), Division of Soil and Water Conservation (DSWC), N.C. Department of Agriculture and Consumer Services (NCDACS), and at least two local farmers.

Option 2 - Standard Best Management Practices (BMPs)
If a farmer does not select option 1, then he must implement standard BMPs. Farmers would choose from combinations of riparian buffers of different widths and composition, water control structures, and nutrient management. Farmers who choose this option would be required to implement their plans within 4 years of the effective date of the rule.

In addition to the Local Advisory Committees, the Secretary of the Department of Environment and Natural Resources would form a Basin Oversight Committee. The Basin Oversight Committee would have the following responsibilities:

- Develop a tracking and accounting method to estimate nutrient loading from agricultural sources.
- Review and approve local nutrient control strategies and report findings to the EMC.
- Establish a technical advisory committee to monitor the science on phosphorus and evaluate the need for specific management actions to meet the phosphorus loading goal.

The Secretary would solicit membership for the Basin Oversight Committee from NRCS, DSWC, NCDACS, CES, DWQ, the environmental community, the scientific community, and agricultural interests.

Nutrient Management Requirements

Under this proposal, certain people who are involved in application of fertilizer to lands in the basin have two options, as follows:
Option 1: successfully complete nutrient management training and certification provided by the Extension Service or DWQ within 5 years of the effective date of the rule, -OR-
Option 2: develop and implement nutrient management plans for the lands where they apply nutrients. Nutrient management plans must meet certain technical criteria based on the type of operation.

The rule would apply to the following people:
- People who own or manage golf courses, recreational lands, rights-of-way, other turfgrass areas, and
- People who own or manage lawns or gardens in residential, commercial, or industrial property, except for residential landowners who fertilize their own property, and
- Applicators and consultants hired by any of the above people, including residential landowners.

The rule would also apply to people under one of the two following alternatives:
Alternative 1:
- People who own or manage at least 50 acres of floriculture or greenhouse areas, and
- People who own or manage at least 50 acres of cropland who have not developed a nutrient management plan under the agriculture rule.
- Applicators and consultants hired by any of the above people.

-OR-

Alternative 2:
- People who own or manage commercial floriculture or greenhouse areas, and
- People who own or manage commercial cropland who have not developed a nutrient management plan under the agriculture rule.

- Applicators and consultants hired by any of the above people.

These two alternatives are being offered for public comment. The EMC will determine a single set of applicability requirements for agricultural nutrient management based on these comments and on the recommendations of the Hearing Officers.

Urban Stormwater Requirements

The proposed rule would require local governments to implement stormwater management programs that include certain minimum elements. Local programs would require all new development to achieve the nitrogen and phosphorus loading goals, and no net increase in peak flow from the pre-development 1-year, 24-hour storm. Local programs would also include public education, mapping, identification and removal of illegal discharges, prioritization of sites for installing stormwater practices in areas of existing development, and annual nutrient load reporting. These programs would be implemented as early as two and one-half years after the effective date of the rule, and the local governments would be responsible for compliance and enforcement activities.

The following local governments would be affected by the proposed rule: 6 municipalities (Greenville, Henderson, Oxford, Rocky Mount, Tarboro, and Washington) and 6 counties (Beaufort, Edgecombe, Franklin, Halifax, Nash, and Pitt). In addition, the rule sets population thresholds of 5,000 for municipalities and 30,000 for counties; as local governments exceed these thresholds, they would be subject to the rule.

Protection and Maintenance of Existing Riparian Buffers

These rules would require that **existing** vegetated riparian (streamside) areas in the basin be protected and maintained on both sides of intermittent and perennial streams, lakes, ponds, and estuarine waters. **This rule does not establish new buffers unless the existing use changes.** The footprints of existing uses such as agriculture, buildings, industrial, commercial, and transportation facilities, maintained lawns, utility lines, and on-site wastewater systems are exempt. A total of 50 feet of riparian area is required on each side of these waterbodies. Within this 50 feet, the first 30 feet is to remain undisturbed with the exception of certain activities. The outer 20 feet must be vegetated, but certain additional uses are allowed in this zone 2. Certain specific activities are identified in the rule as "exempt", "allowable", "allowable with mitigation", or "prohibited". Examples of "exempt" activities include driveway and utility crossings of a certain size through zone 1, and grading and revegetation in zone 2. "Allowable" and "allowable with mitigation" activities require review by DWQ staff, and include activities such as new ponds in drainageways and road crossings. A separate buffer mitigation rule establishes requirements for activities that DWQ staff determines are "allowable with mitigation".

Local governments may request delegation from the state to implement this rule, as spelled out in a separate buffer program delegation rule. In the basin's larger urban areas, protection of existing riparian areas would also be a component of the urban stormwater programs discussed above.

Attachment C

TAR-PAMLICO RIVER BASIN REGIONAL COUNCIL

WARREN COUNTY PASTURE AERATION AND PRECISION AG DEMONSTRATION PROJECT

DRAFT PROPOSAL

I. PRIORITY PROBLEM

Cattle production is an important source of income for many Warren County land owners. Over the last several years, however, there has been a noticeable decrease in grass and hay production from land committed to pasture. Although nutrient application levels have remained steady, producers are not getting the expected response.

An investigation into this situation indicates that a severe soil compaction problem is preventing nutrients, surface-applied at recommended rates, from penetrating the soil surface and reaching the root zone of the forages being grown. Nutrients that can not permeate the surface are washed off the land during rainfall events, eventually ending up in nearby streams.

This project demonstrates the benefits of using a pasture aerator to reduce soil surface compaction. The primary objectives of this project are to improve soil structure and quality by improving the infiltration and penetration of water and surface-applied nutrients to the root zone of growing plants, and by influencing microbial activity and proliferation. The goal of this project is to show a decrease in surface water runoff and an associated improvement in surface water quality.

This proposal incorporates the use of a soil compaction tester to determine the extent of soil compaction, a pasture aerator to break up soil surface compaction, soil testing, nutrient management and water monitoring to determine the extent of infiltration of rain water and applied nutrients.

II. OPTIONS CONSIDERED

Using alternative methods, such as plowing or discing, would disturb too much surface area and potentially destroy existing vegetation.

III. DISCUSSION of SELECTED OPTION/PROJECT ABSTRACT

- **Project Title:** Warren County Pasture Aeration and Precision Ag Demonstration Project
- **Lead Agency:** Warren County Soil and Water Conservation District
- **Goal:** To demonstrate how an aerator improves soil quality and production
- **Objectives:**
  - To improve water infiltration
  - To reduce runoff and nutrient loss
- **Likelihood of Success:** This project will successfully illustrate the use of a pasture aerator to reduce soil compaction and the benefits associated with reduced compaction.

- **Public Support**: Support for this project is clearly illustrated by the involvement of several local, state and federal resource management agencies, a the as well as by the participation of 25 local farmers.
- **Time & Resources Required**: It will take approximately two months to establish this project. The total cost of the project is $28,000.00 (including in-kind matching and other funding sources).
- **Cost-effectiveness:** The use of an aerator to fracture compacted soil is highly cost-effective because it involves the purchase of equipment that can be shared by multiple users, and requires little, if any, additional labor costs. An aerator can also reduce chemical and nutrient application costs.
- **Deliverables:** When this project is over, the aerator will be given to the Warren County Soil & Water Conservation District (SWCD) and made available for use by local farmers at no charge.

IV. DETAILED PROJECT DESCRIPTION/SCOPE of WORK

WHAT: This project will demonstrate to cattle producers, through the use of a soil compaction tester and pasture aeration equipment, how to improve surface water infiltration, encourage grid soil sampling, implement nutrient management and pest management practices and prescribe grazing to reduce nutrient loss through surface water runoff.

The project will establish paired fields, one with aeration and one without. In order to implement this project, an aerator will be cost-shared with producers for use on compacted pasture land. A soil compaction tester will be used to show soil compaction before and after the aerator is used. The project will be evaluated through the collection and measurement of sediment and nutrient runoff at field edges. Samples will be collected using collection basins that catch surface and sub-surface water. Samples will be taken at least 4 times during the year, generally following major rainfall events. Nutrient management plans will be developed and implemented for a period of three years.

WHO: The project is a joint effort between the Warren Soil and Water Conservation District; North Carolina Cooperative Extension Service, Warren County; USDA-Natural Resources Conservation Service and Royster-Clark.

Warren Soil and Water Conservation District is the lead organization (133 1/2 South Main Street, Warrenton, NC 27589) and Bruce Perkinson (252-257-3836) is the primary contact person.

HOW: Paired fields will be established, one with aeration and one without. Sediment and nutrient levels in runoff from each field will be compared.

WHERE: The project will be located in the following 14-digit hydrologic units within the Tar-Pamlico river basin portion of Warren County (See enclosed map).

CO#	HU NAME	ACRES	HU CODE	CAMPS CODE
185	Nutbush	4,296.79	03010102180010	U01
185	Smith Creek	35,453.02	03010106031010	T66
185	Hawtree Creek	17,091.28	03010106041010	T65
185	Six Pound Creek	12,720.39	03010106041020	T64
185	Hubguarter Creek	15,443.04	03010106041030	T63
185	Big Stone House Creek	16,031.62	03010106041040	T62
185	Songbird Creek	8,223.97	03010106041050	T61
185	Pea Hill Creek	272.71	03010106061010	T60
185	Mill Creek	382.11	03010106061020	T59
185	Martin-Sandy	26.59	03020101130010	E12
185	Upper Sandy Creek	4,275.58	03020101130040	E09
185	Fishing Creek Above US-401	26,911.94	03020102000010	D63
CO#	**HU NAME**	**ACRES**	**HU CODE**	**CAMPS CODE**
185	Lees Branch	10,036.53	03020102010010	D67
185	Cabin Branch	15,535.56	03020102010020	D66
185	Little Shocco	4,720.97	03020102010030	D65
185	Lower Shocco	5,054.39	03020102010040	D64
185	Fishing Creek Above NC-58	20,713.78	03020102020020	D62
185	Fishing Creek @ Shocco Crk	31,280.21	03020102020030	D61
185	Lower Fishing Creek	1,327.29	03020102020050	D59
185	Reedy Creek	21,923.02	03020102030010	D58
185	Bens Creek	8,425.83	03020102030020	D57
185	Ltl Fishing Crk @ Jct Reedy	19,498.43	03020102030030	D56
185	Ltl Fishing Crk @ Jct Bear	6,492.18	03020102030040	D55

WHEN: It will take approximately two months to establish the demonstration site and install collection basins.

PROJECT BUDGET:

	Regional Council Grant	Non-Federal Match	Other
STAFF	$0.00	$3,000.00	$1000.00
EQUIPMENT	$8,500.00	$3,000.00*	$4000.00*
SUPPLIES	$1,500.00	$0.00	$0.00
CONTRACT	$0.00	$0.00	$0.00
NCACSP	$0.00	$4,000.00	$0.00
NRCS	$0.00	$0.00	$1000.00
FSA	$0.00	$0.00	$2000.00
TOTAL	**$10,000.00**	**$10,000.00**	**$8,000.00**

*This figure includes on-hand equipment (soil compaction tester, GPS unit, soil sampling kits, application equipment) that will be used during this project

V. ACTIVITIES to MONITOR SUCCESS

Monitoring will be conducted by district staff and Royster-Clark staff at least 4 times a year. Collection basins will be installed to catch surface water runoff and shallow test wells will be installed to catch sub-surface water. Water from these collection points will be analyzed for nutrient content to compare results of the paired fields.

VI. PROGRESS REPORTS

Comparison results will be made available to the council on a quarterly basis. Results will be made available to the general public upon request.

VII. REVIEW, EVALUATION and REDIRECTION

This demonstration project will be reviewed, evaluated and redirected (if necessary) by the Technical Committee of the Coordinating Council for the Albemarle-Pamlico National Estuary Program and the NC Cooperative Extension Service.

