

2013 Jordan Lake Legislation

GENERAL ASSEMBLY OF NORTH CAROLINA SESSION 2013

SESSION LAW 2013-395 SENATE BILL 515

AN ACT TO DELAY ADDITIONAL IMPLEMENTATION OF THE JORDAN LAKE RULES AND JORDAN LAKE SESSION LAWS AND PROVIDE FOR ALTERNATIVE IMPLEMENTATION OF THE PROTECTION OF EXISTING BUFFERS RULE.

Whereas, the United States Congress authorized the United States Army Corps of Engineers (USACE) to create what is now the B. Everett Jordan Lake in 1963; and

Whereas, the USACE submitted a Final Environmental Impact Statement (EIS) in November 1971 that stated, "Of primary concern is the eutrophic tendency of the lake. Eutrophication is a term used to describe the natural change in productivity of a lake during aging. It is usually a long-term phenomenon, which may be measured in geologic time Studies have shown that, assuming that all other elements necessary are available, the amounts of nitrogen and phosphorus presently found in the influent are adequate to produce algae blooms in the lake."; and

Whereas, the USACE stated in the EIS, "Several studies have indicated that the major water quality problem will be associated with anticipated nuisance algal growths resulting from excess nutrients from upstream sources."; and

Whereas, the United States Environmental Protection Agency (EPA) commented in the EIS, "Nutrient concentration in both the Haw River and New Hope River are high, and nuisance algal growth detrimental to water supply and recreation are a virtual certainty Impoundment should not take place until there is a strong technical basis for the prediction that nuisance algal growths will not occur."; and

Whereas, the USACE, in responding to the EPA's comments in the EIS, stated, "... it is doubtful whether a strong technical basis exists for the prediction that nuisance algal growths will not occur on most existing reservoirs"; and

Whereas, the United States Department of the Interior Bureau of Sport Fisheries and Wildlife commented in the EIS that, "High nutrient concentrations will intensify and extend water quality problems into the upper surface layers. Therefore, impoundment will create a pollution problem to the detriment of the ecosystem."; and

Whereas, the EIS contained a summary of complaints from pending litigation that included, "Even in the absence of nutrients from wastes, the shallowness ... would ensure abnormally heavy algae growths that could not be controlled Probably the most serious deficiency of defendants' environmental statement is its de-emphasis on the certainty that the water ... will be of exceptionally bad quality."; and

Whereas, despite the many inherent challenges of managing the water quality of Jordan Lake, the General Assembly remains committed to addressing issues that affect the water quality of the Lake; and

Whereas, it is the intent of the General Assembly to continue implementation of current measures to address water quality issues in Jordan Lake; and

Whereas, it is the intent of the General Assembly to temporarily delay additional implementation of measures to address water quality issues in Jordan Lake in order to allow for further evaluation of those measures and further exploration of other measures and technologies to improve the water quality of the Lake; Now, therefore,

The General Assembly of North Carolina enacts:

PART I. DELAY ADDITIONAL IMPLEMENTATION OF THE JORDAN LAKE RULES AND THE JORDAN LAKE SESSION LAWS

SECTION 1.(a) For purposes of this act, the following definitions apply:

- (1) "Jordan Lake Rules" means all of the following rules:
 - a. 15A NCAC 02B .0262 (Jordan Water Supply Nutrient Strategy: Purpose and Scope)
 - b. 15A NCAC 02B .0263 (Jordan Water Supply Nutrient Strategy: Definitions)
 - c. 15A NCAC 02B .0264 (Jordan Water Supply Nutrient Strategy: Agriculture)
 - d. 15A NCAC 02B .0265 (Jordan Water Supply Nutrient Strategy: Stormwater Management for New Development)
 - e. 15A NCAC 02B .0266 (Jordan Water Supply Nutrient Strategy: Stormwater Management for Existing Development)
 - f. 15A NCAC 02B .0267 (Jordan Water Supply Nutrient Strategy: Protection of Existing Riparian Buffers)
 - g. 15A NCAC 02B .0270 (Jordan Water Supply Nutrient Strategy: Wastewater Discharge Requirements)
 - h. 15A NCAC 02B .0271 (Jordan Water Supply Nutrient Strategy: Stormwater Requirements for State and Federal Entities)
 - i. 15A NCAC 02B .0272 (Jordan Water Supply Nutrient Strategy: Fertilizer Management)
 - j. 15A NCAC 02B .0311 (Cape Fear River Basin)
- (2) "Jordan Lake Session Laws" means all of the following Session Laws or portions of Session Laws:
 - a. S.L. 2009-216.
 - b. Part II of S.L. 2009-484.
 - c. Section 14 of S.L. 2011-394.
 - d. Section 12.1 of S.L. 2012-187.
 - e. Subsections 9(c) through 9(g) of S.L. 2012-200.
 - f. Subsections 11(a) through 11(e) of S.L. 2012-201.

