Fiscal Analysis:
Nonpoint Source Nutrient Rules
Tar-Pamlico River Basin
Nutrient Sensitive Waters Management Strategy

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Prepared by North Carolina Division of Water Quality

Executive Summary

This Executive Summary includes information to assist you in reviewing the remainder of the Tar-Pamlico River Nonpoint Source Nutrient Rules Fiscal Note. The following topics are covered below:

- Background on the Tar-Pamlico River Basin
- An Overview of the Proposed Rules,
- A Summary of Costs and Savings, and
- A Description of the Fiscal Note Format.

Background: The Tar-Pamlico River Basin

The Tar-Pamlico River Basin begins in the Piedmont of North Carolina and extends approximately 180 miles through the Coastal Plain to Pamlico Sound. The Tar River collects flows from approximately 2,300 miles of freshwater streams before entering the estuarine Pamlico River at Washington. Its 5,600 square mile basin encompasses portions of 19 counties. Counties and municipalities in the Tar-Pamlico basin are as follows.

Table 1. Counties and Municipalities in the Tar-Pamlico Basin

	County	%County in Tar-Pamlico Basin[b]	Area in Tar-Pamlico Basin[b] (mi^2)	County Population in Basin[a]	Major Municipalities	Total Municipal Population
1.	Beaufort	97	929	42,098	Washington	9,300
2.	Carteret	1.5	15	886		
3.	Craven	0.3	5	265		
4.	Dare	11	134	3,013		
5.	Edgecombe	99	504	54,842	Rocky Mount Tarboro	57,200 10,900
6.	Franklin	90	443	39,138	Louisburg	3,400
7	Granville	43	230	18,405	Oxford	8,500
8	Halifax	60	442	33,505	Enfield	3,100
9	Hyde	91	1,259	4,805		
10	Martin	25	115	6,407		
11	Nash	80	434	69,681	Rocky Mount Nashville	57,200 3,800
12	Pamlico	17	96	2,035		
13	Person	8	32	2,634		
14	Pitt	58	380	72,149	Greenville	58,900[c]
15	Tyrrell	0.3	1.7	11		
16.	Vance	48	130	19,671	Henderson	16,200[c]
17.	Warren	62	273	11,247		
18.	Washington	19	78	2,526		
19.	Wilson	18	69	12,370		
	TOTAL		**5,571**	**395,689**		

[a]Based on 1997 Certified County Population Estimates (NC Office of State Planning), and
[b]percent of county land area within Tar-Pamlico Basin (NC Center for Geographic Information and Analysis).
[c]Municipality partially within Tar-Pamlico Basin.

The following proportions were estimated for major land cover categories in the basin by DWQ staff for its 1999 Tar-Pamlico River Basinwide Water Quality Management Plan. Estimates were based on LandSat satellite imagery collected during 1993 – 1995, obtained from the NC Center for Geographic Information and Analysis. The urban land area is known to be a significant underestimate. One major reason for this is that many urban areas have significant tree cover that is misinterpreted as forest.

Land Cover Type	Area in Basin (acres)	Percent of Basin Area
Forest/Wetland	1,960,100	54
Cultivated Crop	767,400	21
Water	700,400	19
Pasture/Managed Herbaceous	101,100	2.8
Urban	129,700	3.5[a]
Total	3,658,800	

Source: NC CGIA Corporate Geographic Database
[a]Known underestimate of urban land area due to misinterpretation of image signature.

The Proposed Rules

The following rules compose the proposed Tar-Pamlico NSW Strategy and, if adopted, would be implemented in all waters of the Tar-Pamlico River Basin:

1. Protection and Maintenance of Riparian Buffers
2. Riparian Buffer Mitigation Program
3. Riparian Buffer Delegation Program
4. Basinwide Stormwater Requirements
5. Agricultural Nutrient Loading Goal
6. Agricultural Nutrient Control Strategy
7. Nutrient Management

The following are explanations of each rule in the strategy:

Protection and Maintenance of Riparian Buffers (Chapter 1)

This rule requires that riparian buffers be protected and maintained on both sides of intermittent and perennial surface waters. The rule applies to waters that appear on either the USGS topographic maps or NRCS Soil Survey maps unless one of the two exemptions is met. The exemptions occur when either:

- There is a field determination that a stream shown on the map does not exist on the ground, or
- There is an existing use in the buffer. The footprint of existing land uses within the buffer would be exempt, with the buffer rule only applying when (and if) land use changed.

