Jordan Lake and Falls Lake Rules Update

Durham County Manager’s Office

November 4, 2013
Watershed Boundaries

- Falls Basin (Upper Neuse)
- Jordan Lake (Cape Fear)
- Neuse Basin (Lower Neuse)
- Miami Blvd
- NC-147
- NC-751
- NC-55
- NC-54
Falls Lake Rules Summary

- **New development**: stricter post-construction run-off limits to make new development net neutral with nutrient loading

- **Existing development**: includes septic and everything else except WWTPs and agriculture. Has to get back to 2006 baseline by 2021 and then much larger reductions by 2036

- **Agriculture (and livestock)**: Collective compliance attempted through 2021 (20%N, 40%P), but individual compliance required (for 40%N, 77%P) if collective compliance fails
Jordan Lake Rules Summary

- **New development**: strict post-construction run-off limits to make new development net neutral (similar to Falls Lake requirements)
- **Existing development**: Nutrient reduction requirements not as strict as in Falls watershed, but still significant (35%N, 5%P). No specific septic requirements
- **Fertilizer Management**: Certified applicator training or nutrient management plans for parcels > 5 acres
- **Agriculture**: Same reduction goals as existing dev.; 5 years for collective compliance before additional measures imposed
Departmental Responsibilities

• **Agricultural Rule**
  - Soil & Water

• **Fertilizer Management Rule**
  – *Required* for Jordan Lake only
  – Soil & Water

• **New Development Rule**
  – County Engineering
  – City-County Planning
Departmental Responsibilities
(cont’d.)

- **Existing Development Rule**
  - Public Health (Environmental Health) (Falls only)
  - County Engineering

- **Education**
  - County Engineering
  - Soil & Water
  - Public Health

- **Illegal Discharges** (already illegal per County Ordinance)
  - County Engineering
  - Soil & Water (buffer violations)
Agriculture and Fertilizer Management Compliance Update

SOIL AND WATER CONSERVATION DISTRICT
Falls Agriculture Rules

• According to DWQ, agriculture comprises an estimated one-third to one-half of nitrogen and phosphorus inputs to the lake, the single largest nonpoint contribution.

• A lower % of Durham’s cropland/pasture land is buffered than in other Falls watershed counties
  – individual mandate in Phase II will be much more demanding here.

• Ag community has to comply w. multiple sets of rules
  – Falls / Jordan / Neuse
# Summary of Rules

<table>
<thead>
<tr>
<th></th>
<th>Jordan</th>
<th>Falls</th>
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<tbody>
<tr>
<td><strong>Rules Effective</strong></td>
<td>August 11, 2009</td>
<td>January 15, 2011</td>
</tr>
<tr>
<td><strong>Baseline Data</strong></td>
<td>1997 to 2001</td>
<td>2006 (30% N already required post-1996 per Neuse Rules)</td>
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<tr>
<td><strong>Fertilizer Management</strong></td>
<td>All commercial applicators must be certified by August 2012</td>
<td><strong>No</strong> applicator certification required</td>
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<tr>
<td></td>
<td>Or</td>
<td>No Nutrient Management plans required (Neuse rules) &gt; 50 acres</td>
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<tr>
<td></td>
<td>Nutrient Management plans for parcels of &gt;5 acres</td>
<td></td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td>Not required</td>
<td>Required for agriculture operations who engaged in producing crops for financial profit or engage in research activities in support of commercial production</td>
</tr>
<tr>
<td><strong>Nitrogen Reductions</strong></td>
<td>35% Achieved by 2015</td>
<td>Stage I 20% Achieved by 2021</td>
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<tr>
<td></td>
<td></td>
<td>Stage II 40% Achieved by 2036</td>
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<tr>
<td><strong>Phosphorus Reductions</strong></td>
<td>5% Achieved 2015</td>
<td>Stage I 40% Achieved by 2021</td>
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<td>Stage II 77% Achieved by 2036</td>
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</table>
Falls Agriculture Rules

