

# HOUSE BILL 239: Restore Water Quality in Jordan Reservoir

2009-2010 General Assembly

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<b>Committee:</b>	House Judiciary I	<b>Date:</b>	May 11, 2009
<b>Introduced by:</b>	Representatives Allen, Gibson, Bordsen	<b>Prepared by:</b>	Jeff Hudson
<b>Analysis of:</b>	PCS to Second Edition H239-CSSB-30 [v.1]		Committee Counsel

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**SUMMARY:** *The Proposed Committee Substitute for House Bill 239 would establish a calendar year 2016 compliance date for the Jordan Water Supply Nutrient Strategy for Wastewater Discharge Requirements rule; disapprove the Jordan Water Supply Nutrient Strategy for Stormwater Management of Existing Development rule; and provide an alternative process for managing stormwater from existing development in the Jordan watershed.*

[As introduced, this bill was identical to S166, as introduced by Sen. Foriest, which is currently in Rules and Operations of the Senate.]

## BACKGROUND:

Jordan Lake is located in the piedmont region of central North Carolina in the upper Cape Fear River Basin. Its watershed contains large portions of the urbanized Triangle and Triad regions as well as significant agricultural lands. The Lake was created in 1983 for the purposes of flood control, downstream water quality, fish and wildlife conservation, recreation, and water supply.

Jordan Lake has been consistently rated as eutrophic or hyper-eutrophic since its impoundment in 1983. "Eutrophic" is an over-abundance of nutrients in the lake, primarily nitrogen and phosphorus, which may result in algal blooms and poor water quality. Nutrients make their way to the lake from sources such as wastewater discharges, rainfall runoff from agriculture, and stormwater runoff from new and existing developed lands throughout the entire Jordan watershed. Excessive nutrient inputs drive excessive growth of microscopic algae, which imparts a greenish, murky appearance to the water, causes taste and odor problems in potable water, and robs the water of oxygen, stressing or killing fish and other aquatic life. While not necessarily making the lake unfit for fishing, swimming, or drinking uses, excess nutrients are impacting these uses, and undesirable algae are present in the lake.

The State began taking actions to address the nutrient problems early in the lake's history. The Environmental Management Commission (EMC) designated the Reservoir a Nutrient Sensitive Water (NSW) the year of its impoundment, and imposed phosphorus limits on wastewater dischargers. The lake did not respond to these controls, and in 2002, the EMC determined that the Upper New Hope arm was impaired after it exceeded the State's chlorophyll-a standard. The rest of the lake exceeded the standard in 2006. (Chlorophyll-a is used as an indicator of excess nutrients in waterbodies.)

Several pieces of legislation directed the EMC to address Jordan Lake's impairment. The Clean Water Responsibility Act of 1997 required the EMC to establish improvement goals for nutrient-impaired waters, and to develop and implement management plans that entail sharing of responsibility for reducing nutrient inputs to these waters between point sources and nonpoint sources in a fair, reasonable, and proportionate manner. Session Law 2005-190 directed the EMC to adopt permanent rules to establish and implement nutrient management strategies to protect drinking water supply reservoirs. In addition, requirements of the federal Clean Water Act were set in motion when the lake became impaired, including the need to set load reduction limits for point and nonpoint sources and to enforce discharger limits.

# House Bill 239

Page 2

To comply with the Clean Water Responsibility Act of 1997, Haw wastewater dischargers developed a reservoir model in the late 1990s to estimate the lake's nutrient reduction needs. The EMC approved a reservoir model in 2002. Beginning in 2003, the Division of Water Quality (Division) in the Department of Environment and Natural Resources (DENR) conducted a 1½-year stakeholder meeting process, facilitated by the Triangle J Council of Governments, to seek consensus on nutrient loading goals, discharge allocation methods, and a conceptual nonpoint source strategy. In 2005, the Division held public meetings and solicited public comments on a rules framework. The Division then drafted a set of rules, and held technical stakeholder meetings through 2006 that resulted in rule refinements.

The formal rule-making process began when the rules were published on June 15, 2007, and a 90-day public comment period followed. This included three public hearings held in different locations in the watershed. Following the comment period, five Hearing Officers, all members of the EMC, deliberated for eight months over changes needed to address the comments received. The EMC adopted a revised set of rules in May, 2008.

