Jordan Lake Rules

What Should the Environmental Management Commission Do?

Executive Summary
July 17, 2007

The Jordan Lake Rules are set forth in 76 pages of complicated technical jargon that pose a challenge to even the most educated among our citizens. The short story is the Rules are based upon faulty science, place the same restrictions for the stagnant New hope River on the clean, high flow rate Haw river and are very unlikely to achieve the results that they espouse. The Commission making up these rules is made up of non-elected people that do not represent or answer to the Counties, Cities and Towns to be burdened by these rules. These comments are respectfully provided in the hope that they will provide some illustration as to what the future holds for all of us if these rules are allowed to proceed without significant amendment.

Background and History

Jordan Lake was created by the damming of Haw River, New Hope Creek, and Morgan Creek. Although the U.S. Army Corps of Engineers began construction in 1967, the lake was not filled until 1982. The lake was created for flood control, water supply, water quality, recreation, and fish and wildlife conservation. It has historically been rich in nutrients, not all of which are conducive to plant and animal life. The upper ends of the lake, (fed by the New Hope stream) routinely violate state and federal standards for *chlorophyll a*, a pigment in algae which is a sign of too much nitrogen and phosphorus. While algae is a food source for fish, too much of it kills off aquatic life. The referred to data suggests that the entire lake is now polluted by excessive nitrogen and phosphorus. 68% of the nitrogen and 84% of the phosphorus in the lake comes from non-point sources, without a single point of origin, such as runoff from roads, rooftops, and farms. Conversely, point sources, identifiable and confined discharge points, account for 32% of the nitrogen and 16% of the phosphorus pollution. Point sources on Jordan Lake include 65 permitted wastewater treatment plants that release more than 75 million gallons of waste per day into the watershed. The Jordan Lake Watershed encompasses

such a large and diverse area; it has been separated into three distinct arms: the Upper New Hope Arm, Lower New Hope Arm, and Haw River Arm. The affected portions of Alamance County lie within the Haw River Arm.

Regulatory History

1973 – Textile plants along the Haw River were required to submit samples of intake and discharge water to state and local authorities. This sample data was ignored by the Jordan Lake Rules creators.

1983 - Jordan Lake received a Nutrient Sensitive Waters designation in 1983, requiring nutrient management measures to reduce and prevent excessive growth of algae.

1997 - The Clean Water Responsibility Act, passed in 1997, included legislation to further address problems in Nutrient Sensitive Waters, specifically setting Nitrogen and Phosphorus limits for wastewater treatment plants permitted under the National Pollutant Discharge Elimination System (NPDES).

2003 - In 2003, chlorophyll-a levels were so elevated in the Upper New Hope Arm of the Jordan Lake Watershed, it was classified as impaired, which required the development of a Total Maximum Daily Load (TMDL), the calculation of a maximum amount of a pollutant a water body can receive and still meet water quality standards.

2006 - The Haw River Arm, in which Environmental Management Commission is located, was listed as impaired for chlorophyll-a in 2006 and a TMDL developed. With the seemingly deteriorating condition of the lake, the State took action by developing the Jordan Lake Rules in order to protect water quality.

2008 - Drafting of the rules began in 2005, with an expected promulgation date of summer 2008, after a lengthy period of review and revisions.

To date, the Jordan Lake Rules are the most stringent water basin protection rules developed in the State of North Carolina, going far above the provisions of the Neuse and Tar-Pamlico river basin rules. The Jordan Lake Rules ***designate the entire Alamance County watershed as a critical water supply watershed***, allowing the State to take even

more stringent action to protect water quality at any time. The Rules also classify all of the area within the Jordan Lake watershed as a water supply watershed.

Rule Requirements Based Upon Bad Science

The Jordan Lake Rules place specific load reduction goals on each separate arm, which the region, as a whole, must meet collectively. Load reduction targets are based on sampling done during the baseline loading period (1997-2001). However data exists that shows the Haw River is in much better condition. A baseline load was determined for each arm of the watershed; in the Haw River arm, the Nitrogen baseline load is 2,790,217 lbs/year and the Phosphorus baseline load is 378,569 lbs/year. The Jordan Lake Rules call for an 8% reduction in Nitrogen and a 5% reduction in Phosphorus.

The Sources of the Nitrogen and Phosphorus

The Rules regulate three main sources of pollutant discharge: agricultural, wastewater, and stormwater runoff (generated from development).

