

# Upper Neuse River Basin Association Board of Directors Meeting May 19, 2004

*Our mission: To preserve and protect the water quality in the Upper Neuse River Basin through innovative, cost effective and environmentally sound strategies and to create a coalition of local governments and stakeholders in a water resources partnership.*

## AGENDA

- 9:30 Welcome and Introductions** Becky Heron, Chair
- 9:40 UNRBA Projects Update** Chris Dreps
- New UNRBA Projects
    1. Little River Riparian Corridor Conservation Plan
    2. Little Lick Creek Local Watershed Plan
  - Progress on Watershed Evaluation Tool
  - Progress on Site Evaluation Tool
  - Watershed Plan Implementation
  - Proposal to Kerr-Tar COG: support on Plan implementation\*
- 10:00 FY 2004-05 Budget Amendment\*** Chris Dreps
- 10:15 Duke Public Policy Study: Water Quality Protection in the Flat River** Marissa Archibald  
Drew Cummings  
Andrea Reese
- 10:50 Schedule next meeting**
- 11:00 Adjourn**

\*Decision Item

# UNRBA Projects Update

## **New UNRBA Projects**

The UNRBA has recently won two new planning projects. Both are state-funded, and both come with the promise of funding to implement the recommended projects. In each case, the UNRBA is leveraging support from local governments and regional councils.

### ***1. Little River Riparian Corridor Conservation Plan***

The Eno River Association (ERA), with funding from the Clean Water Management Trust, will contract with the UNRBA to develop a Riparian Corridor Conservation Plan for the Little River Basin. The primary goals of ERA for this project are to assess the current status of natural and cultural features of the basin and develop a lands prioritization system for maximizing river ecology, water quality, and wildlife habitat benefits.

The Little River Plan will forward the UNRBA's major objective, to protect water quality in the Upper Neuse River Basin. Specifically, the Upper Neuse Watershed Management Plan recommends to local governments and communities the protection of lands critical to water resources.

The major objectives of the plan are to:

- 1) Draw upon existing studies and data to evaluate the natural and cultural features and water quality of the basin;
- 2) Based upon ERA land protection criteria, identify priority riparian corridors for conservation;
- 3) Based on ERA and other appropriate criteria, identify priority corridors for restoration; and
- 4) Assist the ERA in identifying key parcels for Plan implementation.

The UNRBA hopes to begin work on the plan in June and complete the project by year's end.

### ***2. Little Lick Creek Local Watershed Plan***

The NC Ecosystem Enhancement Program (EEP) will contract with the UNRBA to create a local watershed plan for Little Lick Creek. The UNRBA proposes to work in partnership with the City and County of Durham, Durham Stormwater Services, the Center for Watershed Protection, and the US Geological Survey.

Little Lick Creek is a tributary of Falls Lake on the eastern edge of Durham. The NC Division of Water Quality has designated the stream as impaired; meaning that Little Lick Creek is not supporting its intended uses, aquatic life and secondary recreation. The impairment is likely a result of runoff from urban development. Section 303(d) of

the 1972 Federal Clean Water Act requires the State to develop a Total Maximum Daily Load (TMDL) or a management plan for impaired water bodies.

The objectives of the Little Lick Creek Local Watershed Planning Project are to:

1. Evaluate current watershed conditions;
2. Analyze the possible causes of existing stream impairment;
3. Predict potential future water resources degradation in the watershed;
4. Identify management strategies for restoring watershed health and preventing future declines; and
5. Assist stakeholders in implementing the plan.

The Little Lick Creek plan will emphasize watershed restoration because of the urban and suburban nature of Little Lick Creek. The plan will identify strategies that the NC EEP can fund and implement, such as stream and wetland restoration, stormwater best management practices, and critical lands protection. However, the comprehensive nature of the plan will make it valuable in guiding local watershed management decisions beyond projects that the EEP can fund. For example, the plan may help the NC Department of Environment and Natural Resources to develop a 'stressor study' as a first step towards identifying and managing the major stresses causing stream impairment. Additionally the plan can identify stormwater retrofits and educational outreach opportunities required by federal stormwater regulations. Finally, the plan will be an asset in Durham's efforts to procure local, state, and federal support for implementation.

The UNRBA, EEP, and City/County of Durham will complete the plan by late spring 2005.