SECTION 1.(b) The implementation dates of the Jordan Lake Rules and Jordan Lake Session Laws that begin July 1, 2013, or later shall be delayed for a period of three years.

PART II. IMPLEMENTATION OF RULE FOR PROTECTION OF EXISTING BUFFERS

SECTION 2.(a) The definitions set out in G.S. 143-212 and 15A NCAC 02B .0267 (Jordan Water Supply Nutrient Strategy: Protection of Existing Riparian Buffers) apply to this section. For purposes of this section, "Protection of Existing Riparian Buffers Rule" means 15A NCAC 02B .0267 (Jordan Water Supply Nutrient Strategy: Protection of Existing Riparian Buffers).

SECTION 2.(b) Protection of Existing Riparian Buffers Rule. – Until the effective date of the revised permanent rule that the Commission is required to adopt pursuant to Section 2(d) of this act, the Commission and the Department shall implement the Protection of Existing Riparian Buffers Rule as provided in Section 2(c) of this act.

SECTION 2.(c) Implementation. – The Protection of Existing Riparian Buffers Rule shall be implemented as follows:

- (1) Notwithstanding the Table of Uses set out in subdivision (9) of the Protection of Existing Riparian Buffers Rule, utility, nonelectric, other than perpendicular crossings that have impacts only in Zone Two shall be categorized as exempt.
- (2) Notwithstanding the Table of Uses set out in subdivision (9) of the Protection of Existing Riparian Buffers Rule, the piping of a stream allowed under a permit issued by the United States Army Corps of Engineers shall be categorized as an allowable use.
- (3) Notwithstanding the definition of "Airport Facilities" set out in sub-subdivision (b) of subdivision (2) of the Protection of Existing Riparian Buffers Rule, "Airport Facilities" shall include any aeronautic industrial facilities that require direct access to the airfield.

SECTION 2.(d) Additional Rule-Making Authority. – The Environmental Management Commission shall adopt a rule to amend 15A NCAC 02B .0267 (Jordan Water Supply Nutrient Strategy: Protection of Existing Riparian Buffers) consistent with Section 2(c) of this act. Notwithstanding G.S. 150B-19(4), the rule adopted by the Commission pursuant to this section shall be substantively identical to the provisions of Section 2(c) of this act. Rules adopted pursuant to this section are not subject to Part 3 of Article 2A of Chapter 150B of the General Statutes. Rules adopted pursuant to this section shall become effective as provided in G.S. 150B-21.3(b1) as though 10 or more written objections had been received as provided by G.S. 150B-21.3(b2).

SECTION 2.(e) Sunset. – Section 2(c) of this act expires on the date that rules adopted pursuant to Section 2(d) of this act become effective.

PART III. EFFECTIVE DATE

SECTION 3. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 26th day of July, 2013.

s/ Philip E. Berger
President Pro Tempore of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Pat McCrory
Governor

Approved 10:47 a.m. this 23rd day of August, 2013

**GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013**

**SESSION LAW 2013-360
SENATE BILL 402**

The General Assembly of North Carolina enacts:

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JORDAN LAKE WATER QUALITY IMPROVEMENT DEMONSTRATION PROJECT

SECTION 14.3A.(a) Jordan Lake Nutrient Mitigation Demonstration Project. – The Department of Environment and Natural Resources shall establish a twenty-four-month demonstration project for the management of nutrients in Jordan Lake. The demonstration project shall specifically focus on preventing and reducing harmful algal blooms and excessive chlorophyll as well providing other nutrient mitigation measures in the Haw River arm and the Morgan Creek arm of Jordan Lake. In conducting the demonstration project, the Department shall enter into a contract with a third party that can deploy floating arrays of in-lake, long-distance circulators to reduce or prevent the adverse impacts of excessive nutrient loads, such as algal blooms, taste and odor problems in drinking water, and low levels of dissolved oxygen. At a minimum, the in-lake mechanical system chosen must meet the following criteria:

- (1) Floating equipment shall be capable of continuous operation on solar power only during day, night, and extended overcast conditions 365 days per year. Continuous operation shall be defined as operating a minimum of ninety-seven percent (97%) of the total hours during the course of one year on solar power without reliance on any connection to the alternating current power grid.
- (2) Achieve a total flow rate through the impellers on a continuous basis for 24 hours per day of 72,000 gallons per minute in the Morgan Creek arm and 36,000 gallons per minute in the Haw River arm.
- (3) The circulation equipment shall be constructed primarily of Type 316 stainless steel metal for strength and superior corrosion resistance. Each machine shall also undergo a passivation bath, also known as stainless steel pickling, to restore corrosion resistance to the welds and other areas of imperfection.
- (4) The circulation equipment shall be mechanically operated by a motor that has the following characteristics:
 - a. Is brushless (brush motors requiring brush replacement are not acceptable).
 - b. Uses a direct drive with no gearbox to avoid lubrication maintenance.
 - c. Contains stainless steel bearings requiring no scheduled lubrication with a rated bearing life expectancy greater than 100,000 hours of continuous operation.
 - d. Is designed for a marine outdoor environment by having a sealed housing with polymeric encapsulated internal windings for superior corrosion resistance capable of withstanding environmental conditions of one hundred percent (100%) humidity, -40 degree to 140 degree Fahrenheit ambient temperature range, freeze resistance, condensation resistance, and splash resistance.
 - e. Has a 10 year or greater replacement warranty.
- (5) The circulation equipment shall be supplied with a motor controller and power management with the following features:

- a. An anti-jam reverse feature that is automated and self-clearing for a locked rotor triggered by high current occurrences caused by a jammed impeller.
 - b. Scheduled reverse cycles with daily reverse impeller cycling for self-clearing of impeller to minimize fouling.
 - c. Motor health status monitoring and recording that includes scheduled speed, commanded speed, actual speed, motor current, motor voltage, and motor controller errors.
 - d. Temperature-compensated charging so that battery charging parameters are automatically adjusted for optimum results based on battery temperature.
 - e. Power conservation and continued operation mode managed by a programmed algorithm for reducing motor load and continuing operation by incremental speed reduction that is automatically enabled when extended low-sunlight conditions occur or battery reserve power is reduced.
 - f. A NEMA 4 enclosure for protection against condensation and moisture in a marine environment with internal circuit boards that are conformal coated for added protection against moisture.
- (6) The battery power storage shall be a single battery (unless multiple batteries are connected in series) to avoid charging problems and shall have the following characteristics:
- a. A battery rating capacity, at a 24-hour discharge rate in watt hours, at least 50 times the motor load in watts during normal operation (full speed, peak load).
 - b. Is a submersible battery to avoid temperature extremes and extend battery life.
 - c. Complies with DOT HMR49 nonspillable battery requirements.
 - d. Is UL listed and compliant to UL 1989.
 - e. Is maintenance-free and does not require rewatering.
 - f. Has a temperature sensor that monitors battery housing temperature and not ambient temperature to optimize charging cycles and extend battery life.
 - g. Is encased in double wall plastic and mounted in a stainless steel cage for safety and battery protection purposes.
- (7) The photovoltaic modules on the unit shall have the following characteristics:
- a. Have a nominal wattage rating that is five times the normal operating wattage of the motor to ensure continuous operation of the motor and impeller in all seasons.
 - b. Are monocrystalline and not multicrystalline to ensure adequate power collection during low-sunlight conditions.
 - c. Are certified to UL 1703 Class C, IEC 61215, and IEC 60364 standards.
 - d. Have 25-year manufacturer performance warranties.
- (8) The digital controller of the machine shall have the following features:
- a. Flashing light-emitting diodes in the control box readily accessible by service personnel and providing continuous electrical diagnostics so the state of the power system can easily be determined.
 - b. Capability to store within controller memory a 30-day rolling log of all primary machine operation parameters.
- (9) The machine shall have an adjustable horizontal water intake that is capable of being field adjusted to a set level below the water surface without requiring machine removal or reinstallation. The intake shall bring a one-foot thick horizontal layer of water into the machine and include a singular hose of

