

**ATTACHMENT A-1**

**A RESOLUTION REGARDING THE TOWN'S RESPONSE TO  
JORDAN LAKE RULES  
Resolution No. 40/2009-10**

WHEREAS, the North Carolina General Assembly, Environmental Management Commission and Division of Water Quality have adopted new regulations limiting nitrogen and phosphorus inputs to Jordan Lake; and

WHEREAS, Rules adopted for Jordan Lake in 2008 by the Environmental Management Commission and by the General Assembly in 2009 could require that the Town of Carrboro and a few other local governments reduce nitrogen from "existing development" by 35 percent and phosphorous by 5 percent within the next 15 years; and

WHEREAS, the Town of Carrboro and its citizens have been leaders over the years in protecting the environment in water quality, land use regulation, stream buffer protection, open space preservation, and stormwater management, and support efforts to protect and restore Jordan Lake; and

WHEREAS, the financial impact of the existing development provisions in the rules could be significant, and

**THEREFORE BE IT RESOLVED BY THE CARRBORO BOARD OF ALDERMEN  
THAT**

- 1) The Board accepts the report prepared by staff, and directs staff to submit the Stage 1 Adaptive Management Program for Existing Development to DWQ
- 2) The Board directs the staff to draft recommendations for planning and financing of future measures to reduce nutrients from existing development.

The resolution is effective upon adoption.



## TOWN OF CARRBORO

NORTH CAROLINA

**TRANSMITTAL                      PLANNING DEPARTMENT**DELIVERED VIA: ☒ HAND ☐ MAIL ☐ FAX ☐ EMAIL

**To:**                      Steve Stewart, Town Manager  
                              Mayor and Board of Aldermen

**From:**                Randy Dodd, Environmental Planner

**Cc:**                    Roy Williford, Planning Director  
                              Patricia McGuire, Planning Administrator  
                              Michael Brough, Town Attorney  
                              Martin Roupe, Development Review Administrator  
                              Henry Wells, Sungate Engineering

**Date:**                November 4, 2009

**Subject:**            Jordan Lake Nutrient Rulemaking Update

Background and Summary

The North Carolina Environmental Management Commission (EMC) and Division of Water Quality (DWQ) have been managing nitrogen and phosphorus inputs to Jordan Lake since the early 1980's. In the past decade, legislative mandates and technical studies have prompted the EMC and DWQ to consider new regulations. The Board of Aldermen have received several reports from Town and Triangle J COG staff during this period and considered and pursued Land Use Ordinance and Town Code amendments in response to the draft rules. The rules (15A NCAC 02B.0262-.0273 and Session Laws 2009-216 and 2009-484) became in the summer of 2009. The purpose of this memo is to provide an update in consideration of the finalization of the rulemaking process.

InformationDescription of Strategy

The State's proposed strategy is designed around nitrogen (N) and phosphorus (P) reduction goals for each of the three arms (upper and lower New Hope and Haw River arms) of Jordan Reservoir. Separate goals were needed for each arm because of the hydrologically distinct behavior exhibited by each arm. The watershed of the Upper New Hope Arm, in which Carrboro, Chapel Hill, and Durham are located, faces the greatest reduction needs. The Lower New Hope Arm has the least reduction need. Its watershed

is relatively small but is being rapidly developed. Finally, the Haw River arm, which comprises 80% of the entire Jordan watershed, contains the rapidly growing Piedmont Triad area.

The proposed rules reflect a comprehensive effort to address nutrient sources to Jordan Reservoir to meet the reduction goals. The strategy includes reductions by point source discharges and in nutrient runoff from agriculture, existing development, and new development. In addition, riparian buffer protection rules are designed to stem loading increases that would otherwise result from loss of those landscape features, while requirements to establish buffers during a change in land use would achieve some loading reduction. Lastly, a fertilizer management rule results in training of fertilizer applicators in the watershed, potentially reducing nutrient inputs through education. Appendix 1 provides a fact sheet on the rules. The State is also setting up a website ([www.jordanlake.org](http://www.jordanlake.org)) to organize and disseminate related information for these newly established and complex set of rules. (As of the drafting of this memo, this website is not fully operational.)