## **Progress on Existing Projects**

### ***1) Upper Neuse Watershed Evaluation Tool***

The US Geological Survey and the NC Ecosystem Enhancement Program are cooperating to develop a watershed evaluation tool (WET) for decision-makers in the Upper Neuse River Basin. The Upper Neuse WET project is a national model demonstrating the use of the USGS's new National Hydrography Dataset. The WET project will:

1. Develop an watershed evaluation tool for the Upper Neuse River Basin, for access through a computer interface running ArcView GIS software;
2. Provide hands-on training in the use of the watershed evaluation tool to water-resource planners and managers in the basin, including members of the UNRBA and NC EEP;
3. Guide local governments in their efforts to develop a basin-wide water-quality monitoring strategy; and
4. Use the WET to support the Little Lick Creek Local Watershed Plan.

The WET task group comprises local government staff, state agency representatives, federal government representatives, and university researchers. The task group has met three times and has:

- Identified the major functions and data to be used in the tool;
- Collected and documented digital data;
- Begun developing the tool; and
- Begun to identify watershed-wide monitoring needs in the Upper Neuse.

The draft Upper Neuse WET will be developed by the end of the summer, 2004. The current version of the WET will be used to support the upcoming Little Lick Creek Local Watershed Plan.

Meeting summaries and the detailed project proposal are on [www.unrba.org](http://www.unrba.org).

### ***2) Upper Neuse Site Evaluation Tool***

The Upper Neuse River Basin Association and the North Carolina Division of Water Quality have begun developing the Upper Neuse Site Evaluation Tool (SET). The SET is a simple predictive stormwater management tool for local governments, site developers, or anyone wanting to use more innovative stormwater management.

Local governments throughout North Carolina are increasing standards for stormwater management as a response to various stormwater regulations, including the federal NPDES Phase I and Phase II requirements, the Neuse River nitrogen reduction rules, and the Tar-Pamlico nutrient reduction requirements. Some larger communities are grappling with the daunting task of restoring watershed functions or meeting Total Maximum Daily Load (TMDL) requirements through retrofitting sites. A few local governments are even considering innovative, performance-based stormwater management beyond state and federal requirements. In the Upper Neuse Basin, local governments have completed a Watershed Management Plan that recommends adopting environmental performance standards for nitrogen and phosphorous, educating ourselves about stormwater Low-impact Development (LID), and fixing existing stormwater problems. The SET is potentially useful for implementing such approaches.

The SET is a simple Microsoft Excel program that allows anyone developing or redeveloping a site to predict the development's stormwater quality and quantity effects. The SET predicts pre- and post-development:

- Total stormwater volume
- Total suspended solids (sediment)
- Total nitrogen
- Total phosphorous
- Fecal coliform

The SET requires only basic site information and can be used early in the planning stage to help make wise choices or avoid environmental mistakes. This way, changes can be made before the developer has invested in a particular site design.

The SET Task Group includes members from NC Division of Water Quality, NC State University's Water Quality Group, stormwater management staff from local governments, a representative from the NC Homebuilders Association, and Tetra Tech, Inc. The Site Evaluation Tool Task Group has met five times and has:

- Agreed on best management practice pollutant removal efficiency assumptions to be used in the tool;
- Expedited a NC DWQ agreement to standardize BMP removal efficiency assumptions in the Neuse and Tar-Pamlico Basins;
- Proposed adding several innovative stormwater management practices to the list of available tools in NC;
- Held discussions on whether hydrology (the basis of "low-impact development") should be an educational component or a regulatory tool;
- Begun calibrating land-use related pollutant loading assumptions in the Upper Neuse for use in the SET; and
- Begun developing a cost estimate program to be included in the SET.

The draft Upper Neuse SET will be ready in early July, at which point local government stormwater managers have agreed to help beta-test the tool.

Meeting summaries and project description are on [www.unrba.org](http://www.unrba.org).

### **Watershed Plan Implementation**

The UNRBA has hired Sarah Bruce for May through August of 2004. Ms. Bruce will support Chris Dreps in the Upper Neuse implementation planning process. Ms. Bruce's major objectives are:

- Supporting the implementation phase of the Plan (including researching local ordinances, contacting local government staff, and GIS mapping);
- Conducting research on selected implementation strategies; and
- Assisting in the outreach and public education component of the planning process.

The UNRBA has met or communicated with appropriate staff from almost all the local governments in the Upper Neuse. In addition, the UNRBA coordinator has made informational presentations to many of the local boards in the Upper Neuse, including Wake Forest, Raleigh, Orange County, Person County, Franklin County, and Creedmoor. We plan to present to Hillsborough later this summer.

Most local governments have developed implementation teams to work directly with the UNRBA coordinator. These local government staff members guide the UNRBA Coordinator in implementation decisions.