VIII. BASINWIDE or REGIONAL APPLICATION

The methodology and results of this demonstration project can be transferable to other river basins with wide application. In part, the NC Cooperative Extension Service views this project as a "teaching/training demonstration project" to be applied locally and statewide.

IX. EDUCATION and OUTREACH:

This demonstration project will help approximately 25 producers prepare nutrient management plans on 10,000 acres in Warren County. Annual nutrient management classes and field days will be held. Both will be open statewide.

X. ENDORSEMENT by REGIONAL COUNCIL

This demonstration project was officially endorsed by members of the Tar-Pamlico River Basin Regional Council on April 9, 1999 at its meeting in Plymouth, NC.

Attachment D

TAR-PAMLICO RIVER BASIN REGIONAL COUNCIL

ALTERNATIVE ON-SITE WASTEWATER TREATMENT SYSTEM

DRAFT PROPOSAL

I. PRIORITY PROBLEM

Residential developmental pressures are being felt throughout rural eastern North Carolina. Due to limited resources and excessive distances to centralized wastewater treatment plants, most of the population relies on the use of on-site wastewater treatment and disposal systems. Unfortunately, the soils in the eastern part of the state (coastal plain) are generally provisionally suitable or unsuitable for the installation of conventional systems. In addition, when a failing system has to be repaired, it is often difficult to assure that adequate soil-based treatment is available.

These situations dictate that alternative, advanced onsite wastewater treatment systems are needed. A properly sited, designed, installed and maintained system can safely treat and dispose of the bacterial component of wastewater and reduce the nutrient component as well.

II. OPTIONS CONSIDERED

Conventional systems work well when properly sited and maintained. Proper siting for a conventional system generally requires well-drained, loamy to sandy loam soils and gentle slope. In the coastal plain, most of the suitable soils have been developed leaving only provisionally suitable soils that are limited by either fine textures, mixed to expansive mineralogy, and high water tables. In these situations, a conventional system does not always function to its highest degree. Therefore, conventional systems are not always the best choice for wastewater treatment in these environments. The other options that are available include fill systems (mounds) or pretreatment systems. The fill or mound systems are used, but often due to lack of required maintenance, do present some problems. Furthermore, the fill or mound systems do little to reduce nutrients entering the environment. The pretreatment options all require some form of management and offer the advantage of reducing the environmental hazards of the septic tank effluent.

III. DISCUSSION of SELECTED OPTION/PROJECT ABSTRACT

- **Project Title:** Alternative Onsite Wastewater Treatment System
- **Lead Agency:** North Carolina State University, Vernon James Center
- **Objectives:**
  - To demonstrate the effectiveness of an advanced on-site wastewater treatment system in reducing coliform and nutrient concentrations.
  - To educate decision-makers about risk management and alternative onsite wastewater treatment systems that are available to reduce environmental health risks and NPS pollution.

- **Likelihood of Success:** This project has a very high probability of successfully illustrating the benefits associated with alternative onsite wastewater treatment systems
- **Public Support:** This project is supported by the Tar-Pamlico River Basin Regional Council
- **Time & Resources Required:** This project will require the installation and monitoring of an advanced pretreatment system. Materials required will include: septic system, pretreatment unit, monitoring wells, sampling pumps, assorted field and laboratory supplies. It will also require approximatley 0.05 FTE to fully monitor and evaluate the project over a 2-year period.

  Time line:

Site selection	Fall 1999 to Spring 2000
System installation	Spring to Summer 2000
System monitoring	Summer 2000 to Summer 2002
Data analysis and report	Fall 2002 to Winter 2003

- **Cost-effectiveness:** Cost effectiveness is difficult to establish at this time, as there is little data to compare the environmental impact of conventional septic systems to advanced pretreatment septic systems. However, EPA and NCSU have both shown that a properly managed septic system is more cost effective than a centralized sewer system for a rural community.
- **Deliverables:** This project will illustrate the use of an advanced pretreatment system in reducing the overall septic system effluent strength in terms of biology and nutrients. The data from this project will be incorporated into a fact sheet or similar publication on the effectiveness of this type of septic system. Finally, the site can be used as a focal point to illustrate the use of this technology to elected officials and other interested parties.

IV. DETAILED PROJECT DESCRIPTION/SCOPE of WORK

WHAT: Advanced systems that are currently available to treat onsite wastewater can significantly reduce the potential for fecal coliform contamination as well as reduce the amount of N entering the environment. During this project, an innovative on-site wastewater disposal system will be installed and evaluated to assess nutrient contamination reduction. Installation will follow the rules and regulations set forth by NCDENR, OSWS guidelines. Site selection will consider public access in order to observe the technology.

WHO: North Carolina State University, Vernon James Center is the lead organization for this project. Dr. David Lindbo (252-793-4428 x. 166) is the principal investigator.

HOW: An advanced pretreatment on-site wastewater disposal system will be installed and evaluated regarding nutrient contamination reduction. The installation will follow the rules and regulations set forth by NCDENR, OSWS guidelines. Septic monitoring parameters will include: BOD, TSS, pH, PO4-P, Total-P, TKN, NH3-N and Total-N. Sampling locations will include: up gradient (minimum of 1 well), septic tank, after treatment modules as applicable, within/below nitrification trench (1-2 wells), down gradient (minimum of 1 well), and adjacent surface water as applicable. Samples will be taken monthly during winter months (high water table periods) and every other month during the remainder of the year.

WHERE: The exact location will be determined based on local Health Department recommendations. Preferably, the system will be located in either Pitt or Beaufort County.

WHEN: See time line above.

PROJECT BUDGET:

Activity	Funding
Travel to Project Site and Meetings	$1,500
Equipment and supplies	$2,000
Educational Supplies and Printing	$1,000
Laboratory Analysis Fees	$3,000
Cost Share of Septic System*	$8,500
TOTAL:	$16,000

*Assumes homeowner will pay a portion (25%) of the system.

V. ACTIVITIES to MONITOR SUCCESS

Monitoring of the system will be accomplished in accordance with NCDENR, OSWS guidelines. System monitoring parameters will include: BOD, TSS, pH, $P0_4$-P, Total-P, TKN, NH_3-N, $N0_3$-N and Total-N. Sampling locations will include: up-gradient (minimum of 1 well), septic tank, after treatment modules as applicable, within/below nitrification trench (1-2 well), down gradient (minimum of 1 well), and adjacent surface water as applicable. Monthly samples will be taken during winter months (high water table periods) and every other month during the remainder of the year.

VI. PROGRESS REPORTS

Progress reports will be prepared annually.

VII. REVIEW, EVALUATION and REDIRECTION

The Tar-Pamlico Regional Council will have the opportunity to review the annual report to determine if the system is performing as expected and make recommendations for additional testing as needed. During the project, the data will be reviewed as attained to determine if the system is functioning properly and reengineering will be done to correct any malfunctions.

VIII. BASINWIDE or REGIONAL APPLICATION

The results of, and lessons learned from, this project are applicable throughout the entire APNEP region.

IX. EDUCATION and OUTREACH:

A key to ensuring proper treatment capacity and the overall effectiveness of an onsite wastewater treatment system is to educate and train all individuals involved in the on-site wastewater industry. This includes site evaluators (both private and public), installers and homeowners. In addition, public decision-makers should be made aware of the alternatives that are available for on- and off-site wastewater treatment and disposal.

Education and training would be best accomplished by upgrading and utilizing existing training centers throughout the state. These centers, which have proven to be an invaluable resource to EHS and NCDENR, can be made available to decision-makers and homeowners as well. Funding will be used for course and center development.

X. ENDORSEMENT by REGIONAL COUNCIL

This demonstration project was officially endorsed by members of the Tar-Pamlico River Basin Regional Council on April 9, 1999 at a meeting in Plymouth, NC.

AGENDA ITEM #_____

TAR-PAMLICO RIVER BASIN

PROPOSED TEXT OF RULES

NUTRIENT SENSITIVE WATERS MANAGEMENT PLAN FOR NONPOINT SOURCES

PRESENTED TO THE ENVIRONMENTAL MANAGEMENT COMMISSION
AT ITS
JULY 1999 MEETING

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INTRODUCTION

BACKGROUND

In September 1989, the EMC adopted the supplemental classification of Nutrient Sensitive Waters (NSW) for the Tar-Pamlico River basin. The EMC approved an initial strategy, later labeled Phase I, that would reduce excessive nutrient loading from point sources. In December 1994, the EMC adopted Phase II of the NSW strategy for the period 1995-2004, which established instream reduction goals for point and nonpoint sources of nutrients.

Point sources were addressed in Phase II through continuation of the point source/nonpoint source trading agreement established in Phase I, with new nutrient loading caps for nitrogen and phosphorus. In each year of Phase II, the association of point source dischargers must make payments for any exceedences of its annual loading caps. These offset payments will be used for agricultural Best Management Practices that reduce nutrient loading to the basin.

In 1996 under Phase II, a plan was implemented to manage nonpoint sources using existing programs, with annual progress reports to the EMC. After two years of implementing this "voluntary" approach, in May 1998, the EMC determined that progress was inadequate, and called for development of rules to achieve the nonpoint source reduction goals.

STAKEHOLDER PROCESS

To initiate rulemaking, DWQ staff began a stakeholder input process in September 1998 by convening a steering committee of stakeholders to identify potential rule subject areas. With input from the steering committee, staff formed stakeholder teams around seven subjects and held intensive meetings from November 1998 through February 1999.

The purpose of the stakeholder team meetings was to allow maximum up-front opportunity for input from all interests, in order to allow differing interests to attempt to find mutually acceptable solutions. Meetings were intended to provide a working environment for affected interests and staff to consider options and sort through technical details. Stakeholder teams had primary responsibility for developing draft rules for public hearing. These draft rules would then be reviewed by the steering committee. The teams were designed to represent all interests. Meetings operated on a consensus basis and were managed by professional facilitators. The consensus-based format required active participation from all. It also provided an atmosphere where disagreements were respected and where participants attempted to revise or fashion criteria to meet all interests. DWQ staff's role was that of a stakeholder with equal authority to all other stakeholders.

DWQ staff believes that the stakeholder process has been of great benefit by providing a forum for working with all affected interests, discussing the issues facing them, and reaching better understanding of each other's constraints. The process has provided opportunity for creating

mutually acceptable solutions. At the same time, the limited total time available to conduct the process made it very challenging, impacting all aspects of the stakeholder effort. Consensus seeking is by nature a time-intensive process. It requires the fullest, most consistent representation possible. A more appropriate time span for such a process, as suggested by the team facilitators, is on the order of a year.

STAKEHOLDER RECOMMENDATIONS AND RECENT EMC ACTION

Stakeholder teams were convened on seven subjects. On an eighth subject, protection of existing riparian buffers, the steering committee agreed to accept the product of the legislatively established Neuse basin stakeholder advisory committee unless the steering committee found significant deficiencies with that product. The charge to all teams was to produce a draft rule or rules that provided for: 1) a 30 percent reduction of nitrogen loading from a given source to the Pamlico estuary from 1991 levels, and 2) that provided for holding phosphorous loads to the estuary constant at 1991 levels. If a team did not draft rules, it was asked to provide a rationale and recommendations for any other action needed.

A report describing the stakeholders' deliberations and their recommendations was provided to the EMC in May. The EMC adopted resolutions as recommended by the stakeholders in the following four subject areas:

1. Atmospheric emissions
2. On-site wastewater
3. Construction erosion and sedimentation control
4. Restoration

In May, the EMC also approved publication of subject matter notice for rules in four subject areas recommended by stakeholders, and added a fifth area, atmospheric emissions of nitrogen. The five rule subjects are as follows:

1. Agriculture
2. Nutrient management
3. Urban stormwater
4. Riparian buffer protection
5. Atmospheric emissions of nitrogen

ACTION CURRENTLY REQUESTED OF THE EMC

The remainder of this report contains draft rules on the first four subjects listed immediately above, as presented to the EMC in May. DWQ staff will request the EMC to approve this rule language for public noticing of text and public hearings. The hearings would occur in late August to early September. Staff plans to report to the EMC in September on public comments received on the subject of rules for atmospheric emissions of nitrogen. This timeframe will allow the full, currently open, subject comment period to elapse.

