Durham City/County Staff Review of the Upper Neuse Watershed Management Plan July 8, 2003 Meeting Summary

Prepared July 9, 2003

UNRBA 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.

On July 8, 2003, Chris Dreps of the Upper Neuse River Basin Association (UNRBA) met with staff from Durham City and County in Durham City Hall. The objectives of the meeting were to:

- Review the analyses in the Upper Neuse Watershed Management Plan (Plan);
- Discuss the management strategies proposed for Durham City and County; and
- Receive staff guidance for proceeding with the introduction of the Plan to Durham City and County elected officials.

Meeting attendees are listed below.

Name	Department/Program
Katie Kalb	Public Works
Glenn Whisler	County Engineering
Terry Rolan	Environmental Services
Lee Murphy	Public Works-Engineering
Paul Wiebke	Stormwater Services
Bill Telford	Environmental Services
Jane Korest	Planning
John Cox	Stormwater Services
Robert Brown	County Health Department
Ben Bearden	UNRBA
Chris Dreps	UNRBA

Plan Analysis

Chris Dreps summarized the Plan's analyses. The two major analyses discussed are the drinking water quality assessment (chlorophyll a levels) and the habitat/recreation assessment (impervious cover). For each analysis the UNRBA Technical Advisory Committee (TAC), made up of local government and NC DENR staff, set management targets. The Plan analyzes current, Year 2025, and two buildout scenarios. All analyses assume development would be 100% compliant with existing regulations and the Neuse rules for nitrogen reduction.

The analysis shows that by 2025, water quality targets in Lake Michie and the Little River Reservoir are close to being exceeded. Under both buildout scenarios, the targets would be exceeded.

The impervious cover target (10% watershed-wide average) is currently exceeded in Ellerbe Creek, Little Lick Creek, and the lower portions of the Eno River watershed. By 2025, Lick Creek and portions of the Eno all the way to Hillsborough will exceed 10% impervious cover.

Questions and comments:
John Cox--Is the 15 micrograms/liter target for Little River Reservoir a growing season average or a yearly average?
[note from Chris Dreps--Subsequently, I have checked this--chlorophyll a targets are growing season averages (May-September)].

Robert Brown--why will Little River Reservoir see increases in chlorophyll a at buildout if the impervious surface limits are 6%?
Chris Dreps--The model takes into account many different types of land cover besides impervious cover (agricultural, suburban lots, etc.) and estimates nitrogen and phosphorous loading from each of these types of land use/cover.

Jane Korest--It is important to give credit to the Council/Commission for protecting those watersheds that remain below 10% impervious cover. Also, make sure to clearly define urban areas, urban service areas (sewer and water provision), and suburban areas (I.E., up to 2 acre lots).
(note from Chris Dreps--I will make sure to do this in any Council/Commission presentations)

Recommended Management Strategies
Chris presented the general recommendations. Those specific to Durham City and Durham County are:

- Density Limits and/or performance standards for nitrogen (1.7 lbs/acre/year) and phosphorous (0.3 lbs/acre/year) in the Lake Michie and Little River Watersheds (phosphorous ;
- 100-foot minimum stream buffers (Lake Michie and Little River Watersheds);
- For all new development above 10% impervious cover, peak flow management for the 1-year, 24-hour storm;
- Upper Neuse long-term monitoring program;
- Septic system recommendations (inspections and maintenance program, GIS database, inspector/installer certification, and mailers to system owners);
- Enhanced construction site inspections and enforcement;
- Enhanced animal operations inspections;
- Stormwater quality BMP inspections and enforcement;
- Education for “Low-Impact Development” and buffer maintenance;
- Targeted lands acquisition;
- Forestry/Agriculture BMPs;
- General watershed education and adopt-a-stream program;
- Stream, riparian, and wetland restoration projects;
- Stormwater retrofits.

Recommendations for the City are:

- Phosphorous performance standard (0.3 lbs/acre/year);
- 50-foot minimum stream buffers;
- For all new development above 10% impervious cover, peak flow management for the 1-year, 24-hour storm;
- Upper Neuse long-term monitoring program;
- Enhanced construction site inspections and enforcement;

- Stormwater quality BMP inspections and enforcement;
- Education for “Low-Impact Development” and buffer maintenance;
- Targeted lands acquisition;
- General watershed education and adopt-a-stream program;
- Stream, riparian, and wetland restoration projects;
- Stormwater retrofits.