### **Proposal to Kerr-Tar COG: Support on Plan Implementation**

#### ***Decision Item***

*Fund the Kerr-Tar COG for up to 5 to 10 percent of a planning staff member's time to provide support to Kerr-Tar communities in the UNRBA (Franklin County, Granville County, Person County, Creedmoor, Stem, and Butner). The funding is currently available from implementation budget (state appropriation). UNRBA dues funding will replace this source of funding once the new projects described above are under contract.*

#### ***Background***

The UNRBA has requested that the Kerr-Tar COG (KT COG) provide staff assistance in implementing management strategies recommended in the Upper Neuse Watershed Management Plan for the local governments within the KT COG region in a timely manner. To this end, we have requested approximately 5-10 percent of a planning staff member's time to support the UNRBA in achieving the following objectives.

The goal is to improve responsiveness to Person County, Granville County, Franklin County, Roxboro, Creedmoor, Butner, and Stem. Although the UNRBA is a function of local governments in both the KT COG and TJ COG regions, it is often difficult to

maintain a constant presence throughout the region. When Ken Krulik was on the UNRBA Technical Advisory Committee, communications with him proved crucial in informing me about issues in the region. I want to continue and build upon this beneficial relationship.

The major activities of the KT COG staff person would be the following.

1. Assist the UNRBA in sharing the results and recommendations of the Upper Neuse Watershed Management Plan with local government staff and decision-makers.
2. Work with UNRBA Coordinator to assess the level of effort that each jurisdiction in the Kerr-Tar region currently undertakes toward the watershed management strategies.
3. Once objective 1 has been accomplished, work with key local government staff to answer basic questions about:
  - Existing local regulations or approaches;
  - Plans to implement a strategy in the future (for example, in new local plans or policies);
  - The projects or activities that would need to be accomplished;
  - The staff involved;
  - Projected costs;
  - Potential funding sources; and
  - Timelines.
4. Determine where UNRBA involvement with implementation is appropriate, for example:
  - Regional recommendations for which partnering or cooperation is possible;
  - Strategies for which economies of scale can be achieved; and/or
  - Strategies for which we can use limited UNRBA resources to help local governments to answer questions identified in objective 2 as requiring further study.

Neil Mallory, the KT COG Executive Director, thinks the KT COG can assign Shelby Powell, a planner on staff, to the project. Mr. Mallory requests a more detailed proposal about what we would like the KT COG to do and how much funding would be provided.

## FY 2004-2005 Budget Amendment

*Decision Item: Amend budget to reflect full participation of all existing members in the UNRBA and two new projects shown in the table below with asterisks.*

### BASE EXPENSES

	<u>FY 2005</u>	<u>FY 2004</u>
Salary (80% FTE)	\$37,818	\$36,363
+ Fringe	+ \$11,723	+ \$10,909
Water Resources Mgr.	\$ 5,729	\$ 3,407
Information Systems Mgr.	\$ 700	\$ 3,963
Information Systems	\$ 4,387	\$ 0
Indirect Cost	\$29,725	\$30,599
Education & training	\$ 500	\$ 0
Travel (workshops, local govt. meetings)	\$ 1,000	\$ 1,000
<b>Subtotal Base Expenses</b>	<b>\$90,582</b>	<b>\$86,242</b>

### WATERSHED MANAGEMENT PLAN IMPLEMENTATION EXPENSES

Travel	\$ 525
Web support	\$ 4,387
Presentation materials	\$ 1,480
Subcontracts for research, imp. planning	\$36,408
Intern	\$ 7,200
<b>Subtotal Implementation Plan Expenses</b>	<b>\$50,000</b>

### SITE EVALUATION TOOL PROJECT EXPENSES

UNRBA Salary, Fringe, & Indirect	\$ 7,788
Travel	\$ 720
Supplies	\$ 1,000
Subcontractual (from state appropriation)	\$24,616
Subcontractual (from grants)	\$40,140
<b>Subtotal SET Expenses</b>	<b>\$74,264</b>

### LITTLE RIVER RIPARIAN CORRIDOR CONSERVATION PLAN EXPENSES\*

UNRBA Salary, Fringe, & Indirect	\$ 7,810
TJCOG Salary, Fringe, & Indirect	\$12,008
<b>Subtotal Little River Expenses</b>	<b>\$19,818</b>

### LITTLE LICK CREEK WATERSHED PLAN EXPENSES (ESTIMATED)\*

UNRBA Salary, Fringe, & Indirect	\$40,000
Subcontractual	\$30,000
<b>Estimated Little Lick Creek Expenses</b>	<b>\$70,000</b>

***Total UNRBA Expenses*** **\$304,664**

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\* New project, contract pending.