A total of 50 feet of riparian buffer would be required on each side of the waterbodies in the basin that meet the above criteria. This 50-foot riparian buffer would consist of 30 feet of virtually undisturbed vegetation and 20 feet that could be disturbed as long as it is revegetated promptly. The rule includes specific procedures for obtaining approvals for numerous allowable uses within the buffer. A list of 36 specific activities were separated into categories of exempt, allowable, allowable with mitigation and prohibited. The classifications of uses are as follows:

- **Exempt** uses, such as archaeological activities and dam maintenance, can be done without staff review.
- **Allowable** uses, such as greenway trails, mining, driveway crossings wider than 25 feet or railroad crossings greater than 150 linear feet, need written staff approval but do not require mitigation.
- **Allowable with mitigation** uses, such as in-stream ponds (mitigation can be on-site) and stormwater management facilities, need written staff approval and compensatory mitigation.
- **Prohibited** uses may not be undertaken in the buffer without a variance.

Riparian Buffer Mitigation Program (Chapter 2)

This rule establishes a process to allow the option of compensatory mitigation for impacts to riparian buffers. The mitigation program would allow mitigation to be carried out by the developer, private banks or the N.C. Wetlands Restoration Program. The rule also allows the option of donating land that contains restorable riparian areas to meet the mitigation requirement.

Landowners have the option of mitigating riparian buffer impacts on either perennial or intermittent streams. The N.C. Wetlands Restoration Program is responsible for coordinating and overseeing the riparian buffer mitigation program.

Riparian Buffer Delegation Program (Chapter 3)

This rule was established to allow voluntary delegation of the buffer protection program to qualified local governments with DWQ oversight. Such a rule was required for the Neuse basin by the General Assembly under House Bill 1402, and will be included in the Tar-Pamlico basin as well. The Delegation Rule provides the option for local governments to voluntarily request the authority to implement the riparian buffer protection program within their jurisdictions. The Environmental Management Commission has the responsibility for reviewing local governments' legal authorities and resources to determine if they can effectively implement a riparian buffer protection program. Local governments who request delegation are required to have one staff member as a designated Riparian Buffer Coordinator. The EMC also has the responsibility of reviewing the program on an annual basis to determine that it is being properly implemented.

Urban Stormwater Requirements (Chapter 4)

The basinwide stormwater program requires that 6 municipalities and 6 counties (Greenville, Henderson, Oxford, Rocky Mount, Tarboro, Washington, Beaufort County, Edgecombe County, Franklin County, Halifax County, Nash County, and Pitt County) develop a stormwater management plan to address nutrients. The stormwater management plan requires these local governments to conduct a permitting, compliance monitoring and enforcement program for new developments, identify and remove illegal discharges, educate the citizens within the jurisdiction about how to reduce nutrient pollution, map stormwater sewers and other water features, identify and prioritize suitable locations for retrofits of existing developed areas, and provide annual reports.

New development is required to maintain 70% or less of the 1991 nitrogen loading and 100% or less of the 1991 phosphorus loading in stormwater discharges, and provide no net increase in the pre-development peak flow from the 1-yr. 24-hr. storm.

DWQ will have one year from the effective date of the rules to provide a model stormwater management plan addressing all of the components listed above. Local governments will then have six

months to submit a local stormwater management plan, based upon the DWQ model. All of the subject local governments must have a stormwater management program in place within 2 years of the effective date of the rules. If a local government fails to adequately establish its stormwater management program, then the DWQ will issue a NPDES stormwater permit to implement the stormwater program for that local government.

Agricultural Nutrient Loading Goal (Chapter 5)

This rule sets an overall nutrient control goal for agriculture consisting of a 30 percent net total nitrogen reduction from the 1991 nitrogen loading, and no net increase in total phosphorus loading over the 1991 level.

Agricultural Nutrient Control Strategy (Chapter 6)

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 and how these operations will hold phosphorus loads at 1991 levels. This goal is to be achieved within five years of the effective date of this rule, and is to be measured from the 1991 loading level.

Under the proposal rule, persons engaging in agricultural operations in the Tar-Pamlico River Basin have two options for meeting the nitrogen net loading reduction. The options are to either participate in a local nutrient control plan (see Option 1 below) or implement standard Best Management Practices (see Option 2 below). Both these options are contained in a single proposed rule (15A NCAC 2B .0256).