Agricultural Requirements

The agricultural nutrient management requirements apply to cropland, greenhouses, golf courses, public grassy areas, and lawn and garden areas. The rules require that anyone who applies fertilizer to these lands must actively work towards nutrient management, including attending a nutrient management training class and developing and implementing a Nutrient Management Plan which articulates reduction goals. Farmers have long since had a fertilizer management plan and use it sparingly since at $500.00 per ton is extremely expensive. However, under the Jordan Rules, there is no distinction between farm use where fertilizers are deliberately and scientifically applied to tilled earth, and residential use, lawn care companies and homeowners, where fertilizers are haphazardly applied without soil testing and using methods that do not prevent discharge into streets and storm sewers. There are no predefined reduction goals; fertilizer application must collectively limit nutrients. Applicators are able to set their own reduction goals, which will be overseen by a Watershed Oversight Committee, composed of members from sectors identified in the Rules. The Watershed Oversight Committee will have two years to achieve some form of reductions from fertilizer application in the watershed; if reductions are not achieved, the State will convene a Local Advisory Committee to oversee the activities of applicators and the Watershed

Oversight Committee. If the Local Advisory Committee fails to make any progress in nutrient reduction in five years, the State will implement stricter rules for the agricultural sector.

Wastewater Treatment Requirements

Wastewater treatment plants will be heavily regulated under the rules, with strict Nitrogen and Phosphorus discharge limits. Practically every plant within the Haw River arm will have to implement costly plant upgrades in order to meet their requirements. Nitrogen reduction targets must be met by 2016 and Phosphorus reduction targets must be achieved within one year of rule promulgation (expected to be July 2008). While this section of the rules will not affect Environmental Management Commission government, it will affect the municipalities and sanitary districts within the County.

Development Requirements (Stormwater)

The Stormwater section of the rules encompasses both new development and existing development and essentially requires the development of a stormwater program. This program must include a plan to ensure enforcement and compliance, a plan to ensure the installation and maintenance of Best Management Practices, a plan to ensure the maintenance of load reductions, a public education program for home fertilization practices, mapping of the storm sewer system, and a program to identify and remove illegal discharges to the storm sewer system or water bodies (not all of these requirements will apply to Environmental Management Commission). Initial loading targets for development have been set at 3.8 lbs/acre/year for Nitrogen and 1.4 lbs/acre/year for Phosphorus.

New Development

For new development, an approved stormwater management plan is required for all new residential development over one acre in size and all new commercial and industrial development over a half acre in size. The stormwater management plan will articulate the load reductions expected to be achieved and the Best Management Practices that will be put into place. Best Management Practices (BMPs) are structural or non-structural measures that reduce non-point source inputs to receiving waters in order to protect water quality. Non-structural BMPs seek to control and prevent pollutants from entering the water system. Examples include public education programs, land use

planning, hazardous material disposal and recycling programs, spill prevention, and street maintenance. Structural BMPs are physical structures that are designed to remove pollutants from stormwater runoff. Examples include stormwater wetlands, bioretention areas, wet detention ponds, grassed swales, and riparian buffers. Although each of these BMPs is used to remove pollutants, particularly Nitrogen and Phosphorus, from stormwater runoff, they differ in the amount of pollutants removed, cost of implementation, and applicability to the geography of the land. Installation of structural BMPs and implementation of non-structural BMPs will assist in meeting the required load reductions. If reductions in excess of the load requirement are achieved, a credit will be generated. The rules allow for the generation and trading of credits for excess load reductions. Credits can either be bought or traded among other governmental entities within the same arm of the watershed; Environmental Management Commission may be able to either fulfill their load reductions by buying credits or generate extra credits in order to sell and make a marginal profit.

Existing Development

Existing development requirements are similar to new development, with the inclusion of retrofitting requirements. Stormwater control measures will be required to be installed on existing structures. The County will have three years to conduct a feasibility study determining the likely ability to impose retrofits on existing development and propose a pace for retrofitting. The retrofit plan must be implemented within four years of rule promulgation.

Additional stormwater requirements include a riparian buffer protection program with an enforceable ordinance. A riparian buffer occurs along stream banks and around other bodies of water and consists of sparse woody vegetation that acts as a filter to remove pollutants from stormwater and groundwater runoff before it reaches surface waters. The rules require a two-zone mandatory fifty foot (50') buffer on all perennial and intermittent streams, lakes, and ponds. The rules specify what uses are allowed and not allowed within the buffer, with the option of mitigation for denied uses. The County has fourteen months after rule promulgation to implement the riparian buffer program.

A Model Has Not Yet Been Developed

The State must develop a model local stormwater program for local governments before any of the stormwater requirements can be implemented and enforced. The model

program must be designed to specify individual government responsibilities in load reduction and provide calculations of credit generation for load reducing activities, such as street sweeping, removal of existing built-upon area, requiring the over-treatment of runoff, and adoption of public education programs. The model program allegedly will be issued within a year of rule promulgation; local governments have six months after that to submit their proposed stormwater program and another year to implement it. The retrofit feasibility study allegedly should be submitted and implemented in approximately two additional years. This is putting the cart before the horse. The Model must be developed first.

Rule Revision is Needed Because of the Use of Flawed Data

Local governments in the Haw River arm have organized into a coalition (Haw River Clean Water Agencies) to protest certain provisions of the rules. Initially there were three main concerns:

1- the accuracy of modeling data;
2- the interpretation of the chlorophyll-a standard; and
3- the presence of alternative data indicating less severe water quality.