A general estimate of the additional programmatic costs to government of implementing the Plan is:
In Durham County--$5,121 per year in year 1. The cost of a septic system inspection and maintenance program would be $705,250 per year in year 1 (this cost could be borne by the system owners).

In Durham City--$16,428 per year in year 1.

Costs for all programs will increase with inflation and growth.

Discussion
Both Jane Korest and Terry Rolan requested that changes be made in several of the maps that Chris presented. These are listed below.

For impervious cover maps--change map to reflect impervious cover percentage increments of 5% (currently, this is 10%). The 10% map doesn't reflect which subwatersheds are at risk of crossing the 10% threshold (5%-10% range).

For map showing recommended management strategies--make this map into two maps. The first should show existing conditions, detailing urban areas, suburban areas, and protected open space. The second map should show urban areas, "future urban service areas", suburban areas, and conservation zones (make the definition of conservation zones clear--a zone in need of a nitrogen and phosphorous loading standard or something equally as protective to meet water quality targets set in the Upper Neuse Plan). On both maps, make sure to update Roxboro's urban area and urban service area (Chris will look at Roxboro's most recent water supply plan to determine the urban service area).

A discussion about lack of input from Roxboro ensued. Chris Dreps recommended that some communication should occur between Durham, Roxboro, and Person County regarding management of Lake Michie's watershed.

John Cox mentioned that the Unified Development Ordinance might allow for different tiers of development density within the city. Regarding the phosphorous standard, John used the Tar-Pamlico site evaluation tool to test whether a theoretical new development of 70% impervious cover could meet the Upper Neuse Plan's recommended phosphorous performance standard of 0.6 lbs/acre/year. He ran this test assuming that the site would have both a large bioretention area and a swale. The resulting loading was 0.7 lbs/acre/year, which would not meet the standard. John supports the idea of a phosphorous loading standard, but he feels we may have to explore a different number. (Note--The Tar-Pamlico spreadsheet's assumptions for the nitrogen and phosphorous removal efficiencies seem very low. If the assumptions were slightly

higher, it is possible that John's theoretical site would have met the phosphorous standard. John and Chris will explore this issue further).

Chris mentioned that the UNRBA has applied to the state for money to develop a spreadsheet tool for overseeing nitrogen and phosphorous standards in the Upper Neuse. If the UNRBA does not receive the grant, the group might seriously consider using some of the remaining state appropriation money and Chris' time to develop such a tool.

Katie Kalb feels that the performance standard may be difficult for most people to understand and may cause significant challenges for management by local governments. Chris responded that this is a new concept for many, but that it is only a small change from the process you're already following to comply with the Neuse Rules for nitrogen reduction. The spreadsheet tools used for nitrogen reduction have become a standard in Durham that most every consultant knows how to use. Adding phosphorous would be only a slight change.

John Cox--make a correction to page 43, table 11 of the Plan. For cities, the performance standard and the zoning options are recommended, so the recommendation should read "performance standard and zoning" (it currently reads "or", giving the false impression that cities could opt out of the performance standard approach).

Terry Rolan--The table (blue handout) should recognize that Durham is already meeting or partially meeting many of the recommendations:

- Targeted land acquisitions;
- Enhanced construction site inspection and enforcement;
- Adopt-a-stream and general watershed education.

Glenn Whisler mentioned that the Forestry BMP's are a problem in the county. A particular problem is clear-cutting a site (allowable under forestry practices but not under site development practices) with the claim that it is forestry and then selling the site. John Cox said that the Unified Development Ordinance will specifically address this problem. Jane Korest said that Chris will need to be clear about which are state regulations and which are local regulations.

Several in the group agreed that the septic system recommendations will have to be handled through a separate decision making process than many of the other recommendations. In recommending the septic system management practices, focus on cost per system owner (about $67 per system per year). Jane advised that we should present the costs and water quality benefits of a septic system inspection and maintenance program.

Next steps

Chris Dreps will write a memo regarding recommendations for the City to Katie Kalb, Frank Duke, and Terry Rolan (cc. Paul Wiebke, John Cox, Marcia Conner and Cora Cole-McFadden?).

Chris will write a memo regarding County recommendations to Frank Duke, Glenn Whisler, and Donnie McFall (cc Becky Heron, Ellen Reckhow, or anyone else?).

Look to staff and UNRBA Board Members for guidance on how to proceed presenting specific recommendations.