Option 1: Local Nutrient Control Strategy Option ----------
All persons engaging in agricultural operations that choose to participate in the local nutrient control strategy must complete a sign-up process within one year from the effective date of the proposed Rule, and must implement BMPs within 5 years of the effective date. If an agricultural operation does not complete the sign-up, then it will be subject to implementation of standard BMPs (Option 2).

This alternative would allow the establishment of Local Advisory Committees comprised of staff from:

- Natural Resources Conservation Service (NRCS),
- NC Cooperative Extension Service (CES),
- Division of Soil and Water Conservation (DSWC),
- NC Department of Agriculture (NCDA),
- local Soil and Water Conservation Districts (SWCD), and
- at least two farmers in each county in the Tar-Pamlico River Basin.

The Local Advisory Committees are responsible for:

- Conducting a sign-up process for persons wishing to participate in and implement the local nutrient control strategy;
- Developing local nutrient control plans that collectively meet the nitrogen loading reduction goal for agricultural operations within five years from the effective date of this Rule.
- Submitting an annual report to the Basin Oversight Committee each May on net total nutrient loading reductions from agricultural operations, the implementation of BMPs for nutrient control, and progress towards the nutrient loading reduction requirement in the

basin. The Environmental Management Commission will use the annual reports to determine the need for adjustments to the nutrient control strategy for agricultural operations.

The goal of the Local Advisory Committees would be to increase effectiveness and flexibility in administering pollution reduction strategies. Acting with advice from the Committee, the DSWC employee on the Committee would have the authority to develop, review, and approve site-specific plans for nitrogen. Also, implementation maps/plans could be developed (for example determining where buffers, water control structures, and other practices are most appropriate based on specific site characteristics). A central goal would be to integrate the Committees with existing agricultural programs and initiatives (for example, Farm Bill EQIP committees/priorities and NC Agricultural Cost Share Program). Landowners in cooperation with the above agencies would develop site-specific plans for controlling nutrients.

The Environmental Management Commission will delegate to the Directors of the Division of Water Quality and Division of Soil and Water Conservation the responsibility of forming a Basin Oversight Committee. The Directors will solicit one nomination for membership on this Committee from each of the following agencies:

- Division of Soil and Water Conservation,
- USDA - Natural Resources Conservation Service,
- North Carolina Department of Agriculture,
- North Carolina Cooperative Extension Service, and
- Division of Water Quality.

The Directors will also solicit one nomination that represents environmental interests, one from the scientific community, and a farmer.

Nominations for the Basin Oversight Committee will be approved by the Secretary, Department of Environment and Natural Resources. Members will be appointed for a term not to exceed five years and will serve at the pleasure of the Secretary. The EMC will delegate the following responsibilities to qualified employees of the Department who are members of the Basin Oversight Committee and employees of DWQ and Division of Soil and Water Conservation.

The responsibilities of the Basin Oversight Committee are the following:

- Develop a tracking and accounting methodology.
- 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 collectively by implementing BMPs.
- Identify and implement future refinements to the accountability as

needed to reflect advances in scientific understanding.

- Appoint a technical advisory committee within 6 months of the effective date of the rule to study phosphorus**.**
- Review, approve, and summarize local nutrient control strategies and present these strategies to the Environmental Management Commission for approval within two years from the effective date of this Rule.
- Review, approve, and summarize county nutrient control annual reports and present these reports to the Environmental Management Commission each October.

Agricultural Nutrient Control Strategy, continued (Chapter 6)