In June 2008, the rules were brought before the Rules Review Commission (RRC). The RRC reviewed and approved the rules over the course of five meetings, with the last approvals on November 20, 2008. A large number of technical changes were made to the rules in response to objections from the RRC, but the content of the rules remained essentially unchanged.

The RRC received a sufficient number of objection letters to the rules to necessitate their review by the General Assembly during its 2009 Regular Session. Several disapproval bills were introduced, including House Bill 239, introduced by Representatives Allen, Gibson, and Bordsen. If one of the disapproval bills becomes law as introduced, the entire set of rules will not become effective. If no action is taken by the General Assembly on a disapproval bill, the rules will become effective upon adjournment of the 2009 Regular Session. *(Background information excerpted from the website of the Division at: <http://h2o.enr.state.nc.us/nps/JordanNutrientStrategy.htm>.)*

## **BILL ANALYSIS:**

### **Jordan Reservoir and Watershed**

The watershed that drains into Jordan reservoir includes portions of the municipalities of Alamance, Apex, Burlington, Carrboro, Cary, Chapel Hill, Durham, Elon, Gibsonville, Graham, Green Level, Greensboro, Haw River, Kernersville, Mebane, Morrisville, Oak Ridge, Ossipee, Pittsboro, Pleasant Garden, Reidsville, Sedalia, Stokesdale, Summerfield, Wilsonville, and Whitsett and the Counties of Alamance, Caswell, Chatham, Durham, Guilford, Orange, Rockingham, and Wake.

Please refer to the following maps for more information about the Jordan Reservoir and its watershed:

- The map entitled "Jordan Lake and Its Watershed" shows the reservoir, its watersheds and subwatersheds, the municipalities and counties that lie in whole or in part in the watershed, and the area and percentage of each county's inclusion in the watershed.
- The map entitled "Jordan Reservoir Watershed" more clearly delineates the subwatersheds and includes the percentage reductions of nitrogen and phosphorus loading from existing development required by NCAC 02B .0270 (Jordan Water Supply Nutrient Strategy: Wastewater Discharge Requirements), adopted by the EMC on May 8, 2008, and approved by the RRC on October 16, 2008
- The third, untitled map more clearly shows the reservoir itself and the extent of its three arms.

*(Maps from the website of the Division at: <http://h2o.enr.state.nc.us/nps/JordanNutrientStrategy.htm>.)*