### *Town Required Response*

A compliance activity and timeline is provided in Table 1 for sections of the rules that apply to the Town. The new rules require a Town response to address three sections of the rules: riparian buffers; stormwater management for new development; and stormwater management from existing development. The rules also include a provision for nutrient offsets, which allow new development to treat to less than the required nitrogen and phosphorus loading requirements in exchange for offset payments. This section of the rules also allows for a market based trading program to be established.

The most immediate Town compliance issue is the submittal of a Stage 1 Existing Development program plan. This plan must include: 1) a public education program; 2) a stormwater mapping program; 3) a program to identify and remove illegal discharges; 4) a program to ensure maintenance of best management practices implemented by the local government; and 5) a program to identify opportunities for retrofits and other projects to reduce nutrient loading from existing developed lands. Items 1-4 are included as current NPDES Phase II permit requirements. Item 5 is outside of the NPDES permit requirement; the Town's efforts with the Bolin Creek Watershed Restoration Team and State efforts for watershed management in the Little Creek watershed (which includes Morgan Creek) will help in retrofit identification. However, it is important to note that no capital funds have been set aside or are planned for to date for implementing retrofits which could be required as early as 2014. Substantial additional retrofit requirements to meet additional nutrient reductions in 2023 may be needed. The Town's draft submittal for Stage 1 is included as Appendix 2. Staff intend to bring to the Board of Aldermen in the near future a request to set a public hearing for minor modifications to ordinance provisions for water quality buffers to comply with DWQ's recently drafted Model Ordinance. Staff also intend to bring to the Board of Aldermen at a time to be determined a request to set a public hearing for stormwater requirements for new development to meet State requirements. It is also worth mentioning that the Town has no obligations for compliance with these rules for agricultural lands outside the municipal limits. Finally, by way of reminder, the Town's NPDES Permit will be up for renewal in 2010, and staff will be working closely with DWQ to determine requirements under the new permit.

**Table 1: Jordan Rule Provisions With Town Compliance Implications**

<b><u>Provision/Activity</u></b>	<b><u>Notes</u></b>	<b><u>Compliance Date</u></b>
<b>Existing Development: Establish Stage 1 Adaptive Management Program (Session Law 2009-216)</b>	Appendix 2 details State guidance on program establishment. Appendix 3 details staff response. These efforts essentially build on NPDES Phase II efforts.	12/31/2009
<b>Comply with State Buffer Requirements (Session Law 2009-484; 15A NCAC 02B .0267)</b>	DWQ has released a Model Buffer Ordinance. Staff are reviewing and will be drafting recommended minor revisions to the ordinance adopted in March, 2009. Staff recommend setting a public hearing date of January 28, 2010 to insure adoption by deadline.	Spring, 2010
	Notes: 1. Rules delegate responsibility to DWQ to implement buffer requirements for state, federal and local government lands; 2. Rules supersede water supply watershed buffer rules; 3. Staff have contacted DWQ to check on greenway trail provisions in buffers.	
<b>Stormwater Management for New Development (Session Law 2009-484; 15A NCAC 02B.0265)</b>		
Adopt stormwater program (including ordinance) for new development to reduce nitrogen and phosphorus	N= 2.2 lbs/ac/yr; P= 0.82 lbs/ac/yr. Model Ordinance has been contracted to Richard Whisnant.	Summer/fall, 2011
	Are in addition to, not instead of, NPDES Phase II and water supply rules.	
	Public road projects undertaken by local governments deemed compliant if meet riparian buffer rule requirements	
<b>Fertilizer Management* (15A NCAC 02B.0272)</b>	State begins enforcing rules for nutrients applied to 5 acres or more	Summer, 2012
<b>Existing Development: Stage 2 Adaptive Management Program (Session Law 2009-216)</b>	If 2014 monitoring report indicates water quality standards not being met, Stage 2 program established to achieve 8% N and 5% P reduction	2014
	If 2023 monitoring report indicates water quality standards not being met, Stage 2 program modified to achieve 35% N reduction	2023
	Notes: 1. Accounting tool being developed at NCSU; should be available in early 2010; 2. Town has not identified sustaining revenue source to implement retrofits and/or participate in trading program if needed in 2014 and again in 2023	
<b>Nutrient offsets ((Session Law 2009-484; 15A NCAC 02B.0273)</b>	Before pursuing, must meet minimum onsite reductions. Market-based trading system allowed.	