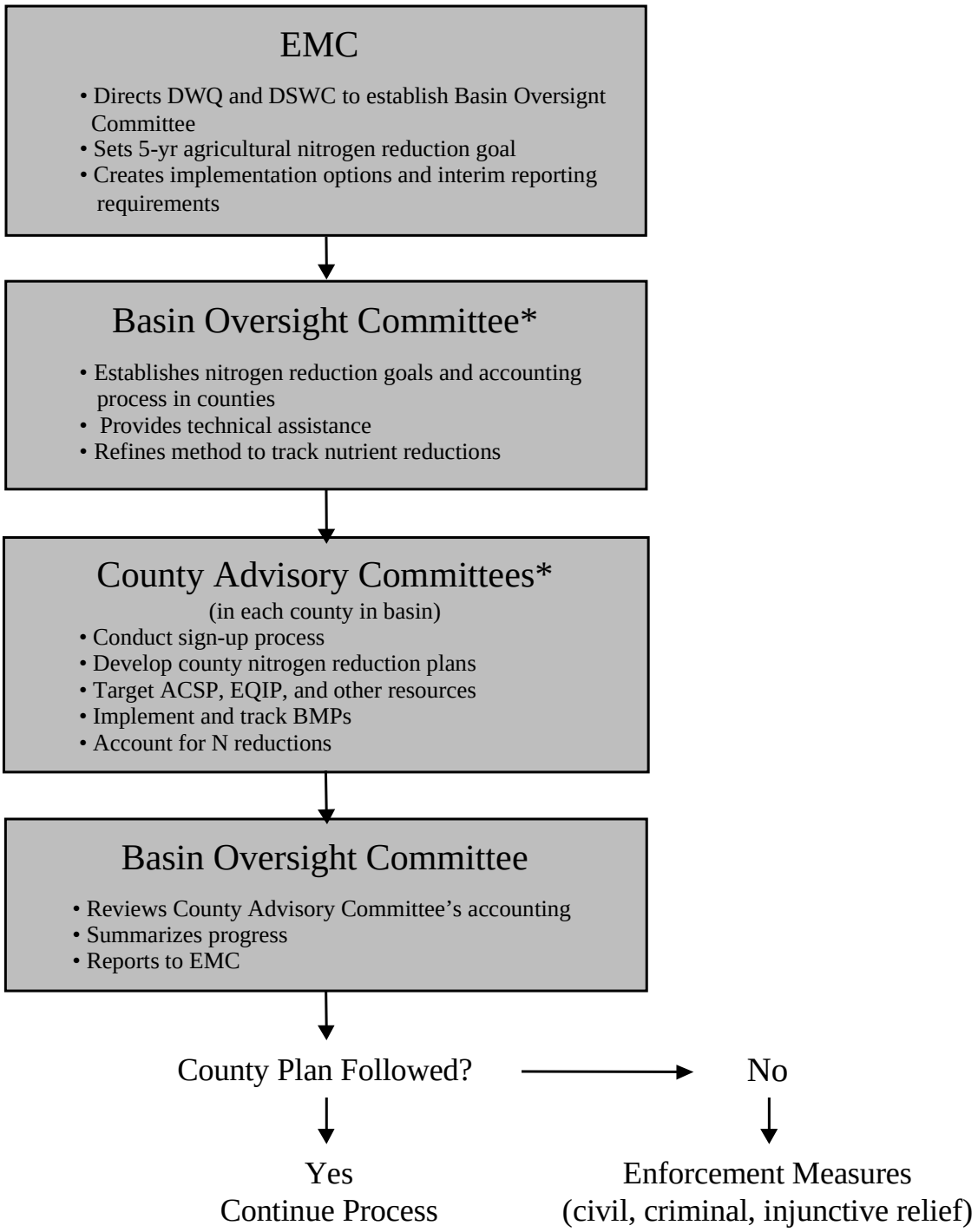
Option 2: Standard Best Management Practices----------

If an agricultural operation does not complete the sign-up process for implementation of the county nutrient control plan, then the agricultural operation must implement specific best management practices, such as riparian buffers, water control structures, and nutrient management, within four years following the effective date of the proposed Rule.

Under Option 2, landowners would not need to install a riparian buffer under the following conditions:

- If both water control structures (with a water management plan) and a nutrient management plan are in effect; or
- If the affected water body is a small ditch (e.g., a hoe drain or a field ditch).

Figure 1: Diagram of the Proposed Agricultural Nutrient Control Strategy Process



Nutrient Management (Chapter 7 and 8)

Nutrient Management is defined as the development, implementation and periodic maintenance of a plan to apply nutrients at rates necessary to 1) achieve realistic crop yields, 2) improve timing of nutrient applications and 3) increase nutrient use efficiency. Under the proposed Rule, three general categories of nutrient applicators are required to obtain a certificate verifying completion of training in nutrient management within five years of the effective date of the rule.

These groups are defined as:

1. Persons who apply fertilizer to 50 or more acres of cropland and horticulture areas in a calendar year (Cropland is defined as agricultural land that is not covered by a certified animal waste management plan and is used for growing corn, oilseed crops, cotton, forages, tobacco, beans and other vegetables and fruits) under alternative 1. Or, Persons who apply fertilizer to cropland and horticulture areas under alternative 2;
2. Persons who apply fertilizer to golf courses, recreational lands, rights-of-way, or other turfgrass areas; and
3. Persons who apply fertilizer to lawn and garden areas in residential, commercial or industrial areas, except for residential landowners who apply fertilizer to their own property.