- Requires formation of a Local Advisory Committee (LAC)
- Requires registration of all agriculture operations
- Requires development of a Local Nutrient Control Strategy (LNCS) which includes a conservation plan for each regulated parcel
- Requires annual progress report to the Watershed Oversight Committee (WOC)
Local Nutrient Control Strategy

Requires the following:

• Number, type, and acreage of all regulated parcels

• Description of planned or implemented BMPs on each regulated parcel, including:
  o Acres affected
  o Resulting nutrient reductions
  o Schedule for BMP installation
  o Operation and maintenance requirements

• Average total hours to develop a conservation plan for each parcel in the LNCS – 21 hours
LNCS Work

• 403 present use agriculture parcels
• 390 present use forestry parcels
• Unknown # of parcels for small local producers
• Unknown # of parcels with equine operations
• 49 registered thus far
All commercial applicators must be certified by August 2012

Or

Nutrient Management plans for parcels of >5 acres by August 2012
Fertilizer Management

• Parcels > 5 acres w. probable fertilizer application
  – 135 industrial parcels total 6,703 acres
  – 98 recreational parcels total 3,042 acres
  – 932 commercial parcels total 7,177 acres

• Residential parcels w. possible fertilizer application
  – 54,469 residential parcels total 15,314 acres
Fertilizer Management

- Duke University Homeowner Fertilizer Survey results
  - 97% have lawns
  - 24% hired a lawn care provider
  - 28% fertilize themselves
  - 79% never had a soil test
  - 85% apply fertilizer before a rain
  - 38% don’t sweep up spilled fertilizer on impervious areas
  - 10% apply fertilizer to buffers
  - 79% don’t understand what the numbers of N-P-K mean
  - 91% don’t know how to determine the correct amount of fertilizer
Fertilizer Management

VOLUNTARY NUTRIENT REDUCTION PROGRAM

HELP US
PROTECT NORTH CAROLINA’S DRINKING WATER.

Durham Soil & Water Conservation District

721 Foster Street
Durham, NC 27701

Phone: (919) 560-0558
www.dconc.gov/swcd
Voluntary Nutrient Reduction Program

**What is the VOLUNTARY NUTRIENT REDUCTION PROGRAM?**

Durham County's Voluntary Nutrient Reduction Program (VNRP) encourages citizens to reduce their fertilizer use by 40%. By improving fertilizer application practices, landowners are protecting their county's water resources and improving water quality in North Carolina. The Best Management Practices (BMPs) recommended by the VNRP include the following:

**Test your soil.** Collect and send a soil sample to the North Carolina Department of Agriculture & Consumer Services Agronomic Division. This soil sample information is an important first step in determining what type and how much fertilizer should be used. This soil test is a free service. You can obtain the sample boxes and forms from the Durham County Agriculture Building located at 721 Foster St. in Durham.

**Do not apply fertilizer within 20 feet of any body of water.** Streams, ponds and bodies of water need a minimum of a 20 ft. vegetated buffer area to help reduce the excess runoff of nutrients from the fertilized and managed areas.

**Sweep up spilled fertilizer from driveways, sidewalks and curbs.** This will help prevent fertilizer spilled on impervious areas from being washed into storm drains and streams.

**It is best for the environment and your lawn to make more frequent low-rate applications and to use slow release or controlled release fertilizers.** Apply fertilizer at the "basic" rate of nitrogen per year according to the chart on the back of this brochure.

**FERTILIZER FORMULA**

To determine the correct amount of fertilizer to use, following the procedure described below.

- To apply 1 lb. of Nitrogen per 1000 sq. ft., divide the 1st number on the fertilizer bag into 100. For example, a 16-4-8 fertilizer should be applied at a rate of 6.25 lbs. per 1000 sq. ft. (100 / 16 = 6.25).
- To apply 1/2 lb. of Nitrogen per 1000 sq. ft., divide the 1st number on the fertilizer bag into 50.