\*Town passed provision in Town Code in 2009 for lands within municipal limit (2 acres or more)

## Appendix 1: Fact Sheet on Jordan Lake Strategy (Source: DWQ)

**JORDAN LAKE NUTRIENT MANAGEMENT STRATEGY****Key issues for local governments charged with new rule implementation:**

**The Jordan Lake Nutrient Management Strategy** ("Jordan Rules") aims to restore and maintain water quality, protect the lake's classified uses and maintain or enhance protections currently implemented by local governments in existing water supply watersheds. The rules (15A NCAC 02B.0262-.0273) became effective Aug. 11, 2009. Session Laws 2009-216 and 2009-484 modified the rules.

**Outreach, education and training resources** may be found at [www.jordanlake.org](http://www.jordanlake.org). Materials include an interactive map, links to legislation, contact information and training events. Additional resources and tools in development include a public outreach brochure to be distributed to local governments and an approved riparian buffer model ordinance to be made available fall 2009. A model stormwater ordinance for new development will be available in September 2010.\*

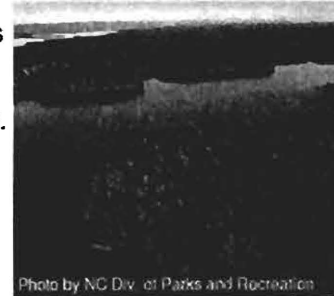


Photo by NC Division of Parks and Recreation

**Stormwater Rules – New Development**

- ▶ Local governments are required to develop stormwater programs that:
  - Approve stormwater management plans for new development.
  - Follow specific requirements of water supply watershed rules.
  - Ensure maintenance of best management practices (BMPs).
  - Ensure enforcement and compliance.
- ▶ Timeline for initial stages of new development stormwater implementation:
  - Feb. 2011\* – DWQ submits model stormwater program, including model ordinance and accounting tool for nutrient loading.
  - Sept. 2011\* – Local governments submit stormwater programs for review.
- ▶ Stormwater management plans are required for Federal and State (non-NCDOT) projects that disturb one-half acre or more of land.
  - Timeline: Feb. 2011\* – Federal and State (non-NCDOT) entities must submit stormwater management plans to DWQ for review.

**Options for Offsetting Nutrient Loads**

- ▶ Provides activities subject to various Jordan Rules (new and existing development, state and federal entities, agriculture and point sources) the option to purchase reduction credit from other sellers.
  - Must meet minimum onsite reduction requirements before purchasing credit.

**Stormwater Rules – Existing Development**

- ▶ Local governments must develop a Stage One program that includes the following:
  - Public education program.
  - Program to map MS4 system, outfalls, waters of U.S. and sanitary sewers.
  - Program to identify and remove illegal discharges.
  - Program to identify opportunities for retrofitting existing development.
  - Program to ensure maintenance of BMPs.
- ▶ DWQ is required to maintain a monitoring program in each arm of the Jordan Reservoir.
  - If monitoring results show impairment, local governments, state and federal entities must implement a Stage Two adaptive management program.
- ▶ Timeline for initial stages of existing development stormwater implementation:
  - Dec. 31, 2009 – Local governments must submit their Stage One program.
  - March 1, 2014 – If monitoring report shows impairment of Upper New Hope Creek, Stage Two program must be developed and implemented.
  - March 1, 2017 – If monitoring report shows impairment of Lower New Hope Creek or Haw River, Stage Two program must be developed and implemented.



\*Indicates date is approximate.