Either the Cooperative Extension Service (CES) or the Division of Water Quality (DWQ) would provide training. During the first year the rule is in effect, there will be a sign-up period administered by DWQ and CES for those individuals wishing to take nutrient management training.

If, within five years of the rule's effective date, a person (as described above) does not participate in nutrient training and become certified, then they will have to develop a nutrient management plan for lands on which they apply nutrients. Cropland nutrient management plans would have to meet standards and specifications adopted by the NC Soil and Water Conservation Commission (SWCC). These plans may be written by the applicator or by a consultant. However, written approval by a technical specialist designated by the SWCC will be required to certify that the nutrient management plan meets the standards adopted by the SWCC.

Turfgrass, horticultural and other non-agricultural fertilizer applicators who do not obtain nutrient management training certification in the five year period will have to develop a nutrient management plan that meets nutrient application standards and specifications developed by DWQ in consultation with CES, NRCS, Division of Soil and Water Conservation (DSWC) and the North Carolina Department of Agriculture and Consumer Services (NCDA). These standards and specifications will be developed and approved by the Director of DWQ within one year of the rule's

effective date. As with cropland, these plans may be written by the applicator or by a consultant but must be approved by a technical specialist designated by the SWCC. Approval by a designated technical specialist will certify that the applicator has a nutrient management plan for lands on which they apply fertilizer and that the plan meets the standards set forth by the DWQ.

Operators of poultry operations of 30,000 or more birds utilizing a dry litter waste management system are required to apply waste at agronomic rates for nitrogen based on realistic yield expectations. Landowners and other individuals who apply fertilizer to less than fifty acres a year including residential, industrial, commercial and crop landowners are encouraged to apply fertilizer at rates recommended by the CES. Also, they are welcome to participate in nutrient management training.

Those persons who choose to develop nutrient management plans instead of participating in the nutrient management training certification program will have to keep nutrient management plans and supporting documents on-site or be able to produce them within 24 hours at the request of the DWQ. An applicator who opts not to undergo nutrient management training, and then does not develop a nutrient management plan or fails to apply nutrients in accordance with an approved nutrient management plan, will be in violation of the rule and subject to enforcement procedures.

Summary of Costs and Savings

The following charts summarize the estimated costs and savings associated with the Tar-Pamlico River Nutrient Sensitive Rules. The NC Division of Water Quality determined these estimates using the best scientific, economic, land use and population data that were available. However, because these proposed rules allow all of the regulated parties to make choices about how to meet nutrient control requirements, DWQ had to make a number of assumptions to estimate the costs of each rule. These assumptions for each rule are described in the appropriate chapter. In a few cases where the interaction of potential costs and benefits was too complex and/or site-specific to quantify, DWQ indicated that these costs were not quantifiable, or "nq."

One of the most important points of this fiscal analysis is that it is not appropriate to compare the costs of the different rules to each other. Some of the reasons why comparisons between rule costs are not valid are:

1. The costs will be borne differently by different regulated parties. For example, the costs to treatment plants may be spread throughout a large customer base while farmers will have individual costs to their businesses, but may be able to defray some of their costs through funding sources such as the NC Agricultural Cost Share Funding.

2. There may be some additional non-quantifiable costs and /or savings associated with particular rules, including the Basinwide Stormwater Rule.

3. Many assumptions were made for each one of the rules in order to predict the behavior of the regulated parties. The assumptions required to estimate the costs could not be standardized since each rule affects different parties and regulates different issues.

A summary of the costs to the regulated parties for each of the proposed rules follows. Please note that two of the rules, the Agricultural Nutrient Reduction Goals and the Riparian Buffer Delegation Program, do not have any costs associated with them because they do not regulate behavior.

Table 1: Summary of Costs to Affected Parties

Protection and Maintenance of Riparian Buffers (Chapter 1)

Landowners	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$4,855,000	$971,000	$971,000	$971,000	$971,000	$971,000
Planning	n.q.	n.q.	n.q.	n.q.	n.q.	n.q.
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	13,135,000 + n.q.	$2,627,000 + n.q.	$2,627,000 + n.q.	$2,627,000 + n.q.	$2,627,000 + n.q.	$2,627,000 + n.q.
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$17,990,000 + n.q.	$3,598,000 + n.q.	$3,598,000 + n.q.	$3,598,000 + n.q.	$3,598,000 + n.q.	$3,598,000 + n.q.