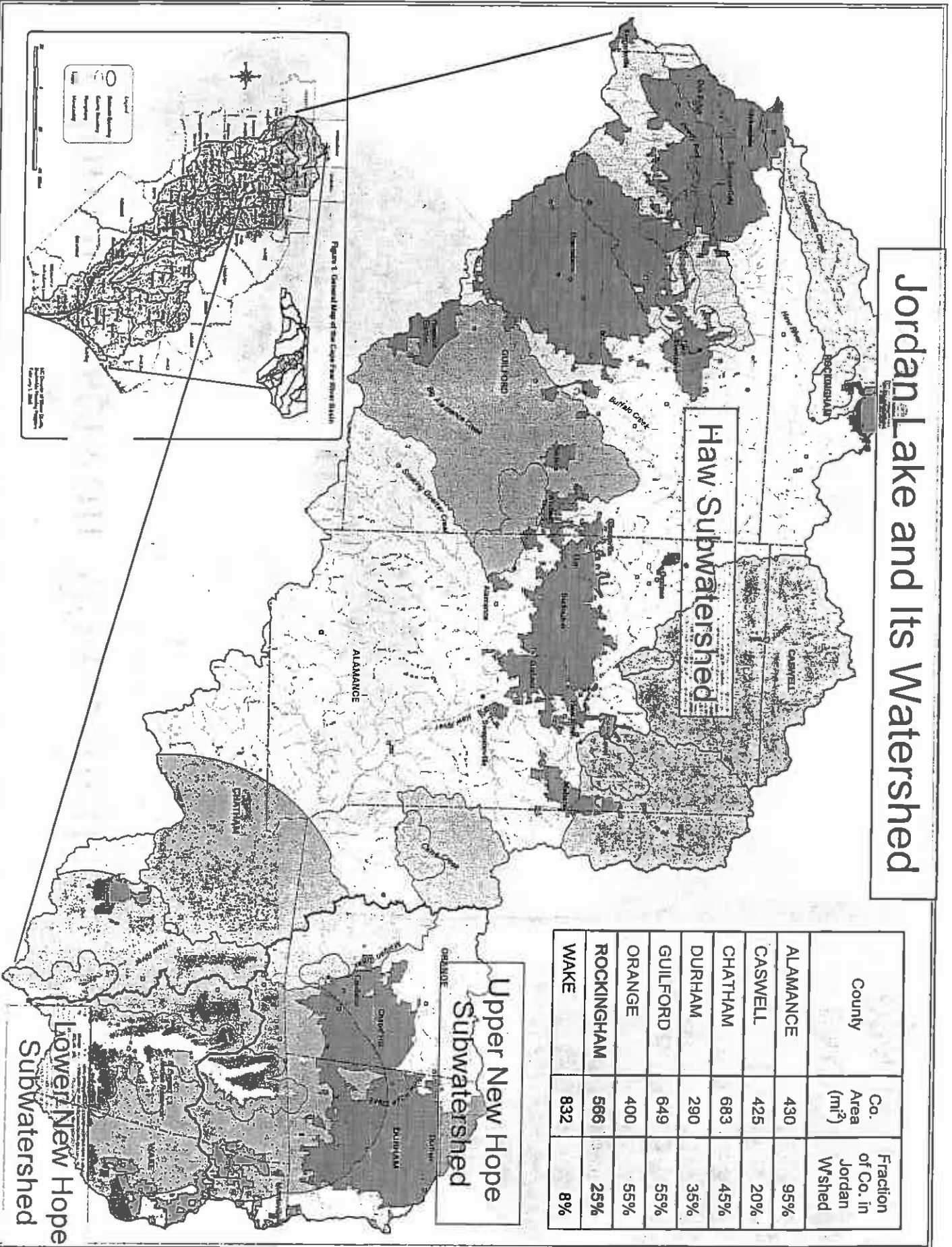
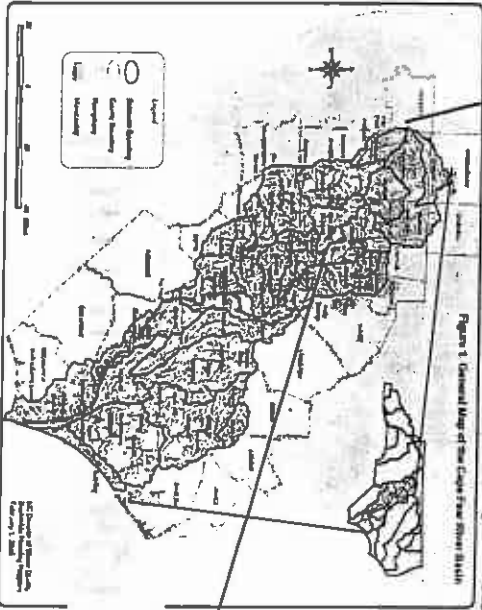
# Jordan Lake and Its Watershed

## Haw Subwatershed

County	Co. Area (mi <sup>2</sup> )	Fraction of Co. in Jordan Wshed
ALAMANCE	430	95%
CASWELL	425	20%
CHATHAM	683	45%
DURHAM	290	35%
GUILFORD	649	55%
ORANGE	400	55%
ROCKINGHAM	566	25%
WAKE	832	8%