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**SUMMARY OF RULES**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>JORDAN LAKE</th>
<th>FALLS LAKE</th>
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<tbody>
<tr>
<td></td>
<td>35% Nitrogen</td>
<td>Stage I 20% N</td>
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<td></td>
<td>5% Phosphorus</td>
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Stormwater and Erosion Control Compliance Update

ENGINEERING AND ENVIRONMENTAL SERVICES DEPARTMENT
Stormwater Ordinance Compliance

- June 11, 2012 – BOCC approves County Stormwater ordinance amendments as mandated by the Falls and Jordan Lake New Development Rules.

- **Legislative Changes:**
  - HB953 (2012) allowed 2 year delay of local implementation of Jordan Lake New Development Rule → BOCC kept ordinance in place as is (Aug. 2012)
  - HB515 (2013) allowed a 3 year delay of any Jordan Lake rule not required prior to 7/1/2013 → BOCC has not taken action on this option (and does not need to)
  - These options do not change the baseline year OR the compliance deadlines, and as a result they would compress the time available for compliance activities and (in the case of new development) would also shift the burden and cost of stormwater compliance from developers to all taxpayers
Next Steps…

- Continue development plan review and permitting in accordance with the current Stormwater Ordinance
- Continue developing an existing development retrofit strategy
- Continue to identify opportunities for nutrient credits
- Continue stormwater public education
- Investigate funding options
Onsite Wastewater Compliance Update

PUBLIC HEALTH DEPARTMENT
Onsite Wastewater Compliance

• Jordan Rules do not deal directly with onsite wastewater (septic and discharging sandfilters)

• Falls Rules require continuous implementation of a program to reduce loading from failing onsite systems (which are included in “existing development”)

Onsite Wastewater Compliance

- Required inventory of onsite wastewater systems in Durham County was submitted to NC Dept. of Environment and Natural Resources in January 2013

- Credits still being developed for retrofitting onsite systems or connecting them to public sewer if available
Onsite Wastewater in Falls Lake Watershed
County Policy Considerations

- Continue working with / through UNRBA
- Utilize Jordan Lake Rules delay option (staff does not recommend)
- Unified Watershed Ordinance for Agriculture & Fertilizer Management
- Develop / purchase a nutrient / BMP-tracking software system
- Invest in staff-driven efforts
- Expand public education
- Develop “Watershed Improvement Program” and funding mechanism
- Invest in higher resolution aerial photography to track land use change
- Further develop funding options for compliance-driven activities, including watershed improvement districts or county stormwater utility
UNRBA Updates

• All upper (Falls) watershed jurisdictions participate
• Commissioner Reckhow delegate to BOD
• Dues have increased since FY10-11 ($57k this year)
• Working with other jurisdictions this year to help cover one-time cost of “nutrient credit toolbox” development
• Dues will likely increase again next year to help cover collective compliance costs incl. UNRBA staff and additional studies and monitoring
Tracking Software

• This type of GIS-based software could facilitate the work of meeting the county’s nutrient reduction goals
  – The program would track and catalog nutrient reductions made by those individuals and entities that have registered their activities and/or operations
  – The program could include both ag. and stormwater BMPs, onsite wastewater facilities, nutrient management plans, retrofits, monitoring data, etc.
Personnel / Operational Needs

Soil & Water
- 2.5 FTEs
  - 2 FTEs for VNRP and LNCS
  - Continuation of .5 FTE currently grant-funded position
- Operational funding for vehicles, computers, etc.

Stormwater and Erosion Control
- Operational and staff funding to aid the county in complying with the existing development rules and the County’s Strategic Goal 4. This existing development program would consist of:
  - 1-2 additional FTEs to manage existing development compliance deadlines and future programs
  - Public education and outreach
Unified Watershed Ordinance for Agriculture & Fertilizer Management

Agriculture

a. Require registration for all operations in the county with the Local Advisory Committee (LAC)
b. Develop LNCS for the County

a. Fertilizer Management

a. Require commercial applicators to be certified
b. Require registration of commercial applicators and submittal of nutrient management plans
c. Require landowners to implement Best Management Practices when applying fertilizer