PROPOSED TEXT OF RULES

AGRICULTURE

15A NCAC 2B .0255 is proposed for adoption as follows:

.0255 TAR-PAMLICO RIVER BASIN - NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: AGRICULTURAL NUTRIENT LOADING GOALS

All persons engaging in agricultural operations in the Tar-Pamlico River Basin, including those related to crops, horticulture, livestock, and poultry, shall collectively achieve and maintain certain nutrient loading levels. A management strategy to achieve this reduction is specified in Rule .0256 of this Rule. These Rules apply to all livestock and poultry operations, regardless of size, in the Tar-Pamlico River Basin, in addition to requirements set forth in general permits for animal operations issued pursuant to G.S. 143-215.10C. The nutrient loading goals to be met by all persons specified here are as follows:

(1) a 30 percent total nitrogen net loading reduction from 1991 loading from agriculture to the basin; and

(2) no net increase in total phosphorus loading over 1991 levels.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*

15A NCAC 2B .0256 is proposed for adoption as follows:

.0256 TAR-PAMLICO RIVER BASIN-NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: AGRICULTURAL NUTRIENT CONTROL STRATEGY

(a) PURPOSE. The purpose of this Rule is to set forth a process by which agricultural operations in the Tar-Pamlico River Basin will collectively achieve and maintain a 30 percent reduction in nitrogen loading to the Pamlico estuary from agricultural activities. This reduction is to be achieved within five years of the effective date of this Rule, and is to be measured from 1991 loading levels. The purpose of this Rule is also for agricultural operations to hold phosphorus loading from agricultural activities to 1991 levels within five years. The Commission acknowledges that the requirements of this Rule do not fully address nitrogen loading from animal operations, including atmospheric emissions and deposition of ammonia compounds. As information becomes available on nitrogen loading from animal operations and BMPs to control this loading, the Commission may require such BMPs it deems necessary to support the purpose of this Rule.

(b) APPLICABILITY. This Rule shall apply to all persons engaging in agricultural operations in the Tar-Pamlico River Basin. Agricultural operations are activities that relate to the production of crops, horticultural products, livestock, and poultry.

(c) OPTIONS FOR MEETING RULE REQUIREMENTS. Persons subject to this Rule are provided with two options for meeting the requirements of this Rule. Such persons shall be responsible for implementing and maintaining the BMPs selected per Item (e) or (f) for as long as they continue their agricultural operation.

(1) Option 1 is to sign up for and participate in implementing a collective local strategy for agricultural nutrient control pursuant to Item (e) of this Rule. This option allows site-specific plans to be developed for those operations where further nitrogen and phosphorus reduction practices are necessary to achieve the collective loads.

(2) Option 2 is to implement standard BMPs pursuant to Item (f) of this Rule. Requirements for the BMPs are listed in Items (g) through (k) of this Rule.

(d) METHOD FOR RULE IMPLEMENTATION. This Rule shall be implemented through a cooperative effort between the Basin Oversight Committee and Local Advisory Committees in each county or watershed. The membership, roles and responsibilities of these committees are set forth in Items (l) and (m) of this Rule.

(e) OPTION 1: PARTICIPATE IN A COLLECTIVE LOCAL STRATEGY FOR AGRICULTURAL NUTRIENT CONTROL. Persons who choose to participate in the collective local strategy for agricultural nutrient control shall meet the following requirements.

(1) Within one year of the effective date of the Rule, persons shall sign up with the Local Advisory Committee for their county or watershed to participate in the collective local strategy. Persons who do not complete the sign-up process shall be subject to Option 2 set forth in Item (f) of this Rule.

(2) Persons who choose this option shall sign a plan developed for their operation that is satisfactory to their Local Advisory Committee per the requirements set forth in Sub-Item (m)(3).

(3) A person may withdraw from the local nutrient control strategy up until the time that the person signs a plan for his operation as described in Sub-Item (2) above. Persons who do not sign the plan shall be subject to Option 2 pursuant to Item (f) of this Rule.

(4) Persons who sign the plan for their operation shall be required to implement the plan within five years after the effective date of this Rule and to permanently maintain the BMPs specified in the plan for as long as the agricultural operation continues.

(5) Persons who implement a nutrient management plan as part of Option 1 shall have satisfied the requirements of the Tar-Pamlico Nutrient Management Rule, 15A NCAC 2B .0257.

(f) OPTION 2: IMPLEMENT STANDARD BEST MANAGEMENT PRACTICES (BMPs). Option 2 shall apply to the following persons: persons who choose to follow this option, persons who do not complete the sign-up process for Option 1 within one year of the effective date of this Rule, and persons who sign up for Option 1 but withdraw prior to signing the specific plan for their operation. The requirements associated with Option 2 are as follows.

(1) Persons subject to Option 2 shall implement one of the following BMP combinations on all lands within their operation within four years of the effective date of this Rule:

(A) A 30-foot forested riparian area meeting the requirements of Items (g) and (h) and a 20-foot vegetated riparian area meeting the requirements of Items (g) and (i); or

(B) A 30-foot vegetated riparian area meeting the requirements of Items (g) and (i) and either water control structures meeting the requirements of Item (j) or a nutrient management plan meeting the requirements of Item (k); or

(C) A 20-foot forested riparian area meeting the requirements of Items (g) and (h) and either water control structures meeting the requirements of Item (j) or a nutrient management plan meeting the requirements of Item (k); or

(D) Water control structures meeting the requirements of Item (j) and a nutrient management plan meeting the requirements of Item (k).

(g) REQUIREMENTS FOR FORESTED AND VEGETATED RIPARIAN AREAS. Forested and vegetated riparian areas implemented under either Option 1 or Option 2 shall meet the following requirements.

(1) Sheet flow must be maintained to the maximum extent practical through dispersal of concentrated flow and re-establishment of vegetation to maintain the effectiveness of the riparian area.

(2) Concentrated runoff from new ditches or manmade conveyances must be dispersed into sheet flow before the runoff enters any riparian area.

(3) Periodic corrective action to restore sheet flow should be taken by the landowner if necessary to impede the formation of erosion gullies that allow concentrated flow to bypass treatment in the riparian area.

(4) A vegetated riparian area may be substituted for an equivalent width of forested riparian area within 100 feet of tile drainage.

(5) Where the riparian area requirements would result in an unavoidable loss of tobacco allotments [(7 CFR 723.220(c)] and the BMPs of controlled drainage or nutrient management are not in place, forest cover is required only in the first 20 feet of the riparian area.

(6) The following practices and activities are not allowed in either the forested riparian area or the vegetated riparian area:

(A) Any activities that would result in water quality standard violations or disrupt the structural or functional integrity of the riparian areas.

(B) Land disturbing activity and placement of fill and other materials, other than that necessary under Item (h) of this Rule.

(C) Any activity that threatens the health and function of the vegetation including, but not limited to, application of fertilizer or chemicals in amounts exceeding the manufacturer's recommended rate, uncontrolled sediment sources on adjacent lands, and the creation of any areas with bare soil.

(7) The following waterbodies and land uses are exempt from the riparian area requirements of this Rule:

(A) Ditches and manmade conveyances, other than modified natural streams, which under normal conditions do not receive drainage waters from any tributary ditches, canals, or streams, unless the ditch or manmade conveyance delivers runoff directly to waters classified in accordance with 15A NCAC 2B .0100.

(B) Areas mapped as perennial streams, intermittent streams, lakes, ponds or estuaries on the most recent versions of United States Geological Survey 1:24,000 scale (7.5 minute quadrangle) topographic maps where no perennial or intermittent streams, lakes, ponds, or estuaries exist on the ground.

(C) Ponds and lakes created for animal watering, irrigation, or other agricultural uses that are not part of a natural drainage way that is classified in accordance with 15A NCAC 2B .0100.

(D) Water dependent structures as defined in 15A NCAC 2B .0202, provided that they are located, designed, constructed and maintained to provide maximum nutrient removal, to have the least adverse effects on aquatic life and habitat and to protect water quality.

(E) Stream restoration projects, scientific studies, stream gauging, water wells, passive recreation facilities such as boardwalks, trails, pathways, historic preservation and archaeological activities, provided that they are located, designed, constructed and maintained to provide the maximum nutrient removal and erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to maximum extent practical through the use of BMPs.

(F) Stream crossings associated with timber harvesting, if performed in accordance with the Forest Practices Guidelines Related to Water Quality (15A NCAC 1J .0201-.0209).

(h) SPECIFICATIONS FOR FORESTED RIPARIAN AREAS. Forested riparian areas implemented under either Option 1 or Option 2 shall meet the following specifications.

(1) Forested riparian areas shall be established on all sides of surface waters indicated as intermittent streams, perennial streams, lakes, ponds and estuaries on the most recent versions of U.S.G.S. 1:24,000 scale (7.5 minute quadrangle) topographic maps or other site-specific evidence. The surface waters shall be within the operation or adjacent to it within the distances specified in Sub-Item (f)(1) above.

(2) The forested riparian area shall begin at top of bank for intermittent streams and perennial streams without tributaries and shall extend landward the applicable distance specified in Sub-Item (f)(1) above on all sides of the waterbody, measured horizontally on a line perpendicular to the waterbody. For all other waterbodies, the forested riparian area shall begin at top of bank or mean high water line and shall extend landward the applicable distance specified in Sub-Item (f)(1) above, measured horizontally on a line perpendicular to the waterbody.

(3) Forested riparian areas shall be established as undisturbed forest. Any forest vegetation that exists on the effective date of this Rule in forested riparian areas that are established per this Rule must be preserved and maintained in accordance with Sub-Items (h)(5)(A)-(F) below.

(4) The application of fertilizer in forested riparian areas established under this Rule is prohibited.

(5) The following practices and activities are allowed in forested riparian areas established under this Rule.

(A) Natural regeneration of forest vegetation and planting vegetation to enhance the riparian area if disturbance is minimized, provided that any plantings should primarily consist of locally native trees and shrubs.

(B) Selective cutting of trees provided that the basal area (measured as 12-inch diameter breast height) remains at or above 60 square feet per acre of riparian area. Limited mechanized equipment is allowed in this area.

(C) Horticulture practices to maintain the health of individual trees.

(D) Removal of individual trees that are in danger of causing damage to dwellings, other structures, or the stream channel.

(E) Removal of dead trees and other timber cutting techniques necessary to prevent extensive pest or disease infestation if recommended by the Director, Division of Forest Resources and approved by the Director, Division of Water Quality.

(F) Timber removal and skidding of trees, as allowed under Sub-Items (h)(5)(A) – (h)(5)(E) shall be directed away from the water course or water body. Skidding shall be done in a manner to prevent creation of ephemeral channels perpendicular to the water body. Tree removal shall be performed in a manner that does not compromise the intended purpose of the riparian area and in accordance with the Forest Practices Guidelines Related to Water Quality (15A NCAC 1J .0201-.0209).

(i) SPECIFICATIONS FOR VEGETATED RIPARIAN AREAS. Vegetated riparian areas implemented under either Option 1 or Option 2 shall meet the following specifications.

(1) The vegetated riparian area identified in Sub-Item (f)(1)(A) shall begin at the outer edge of the forested riparian area and shall extend landward a minimum of 20 feet as measured horizontally on a line perpendicular to the waterbody. The vegetated riparian area identified in Sub-Item (f)(1)(B) shall begin at the top of bank for intermittent streams and perennial streams without tributaries and shall extend landward a minimum of 30 feet on each side of the waterbody, measured horizontally on a line perpendicular to the waterbody. For all other waterbodies, the vegetated riparian area identified in Sub-Item (f)(1)(B) shall begin at the top of bank or the mean high water line and shall extend landward 30 feet, measured horizontally on a line perpendicular to the waterbody.