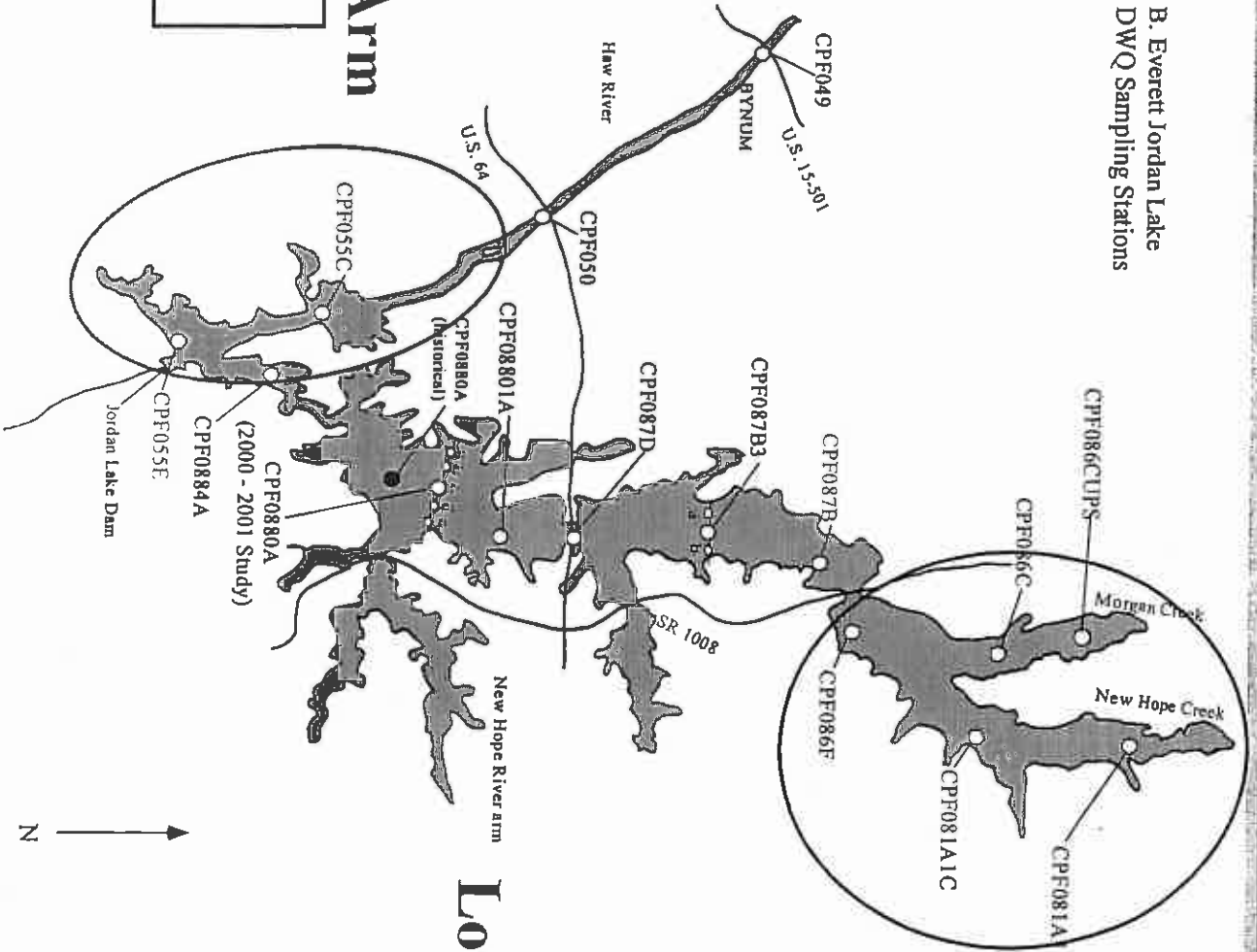
## Upper New Hope Subwatershed

## Lower New Hope Subwatershed





B. Everett Jordan Lake  
DWQ Sampling Stations



Haw River Arm

8% N  
5% P

Upper New Hope Arm

35% N  
5% P

Lower New Hope Arm

0% N  
0% P

© 2000 - 2001 DWQ Stations



# House Bill 239

Page 7

## Compliance Date for Wastewater Discharge Rule

Under 15A NCAC 02B .0270 (Jordan Water Supply Nutrient Strategy: Wastewater Discharge Requirements), adopted by the EMC on May 8, 2008, and approved by the RRC on October 16, 2008 (Wastewater Discharge Rule), each existing wastewater discharger with a permitted flow of greater than or equal to one hundred thousand (100,000) gallons per day would have to limit its total nitrogen discharge as provided under the rule no later than calendar year 2014.

**The Proposed Committee Substitute for House Bill 239 (PCS)** would establish a calendar year 2016 compliance date for the Wastewater Discharge Rule. The PCS would also direct the EMC to adopt a rule to replace the Wastewater Discharge Rule that is substantively identical to the requirements of the PCS.