- adequate length to reach the required intake depth setting. The flow through the hose and intake shall not exceed one foot per second.
- (10) The circulation equipment shall operate normally with the following maintenance features:
 - a. No scheduled lubrication requirements for any system component, including motor and motor bearings.
 - b. No brush replacement on motor, gearbox replacement, or motor replacement to be expected during a 25-year expected life of the circulation equipment.
 - c. No spare parts shall be required to be kept on hand.
 - d. The impeller assembly shall be removable without the use of tools.
 - e. The circulator equipment shall have a bird deterrent system to minimize bird roostings and droppings on photovoltaic modules.
 - (11) The flotation equipment shall have the following features and characteristics:
 - a. Adjustable float arms with a one-inch diameter shaft and turnbuckle to achieve optimal performance setting. The arms shall be a closed frame to minimize torsion forces on the circulation equipment and provide balanced flotation.
 - b. The flotation buoyancy shall be 1,350 pounds or more to support the weight of the assembled circulation equipment with a safety factor greater than 1.5. Each machine shall weigh approximately 850 pounds.
 - c. Flotation shall contain expanded polystyrene foam beads that are steamed together to minimize water adsorption.
 - d. The flotation shall not sink should the flotation encasement be punctured. Encasements shall be resistant to damage due to animals, ice, bumps by watercraft, and contact deterioration from petroleum products and should be suitable for marine use.
 - (12) The circulation equipment shall be capable of being held in position by either attachment to mooring blocks at the bottom of the reservoir or tethering to the shore.

Any contract entered into under this subsection shall not be subject to Article 3 or Article 8 of Chapter 143 of the General Statutes. Once installed, the Department shall monitor and evaluate the performance of the circulators in reducing the adverse impacts of harmful algal blooms and excessive chlorophyll and in providing other nutrient mitigation measures in the Haw River arm and the Morgan Creek arm of Jordan Lake and report the results of the monitoring and evaluation as provided in subsection (b) of this section.

SECTION 14.3A.(b) Report. – No later than October 1, 2015, the Department of Environment and Natural Resources shall submit an interim report on implementation of the demonstration project to the Environmental Review Commission and the Fiscal Research Division of the General Assembly. No later than April 1, 2016, the Department of Environment and Natural Resources shall submit a final report on implementation of the demonstration project to the Environmental Review Commission and the Fiscal Research Division of the General Assembly.

SECTION 14.3A.(c) Funding. – Of the funds appropriated by this act to the Clean Water Management Trust Fund, a total of one million three hundred fifty thousand dollars (\$1,350,000) for fiscal year 2013-2014 and three hundred thousand dollars (\$300,000) for fiscal year 2014-2015 shall be transferred to the Department of Environment and Natural Resources to be used to implement the Jordan Lake Water Quality Improvement Demonstration Project. In addition, the Department of Environment and Natural Resources shall contribute one hundred fifty thousand dollars (\$150,000) for fiscal year 2014-2015 and one hundred fifty thousand dollars (\$150,000) for fiscal year 2015-2016 from available funds, including those appropriated by this act, to support the Department's Division of Water Resources activities to manage and carry out the project, including water sampling, water testing, and water analysis of samples in

the lake and connecting creeks prior to and during the demonstration project defined in subsection (a) of this section.

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EFFECTIVE DATE

SECTION 38.6. Except as otherwise provided, this act becomes effective July 1, 2013.

In the General Assembly read three times and ratified this the 25th day of July, 2013.

s/ Tom Apodaca
Presiding Officer of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Pat McCrory
Governor

Approved 1:00 p.m. this 26th day of July, 2013