(2) Vegetation in the vegetated riparian area shall consist of a dense ground cover composed of herbaceous or woody species, which provides for diffusion and infiltration of runoff and filtering of pollutants.

(3) The following practices and activities are allowed in the vegetated riparian area in addition to those allowed in the forested riparian area.

(A) Mowing and removal of plant products such as timber, nuts, and fruit on a periodic basis, provided the intended purpose of the riparian area is not compromised by harvesting, disturbance, or loss of ground cover.

(B) Management of forest vegetation to minimize shading on adjacent land, if the water quality functions of the riparian area are not compromised.

(j) REQUIREMENTS FOR WATER CONTROL STRUCTURES. Water control structures implemented under either Option 1 or Option 2 shall meet the following requirements.

(1) Water control structures shall be operated pursuant to a water control structure management plan developed according to the standards and specifications adopted by the NC Soil and Water Conservation Commission. A technical specialist designated pursuant to Rules adopted by the Soil and Water Conservation Commission must provide written approval that the water management plan meets such standards and specifications. If the water management plan is not implemented, then a riparian area is required pursuant to this Section.

(2) The water control structures must provide equivalent protection and directly affect the land and waterbodies draining into the waterbody subject to the riparian area requirements.

(3) To the maximum extent practical, water control structures should be managed to maximize nitrogen removal throughout the year.

(k) REQUIREMENTS FOR NUTRIENT MANAGEMENT PLANS. Nutrient management plans implemented under either Option 1 or Option 2 shall meet the following requirements.

(1) Nutrient management plans shall be implemented on agricultural land adjacent to riparian areas according to the standards and specifications adopted by the NC Soil and Water Conservation Commission. A technical specialist designated pursuant to Rules adopted by the Soil and Water Conservation Commission must provide written approval that the water management plan meets such standards and specifications.

(2) If the nutrient management plan is not implemented, then a riparian area is required pursuant to this Section.

(3) Nutrient management plans must provide equivalent protection and directly affect the land and waterbodies draining into the waterbody subject to the riparian area requirement.

(4) To the maximum extent practical, nutrient management plans should be managed to maximize nitrogen removal throughout the year.

(l) BASIN OVERSIGHT COMMITTEE. The Basin Oversight Committee shall have the following membership, role and responsibilities.

(1) MEMBERSHIP. The Commission shall delegate to the Secretary the responsibility of forming a Basin Oversight Committee within 2 months of the effective date of this Rule. Members shall be appointed for five-year terms and shall serve at the pleasure of the Secretary. Until such time as the Commission determines that long-term maintenance of the nutrient loads is assured, the Secretary shall either reappoint members or replace members every five years. The Secretary shall solicit one nomination for membership on this Committee to represent each of the following:

(A) Division of Soil and Water Conservation,

(B) United States Department of Agriculture-Natural Resources Conservation Service (shall serve in an "ex-officio" non-voting capacity and shall function as a technical program advisor to the Committee),

(C) North Carolina Department of Agriculture and Consumer Services,

(D) North Carolina Cooperative Extension Service,

(E) Division of Water Quality,

(F) Environmental interests,

(G) Agricultural interests, and

(H) The scientific community with experience related to water quality problems in the Tar-Pamlico River Basin.

(2) ROLE. The Basin Oversight Committee shall:

(A) Develop a tracking and accounting methodology pursuant to Sub-Item (l)(3), and submit the final version to the Commission within one year of the effective date of this Rule.

(B) Demonstrate within 18 months of the effective date of this Rule how the nitrogen and phosphorus loads can be met by each county or watershed and collectively by implementing BMPs.

(C) Identify and implement future refinements to the accountability methodology as needed to reflect advances in scientific understanding.

(D) Appoint a technical advisory committee within 6 months of the effective date of this Rule to monitor advances in scientific understanding related to phosphorus loading, to evaluate the need for additional management action to meet the phosphorus load, and to report its findings to the Basin Oversight Committee on an annual basis. The Basin Oversight Committee shall in turn report these findings and its recommendations to the Commission on an annual basis following the effective date of this Rule, until such time as the Commission determines that the technical advisory committee has fulfilled its purpose. The Basin Oversight Committee shall solicit nominations for this committee from the Division of Soil and Water Conservation, United States Department of Agriculture-Natural Resources Conservation Service, North Carolina Department of Agriculture and Consumer Services, North Carolina Cooperative Extension Service, Division of Water Quality, environmental interests, agricultural interests, and the scientific community with experience related to the committee's charge.

(E) Review, approve and summarize county or watershed local strategies and present these strategies to the Commission for approval within 2 years after the effective date of this Rule.

(F) Review, approve and summarize local nitrogen and phosphorus loading annual reports and present these reports to the Commission each October, until such time as the Commission determines that annual reports are no longer needed to assure long-term maintenance of the nutrient loads.

(3) ACCOUNTABILITY PROCESS. The Basin Oversight Committee shall develop an accountability process that meets the following requirements:

(A) The process shall quantify baseline total nitrogen and phosphorus loadings from agricultural operations in each county and for the entire basin.

(B) The process shall allocate the calculated nitrogen and phosphorus loads for agricultural operations to counties or watersheds within the Tar-Pamlico basin.

(C) The process shall include a means of tracking implementation of BMPs, including location, type, area affected.

(D) The process shall include a means of estimating incremental nitrogen and phosphorus reductions from actual BMP implementation and of evaluating progress toward the nutrient loads from BMP implementation.

(E) The process shall allow for future refinements to the nutrient baseline loading determinations, and to the load reduction accounting methodology.

(F) The process shall provide for quantification of changes in nutrient loading due to changes in land use, modifications in agricultural activity, or quantification of atmospheric nitrogen loading.

(G) The process shall include a method to track maintenance of the nutrient net loads after the initial five years of this Rule, including tracking of changes in BMPs and additional BMPs to offset new or increased sources of nutrients from agricultural operations.

(H) A draft accountability process shall be submitted to the Commission within six months after the effective date of the Rule. The final accountability process shall be submitted to the Commission for approval within one year after the effective date of the Rule. If the Commission does not approve the final accountability process, the Basin Oversight Committee will have an additional three months to revise and resubmit the process to the Commission. If the Commission does not approve an accountability process within 15 months of the effective date of this Rule, then the Commission may require all agricultural operations to follow Option 2 set forth in Item (e) of this Rule.

(m) LOCAL ADVISORY COMMITTEES. The Local Advisory Committees shall have the following membership, roles, and responsibilities.

(1) MEMBERSHIP. The Commission shall delegate to the Directors of the Division of Water Quality and the Division of Soil and Water Conservation the responsibility of forming Local Advisory Committees within two months of the effective date of this Rule. The Directors shall form Local Advisory Committees in each county (or watershed as specified by the Basin Oversight Committee) within the Tar-Pamlico River Basin. Members shall serve for terms of five years at the pleasure of the Environmental Management and Soil and Water Conservation Commissions. Until such time as the Commission determines that long-term maintenance of the nutrient loads is assured, the Directors shall reappoint or replace members every five years. The Directors shall solicit nominations for membership on the Local Advisory Committee that represent each of the following interests:

(A) Local Soil and Water Conservation District (one),

(B) Local United States Department of Agriculture- Natural Resources Conservation Service (one),

(C) Local North Carolina Department of Agriculture and Consumer Services (one),

(D) Local North Carolina Cooperative Extension Service (one),

(E) Local North Carolina Division of Soil and Water Conservation (one),

(F) Local farmers in the county or watershed (at least two).

(2) ROLE. The Local Advisory Committees shall:

(A) Conduct a sign-up process for persons wishing to voluntarily implement the local strategy pursuant to Item (e) of this Rule. This sign-up process shall be completed within one year after the effective date of this Rule.

(B) Designate a member agency to compile and retain copies of all individual plans produced under Item (e) of this Rule.

(C) Develop local nutrient control strategies for agricultural operations, pursuant to Sub-Item (m)(3) of this Rule, to meet the nitrogen and phosphorus loads assigned by the Basin Oversight Committee. Those strategies shall be submitted to the Basin Oversight Committee no later than twenty-three months from the effective date of this Rule.

(D) Ensure that any changes to the design of the local strategy will continue to meet the nutrient loads of this Rule.

(E) Submit annual reports to the Basin Oversight Committee, pursuant to Sub-Item (m)(4) of this Rule, each May until such time as the Commission determines that annual reports are no longer needed to assure long-term maintenance of the nutrient loads.

(3) LOCAL NUTRIENT CONTROL STRATEGIES. The Local Advisory Committees shall be responsible for developing county or watershed nutrient control strategies that meet the following requirements.

(A) Local nutrient control strategies shall be designed to achieve the required nitrogen and phosphorus loads within five years after the effective date of this Rule, and to maintain those reductions in perpetuity or until such time as this Rule is revised to modify this requirement.

(B) Local nutrient control strategies shall specify the names and locations of all agricultural operations within their areas, numbers and acres of BMPs that will be implemented by enrolled operations, estimated nitrogen and phosphorus reductions, schedule for BMP implementation, and operation and maintenance requirements.

(C) Local nitrogen control strategies are not required to be more stringent than the standard BMP option provided that the nutrient loads is achieved collectively; however, the Local Advisory Committees may develop strategies that achieve greater reductions than the nutrient loads.

(D) If the Local Advisory Committee fails to develop the local nutrient control strategy, the Commission may develop the strategy based on the tracking and accounting method approved by the Commission.

(4) ANNUAL REPORTS. The Local Advisory Committees shall be responsible for submitting annual reports for their counties or watersheds. Annual reports shall be submitted to the Basin Oversight Committee each May until such time as the Commission determines that annual reports are no longer needed to assure long-term maintenance of the nutrient loads. Annual reports should include the following information on local agricultural operations, summarized separately for cropland, livestock and poultry activities:

(A) Documentation of BMPs implemented (including type, location, and area affected) under the local strategy and their costs.

(B) Documentation of BMPs discontinued under the local strategy.

(C) Changes in land use or agricultural activity and any associated increases or decreases in nitrogen and phosphorus loading resulting from these changes.

(D) Documentation of success in operation and maintenance of BMPs under the local strategy.

(E) Net nitrogen and phosphorus loading changes from agricultural operations under the local strategy, and progress towards or maintenance of the nitrogen and phosphorus loads.

(F) Requests for modifications to accounting practices or nutrient loads.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*

NUTRIENT MANAGEMENT

15A NCAC 2B .0257 is proposed for adoption as follows:

(ALTERNATIVE 1)

.0257 TAR-PAMLICO RIVER BASIN - NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: NUTRIENT MANAGEMENT

(a) PURPOSE. The two primary purposes of this Rule are: to reduce the nitrogen loading and to maintain the phosphorus loading to the Pamlico estuary resulting from fertilizer application. Achievement of these objectives will be measured based on 1991 loading levels and are to be achieved within five years from the effective date of this Rule.

(b) APPLICABILITY. This Rule shall apply as follows.

(1) This Rule shall apply to the following persons who apply nutrients to their lands:

(A) Persons who own or manage cropland areas that together comprise at least 50 acres that have not developed a nutrient management plan for their property pursuant to 15A NCAC 2B .0256.

(B) Persons who own or manage floriculture areas, ornamental areas and greenhouse production areas that together comprise at least 50 acres.

(C) Persons who own or manage golf courses, recreational lands, rights-of-way, or other turfgrass areas.

(D) Persons who own or manage lawn and garden areas in residential, commercial, or industrial developments except for residential landowners who apply fertilizer to their own property.

(2) This Rule shall apply to applicators hired by the persons listed in Sub-Item (b)(1). Sub-Item (c)(2) sets forth the potential requirements for applicators.

(3) This Rule shall apply to applicators, hired by residential landowners, who apply fertilizer to residential areas in the Tar-Pamlico basin.