**UNRBA REVENUE**

	<u>FY 2005</u>	<u>FY 2004</u>
Member government dues	\$86,242*	\$86,242
Site Evaluation Tool Grants	\$49,650	\$0
Remaining state appropriation (for Implementation)	\$92,781	\$84,792
Little River Riparian Corridor Conservation Plan	\$19,818	\$0
Little Lick Creek Local Watershed Plan (estimated)	\$70,000	\$0
<b>Total Revenue</b>	<b>\$318,491</b>	<b>\$171,034</b>

**Additional Discussion: options for UNRBA revenue**

Assuming all UNRBA projects and contracts, the UNRBA will need additional staff support to accomplish all the project goals for FY 2004-2005.

The UNRBA Coordinator will be exploring options for staff support.

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\* The UNRBA Board approved this level of dues at the March 24, 2004 meeting.

# Duke Public Policy Study: Water Quality Protection in the Flat River Watershed

Marissa Archibald, Andrea Reese, and Drew Cummings  
Terry Sanford Institute of Public Policy  
19 May 2004

## I. Intro

Flat River; Multiple Jurisdictions; Growing Population; Long-Range Problem  
(maintaining water quality in the face of growing developmental pressures)

## II. Criteria

- A. Must protect water quality
- B. Must be acceptable to all stakeholders (process *and* option criterion)
- C. Will be perceived as cost-effective
- D. Will be administratively affordable
- E. Will be technologically feasible
- F. Will provide flexibility to adapt to future technologies and needs
- G. Will improve local governments' capacity to solve future water quality problems (process criterion)

## III. Processes

- A. Mandatory: Cooperative or Independent
- B. Voluntary: Cooperative or Independent
- C. Possibilities for Compensation: Government(s), trust funds, non-profits, and/or individuals

## IV. Options

- A. Upgrade water treatment
- B. Raise Lake Michie dam
- C. Build new dam upstream from Lake Michie
- D. Zoning and density changes
- E. Impervious surface limits
- F. Targeted land protection
- G. Best management practices (BMPs)
- H. Performance standards
- I. Market for pollution permits

## V. Recommendations

- A. Voluntary, cooperative processes
- B. Code and ordinance revision
- C. Targeted land protection and outreach
- D. BMP education and outreach
- E. Performance standards
- F. Further study

## VI. Questions

## Duke Public Policy Study, continued

### Recommendations

#### *Recommendation 1: Voluntary Cooperative Process*

Local government officials should first attempt to protect water quality through collaboration and consensus with other local governments. A negotiated solution is especially likely to seem fair to all stakeholders and improve local governments' capacity to address future water quality problems. Third-party mediators could help to enhance the negotiation process.

#### *Recommendation 2: Codes and Ordinance Revision (part of Option 4)*

Local governments can revise codes and ordinances for small-scale land uses (such as driveways, streets, parking lots, setbacks, and more) at minimal cost. They should improve the compatibility of such codes and ordinances with water quality protection.

#### *Recommendation 3: Targeted Land Protection and Outreach (Option 6)*

The governments of Person County, Durham County, and the City of Durham should begin voluntary, cooperative action to purchase conservation easements on land critical to the Flat River's water quality. Private and local government funding can be used to leverage additional land protection funding from state and federal sources. Local governments should conduct an outreach effort to inform landowners about the opportunities to protect open space, including the tax incentives and other benefits of easements.

#### *Recommendation 4: BMP Education and Outreach (Option 7)*

As a precursor to requiring the use of best management practices, the governments of Person County, Durham County, and the City of Durham should ensure that they, landowners, and developers are aware of the most up-to-date BMPs. These stakeholders would become aware of low impact design options that could be cost-effective or cost-reducing means of decreasing the water quality impacts of new developments.

#### *Recommendation 5: Performance Standards (Option 8)*

Person County, Durham County, and the City of Durham should establish performance standards for all water pollutants to maintain the current water quality in Lake Michie. In the near term, the performance standard would be met indirectly through BMPs and low impact designs mandated by each jurisdiction. In the future, when better monitoring is possible, each landowner could freely select BMPs or other actions to meet the performance standard. Water users could assist landowners with the cost of implementing any BMPs that impose additional costs on landowners.

#### *Recommendation 6: Further Study*

As an extension of performance standards, Person County, Durham County, and the City of Durham should consider a pollutant trading system as a direct and flexible option for water quality protection. Due to current technological uncertainties and high potential administrative costs, this option is not viable as an immediate solution.

We also recommend further modeling to project demographic changes in the Flat River watershed and the ensuing pressures on water quality. Policy makers would benefit from more accurate predictions about the constraints to growth and about when water quality will be threatened. Concrete figures are more conducive to concrete action.