## Existing Development Rule

Under 15A NCAC 02B .0266 (Jordan Water Supply Nutrient Strategy: Stormwater Management for Existing Development), adopted by the EMC on May 8, 2008, and approved by the RRC on November 20, 2008 (Existing Development Rule), and its accompanying rules, the following nutrient load reductions must be achieved for each arm of the Jordan Reservoir and its subwatershed.

	Upper New Hope Arm	Lower New Hope Arm	Haw Arm
Nitrogen	35% Reduction	0% Reduction	8% Reduction
Phosphorus	5% Reduction	0% Reduction	5% Reduction

Each local government in the Jordan watershed would have to identify the nutrient load reductions from existing development that it would need to achieve to satisfy the required nutrient reduction goals for its subwatershed. Local governments would have to develop long-range plans to implement nutrient load reductions from existing development, including overall compliance timeframes. These plans would be subject to EMC review and approval.

**The Proposed Committee Substitute for House Bill 239 (PCS)** would disapprove the Existing Development Rule and establish an alternative, phased-in process for achieving nutrient loading reductions from existing development as follows:

### Nutrient Monitoring

The PCS would require DENR to maintain an ongoing program to monitor water quality in each arm of Jordan Reservoir. On March 1, 2014 and every three years thereafter, DENR would report the results of monitoring in each arm of Jordan Reservoir to the Environmental Review Commission (ERC).

### Stage 1 Program to Control Nutrient Loading from Existing Development

The PCS would require municipalities and counties located in whole or in part in the Jordan watershed to implement a Stage 1 adaptive management program to control nutrient loading from existing development (Stage 1 program) in the Jordan watershed. The Stage 1 program would include all of the following measures:

- A public education program to inform the public of the impacts of nutrient loading and measures that can be implemented to reduce nutrient loading from stormwater runoff from existing development.

# House Bill 239

Page 8

- A mapping program that includes major components of the municipal separate storm sewer system, including the location of major outfalls and the names and location of all waters of the United States that receive discharges from those outfalls, land use types, and location of sanitary sewers.
- A program to identify and remove illegal discharges.
- A program to identify opportunities for retrofits and other projects to reduce nutrient loading from existing developed lands.
- A program to ensure maintenance of best management practices implemented by the local government.

A Stage 1 program would be subject to approval by the EMC.

## Stage 2 Program to Control Nutrient Loading from Existing Development

If the March 1, 2014, or any subsequent monitoring report for the Upper New Hope Creek Arm of Jordan Reservoir does not show that nutrient-related water quality standards are being achieved, a municipality or county located in whole or in part in the subwatershed of that arm would be required to develop and implement a Stage 2 adaptive management program to control nutrient loading from existing development in the Jordan watershed (Stage 2 program). If the March 1, 2017, or any subsequent monitoring report for the Haw River Arm or the Lower New Hope Creek Arm of Jordan Reservoir does not show that nutrient-related water quality standards are being achieved, a municipality or county located in whole or in part in the subwatershed of that arm would be required to develop and implement a Stage 2 program.

The Department could defer development and implementation of Stage 2 programs required in an arm of Jordan Reservoir if it determines that additional reductions in nutrient loading from existing development in that arm will not be necessary to achieve nutrient-related water quality standards. In making this determination, the Department would consider the anticipated effect of measures implemented or scheduled to be implemented to reduce nutrient loading from sources in the arm other than existing development. If any subsequent monitoring report for an arm of Jordan Reservoir shows that nutrient-related water quality standards have not been achieved, the Department would notify the municipalities and counties located in whole or in part in the subwatershed of that arm that they must develop and implement a Stage 2 program.

DENR would establish a load reduction goal for existing development for each municipality and county required to implement a Stage 2 program. The load reduction goal would be designed to achieve an eight percent (8%) reduction in nitrogen loading of surface water from existing development and a five percent (5%) reduction in phosphorus loading of surface water from existing development relative to the baseline period 1997 through 2001. The baseline load for a municipality or county could not include nutrient loading from lands under State or federal control or lands in agriculture or forestry.

DENR would notify the local governments in each subwatershed that either:

- Implementation of a Stage 2 program will be necessary to achieve water quality standards in an arm of the reservoir and direct the municipalities and counties in the subwatershed to develop a load reduction program.
- Implementation of a Stage 2 program will not be necessary at that time but will be reevaluated in three years based on the most recent water quality monitoring information.