Riparian Buffer Mitigation Program (Chapter 2)

Landowners	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Regulatory	$4,702,266	$940,453	$940,453	$940,453	$940,453	$940,453
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$4,702,266	$940,453	$940,453	$940,453	$940,453	$940,453

Riparian Buffer Delegation Program (Chapter 3)

No Regulated Parties	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Table 1: Summary of Costs to Affected Parties, continued

Basinwide Stormwater Program (Chapter 4)

Local Governments	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$68,400	$0	$0	$22,800	$22,800	$22,800
Operation	$9,984,000	$1,996,800	$1,996,800	$1,996,800	$1,996,800	$1,996,800
Planning	$162,000	$0	$162,000	$0	$0	$0
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	N/A	N/A	N/A	N/A	N/A
Other	$51,000	$51,000	$0	$0	$0	$0
Yearly Totals	$10,265,400	$2,047,800	$2,158,800	$2,019,600	$2,019,600	$2,019,600

Basinwide Stormwater Program (Chapter 4)

Developers	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	n.q.	n.q.	n.q.	n.q.	n.q.	n.q.
Operation	$0	$0	$0	$0	$0	$0
Planning	$1,028,250	$0	$0	$342,750	$342,750	$342,750
Regulatory	n.q.	n.q.	n.q.	n.q.	n.q.	n.q.
Transaction Opportunity	n.q.	n.q.	n.q.	n.q.	n.q.	n.q.
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$1,028,250 + n.q.	$0 + n.q.	$0 + n.q.	$342,750 + n.q.	$342,750 + n.q.	$342,750 + n.q.

Basinwide Stormwater Program (Chapter 4)

Homeowners	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$1,233,900	$0	$0	$205,650	$411,300	$616,950
Planning	$0	$0	$0	$0	$0	$0
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	nq	nq	nq	nq	nq	nq
Yearly Totals	$1,233,900 + n.q.	$0 + n.q.	$0 + n.q.	$205,650 + n.q.	$411,300 + n.q.	$616,950 + n.q.

Table 1: Summary of Costs to Affected Parties, continued

Agricultural Nutrient Control Goal (Chapter 5)

Farmers	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	N/A	$0	$0	$0	$0	$0
Operation	N/A	$0	$0	$0	$0	$0
Planning	N/A	$0	$0	$0	$0	$0
Regulatory	N/A	$0	$0	$0	$0	$0
Transaction Opportunity	N/A	$0	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0	$0
Yearly Totals	0	N/A	N/A	N/A	N/A	N/A

Agricultural Nutrient Control Strategy (Chapter 6 – Option 1)

Farmers	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$24,400,000	$4,880,000	$4,880,000	$4,880,000	$4,880,000	$4,880,000
Operation	$651,000	$130,200	$130,200	$130,200	$130,200	$130,200
Planning	$0	$0	$0	$0	$0	$0
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	($1,120,000)	($224,000)	($224,000)	($224,000)	($224,000)	($224,000)
Yearly Totals	$23,931,000	$4,786,200	$4,786,200	$4,786,200	$4,786,200	$4,786,200

Agricultural Nutrient control Strategy (Chapter 6 – Option 2)

Farmers	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$27,000,000	$6,750,000	$6,750,000	$6,750,000	$6,750,000	$0
Operation	$1,323,000	$94,500	$189,000	$283,500	$378,000	$378,000
Planning	$0	$0	$0	$0	$0	$0
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$4,725,000	$337,500	$675,000	$1,012,500	$1,350,000	$1,350,000
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$33,048,000	$7,182,000	$7,614,000	$8,046,000	$8,478,000	$1,728000

Table 1: Summary of Costs to Affected Parties, continued

Nutrient Management (Chapter 7 - Alternative 1)

Nutrient Applicators	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$150,800	$0	$15,080	$30,160	$45,240	$60,320
Planning	$729,720	$0	$182,430	$182,430	$182,430	$182,430
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$880,520	$0	$197,510	$212,590	$227,670	$242,750

Nutrient Management (Chapter 8 - Alternative 2)