(4) This Rule shall apply to consultants hired by the persons listed in Sub-Item (b)(1) or by applicators. Sub-Item (c)(2) sets forth the requirements for consultants.

(c) REQUIREMENTS. Subject persons shall meet the following requirements:

(1) Persons responsible for applying nutrients to their own land or land that they manage shall either:

(A) Attend and successfully complete nutrient management training pursuant to Item (d), or

(B) Complete a nutrient management plan for all lands to which they apply or manage the application of nutrients, pursuant to Item (e).

(2) Persons who hire an applicator to apply nutrients to the land that they own or manage shall either:

(A) Ensure that the applicator they hire has attended and successfully completed nutrient management training pursuant to Item (d), or

(B) Ensure that the applicator they hire has completed a nutrient management plan for the land that they own or manage pursuant to Item (e), or

(C) Complete a nutrient management plan for the land that they own or manage pursuant to Item (e) and ensure that the applicator they hire follows this plan.

(4) Applicators, hired by residential landowners, who apply fertilizer to residential areas in the Tar-Pamlico basin shall attend and successfully complete nutrient management training pursuant to Item (d).

(5) Consultants who prepare nutrient management plans for persons who own or manage land or who apply nutrients to land in the Tar-Pamlico basin shall attend and successfully complete nutrient management training pursuant to Item (d).

(d) NUTRIENT MANAGEMENT TRAINING. Persons who choose to meet this Rule's requirements by completing nutrient management training shall meet the following requirements.

(1) Within one year from the effective date of this Rule, the person shall sign up with the Cooperative Extension Service or the Division to take the nutrient management training.

(2) Within five years from the effective date of this Rule, the person shall obtain a certificate from the Cooperative Extension Service or the Division verifying completion of training that addresses, at minimum, proper management of nitrogen and phosphorus.

(3) Persons who fail to sign up or to obtain the nutrient management certificate within the required timeframes shall be required to develop and properly implement nutrient management plans pursuant to Item (e).

(4) Training certificates must be kept on-site or be produced within 24 hours of a request by the Division.

(e) NUTRIENT MANAGEMENT PLANS. Persons who choose to meet this Rule's requirements by completing a nutrient management plan shall meet the following requirements.

(1) Within five years of the effective date of this Rule, a nutrient management plan that meets the following standards shall be developed:

(A) Nutrient management plans for cropland shall meet the standards and specifications adopted by the NC Soil and Water Conservation Commission.

(B) Nutrient management plans for application of dry poultry litter from animal waste management systems involving 30,000 or more birds, as required under NC Statute §143-215.10C(f), shall stipulate application of litter at agronomic rates for nitrogen. Agronomic rates shall be based on realistic yield expectations derived from waste nutrient content, crop and soil type, or yield records.

(C) Nutrient management plans for turfgrass shall follow the North Carolina Cooperative Extension Service guidelines in "Water Quality and Professional Lawn Care" (NCCES publication number WQMM-155), "Water Quality and Home Lawn Care" (NCCES publication number WQMM-151), or guidelines distributed by land-grant universities. Copies may be obtained from the Division of Water Quality, 512 North Salisbury Street, Raleigh, North Carolina 27626 at no cost.

(D) Nutrient management plans for nursery crops and greenhouse production shall follow the Southern Nurserymen's Association guidelines promulgated in "Best Management Practices Guide For Producing Container-Grown Plants" or guidelines distributed by land-grant universities. Copies may be obtained from the Southern Nurserymen's Association, 1000 Johnson Ferry Road, Suite E-130, Marietta, GA 30068-2100 at a cost of thirty-five dollars ($35.00). The materials related to nutrient management plans for turfgrass, nursery crops and greenhouse production are hereby incorporated by reference including any subsequent amendments and editions and are available for inspection at the Department of Environment and Natural Resources Library, 512 North Salisbury Street, Raleigh, North Carolina.

(2) The person who writes the nutrient management plan shall have the plan approved in writing by a technical specialist. Appropriate technical specialists shall be as follows.

(A) Nutrient management plans for cropland and application of dry poultry litter shall be approved by a technical specialist designated pursuant to Rules adopted by the Soil and Water Conservation Commission.

(B) Nutrient management plans for turfgrass and nursery crops and greenhouse production shall be approved by a technical specialist designated pursuant to Rules adopted by the Commission.

(3) Nutrient management plans and supporting documents must be kept on-site or be produced within 24 hours of a request by the Division.

(4) The Division shall develop model nutrient management plans in consultation with the Cooperative Extension Service. The model plans shall address both nitrogen and phosphorus, and shall address the source of nutrients, the amount of nutrient applied, the placement of nutrients, and the timing of nutrient applications.

(f) COMPLIANCE. Persons who fail to comply with this Rule are subject to enforcement measures authorized in G.S. 143-215.6A (civil penalties), G.S. 143-215.6B (criminal penalties), and G.S. 143-215.6C (injunctive relief).

(ALTERNATIVE 2)

Same as alternative 1 with the exception of (b)(1), which would read:

(b) APPLICABILITY. This Rule shall apply as follows.

(1) This Rule shall apply to the following persons who apply nutrients to their lands:

(A) Persons who own or manage cropland areas for commercial purposes that have not developed a nutrient management plan for their property pursuant to 15A NCAC 2B .0256.

(B) Persons who own or manage commercial floriculture areas, ornamental areas and greenhouse production areas.

(C) Persons who own or manage golf courses, recreational lands, rights-of-way, or other turfgrass areas.

(D) Persons who own or manage lawn and garden areas in residential, commercial, or industrial developments except for residential landowners that apply fertilizer to their own property.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*

URBAN STORMWATER

15A NCAC 2B .0258 is proposed for adoption as follows:

.0258 TAR-PAMLICO RIVER BASIN-NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: BASINWIDE STORMWATER REQUIREMENTS

(a) PURPOSE. The purpose of this Rule is to achieve a 30 percent reduction in nutrient loading from existing and new developments. The purpose of this Rule is also to provide control for peak flows in new development to ensure that the functions of existing riparian buffers are not compromised by channel erosion.

(b) APPLICABILITY. This Rule shall apply to local governments in the Tar-Pamlico basin according to the following criteria.

(1) This Rule shall apply to the following municipal areas:
   (A) Greenville
   (B) Henderson
   (C) Oxford
   (D) Rocky Mount
   (E) Tarboro
   (F) Washington

(2) This Rule shall apply to the following counties:
   (A) Beaufort
   (B) Edgecombe
   (C) Franklin
   (D) Halifax
   (E) Nash
   (F) Pitt

(3) Additional local governments shall become subject to this Rule upon meeting the following criteria:
   (A) Active incorporated municipal areas with populations exceeding 5,000 persons according to the most recent population estimates listed in the most recent annual publication of *North Carolina Municipal Populations*, Office of State Planning. If a municipal area has only a portion of its area within the Tar-Pamlico River basin, then the percentage of the municipality's area within the basin shall be multiplied by the population estimate; if the result is less than 5,000, then the municipal area shall not be subject to this Rule.
   (B) Counties with populations exceeding 30,000 persons according to the population estimates listed in the most recent annual publication *North Carolina Municipal Populations*, Office of State

Planning. If a county has only a portion of its area within the Tar-Pamlico River basin, then the percentage of the county's area within the basin shall be multiplied by the population estimate; if the result is less than 30,000, then the county shall not be subject to this Rule.

(c) REQUIREMENTS. All local governments subject to this Rule shall develop stormwater management programs for submission to and approval by the Commission. The stormwater program shall include the following components at a minimum:

(1) A requirement that developers submit a stormwater management plan for all new developments proposed within their jurisdictions. These stormwater plans shall not be approved by the subject local governments unless the following criteria are met:

(A) The nitrogen load contributed by the proposed new development activity shall not exceed 4.0 pounds per acre per year. This is equivalent to 70 percent of the average nitrogen load contributed by the non-urban areas in the Tar-Pamlico River basin based on 1995 land use data. The Commission may periodically update the design standard based on the availability of new scientific information.

(B) The phosphorus load contributed by the proposed new development activity shall not exceed 0.4 pounds per acre per year. This is equivalent to the average phosphorus load contributed by the non-urban areas in the Tar-Pamlico River basin based on 1995 land use data. The Commission may periodically update the design standard based on the availability of new scientific information

(C) The new development activity does not result in a net increase in peak flow leaving the site from the predevelopment conditions for the 1-year, 24-hour storm.

(2) A public education program to inform citizens of how to reduce nutrient pollution and to inform developers about the nutrient and flow control requirements set forth in Sub-Item (c)(1)(A).

(3) A mapping program that includes major components of the municipal separate storm sewer system, waters of the State, land use types, and location of sanitary sewers.

(4) A program to identify and remove illegal discharges.

(5) A program to identify and prioritize opportunities to achieve nutrient reductions from existing developed areas.

(6) A program to ensure maintenance of BMPs implemented as a result of the provisions in Sub-Items (c)(1) and (c)(5).

(7) A program to ensure enforcement and compliance with the provisions in Sub-Item (c)(1).

(d) TIMEFRAME FOR IMPLEMENTATION. The timeframe for implementing the stormwater management program shall be as follows:

(1) Within 12 months of the effective date of this Rule, the Division shall submit a model local stormwater program to the Commission for approval. The Division shall work in cooperation with subject local governments in developing this model program.

(2) Within 12 months of the Commission's approval of the model local stormwater program or within 12 months of a local government's later designation pursuant to Sub-Item (b)(3), subject local governments shall submit their local stormwater management programs to the Commission for review and approval. These local programs shall equal or exceed the requirements in Item (c) of this Rule.

(3) Within 18 months of the Commission's approval of the model local stormwater program or within 18 months of a local government's later designation pursuant to Sub-Item (b)(3), subject local governments shall adopt and implement their approved local stormwater management program.

(4) Local governments administering a stormwater management program shall submit annual reports to the Division documenting their progress and net changes to nitrogen load by October 30 of each year.

(e) COMPLIANCE. A local government that fails to submit an acceptable local stormwater management program within the timeframe established in this Rule or fails to implement an approved program shall be in violation of this Rule. In this case, the stormwater management requirements for its jurisdiction shall be administered through the NPDES municipal stormwater permitting program per 15A NCAC 2H .0126. Any local government that is subject to an NPDES municipal stormwater permit pursuant to this Rule shall:

(1) Develop and implement comprehensive stormwater management program to reduce nutrients from both existing and new development. This stormwater management program shall meet the requirements of Item (c) of this Rule for new and existing development.

(2) Be subject to the NPDES permit for at least one permitting cycle (five years) before it is eligible to submit a local stormwater management program to the Commission for consideration and approval.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-282(d); 143-215.6A; 143-215.6B; 143-215.6C.*
Eff. August 1, 2000.

RIPARIAN BUFFER PROTECTION

15A NCAC 2B .0259 is proposed for adoption as follows:

.0259 TAR-PAMLICO RIVER BASIN - NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS

The following is the management stategy for maintaining and protecting riparian buffers in the Tar-Pamlico River Basin:

(1) PURPOSE. The purpose of this Rule shall be to protect and preserve riparian buffers in the Tar-Pamlico River Basin to maintain their nutrient removal functions.

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

(a) 'Channel' means a natural water-carrying trough cut vertically into low areas of the land surface by erosive action of concentrated flowing water or a ditch or canal excavated for the flow of water. (current definition in Forest Practice Guidelines Related to Water Quality, 15A NCAC 1I .0102)

(b) 'DBH' means Diameter at Breast Height of a tree, which is measured at 4.5 feet above ground surface level.

(c) 'Ditch or canal' means a man-made channel other than a modified natural stream constructed for drainage purposes that is typically dug through inter-stream divide areas. A ditch or canal may have flows that are perennial, intermittent, or ephemeral and may exhibit hydrological and biological characteristics similar to perennial or intermittent streams.