### Riparian Buffer Rules

- ▶ 50-foot wide riparian buffers are required on all surface waters, including intermittent and perennial streams, lakes, ponds and reservoirs. These features must be present on one of the following to be subject:
  - Most recent printed version of the soil survey maps prepared by the Natural Resources Conservation Service; or
  - 1:24,000 scale quadrangle topographic maps prepared by U.S. Geologic Survey; or
  - Map approved by the Geographic Information Coordinating Council and the EMC.
- ▶ Local governments must develop and implement buffer programs except where DWQ has jurisdiction. DWQ shall implement buffers for:
  - Local government, state & federal activities.
  - Activities under multiple jurisdictions.
  - Forest harvesting and agricultural activities.
  - Activities conducted in a location where there is no local government implementing one of the following programs at the time of the activity: NPDES stormwater, water supply or voluntary local stormwater or buffer initiative.
- ▶ Diffuse flow is required before stormwater runoff enters the buffer from any new ditch or manmade conveyance. It is required on all buffered streams, regardless of property size or type of land use.
- ▶ Timeline for initial stages of implementation:
  - Aug. 11, 2009 – DWQ begins implementing riparian buffer rules in its jurisdiction.
  - Oct. 2009 – DWQ makes model buffer ordinance available to local governments.
  - May 2010\* – Local governments submit local buffer programs for DWQ review.



Photo by USDA NRCS

### Wastewater Discharge Rule

- ▶ Applies to existing wastewater treatment facilities that receive nutrient-bearing wastewater and whose discharges are subject to individual NPDES permits.
  - Distributes waste-load allocations of nitrogen and phosphorus among the dischargers within each sub-watershed.
  - Sets limits on nitrogen and phosphorus loads from larger dischargers (permitted flow at or above 0.1 MGD).
  - Larger dischargers must optimize facilities to minimize nitrogen loads while process improvements are completed.
  - Provides for group compliance approach which allows dischargers to work collectively to meet their combined nutrient limits.
- ▶ Timeline for wastewater rule implementation:
  - Feb. 2010\* – Submit optimization reports.
  - Aug. 2010\* – Implement optimization.
  - 2010 – Compliance for phosphorus limits.
  - 2016 – Compliance for nitrogen limits.

### Agriculture Rules

- ▶ Nutrient reduction goals for agricultural operations have been established.
  - Reduction goals must be met at the subwatershed level
- ▶ Watershed Oversight Committee is being established to initially implement rules.
  - Local advisory committees may be established if required.

### Fertilizer Management Rules

- ▶ By August 2012, fertilizer application shall be made by an applicator that has completed nutrient management training OR pursuant to a nutrient management plan.
- ▶ Rule does not apply to use of fertilizer by homeowner on residential property.

Note: An online version of this fact sheet that includes direct links to the full text of the Jordan Rules, related documents and associated legislation is available at: [www.jordanlake.org](http://www.jordanlake.org).

\*Indicates date is approximate.

## Appendix 2: DWQ Guidance on Stage 1 Adaptive Management Program



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins  
Director

Beverly Eaves Perdue  
Governor

Dee Freeman  
Secretary

October 13, 2009

### **MEMORANDUM**

To: Affected Local Governments in the Jordan Lake Watershed  
From: Jason Robinson, Environmental Program Consultant, NPS Planning Unit  
Subject: Guidance for local governments' design and submittal of Stage I adaptive management programs for existing development, per Session Law 2009-216

Session Law 2009-216 requires that local governments develop and submit a Stage 1 adaptive management program to the NC Environmental Management Commission (EMC) to address existing development in their jurisdiction by December 31, 2009. Session Law 2009-216 was signed by the Governor and effective June 30, 2009. This Session Law replaced the original Jordan Water Supply Nutrient Strategy: Stormwater Management for Existing Development Rule (15A NCAC 02B .0266).

The Division of Water Quality (DWQ) will have six months following submission of the local government's Stage 1 programs to review the programs and provide recommendations to the EMC for approval or disapproval. Upon approval by the EMC, local governments will have three months to begin implementing their Stage 1 programs. If the EMC requires changes to the Stage 1 programs, the local governments will be required to resubmit revised programs to the EMC within two months, and DWQ would provide recommendations to the EMC within two months of the local government's re-submittal. Each local government shall report annually to the Department on implementation of its program.