Nutrient Applicators	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	$0	$0	$0	$0	$0	$0
Operation	$158,400	$0	$15,840	$31,680	$47,520	$63,360
Planning	$767,200	$0	$191,800	$191,800	$191,800	$191,800
Regulatory	$0	$0	$0	$0	$0	$0
Transaction Opportunity	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$925,600	$0	$207,640	$223,480	$239,320	$225,160

Table 2: Summary of Costs to the Implementing Agency

Protection and Maintenance of Riparian Buffers (Chapter 1)

Local Governments with Delegated Programs	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$14,000	$14,000	$0	$0	$0	$0
Monitoring/Record-keeping	$67,200	$0	$16,800	$16,800	$16,800	$16,800
Permitting	$134,400	$0	$33,600	$33,600	$33,600	$33,600
Inspection/Enforcement	$100,800	$0	$25,200	$25,200	$25,200	$25,200
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$316,400	$14,000	$75,600	$75,600	$75,600	$75,600

Table 2: Summary of Costs to the Implementing Agency, continued

Protection and Maintenance of Riparian Buffers (Chapter 1)

DWQ - Water Quality Section	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Riparian Buffer Mitigation Program (Chapter 2)

Local Governments with Delegated Programs	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Riparian Buffer Mitigation Program (Chapter 2)

DWQ - Water Quality Section	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Basinwide Stormwater Requirements (Chapter 4)

DWQ - Water Quality Section	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Table 2: Summary of Costs to the Implementing Agency, continued

Agricultural Nutrient Control Strategy (Chapter 6)

DWQ - Water Quality Section	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Nutrient Management (Chapters 7 and 8)

DWQ - Water Quality Section	Total for 5 Years	Year 1	Year 2	Year 3	Year 4	Year 5
Rule Development	$0	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0	$0
Monitoring/Record-keeping	$0	$0	$0	$0	$0	$0
Inspection/Enforcement	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0
Yearly Totals	$0	$0	$0	$0	$0	$0

Table 3: Summary of Benefits to the Public

Benefits:	For all Five Years:
Human Health	This rule will contribute to making the Tar-Pamlico River safe for human health.
Environmental Assets	This rule will help to protect the commercial and recreational fishing, travel, and tourism industries in the Tar-Pamlico River basin. In addition, this rule will help to reduce the costs of treating drinking water.
Ecosystem Health	This rule will help to protect fish and wildlife habitat in and around the Tar-Pamlico River. This rule may also help to establish additional wildlife habitat.
Other	None.
Total	Overall, the economic benefits of these rules cannot be quantified. However, it is clear that the environmental resources in the Tar-Pamlico River have a high economic and recreational value to citizens, municipalities, industries and tourism. These rules will help to address the long history of problems associated with nutrient pollution and algal blooms that threatens the Tar-Pamlico River.

The Fiscal Note Format

The Division of Water Quality, Water Quality Section, has prepared the attached fiscal note for the proposed NSW rule for the Tar-Pamlico River. The format of the fiscal note is based on software created through a cooperative agreement between the University of North Carolina, Chapel Hill and DENR. This software provides a series of questions about the proposed rule organized into six steps as follows:

Step 1: Description of the Proposed Rule
Step 2: Screening Analysis: Exemptions, Prima Facie Determinations and Emergency Rules
Step 3: Defining the Problem and the Regulation
Step 4: Identify Impacts
- **4-A.** Regulated Parties
- **4-B.** Implementing Agency
- **4-C.** Public Beneficiary

Step 5: Threshold Decision After Preliminary Rule Evaluation
Step 6: Analysis for Major Rules

Step 1: Description of the Proposed Rule contains basic information about the proposed rule and identifies the analyst.

Step 2: Screening Analysis: Exemptions, Prima Facie Determinations, and Emergency Rules includes a number of questions that aid in determining whether or not it is necessary to perform a fiscal analysis.

Step 3: Defining the Problem and the Regulation contains a more detailed description of the proposed rule and describes how it would change the behavior of the regulated community if it were implemented.

Step 4: Identifying Impacts describes the current practices of the regulated community(ies), and how these practices are contributing to environmental problems. The section contains three parts. For each part, the underlying assumptions (if applicable) and the sources of information are given.

Step 5: Threshold Decision After Preliminary Rule Evaluation includes a table which indicates if the proposed rule shows an estimated annual economic impact of $5 million or more.