(d) 'Ephemeral (stormwater) stream' means a feature that carries only stormwater in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel, the aquatic bed is always above the water table, and stormwater runoff is the primary source of water. An ephemeral stream typically lacks the biological, hydrological, and physical characteristics commonly associated with the continuous or intermittent conveyance of water.

(f) 'Forest plantation' means an area of planted trees that may be conifers (pines) or hardwoods. On a plantation, the intended crop trees are planted rather than naturally regenerated from seed on the site, coppice (sprouting), or seed that is blown or carried into the site.

(g) 'High Value Tree' means a tree that meets or exceeds the following standards: for pine species, 14-inch DBH or greater or 18-inch or greater stump diameter; and, for hardwood or wetland species, 16-inch DBH or greater or 24-inch or greater stump diameter.

(h) 'Intermittent stream' means a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table. The flow may be heavily supplemented by stormwater runoff. An intermittent stream often lacks the biological and hydrological characteristics commonly associated with the continuous conveyance of water.

(i) 'Modified natural stream' means an on-site channelization or relocation of a stream channel and subsequent relocation of the intermittent or perennial flow as evidenced by topographic alterations in the immediate watershed. A modified natural stream must have the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water.

(j) 'Perennial stream' means a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year. Groundwater is the primary source of water for a perennial stream, but it also carries stormwater runoff. A perennial stream exhibits the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water.

(k) 'Perennial waterbody' means a natural or man-made basin that stores surface water permanently at depths sufficient to preclude growth of rooted plants, including lakes, ponds, sounds, non-stream estuaries and ocean. For the purpose of the State's riparian buffer protection program, the waterbody must be part of a natural drainageway (i.e., connected by surface flow to a stream).

(l) 'Stream' means a body of concentrated flowing water in a natural low area or natural channel on the land surface.

(m) 'Tree' means a woody plant with a DBH equal to or exceeding 5 inches.

(3) APPLICABILITY. This Rule shall apply to 50-foot wide riparian buffers directly adjacent to surface waters in the Tar-Pamlico River Basin (intermittent streams, perennial streams, lakes, ponds, and estuaries), excluding wetlands. The riparian buffers protected by this Rule shall be measured pursuant to Item (4) of this Paragraph. 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). Riparian buffers adjacent to surface waters that do not appear on either of the maps shall not be subject to this Rule. Riparian buffers adjacent to surface waters that appear on the maps shall be subject to this Rule unless one of the following applies.

(a) EXEMPTION WHEN AN ON-SITE DETERMINATION SHOWS THAT SURFACE WATERS ARE NOT PRESENT. When a landowner or other affected party believes that the maps have inaccurately depicted surface waters, he or she shall consult the Division or the appropriate delegated local authority. Upon request, the Division or delegated local authority shall make on-site determinations. Any disputes over on-site determinations shall be referred to the Director in writing. A determination of the Director as to the accuracy or application of the maps is subject to review as provided in Articles 3 and 4 of Chapter 150B of the General Statutes. Surface waters that appear on the maps shall not be subject to this Rule if an on-site determination shows that they fall into one of the following categories.

(i) Ditches and manmade conveyances other than modified natural streams.

(ii) Manmade ponds and lakes that are located outside natural drainage ways.

(iii) Ephemeral (stormwater) streams.

(b) EXEMPTION WHEN EXISTING USES ARE PRESENT AND ONGOING. This Rule shall not apply to portions of the riparian buffer where a use is existing and ongoing according to the following:

(i) A use shall be considered existing if it was present within the riparian buffer as of August 1, 2000. Existing uses shall include, but not be limited to, agriculture, buildings, industrial facilities, commercial areas, transportation facilities, maintained lawns, utility lines and on-site sanitary sewage systems. Only the portion of the riparian buffer that contains the footprint of the existing use is exempt from this Rule. Activities necessary to maintain uses are allowed provided that no additional vegetation is removed from Zone 1, existing diffuse flow is maintained, and surface waters are not disturbed. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised, the ground is stabilized and existing diffuse flow is maintained.

(ii) At the time an existing use is converted to another use, this Rule shall apply. An existing use shall be considered to be converted to another use if any of the following applies:

(A) Impervious surface is added to the riparian buffer in locations where it did not exist previously.

(B) An agricultural operation within the riparian buffer is taken out of production.

(C) A lawn within the riparian buffer ceases to be maintained.

(4) ZONES OF THE RIPARIAN BUFFER. The protected riparian buffer shall have two zones as follows:

(a) Zone 1 shall consist of a vegetated area that is undisturbed except for uses provided for in Item (6) of this Paragraph. The location of Zone 1 shall be as follows:

(i) For intermittent and perennial streams, Zone 1 shall begin at the most landward limit of the top of bank or the rooted herbaceous vegetation and extend landward a distance of 30 feet on all sides of the surface water, measured horizontally on a line perpendicular to the surface water.

(ii) For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.

(iii) For surface waters within the 20 Coastal Counties (defined in 15A NCAC 2B .0202) within the jurisdiction of the Division of Coastal Management, Zone 1 shall begin at the most landward limit of the normal high water level, the normal water level, or the landward limit

of coastal wetlands as defined by the Division of Coastal Management and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.

(b) Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and uses provided for in Item (6) of this Paragraph. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. Zone 2 shall begin at the outer edge of Zone 1 and extend landward 20 feet as measured horizontally on a line perpendicular to the surface water. The combined width of Zones 1 and 2 shall be 50 feet on all sides of the surface water.

(5) DIFFUSE FLOW REQUIREMENT. Diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation.

(a) Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters the riparian buffer.

(b) Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.

(6) TABLE OF USES. The following chart sets out the uses and their designation under this Rule as exempt, allowable, allowable with mitigation, or prohibited. The requirements for each category are given in Item (7) of this Paragraph.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Airport facilities: • Airport facilities that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Airport facilities that impact greater than 150 linear feet or one-third of an acre of riparian buffer		X	X	
Archaeological activities	X			
Bridges		X		
Dam maintenance activities	X			

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Drainage ditches, roadside ditches and stormwater outfalls through riparian buffers: • Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients and other pollution that convey to waterbodies • New drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nitrogen and attenuate flow before the conveyance discharges through the riparian buffer • New drainage ditches, roadside ditches and stormwater outfalls that do not provide control for nitrogen before discharging through the riparian buffer • Excavation of the streambed in order to bring it to the same elevation as the invert of a ditch	X	X		X X
Drainage of a pond in a natural drainage way provided that a new riparian buffer that meets the requirements of Items (4) and (5) is established adjacent to the new channel	X			
Driveway crossings: • Driveway crossings on single family residential lots that disturb equal to or less than 25 linear feet or 2,500 square feet of riparian buffer • Driveway crossings on single family residential lots that disturb greater than 25 linear feet or 2,500 square feet of riparian buffer • In a subdivision that cumulatively disturb equal to or less than 150 linear feet or one-third of an acre of riparian buffer • In a subdivision that cumulatively disturb greater than 150 linear feet or one-third of an acre or riparian buffer	X	X X	X	

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Fences provided that disturbance is minimized and installation does not result in removal of forest vegetation	X			
Forest harvesting - see Item (11) of this Rule				
Fertilizer application: • One-time fertilizer application to establish replanted vegetation • Ongoing fertilizer application	X			X
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized	X			
Greenway trails		X		
Historic preservation	X			
Landfills				X
Mining activities: • Mining activities that are covered by the Mining Act provided that new riparian buffers that meet the requirements of Items (4) and (5) are established adjacent to the relocated channels • Mining activities that are not covered by the Mining Act OR where new riparian buffers that meet the requirements or Items (4) and (5) are not established adjacent to the relocated channels		X	X	

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Non-electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only • Impacts other than perpendicular crossings in Zone 1 • Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer • Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer	X	X X	X X	
On-site sanitary sewage systems - new ones that use ground absorption				X
Overhead electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only • Impacts other than perpendicular crossings in Zone 1 [1,2] • Perpendicular crossings that disturb equal to or less than 150 linear feet of riparian buffer [1] • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer [1, 2]	X X X	X		
Periodic maintenance of modified natural streams such as canals and a grassed travelway on one side of the surface water when alternative forms of maintenance access are not practical		X		

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Playground equipment: • Playground equipment on single family lots provided that installation and use does not result in removal of vegetation • Playground equipment installed on lands other than single-family lots or that requires removal of vegetation	X	X		

[1] Provided that, in Zone 1, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternatives evaluation by the Division.

- A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.
- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.
- Rip rap shall not be used unless it is necessary to stabilize a tower.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

[2] Provided that poles or towers shall not be installed within 10 feet of a water body unless the Division completes a no practical alternatives evaluation.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Ponds in natural drainage ways: • New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) is established adjacent to the pond • New ponds where a riparian buffer that meets the requirements of Items (4) and (5) is NOT established adjacent to the pond		X	X	
Ponds in natural drainage ways: • New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) is established adjacent to the pond • New ponds where a riparian buffer that meets the requirements of Items (4) and (5) is NOT established adjacent to the pond		X	X	
Protection of existing structures and facilities when this requires additional disturbance of the riparian buffer or the stream channel		X		
Railroad crossings: • Railroad crossings that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer		X	X	
Removal of previous fill or debris provided that diffuse flow is maintained and any vegetation removed is restored	X			
Road crossings: • Road crossings that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Road crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer		X	X	

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Scientific studies and stream gauging	X			
Stormwater management ponds: • New stormwater management ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) is established adjacent to the pond • New stormwater management ponds where a riparian buffer that meets the requirements of Items (4) and (5) is NOT established adjacent to the pond		X	X	
Stream restoration	X			
Streambank stabilization		X		
Temporary roads: • Temporary roads that disturb less than or equal to 2,500 square feet provided that vegetation is restored within six months • Temporary roads that disturb greater than 2,500 square feet provided that vegetation is restored within six months	X	X		

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Temporary sediment and erosion control devices: • In Zone 2 only provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow in accordance with Item (5) • In Zones 1 and 2 to control impacts associated with uses approved by the Division or that have received a variance provided that sediment and erosion control for upland areas is addressed to the maximum extent practical outside the buffer • In-stream temporary erosion and sediment control measures for work within a stream channel	X X	 X		
Underground electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only • Impacts other than perpendicular crossings in Zone 1[3] • Perpendicular crossings that disturb less than or equal to 40 linear feet of riparian buffer[3] • Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer[3]	X X X 	 X		

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Vegetation management:				
• Emergency fire control measures provided that topography is restored	X			
• Periodic mowing and harvesting of plant products in Zone 2 only	X			
• Planting vegetation to enhance the riparian buffer	X			
• Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised	X			
• Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life	X			
• Removal or poison ivy	X			
• Removal of understory nuisance vegetation as defined in: Smith, Cherri L. 1998. Exotic Plant Guidelines. Department of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30	X			

[3] Provided that, in Zone 1, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternatives evaluation by the Division.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench, where trees are cut.
- Underground cables shall be installed by vibratory plow or trenching.
- The trench shall be backfilled with the excavated soil material immediately following cable installation.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Water dependent structures as defined in 15A NCAC 2B .0202		X		
Water supply reservoirs: • New reservoirs provided that a riparian buffer that meets the requirements of Items (4) and (5) is established adjacent to the reservoir • New reservoirs where a riparian buffer that meets the requirements of Items (4) and (5) is NOT established adjacent to the reservoir		X	X	
Water wells	X			
Wetland restoration	X			

(7) REQUIREMENTS FOR CATEGORIES OF USES. Uses designated as exempt, allowable, allowable with mitigation and prohibited in Item (6) of this Paragraph shall have the following requirements:

(a) EXEMPT. Uses designated as exempt are allowed within the riparian buffer. Exempt uses shall be designed, constructed and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. In addition, exempt uses shall meet requirements listed in Item (6) of this Paragraph for the specific use.

(b) ALLOWABLE. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Paragraph. These uses require written authorization from the Division or the delegated local authority.