In addition to submitting a general information sheet (attached), the following measures are required in the local government's Stage 1 adaptive management programs for existing development:

1. 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.
2. A mapping program that includes major components of the municipal separate storm sewer system, including the location of major outfalls, as defined in 40 Code of Federal Regulations §122.26(b)(5) (July 1, 2008) 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.
3. A program to identify and remove illegal discharges.
4. A program to ensure maintenance of best management practices implemented by the local government.
5. A program to identify opportunities for retrofits and other projects to reduce nutrient loading from existing developed lands.

As stated in the Session Law, the Department will accept local government implementation of other stormwater program or programs in meeting the Stage 1 standards. It should be noted that the measures 1-4 are required by NPDES Phase II stormwater permits. Therefore, Phase II communities will only have to submit the general information sheet that is attached and provide their Phase II permit number, and submit a program for measure 5, the identification of retrofit opportunities and other load-reducing measures from existing development.

The attached information is guidance for developing a program for each of the five measures. Please note: The measures listed below do not have to be completed by December 31, 2009, only the program describing how they will be accomplished.

For further information, please contact Mike Randall at 919-807-6374. For information on the public education program, please contact Bridget Munger at 919-807-6363.



## 1. Public education program

- ☐ Provide opportunities for the public to participate in program development and implementation.
- ☐ Identify target pollutants likely to be generated from urban settings (e.g., fecal, sediment and floatables).
- ☐ Identify the appropriate target groups and develop stormwater educational material to appropriate target groups that will likely have a significant stormwater impact on the target pollutants.

Local governments may rely on state-supplied Public Education and Outreach materials, as available, when implementing its own program. Please visit [www.ncstormwater.org](http://www.ncstormwater.org) to view a complete list of free outreach materials currently available.

- ☐ Distribute educational materials to the community, conduct public outreach activities, continue to raise public awareness on the causes and impacts of stormwater pollution, and inform the public on steps they can take to reduce or prevent stormwater pollution.

The outreach program, including those elements implemented locally or through a cooperative agreement, must include at least two of the following:

- Newspaper articles and/or inserts
- Kiosks and signage
- Targeted direct mail
- Displays at the point-of purchase
- Utility bill inserts

The outreach program, including those elements implemented locally or through a cooperative agreement, must include at least two of the following:

- Public meetings
- Community events
- Contest
- Storm drain marking
- Stream and Litter cleanups
- Group presentation and/or speeches

The outreach program, including those elements implemented locally or through a cooperative agreement, must include at least two of the following:

- News coverage
- Workshops and class room outreach
- Distributing promotional giveaways and specialty items
- Brochures, displays, signs, welcome packets, and pamphlets
- Local cable access
- Newsletters

For each media, event or activity, including those elements implemented locally or through a cooperative agreement, measure and record the extent of exposure. For example, quantity of items distributed, total attendance at outreach event or number of participants.

- ☐ Establish a stormwater hotline/helpline.
- ☐ Develop and maintain a website.

The website should include information on water quality, stormwater projects and activities, and ways to contact stormwater management program staff.

## 2. Mapping program

- ☐ Map major components of the municipal separate storm sewer system, including the location of major outfalls, as defined in 40 Code of Federal Regulations §122.26(b)(5) (July 1, 2008) 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.

Components include major outfalls and receiving streams, drainage areas, storm sewer pipes, and detention ponds and other structural BMPs.

Major municipal separate storm sewer outfall (or "major outfall") means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).

## 3. Identify and removal of illegal discharges program

- ☐ Develop an ordinance to prohibit illicit discharges.

To meet this requirement, the local government must establish and maintain adequate legal authorities to prohibit illegal discharges and enforce the approved Illegal Discharge Detection and Elimination Program. If the local government does not have the legal authority to develop an enforceable ordinance to prohibit illicit discharges to their MS4, their program must describe how they will rely on other entities that do have the necessary authority to prohibit illicit discharges.

- ☐ Develop written procedures for implementing and enforcing the Illegal Discharge Detection and Elimination Program including appropriate enforcement procedures and actions.