Chlorophyll-a data, used in the water quality model to predict water quality conditions, was highly contested due to the use of an **incorrect analysis protocol** by the State from 1996 to 2000. Despite evidence this data was flawed, the State utilized it in the water quality model, supplementing it with data collected from fourteen sampling sites in 2000 and 2001. 2000 and 2001 were drought years which likely skewed the data. In addition, the State's use of an annual standard for chlorophyll-a was thought to have skewed data as well, through the inclusion of summer data, during which algae growth is typically high.

Data from USGS sampling showed a much different scenario, illustrating that the Haw River arm is compliant for chlorophyll-a concentrations 93% of the time. In light of the USGS data and other data sources showing more favorable conditions in the lake, the Haw River Clean Water Agencies proposed in 2001 to collaborate with the State to collect more reliable data, an offer which was flatly turned down by the State.

However, the group did hire an independent lab to start monitoring for chlorophyll-a in March 2005. This monitoring, which continues to this day, showed much lower

chlorophyll-a values, **evidence that the State has ignored altogether**. In addition to concern about the faulty science behind the water quality modeling, the State cannot make any assurances that water quality will actually improve with the passage of the Jordan Lake Rules.

With no progress made in terms of data accuracy, the Haw River Clean Water Agencies called attention to the feasibility of upgrading wastewater treatment plants to comply with the rules and the existing development retrofit requirements. The group alleged that neither provision was feasible and too costly to implement. After intensive lobbying, the State made a few concessions. The deadline for wastewater dischargers to comply with Nitrogen reductions was extended to 2016 to give them more time to procure funding for treatment plant upgrades. Compliance with Phosphorus reductions must be achieved within one year of rule promulgation. The retrofit rule was significantly reduced in stringency with the removal of the requirement of a specific number of retrofits per year based on population. The rule no longer specifies the intensity of retrofitting, but instead leaves the decision up to local governments to determine feasibility.

Although they have made some small gains, the Haw River Clean Water Agencies continue to protest the rules, with current opposition focusing on the infeasibility of the existing development rules, the prohibitive costs associated with wastewater treatment plant compliance, and the State's issuance of an unclear financial impact statement that does not represent the real costs of compliance. In addition, the group is currently arguing about a perceived inequity in the rules, with very little restrictions being placed on agriculture and forestry. **While I share many of the group's concerns, I am convinced that the requirements currently placed on agriculture and forestry are completely adequate and Environmental Management Commission needs to continue to represent our agricultural interests in the County and the measures farmers have already voluntarily implemented in order to protect water quality.**

Impacts

The Jordan Lake Rules will undoubtedly have an enormous impact on Alamance County. Compliance with the rules will be costly in terms of both money and staff. The State has estimated the compliance costs for requirements applicable to the Alamance

County citizens to exceed $ 100,000,000.00. I believe it will be much more in terms of jobs lost from businesses leaving and the detrimental effect the Rules will have on the County's efforts to attract new business.

The requirements of the stormwater program will have a major financial impact on the County. A program will have to be developed from the ground up, as the County is currently exempt from the National Pollutant Discharge Elimination System (NPDES) permit program and therefore has never been required to have a stormwater program before. A comprehensive stormwater program, encompassing enforcement and education, will be required. For the first time in the County's history, stormwater control measures will be required on development. These measures will need to be reviewed, inspected, and maintained, all of which will require additional staff. Staff time and funding will also be necessary for stormwater public education efforts. Staff time in the County Cooperative Extension Service will also be affected, as the office will most likely be selected as the training provider of the nutrient management application classes.

The rules will impact economic development within the region. There is a very real fear that developers will be hesitant to site new development in the County due to the excessive restrictions and locate elsewhere, outside of the watershed where the development laws are more lax. The rules would create a significant financial burden on developers through higher costs for property and construction, which would then be passed onto the consumer through higher home prices and higher rent for commercial space. These increased requirements and costs will put residents and businesses in the County at a disadvantage in efforts to recruit new industries and encourage the expansion of current facilities. Existing development retrofit requirements will incur additional costs to the County, which may lead to higher fees to do business in the County.

State Highway System Compliance

North Carolina has 78,000 miles of highway much of which is currently in need of repair. ***There is noticeably no mention in these rules of any requirements on the State who as owner of the roads in the County has responsibility for the ditches and runoff therefrom.***

Action Steps

The proposed rules were authorized for public comment by the North Carolina Environmental Management Commission on March 8, 2007. Therefore, we are currently in the middle of the public comment period. I urge Environmental Management Commission to listen carefully to the responses to the rules. It is also important to get as many people involved as possible in the re-writing of these rules, including but not limited to elected and appointed officials, city and County staff, citizens, the development community, and the farming community.

Last but not least local governments need to be continuously and consistently represented by the Environmental Management Commission in the development of the Nutrient Management Plan and the Environmental Management Commission also needs to pay continuous attention to local government concerns.

Respectfully submitted this 17th day of July, 2007.

Alamance County

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