(c) ALLOWABLE WITH MITIGATION. Uses designated as allowable with mitigation may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Paragraph and an appropriate mitigation strategy has been approved pursuant to Item (10) of this Paragraph. These uses require written authorization from the Division or the delegated local authority.

(d) PROHIBITED. Uses designated as prohibited may not proceed within the riparian buffer unless a variance is granted pursuant to Item (9) of this Paragraph.

(8) DETERMINATION OF "NO PRACTICAL ALTERNATIVES." Persons who wish to undertake uses designated as allowable or allowable with mitigation shall submit a request for a "no practical alternatives" determination to the Division or to the delegated local authority. The applicant shall certify that the criteria identified in Sub-Item (8)(a) of this Paragraph are met. The Division or the delegated

local authority shall grant an Authorization Certificate upon a "no practical alternatives" determination. The procedure for making an Authorization Certificate shall be as follows:

(a) For any request for an Authorization Certificate, the Division or the delegated local authority shall review the entire project and make a finding of fact as to whether the following requirements have been met in support of a "no practical alternatives" determination:

(i) The basic project purpose cannot be practically accomplished in a manner that would better minimize disturbance, preserve aquatic life and habitat, and protect water quality.

(ii) The use cannot practically be reduced in size or density, reconfigured or redesigned to better minimize disturbance, preserve aquatic life and habitat, and protect water quality.

(iii) Best management practices will be used if necessary to minimize disturbance, preserve aquatic life and habitat, and protect water quality.

(b) Requests for an Authorization Certificate shall be reviewed and either approved or denied within 60 days of receipt of a complete submission based on the criteria in Sub-Item (8)(a) of this Paragraph by either the Division or the delegated local authority. Failure to issue an approval or denial within 60 days shall constitute that the applicant has demonstrated "no practical alternatives." The Division or the delegated local authority may attach conditions to the Authorization Certificate that support the purpose, spirit and intent of the riparian buffer protection program. Complete submissions shall include the following:

(i) The name, address and phone number of the applicant;

(ii) The nature of the activity to be conducted by the applicant;

(iii) The location of the activity, including the jurisdiction;

(iv) A map of sufficient detail to accurately delineate the boundaries of the land to be utilized in carrying out the activity, the location and dimensions of any disturbance in riparian buffers associated with the activity, and the extent of riparian buffers on the land;

(v) An explanation of why this plan for the activity cannot be practically accomplished, reduced or reconfigured to better minimize disturbance to the riparian buffer, preserve aquatic life and habitat and protect water quality; and

(vi) Plans for any best management practices proposed to be used to control the impacts associated with the activity.

(c) Any disputes over determinations regarding Authorization Certificates shall be referred to the Director for a decision. The Director's decision is subject to review as provided in Articles 3 and 4 of Chapter 150B of the General Statutes.

(9) VARIANCES. Persons who wish to undertake uses designated as prohibited have the option of pursuing a variance. The Division or the appropriate delegated local authority may grant minor variances. The variance request procedure shall be as follows:

(a) For any variance 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 riparian buffer protection requirements;

(ii) The variance is in harmony with the general purpose and intent of the State's riparian buffer protection requirements and preserves its spirit; and

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

(b) MINOR VARIANCES. A minor variance request pertains to activities that are proposed only to impact any portion of Zone 2 of the riparian buffer. Minor variance requests shall be reviewed and approved based on the criteria in Sub-Item (9)(a) of this Paragraph by the 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 variance approval that support the purpose, spirit and intent of the riparian buffer protection program. 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) MAJOR VARIANCES. A major variance request pertains to activities that are proposed to impact any portion of Zone 1 or any portion of both Zones 1 and 2 of the riparian buffer. If the Division or the delegated local authority has determined that a major variance request meets the requirements in Sub-Item (9)(a) of this Paragraph, then it shall prepare a preliminary finding and submit it to the Commission. Preliminary findings on major variance requests shall be reviewed by the Commission within 90 days after receipt by the Director. Requests for appeals of determinations that the requirements of Sub-Item (9)(a) of this Paragraph have not been met shall be made to the Office of Administrative Hearings for determinations made by the Division or the appropriate Board of Adjustments under G.S. 160-388 or G.S. 153A-345 for determinations made by the delegated local authority. The purpose of the Commission's review is to determine if it agrees that the requirements in Sub-Item (9)(a) of this Paragraph have been met. Requests for appeals of decisions made by the Commission shall be made to the Office of Administrative Hearings. The following actions shall be taken depending on the Commission's decision on the major variance request:

(i) Upon the Commission's approval, the Division or the delegated local authority shall issue a final decision granting the major variance.

(ii) Upon the Commission's approval with conditions or stipulations, the Division or the delegated local authority shall issue a final decision, which includes these conditions or stipulations.

(iii) Upon the Commission's denial, the Division or the delegated local authority shall issue a final decision denying the major variance.

(10) MITIGATION. Persons who wish to undertake uses designated as allowable with mitigation shall meet the following requirements in order to proceed with their proposed use.

(a) Obtain a determination of "no practical alternatives" to the proposed use pursuant to Item (8) of this Paragraph.

(b) Obtain approval for a mitigation proposal pursuant to 15A NCAC 2B .0260.

(11) REQUIREMENTS SPECIFIC TO FOREST HARVESTING. The following requirements shall apply for forest harvesting operations and practices.

(a) The following measures shall apply in the entire riparian buffer:

(i) Logging decks and sawmill sites shall not be placed in the riparian buffer.

(ii) Access roads and skid trails shall be prohibited except for temporary and permanent stream crossings established in accordance with 15A NCAC 1I .0203. Temporary stream crossings shall be permanently stabilized after any site disturbing activity is completed.

(iii) Timber felling shall be directed away from the stream or water body.

(iv) Skidding shall be directed away from the stream or water body and shall be done in a manner that minimizes soil disturbance and prevents the creation of channels or ruts.

(v) Individual trees may be treated to maintain or improve their health, form or vigor.

(vi) Harvesting of dead or infected trees or application of pesticides necessary to prevent or control extensive tree pest and disease infestation shall be allowed. These practices must be approved by the Division of Forest Resources for a specific site. The Division of Forest Resources must notify the Division of all approvals.

(vii) Removal of individual trees that are in danger of causing damage to structures or human life shall be allowed.

(viii) Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the riparian buffer shall be allowed provided that soil disturbance is minimized. Plantings shall consist primarily of native species.

(ix) High intensity prescribed burns shall not be allowed.

(x) Application of fertilizer shall not be allowed except as necessary for permanent stabilization. Broadcast application of fertilizer or herbicides to the adjacent forest stand shall be conducted so that the chemicals are not applied directly to or allowed to drift into the riparian buffer.

(b) In Zone 1, forest vegetation shall be protected and maintained. Selective harvest as provided for below is allowed on forest lands that have a deferment for use value under forestry in accordance with G.S. 105-277.2 through 277.6 or on forest lands that have a forest management plan prepared or approved by a registered professional forester. Copies of either the approval of the deferment for use value under forestry or the forest management plan shall be produced upon request. For such forest lands, selective harvest is allowed in accordance with the following:

(i) Tracked or wheeled vehicles are not permitted except at stream crossings designed, constructed and maintained in accordance with 15A NCAC 1I .0203.

(ii) Soil disturbing site preparation activities are not allowed.

(iii) Trees shall be removed with the minimum disturbance to the soil and residual vegetation.

(iv) The following provisions for selective harvesting shall be met:

(A) The first 10 feet of Zone 1 directly adjacent to the stream or waterbody shall be undisturbed except for the removal of individual high value trees as defined provided that no trees with exposed primary roots visible in the streambank be cut.

(B) In the outer 20 feet of Zone 1, a maximum of 50 percent of the trees greater than 5 inches dbh may be cut and removed. The reentry time for harvest shall be no more frequent than every 15 years, except on forest plantations where the reentry time shall be no more frequent than every 5 years. In either case, the trees remaining after harvest shall be as evenly spaced as possible.

(C)In Zone 2, harvesting and regeneration of the forest stand shall be allowed provided that sufficient ground cover is maintained to provide for diffusion and infiltration of surface runoff.

(12) REQUIREMENTS SPECIFIC TO LOCAL GOVERNMENTS WITH STORMWATER PROGRAMS FOR NITROGEN CONTROL. Local governments that are required to have local stormwater programs pursuant to 15A NCAC 2B .0258 shall have two options for ensuring protection of riparian buffers on new developments within their jurisdictions as follows.

(a) Obtain authority to implement a local riparian buffer protection program pursuant to 15A NCAC 2B .0261.

(b) Refrain from issuing local approvals for new development projects unless either:

(i) The person requesting the approval does not propose to impact the riparian buffer of a surface water that appears on either the most recent versions of the soil survey maps prepared by the Natural Resources Conservation Service of the United States Department of Agriculture or the most recent versions of the 1:24,000 scale (7.5 minute quadrangle) topographic maps prepared by the United States Geologic Survey (USGS).

(ii) The person requesting the approval proposes to impact the riparian buffer of a surface water that appears on the maps described in Sub-Item (12)(b)(i) of this Paragraph and either:

(A) Has received an on-site determination from the Division pursuant to Sub-Item (3)(a) of this Paragraph that surface waters are not present;

(B) Has received an Authorization Certificate from the Division pursuant to Item (8) of this Paragraph for uses designated as Allowable under this Rule;

(C) Has received an Authorization Certificate from the Division pursuant to Item (8) of this Paragraph and obtained the Division's approval on a mitigation plan pursuant to

Item (10) of this Paragraph for uses designated as Allowable with Mitigation under this Rule; or

(D) Has received a variance from the Commission pursuant to Item (9) of this Paragraph.

(13) OTHER LAWS, REGULATIONS AND PERMITS. In all cases, compliance with this Rule does not preclude the requirement to comply with all federal, state and local regulations and laws.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*

15A NCAC 2B .0260 is proposed for adoption as follows:

.0260 TAR-PAMLICO RIVER BASIN - NUTRIENT SENSITIVE WATERS MANAGEMENT STRATEGY: MITIGATION PROGRAM FOR PROTECTION AND MAINTENANCE OF RIPARIAN BUFFERS

The following are the requirements for the Riparian Buffer Mitigation Program for the Tar-Pamlico Basin:

(1) PURPOSE. The purpose of this Rule is to set forth the mitigation requirements that apply to the Tar-Pamlico Basin riparian buffer protection program, as described in Rule 15A NCAC 2B .0259.

(2) APPLICABILITY. This Rule applies to persons who wish to impact a riparian buffer in the Tar-Pamlico Basin when one of the following applies:

(a) A person has received an Authorization Certificate pursuant to 15A NCAC 2B .0259 for a proposed use that is designated as "allowable with mitigation."

(b) A person has received a variance pursuant to 15A NCAC 2B .0259 and is required to perform mitigation as a condition of a variance approval.

(3) THE AREA OF MITIGATION. The required area of mitigation shall be determined by either the Division or the delegated local authority according to the following:

(a) The impacts in square feet to each zone of the riparian buffer shall be determined by the Division or the delegated local authority by adding the following:

(i) The area of the footprint of the use causing the impact to the riparian buffer.

(ii) The area of the boundary of any clearing and grading activities within the riparian buffer necessary to accommodate the use.

(iii) The area of any ongoing maintenance corridors within the riparian buffer associated with the use.

(b) The required area of mitigation shall be determined by applying the following multipliers to the impacts determined in Sub-item (3)(a) of this Paragraph to each zone of the riparian buffer:

(i) Impacts to Zone 1 of the riparian buffer shall be multiplied by 3.

(ii) Impacts to Zone 2 of the riparian buffer shall be multiplied by 1.5.

(iii) Impacts to wetlands within Zones 1 and 2 of the riparian buffer that are subject to mitigation under 15A NCAC 2H .0506 shall comply with the mitigation ratios in 15A NCAC 2H .0506.