Written procedures includes: 1) Right-of Entry; 2) appropriate enforcement procedures and actions; 3) description of how the local government plans to detect and address illicit discharges to the local government's system, including discharges from illegal dumping and spills; 4) description of the inspection program designed to detect dry weather flows at system outfalls; 5) description of procedures for tracing the source of an illicit discharge, including the specific techniques local government will use to detect the location of the source; 6) description of procedures for removing the source of the illicit discharge; 7) establishing and publicizing a reporting mechanism for the public to report illicit discharges; and 8) establishing an illicit discharge management tracking system.

- ☐ Conduct dry weather inspections and take reasonable steps to mitigate any illicit dumping discovered during these inspections.

Describe the steps taken for any illicit dumping discovered during these inspections including appropriate enforcement procedures.

- ☐ Provide training for employees (including contractors) on illegal discharges.
- ☐ Inform businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.
- ☐ Develop educational material and distribute to target audiences.
- ☐ Report all spills and sanitary sewer overflow's reaching storm drains or surface waters to the stormwater group.
- ☐ Establish and publicize a reporting mechanism for the public to report illegal discharges.
- ☐ Investigate and mitigate any reported illegal discharge.
- ☐ Maintain a log of hotline calls and actions taken.

**4. Program to ensure maintenance of BMPs owned and operated by the local governments**

- ☐ Develop and implement a mechanism to require long-term operation and maintenance of BMPs owned and operated by local government.

Describe operation and maintenance practices/procedures and schedule for structural stormwater controls owned/operated by the local governments

Provide training for staff.

## 5. Program to identify opportunities for retrofits and other projects to reduce nutrient loading from existing developed lands

- ❑ Establish a program to identify and prioritize places within existing developed areas that are suitable for retrofits or other nutrient load-reducing activities.
- ❑ Retrofit opportunities will be considered acceptable if all of the following conditions have been investigated:
  - ❑ The retrofit, if implemented, clearly has the potential to reduce nitrogen or phosphorus loading to the receiving water.
  - ❑ The watershed is clearly contributing nitrogen or phosphorus loading above background levels.
  - ❑ The landowner where the retrofit is proposed is willing to have the retrofit installed on their property. Securing the landowner's cooperation is one of the most important tasks for the local government, as this is often the most difficult aspect of implementing a retrofit.
  - ❑ There is adequate space and access for the retrofit.
  - ❑ It is technically practical to install a retrofit at that location.

The minimum number of retrofit opportunities that each local government is required to identify is based on a sliding scale according to the population of the community. For those communities that are not completely located within the Jordan watershed, the number of retrofits can be based on the estimated population within the watershed. The local government will have to provide the data to support this population. Table 1 below shows the minimum requirements for identifying retrofit opportunities for each affected jurisdiction. Sites may be carried over to meet the minimum requirements for up to two subsequent years provided that BMPs/retrofits have not been implemented and the site continues to meet the criteria above on an annual basis.

**Table 1: Minimum Number of Existing Development Nutrient Load-Reducing Projects to be Identified on an Annual Basis Based on Local Governments' Population in the Watershed**

Approximate Population in the Watershed	Minimum # of Retrofits to be Identified
Less than 15,000	1
15,000 - 30,000	2
30,000 - 60,000	3
60,000+	4

### Data Collection and Notification

- ❑ Each retrofit opportunity that is identified shall be accompanied by information to describe the location of the retrofit, the type of retrofit being proposed, the property owner, as well as basic information about the watershed and the receiving water. Table 2 shows a suggested format for presenting this information for each retrofit opportunity.