# House Bill 239

Page 9

A local government receiving notice of the requirement to develop and implement a Stage 2 program would not be required to submit a program if the local government demonstrates that it has already achieved the required reductions in nutrient loadings.

A Stage 2 program would be subject to approval by the EMC. The EMC must approve the program unless it finds that the local government can, through the implementation of reasonable and cost effective measures not included in the proposed program, meet the reductions in nutrient loading established by the Division by a date earlier than that proposed by the local government. If the EMC finds that there are additional or alternative reasonable and cost effective measures, the Commission could require the local government to modify its proposed program to include such measures to achieve the required reductions by the earlier date. In determining whether additional load reduction measures are reasonable and cost effective, the Commission would take into consideration, among other things, the increase in the per capita cost of a local government's stormwater management program that would be required to implement such measures and the cost per pound of nitrogen and phosphorus removed by such measures. The Commission could not require additional or alternative measures that would require a local government to:

- Install or require installation of a new stormwater collection system in an area of existing development unless the area is being redeveloped.
- Acquire developed private property.
- Reduce or require the reduction of impervious surfaces within an area of existing development unless the area is being redeveloped.

If at any time DENR finds that an arm of the Jordan Reservoir has achieved compliance with water quality standards, DENR would notify the local governments in the subwatershed. Subject to the approval of the EMC, a local government could modify its Stage 2 program to maintain only those measures necessary to prevent increases in nutrient loading from existing development.

The PCS would also require DENR to submit a model Stage 2 adaptive management program to control nutrient loading from existing development (model Stage 2 program) to the EMC for approval no later than July 1, 2013. The model Stage 2 program would identify specific load reduction practices and programs and reduction credits associated with each practice or program. DENR would consider the findings and recommendations of the Scientific Advisory Board and comments submitted by affected municipalities and counties. The EMC would approve a final model Stage 2 program no later than December 31, 2013.

## Additional Measures to Control Nutrient Loading from Existing Development

If the March 1, 2023, report or any subsequent monitoring report for the Upper New Hope Creek Arm of Jordan Reservoir shows that nutrient-related water quality standards are not being achieved, a municipality or county located in whole or in part in the Upper New Hope Creek Subwatershed would be required to modify its Stage 2 program to achieve additional reductions in nitrogen loading from existing development. The modified Stage 2 adaptive management program would be designed to achieve a total reduction in nitrogen loading from existing development of thirty-five percent (35%) relative to the baseline period 1997 through 2001. The Department would notify local governments of the requirement to implement additional measures to reduce nitrogen loading. Submission, review and approval, and implementation of a modified Stage 2 program would follow the same process and timeline for the initial Stage 2 program.

# House Bill 239

Page 10

## Enforcement

The provisions in the PCS would be enforced through DENR's existing civil, criminal, and injunctive remedies for violations of water quality laws.

## EMC to Adopt Substantively Identical Rule

The PCS would direct the EMC to adopt a rule to replace the Existing Development Rule that is substantively identical to the requirements of the PCS.

## No Change to Existing Regulatory Authority.

The act would not limit, expand, or modify the authority of the EMC to undertake alternative regulatory actions otherwise authorized by State or federal law, including, but not limited to, the reclassification of waters of the State pursuant to G.S. 143-214.1, the revision of water quality standards pursuant to G.S. 143-214.3, and the granting of variances pursuant to G.S. 143-215.3.

## Scientific Advisory Board

The PCS would require the Secretary of Environment and Natural Resources to establish a Nutrient Sensitive Waters Scientific Advisory Board (Scientific Advisory Board) no later than July 1, 2010. The Scientific Advisory Board would consist of five to ten members with expertise and experience in stormwater management related issues. Under the PCS, the Scientific Advisory Board would have to do all of the following no later than July 1, 2012:

- Identify management strategies that can be used by local governments to reduce nutrient loading from existing development.
- Evaluate the feasibility, costs, and benefits of implementing the identified management strategies.
- Develop an accounting system for assignment of nutrient reduction credits for the identified management strategies.
- Identify the need for any improvements or refinements to modeling and other analytical tools used to evaluate water quality in nutrient-impaired waters and nutrient management strategies.

**EFFECTIVE DATE:** This act would become effective when it becomes law.