Step 6: Analysis for Major Rules includes questions and tables that provide further descriptions of how costs were calculated for rules that show an estimated economic impact of $5 million or more.

4-A. Regulated Parties

Description of the Regulated Community	The regulated community is defined as the group of North Carolinians that must comply with the proposed rule. The regulated community may include one or more of the following: Specific Industries and Businesses, Specific Geographic Areas, Local or State Governments, Citizens, and Generic Activities (e.g., Use of solvents, tank storage of chemicals).
Fixed Capital Investment	This is the estimated cost associated with a capital investment that is made to comply with the proposed rule. Some examples of fixed capital investments associated with the Tar-Pamlico NSW Rules include: wastewater treatment plant modifications, stormwater best management practices (such as wet detention ponds), and the installation of water control structures.
Operation and Maintenance Cost	Operating and maintenance costs include recurring costs, such as labor and equipment, that the regulated entity must obtain to comply with the proposed rule. Some examples of operation and maintenance costs associated with the Tar-Pamlico NSW Rules include: maintenance of additional basins at treatment plants, mowing and repair of best management practices, and updating nutrient management plans.
Planning Costs	The expense of creating plans/designs for the regulated party to comply with the proposed rule. To determine an estimated planning cost, local government staff time and/or consultant time was multiplied by an appropriate compensation rate.
Regulatory Transaction Costs	The estimated expense to the regulated community associated with its new interactions with the implementing agency as a result of the proposed rule. There are five possible types of regulatory transaction costs (only the applicable ones were mentioned for each rule). Note that the staff time may apply to many different groups, including local government, industry, business, or consultant staff. The compensation rate used should be adjusted accordingly. • Inspections • Monitoring • Periodic Reporting • Permit Applications • Permit Modification
Opportunity Costs	Opportunity costs associated with the proposed rule are estimated losses in revenue to the regulated party due to one of the following effects of the proposed rule: • Delays associated with the permitting process. • Restrictions to public resources, such as fisheries. • Lowered market value of property due to land use restrictions.
Other Costs	These are additional estimated costs that do not fall under the previous cost categories. An example of an “other cost” could be indirect benefits to a regulated party as a result of the implementation of the proposed rule (such as increased barriers for competitors to enter into a market).

4-B. Implementing Agency Costs/Savings

The costs to DWQ in implementing the Tar-Pamlico NSW Rules represent opportunity costs for DENR to implement the rule component. No new funds are being requested for implementation, but tasks will be integrated into existing job description and folded into work loads of existing staff.

Description of the Implementing Agency	This part describes the branch, section, and unit of DENR that will be responsible for implementing the proposed rule. If this group is currently administering any similar programs, they will be described.
Regulatory Development Costs	This part describes the tasks and estimated opportunity costs for DENR to develop and propose this rule as well as make future modifications.
Monitoring and Record-keeping Costs	This describes the tasks and estimated opportunity costs for DENR to ensure compliance with the proposed rule and to maintain the required records of compliance.
Permitting Costs	This part states the number and type of permits that will have to be processed each year by DENR staff and an estimate of potential opportunity costs to the agency.
Inspection and Enforcement Costs	This part describes the tasks and estimated opportunity costs for inspecting the regulated party and an inspection schedule if applicable.
Other Costs	If these are additional tasks and opportunity costs that do not fall under the previous categories, they can be covered in this section.

4-C. Public Beneficiary Costs/Savings

Description of the Public Beneficiary	These are parties that benefit economically from the proposed rule as well as parties that benefit in a non-economic manner; for example, the public at large benefits from the availability of recreational resources. In addition, a "benefit" can include maintaining the status quo if the trends indicate that environmental conditions would worsen without regulatory intervention. The section contains five separate parts. For each part, the underlying assumptions (if applicable) and the sources of information are given.
Health Benefits	This part includes benefits and potential benefits of the proposed rule to human health. An example is making the water safe for recreational uses.
Environmental Asset Benefits	This part includes economic benefits that are associated with the environmental asset that is being protected and/or improved. Some examples include: industries/water treatment plants that rely on clean water, tourism industries, owners of riverside property, and fisheries.
Ecosystem Benefits	This part includes benefits to the ecosystem as a whole that do not appear to be directly associated with an economic value. An example may be to increase the available habitat for plants and animals (including endangered species).
Other Benefits	If these are additional benefits that do not fall under the previous benefits categories, they can be covered in this section.