**Table 2: Retrofit Opportunity Table**

Location description, including directions from a major highway	
Type and description of retrofit opportunity	
Current property owner	
Is the property owner willing to cooperate?	
Land area available for retrofit (sq. ft)	
Accessibility to retrofit site	
Drainage area size (acres)	
Land use in drainage area (percent of each type of land use)	
Average slope in drainage area (%)	
Environmentally sensitive areas in drainage area (steep slopes, wetlands, riparian buffers, endangered/ threatened species habitat)	
Approximate annual nitrogen and phosphorus loading from drainage area (lbs/acre/year) *	
Potential nitrogen reduction (lbs/ac/yr)*	
Potential phosphorus reduction (lbs/ac/yr)*	
Estimated cost of retrofit	
Receiving water	
DWQ classification of receiving water	
Use support rating for receiving water	
Other important information	

### Mapping Requirements

- ☐ Affected local governments are required to provide maps (electronic or hard copy) that show the locations of retrofit opportunities. Maps must display the following information: :
  - ☐ Drainage area to retrofit opportunity sites
  - ☐ Land uses within the drainage area
  - ☐ Locations of retrofit opportunities
  - ☐ Property boundaries in the vicinity of the retrofit opportunities
  - ☐ Significant hydrography (as depicted on U.S.G.S. topographic maps and USDA-NRCS Soil Survey maps)
  - ☐ Roads
  - ☐ Environmentally-sensitive areas (e.g., steep slopes, wetlands, riparian buffers, endangered/ threatened species habitat, where available)
  - ☐ Publicly-owned parks, recreational areas, and other open lands

## Appendix 3 Draft Submittal To DWQ

### **JORDAN NUTRIENT STRATEGY STAGE 1** **ADAPTIVE MANAGEMENT PROGRAM FOR EXISTING DEVELOPMENT -** **GENERAL INFORMATION**

This form is for use by local governments in the Jordan Lake watershed that are required to implement a Stage 1 adaptive management program for their existing development according to Session Law 2009-216. A complete submittal package includes this form and three copies of the Stage 1 adaptive management program narrative. Incomplete submittals may be returned to the applicant.

#### **I. APPLICANT STATUS INFORMATION**

Name of Local Government	Town of Carrboro
County(s)	Orange
Approximate Jurisdictional Area in Jordan Watershed (mi <sup>2</sup> )	12.1
Subwatershed(s) (Haw, LNH, UNH)	UNH
Approximate Population in Jordan Watershed	19,479

#### **II. EXISTING LOCAL WATER QUALITY PROGRAMS**

Local Water Supply Watershed Program	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
NPDES Phase II Stormwater Program	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
NPDES Phase II Permit #: NCS000450	

#### **III. RELIANCE ON ANOTHER ENTITY TO SATISFY ONE OR MORE OF YOUR PROGRAM OBLIGATIONS**

(If more than one, attach additional sheets)

Do you intend that another entity perform one or more of your program obligations?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, identify each entity and the element they will be implementing	
• Name of Entity	ORANGE COUNTY EROSION CONTROL DIVISION
• Element they will implement	CONSTRUCTION SITE RUNOFF CONTROL
• Contact Person	REN IVINS
• Contact Address	PO BOX 8181, HILLSBOROUGH, NC 27278
• Contact Telephone Number	919-245-2586
Are legal agreements in place to establish responsibilities?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**IV. CONTACT INFORMATION**

Provide the following information for the person/position that will be responsible for day to day implementation and oversight of the Stage I adaptive management program.

Name of Contact Person	Randy Dodd
Title	Environmental Planner
Street Address	301 West Main Street
PO Box	
City	Carrboro
State	NC
Zip	27510
Telephone Number	919 918-7326
Fax Number	919 918-4454
E-Mail Address	rdodd@townofcarrboro.org

## **Carrboro's Program to Identify Opportunities for Retrofits and Other Projects to Reduce Nutrient Loading from Existing Developed Lands**

The following provides a summary of Carrboro's approach to establish a program to identify and prioritize opportunities for retrofits or other nutrient load-reducing activities.

- 1) Carrboro has applied for and received 319 funds to pursue retrofits in the Tanbark Branch and Dry Gulch watersheds. These funds also include establishment of demonstration rain gardens. These projects will be completed in the next 3 years. (Carrboro intends to also document the voluntary installation of rain gardens and other BMPs [e.g., impervious disconnection, lawn conversion, rainwater harvesting] by local residents and businesses that stem from increased awareness of the need to treat stormwater at its source). Carrboro intends to continue to pursue 319 and other State and Federal funds to help with efforts of the Bolin Creek Watershed Restoration Team that will also reduce nutrient runoff.