(4) THE LOCATION OF MITIGATION. The mitigation effort shall be located in the same physiographic region of the Tar-Pamlico River Basin as the proposed impact, or lower in the basin. The physiographic regions are identified in _____.

(5) ISSUANCE OF THE MITIGATION DETERMINATION. The Division or the delegated local authority shall issue a mitigation determination that specifies the required area and location of mitigation pursuant to Items (3) and (4) of this Paragraph.

(6) OPTIONS FOR MEETING THE MITIGATION DETERMINATION. The mitigation determination made pursuant to Item (5) of this Paragraph may be met through one of the following options:

(a) Payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Item (7) of this Paragraph.

(b) Donation of real property or of an interest in real property pursuant to Item (8) of this Paragraph.

(c) Restoration or enhancement of a riparian buffer that is not otherwise required to be protected. This shall be accomplished by the applicant after submittal and approval of a restoration plan pursuant to Item (9) of this Paragraph.

(7) PAYMENT TO THE RIPARIAN BUFFER RESTORATION FUND. Persons who choose to satisfy their mitigation determination by paying a compensatory mitigation fee to the Riparian Buffer Restoration Fund shall meet the following requirements:

(a) SCHEDULE OF FEES: The amount of payment into the Fund shall be determined by multiplying the acres or square feet of mitigation determination made pursuant to Item (5) of this Paragraph by $0.96 per square foot or $41,625 per acre.

(b) The required fee shall be submitted to the Division of Water Quality, Wetlands Restoration Program, P.O. Box 29535, Raleigh, NC 27626-0535 prior to any activity that results in the removal or degradation of the protected riparian buffer for which a "no practical alternatives" determination has been made.

(c) The payment of a compensatory mitigation fee may be fully or partially satisfied by donation of real property interests pursuant to Item (8) of this Paragraph.

(d) The fee outlined in Sub-item (7)(a) of this Paragraph shall be reviewed every two years and compared to the actual cost of restoration activities conducted by the Department, including site identification, planning, implementation, monitoring and maintenance costs. Based upon this biennial review, revisions to Sub-item (7)(a) of this Paragraph will be recommended when adjustments to this Schedule of Fees are deemed necessary.

(8) DONATION OF PROPERTY. Persons who choose to satisfy their mitigation determination by donating real property or an interest in real property shall meet the following requirements:

(a) The donation of real property interests may be used to either partially or fully satisfy the payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to Item (7) of this Paragraph. The value of the property interest shall be determined by an appraisal performed in accordance with Sub-item (8)(d)(iv) of this Paragraph. The donation shall satisfy the mitigation determination if the appraised value of the donated property interest is equal to or greater than the required fee. If the appraised value of the donated property interest is less than the required fee calculated pursuant to Sub-item (7)(a) of this Paragraph, the applicant shall pay the remaining balance due.

(b) The donation of conservation easements to satisfy compensatory mitigation requirements shall be accepted only if the conservation easement is granted in perpetuity.

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

(i) The property shall be located within an area that is identified as a priority for restoration in the Basinwide Wetlands and Riparian Restoration Plan or shall be located at a site that is otherwise consistent with the goals outlined in the Basinwide Wetlands and Riparian Restoration Plan.

(ii) The property shall contain riparian buffers not currently protected by the State's riparian buffer protection program that are in need of restoration.

(iii) The restorable riparian buffer on the property shall have a minimum length of 1000 linear feet along a surface water and a minimum width of 50 feet as measured horizontally on a line perpendicular to the surface water.

(iv) The size of the restorable riparian buffer on the property to be donated shall equal or exceed the acreage of riparian buffer required to be mitigated under the mitigation responsibility determined pursuant to Item (3) of this Paragraph.

(v) The property shall not require excessive measures for successful restoration, such as removal of structures or infrastructure. Restoration of the property shall be capable of fully offsetting the adverse impacts of the requested use;

(vi) The property shall be suitable to be successfully restored, based on existing hydrology, soils, and vegetation;

(vii) The estimated cost of restoring and maintaining the property shall not exceed the value of the property minus site identification and land acquisition costs.

(ix) The property shall not contain cultural or historic resources.

(x) The property shall not contain any hazardous substance or solid waste.

(xi) The property shall not contain structures or materials that present health or safety problems to the general public. If wells, septic, water or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations.

(xii) The property shall have the potential to remove nitrogen, improve water quality and enhance natural resources after restoration. The Division shall consider whether the property is adjacent to or includes:

(A) a Department-approved restoration or preservation project or public lands;

(B) a sensitive natural resource, as identified in the Basinwide Wetland and Riparian Restoration Plan;

(C) known occurrences of rare species as identified by the North Carolina Natural Heritage Program in the "Natural Heritage Program List of Rare Animal Species of North Carolina" or the "Natural Heritage Program List of the Rare Plant Species of North Carolina;"

(D) significant Natural Heritage Area as identified by the North Carolina Natural Heritage Program in the "North Carolina Natural Heritage Program Biennial Protection Plan,

List of Significant Natural Heritage Areas." Copies of these documents may be obtained from the Department of Environment and Natural Resources, Division of Parks and Recreation, Natural Heritage Program, P.O. Box 27687, Raleigh, North Carolina 27611;

(E) federally or state-listed sensitive, endangered, or threatened species, or their critical habitat;

(F) non-supporting, partially supporting, or support-threatened waters as designated by the Division pursuant to 40 CFR 131.10(a) through (g). This material is available at the Department of Environment and Natural Resources, Division of Water Quality, Water Quality Section, 512 North Salisbury Street, Raleigh, North Carolina 27604;

(xiii) The property and adjacent properties shall not have prior, current, and known future land use that would inhibit the function of the restoration effort.

(xiv) The property shall not have any encumbrances or conditions on the transfer of the property interests.

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

(i) Documentation that the property meets the requirements laid out in Sub-Item (8)(c) of this Paragraph.

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

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

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

(v) A title certificate.

(9) RIPARIAN BUFFER RESTORATION OR ENHANCEMENT. Persons who choose to meet their mitigation requirement through riparian buffer restoration or enhancement shall meet the following requirements:

(a) The applicant may restore or enhance a riparian buffer that is not protected under the State's riparian buffer protection program if either of the following applies:

(i) The area of riparian buffer restoration is equal to the required area of mitigation determined pursuant to Item (3) of this Paragraph.

(ii) The area of riparian buffer enhancement is three times larger than the required area of mitigation determined pursuant to Item (3) of this Paragraph.

(b) The location of the riparian buffer restoration or enhancement shall comply with the requirements in Item (4) of this Paragraph.

(c) The riparian buffer restoration or enhancement site shall have a minimum width of 50 feet as measured horizontally on a line perpendicular to the surface water.

(d) The applicant shall first receive an Authorization Certificate for the proposed use according to the requirements of 15A NCAC 2B .0259. After receiving this determination, the applicant shall submit a restoration or enhancement plan for approval by the Division. The restoration or enhancement plan shall contain the following.

(i) A map of the proposed restoration or enhancement site.

(ii) A vegetation plan. The vegetation plan shall include a minimum of at least two native hardwood tree species planted at a density sufficient to provide 320 trees per acre at maturity.

(iii) A grading plan. The site shall be graded in a manner to ensure diffuse flow through the riparian buffer.

(iv) A fertilization plan.

(v) A schedule for implementation.

(e) Within one year after the Division has approved the restoration or enhancement plan, the applicant shall present proof to the Division that the riparian buffer has been restored or enhanced. If proof is not presented within this timeframe, then the person shall be in violation of the State's or the delegated local authority's riparian buffer protection program.

(f) The mitigation area shall be placed under a perpetual conservation easement whose terms are acceptable to the Division.

(g) The applicant shall submit annual reports for a period of five years after the restoration or enhancement showing that the trees planted have survived and that diffuse flow through the riparian buffer has been maintained. The applicant shall be responsible for replacing trees that do not survive and for restoring diffuse flow if needed during that five-year period.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*

training session by the Division and subsequent annual training sessions. The Administrator shall ensure that local government staff working directly with the program receive training to understand, implement and enforce the program.

(3) PROCEDURES FOR USES WITHIN RIPARIAN BUFFERS THAT ARE ALLOWABLE AND ALLOWABLE WITH MITIGATION. Upon receiving delegation, local authorities shall be responsible for reviewing proposed uses within the riparian buffer and issuing approvals if the uses meet the Tar-Pamlico Basin riparian buffer protection requirements. Delegated local authorities shall issue an Authorization Certificate for uses if the proposed use meets the Tar-Pamlico Basin riparian buffer protection requirements, or provides for appropriate mitigated provisions to the Tar-Pamlico Basin riparian buffer protection requirements. The Division shall have the authority to challenge a decision made by a delegated local authority for a period of 30 days after the Authorization Certificate is issued. If the Division does not challenge an Authorization Certificate within 30 days of issuance, then the delegated local authority's decision will stand.

(4) VARIANCES. After receiving delegation, local governments shall be responsible for reviewing variance requests, providing approvals for minor variance requests and making recommendations to the Commission for major variance requests pursuant to the Tar-Pamlico Basin riparian buffer protection program.

(5) LIMITS OF DELEGATED LOCAL AUTHORITY. The Commission shall have jurisdiction to the exclusion of local governments to implement the Tar-Pamlico Basin riparian buffer protection requirements for the following types of activities:

(a) Activities conducted under the authority of the State;

(b) Activities conducted under the authority of the United States;

(c) Activities conducted under the authority of multiple jurisdictions;

(d) Activities conducted under the authority of local units of government.

(6) RECORD-KEEPING REQUIREMENTS. Delegated local authorities are required to maintain on-site records for a minimum of 5 years. Delegated local authorities must furnish a copy of these records to the Director within 30 days of receipt of a written request for the records. The Division will inspect local riparian buffer protection programs to ensure that the programs are being adequately implemented and enforced. Each delegated local authority's records shall include the following:

(a) A copy of variance requests;

(b) The variance request's finding of fact;

training session by the Division and subsequent annual training sessions. The Administrator shall ensure that local government staff working directly with the program receive training to understand, implement and enforce the program.

(3) PROCEDURES FOR USES WITHIN RIPARIAN BUFFERS THAT ARE ALLOWABLE AND ALLOWABLE WITH MITIGATION. Upon receiving delegation, local authorities shall be responsible for reviewing proposed uses within the riparian buffer and issuing approvals if the uses meet the Tar-Pamlico Basin riparian buffer protection requirements. Delegated local authorities shall issue an Authorization Certificate for uses if the proposed use meets the Tar-Pamlico Basin riparian buffer protection requirements, or provides for appropriate mitigated provisions to the Tar-Pamlico Basin riparian buffer protection requirements. The Division shall have the authority to challenge a decision made by a delegated local authority for a period of 30 days after the Authorization Certificate is issued. If the Division does not challenge an Authorization Certificate within 30 days of issuance, then the delegated local authority's decision will stand.

(4) VARIANCES. After receiving delegation, local governments shall be responsible for reviewing variance requests, providing approvals for minor variance requests and making recommendations to the Commission for major variance requests pursuant to the Tar-Pamlico Basin riparian buffer protection program.

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(6) RECORD-KEEPING REQUIREMENTS. Delegated local authorities are required to maintain on-site records for a minimum of 5 years. Delegated local authorities must furnish a copy of these records to the Director within 30 days of receipt of a written request for the records. The Division will inspect local riparian buffer protection programs to ensure that the programs are being adequately implemented and enforced. Each delegated local authority's records shall include the following:

(a) A copy of variance requests;

(b) The variance request's finding of fact;

(c) The result of the variance proceedings;

(d) A record of complaints and action taken as a result of the complaint;

(e) Records for stream origin calls and stream ratings; and

(f) Copies of request for authorization, records approving authorization and Authorization Certificates.

History Note: *Authority G. S. 143-214.1; 143-214.7; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C. Eff. August 1, 2000.*