- 2) Carrboro will utilize as a foundation the following studies:

NCDWQ, 2003. Assessment Report: Biological Impairment in the Little Creek Watershed. North Carolina Department of Environment and Natural Resources, Division of Water Quality, April, 2003.

Morgan Creek Local Watershed Plan. Targeting of Management Report. Prepared by: Tetra Tech, Inc. with support from Soil & Environmental Consultants, Inc. September, 2004.

Carrboro & Chapel Hill BMP Sites, Orange County, North Carolina. Prepared for: North Carolina Department of Environment and Natural Resources, Ecosystem Enhancement Program. Prepared by Ward Consulting Engineers, January 2007.

Bolin Creek Watershed Geomorphic Analysis and Potential Site Identification for Stormwater Structures and Retrofits. Prepared by Earth Tech. November, 2007.

Opportunities for Water Quality Credit Trading in the Jordan Lake Watershed. Prepared for: Mid-Carolina Council of Governments, Cape Fear River Assembly. Prepared by CH2M Hill, December, 2007.

- 3) Carrboro will supplement this information by looking at stormwater BMP retrofit opportunities at the 173 stormwater BMPs installed in Carrboro. Many of these BMPs are dry detention facilities. Some of these may be good candidates for retrofits to wet detention ponds or stormwater wetlands that have higher nutrient removal efficiencies.
- 4) As a part of routine stormwater management and watershed restoration efforts, Carrboro will identify other retrofit opportunities



- 5) Retrofit opportunities will be considered acceptable if the following conditions are met:
- ☐ The retrofit clearly has the potential to reduce nitrogen or phosphorus loading.
  - ☐ The watershed is clearly contributing nitrogen or phosphorus above background levels.
  - ☐ There is adequate space and access for the retrofit.
  - ☐ It is technically practical to install a retrofit at that location.

Carrboro will continue to contact landowners of land with retrofit opportunities to pursue approval of retrofits. Until a project is ready for development of construction documents, Carrboro believes it is premature to pursue more than verbal agreement. Prior to construction document preparation, Carrboro will obtain written landowner approval.

- 6) Carrboro will fully document (as outlined in DWQ guidance below) all retrofit opportunities identified beginning in 2010, and update this list annually.
- 7) Carrboro intends to explore establishment of mechanisms for funding of retrofits in 2010.

#### Data Collection and Notification

- ☐ Each retrofit opportunity shall include information on: location; type of retrofit; property owner; watershed/receiving water. Table 1 shows the format for presentation. Carrboro will maintain a spreadsheet or database and GIS data to manage retrofit opportunity data.

**Table 1: Retrofit Opportunity Information for Each Retrofit Identified**

Location description, including directions from a major highway
Type and description of retrofit opportunity
Current property owner
Is the property owner willing to cooperate?
Land area available for retrofit (sq. ft)
Accessibility to retrofit site
Drainage area size (acres)
Land use in drainage area (percent of each type of land use)
Average slope in drainage area (%)
Environmentally sensitive areas in drainage area
Approximate annual nitrogen and phosphorus loading from drainage area (lbs/acre/year)
Potential nitrogen reduction (lbs/ac/yr)
Potential phosphorus reduction (lbs/ac/yr)
Estimated cost of retrofit
Receiving water
DWQ classification of receiving water
Use support rating for receiving water
Other important information

### Mapping Requirements

For GIS data, Carrboro will maintain GIS data that show the locations of retrofit opportunities. This data will include the following information:

- ☐ Drainage area to retrofit opportunity sites
- ☐ Land uses within the drainage area
- ☐ Locations of retrofit opportunities
- ☐ Property boundaries in the vicinity of the retrofit opportunities
- ☐ Significant hydrography (as depicted on U.S.G.S. topographic maps and USDA-NRCS Soil Survey maps)
- ☐ Roads
- ☐ Environmentally-sensitive areas (e.g., steep slopes, wetlands, riparian buffers, endangered/ threatened species habitat, where available)
- ☐ Publicly-owned parks, recreational areas, and other open lands

For Bolin Creek, Carrboro will publish these data as part of a watershed restoration plan currently under development.