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Technical Advisory Committee
April 4, 2002

Prepared April 8, 2002

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.

The Technical Advisory Committee of the Upper Neuse River Basin Association (UNRBA) met at 10:00 A.M. on April 4, 2002 in the North Durham Water Reclamation Facility training room. The objectives of the meeting were to:

- Present a detailed summary of the Draft Upper Neuse Watershed Management Plan for new and continuing TAC members and
- Receive TAC comment and recommendation on proceeding toward local review of, and comments on, watershed management recommendations.

Meeting attendees are listed below:

Name	Organization	E-mail Address or Phone
Becky Heron	Durham County Commission (UNRBA BOD)	beckymheron@mindspring.com
Dale Crisp	City of Raleigh Public Utilities	dale.crisp@ci.raleigh.nc.us
Jack Day	Town of Stem	jackielday@aol.com
Terry Rolan	City of Durham Env. Resources	trolan@ci.durham.nc.us
Klaus Albertin	Tetrattech	klaus.albertin@tetrattech.com
Kimberly Brewer	Tetrattech	kimberly.brewer@tetrattech.com
Michael Adcock	City of Durham Env. Resources	madcock@ci.durham.nc.us
Pat Davis	Triangle J Council of Gov	pdavis@tjcog.org
Perry Sugg	Orange County	psugg@co.orange.nc.us

Chris Roessler	NC Division of Water Quality	chris.roessler@ncmail.net
Keith Luck	Durham City/County Planning	kluck@ci.durham.nc.us
Bill Noyes	Durham County Engineering	wnoyes@co.durham.nc.us
Scott Miles	Town of Wake Forest	scott.miles@ci.wake-forest.nc.us
Watson Brown	City of Raleigh Planning	brownw@raleigh-nc.org
Michael Douglas	DENR/DEH/PWSS-RRO	michael.douglas@ncmail.net
Joel Cross	City of Creedmoor	jcross4620@aol.com
Tony Hammond	City of Creedmoor	citymanager@cityofcreedmoor.org
George Norris	NC Watershed Restoration Program	george.norris@ncmail.net
Ken Krulik	Kerr Tar COG	kkruklik@kerrtarcog.org
Paula Murphy	Person County	pmurphy@personcounty.net
Tom Tempia	Orange County	ttempia@co.orange.nc.us
Margaret Hauth	Town of Hillsborough	hbplan@mindspring.com
John Cox	City of Durham Stormwater	jcox@ci.durham.nc.us
Mark Senior	City of Raleigh Stormwater	mark.senior@ci.raleigh.nc.us
Chris Dreps	UNRBA	dreps@tjcog.org

Introductions and Meeting Objectives

Chris Dreps began the meeting by asking participants to introduce themselves. It was acknowledged that the group included some new folks. Directors and other attendees introduced themselves. Chris Dreps then presented the meeting objectives:

- Detailed Review of the Draft Plan
- TAC and local staff discussion of the Draft Plan
- Draft Plan review

Detailed Summary of the Draft Plan

Kimberly Brewer, with Tetra Tech, began a presentation of the Draft Watershed Management Plan Analysis and Recommendations. She began by reminding the group of the priority issues and explaining the planning approach rationale as it relates to these priorities. The priority issues identified through this planning process are:

- Level 1 (most important)--Drinking Water Safety

- Level 2 (very important)--Limits on Recreational Use, Threat to Aquatic and Riparian Habitat
- Level 3 (important)--Inadequate Water Supply, Threat to Aesthetics

Next, Ms. Brewer showed a map of the impaired water bodies (listed by the NC Division of Water Quality in compliance with the Clean Water Act Section 303(d)). These, and the key causes of impairment, are listed in the table below.

Impaired Stream	Source of Impairment
Little Lick Creek	Construction
	Urban Runoff/Storm Sewers
Flat River	Agriculture
	Flow Modification
Lick Creek	Construction
	Urban Runoff/Storm Sewers
North Fork Little River	Agriculture
South Flat River	Agriculture
Knap of Reeds	Urban Runoff/Storm Sewers
Ellerbe Creek	Urban Runoff/Storm Sewers
	Minor Non-Municipal Discharge
New Light Creek	Agriculture

Dale Crisp asked if these listings reflect the most up to date 303(d) list. George Norris informed the group that the new list, which will be released this Summer, will remove New Light Creek, South Flat River, and North Little River from the "not fully supporting" status. The group agreed that the Draft Plan must reflect these changes. We will contact Cam McNutt (NCDWQ) to obtain the most up-to-date listing of impaired streams.

Next, Ms. Brewer explained how the Draft Management Plan analysis used existing data to assess existing and potential future impacts in the priority areas. The table below shows stressors (for example, sediment and erosion), the level of effort needed to address the stressors (largest), and the potential impacts these stressors have on the uses identified as priorities in the plan (sedimentation and erosion can affect drinking water safety, recreational use, aquatic and riparian habitat, and aesthetics).

Type of Stressor	Level of Effort	Priorities				
		Drinking Water Safety	Recreational Use	Aquatic & Riparian Habitat	Inadequate Water Supply	Aesthetics
Nutrients/Algae/TOC	Largest	✓	✓	✓		✓
Sedimentation and Erosion	Largest	✓	✓	✓		✓
Hydro-Modification	Moderate		✓	✓		✓
Inadequate Infrastructure	Moderate	✓		✓	✓	
Toxics	Some	✓		✓		
Pathogens	Some	✓	✓			
BOD	Some			✓		

Next, Ms. Brewer explained the modeling process used to assess the impacts of current and future land use (for both nonpoint and point sources), identify sensitive and threatened areas, and evaluate the effectiveness of management measures. The analysis models the indicators below, which are seen as indicators of the above-listed stressors.

Indicator	Stressor	Priority
Chlorophyll <i>a</i>	Nutrients/Algae	Drinking Water, Habitat
Impervious Area	Sedimentation and Erosion	Habitat, Recreation
Impervious Area	Hydromodification	Habitat, Recreation

The Draft Plan identifies targets previously endorsed by the UNRBA Board of Directors:

Water supply management--Chlorophyll *a* target of 15 ug/liter for Lake Holt, Little River Reservoir, Falls Lake intake and no significant increase for all other supplies Recreation and

Habitat--Imperviousness (not to exceed 10% watershed avg. without enhanced peak flow control) and chlorophyll a (not to exceed 25 ug/liter for lakes).

Chris Roessler asked how we define "no significant increase in chlorophyll a". No significant increase not defined statistically, but rather as no increase over historic mean measures for the indicator (algae). However, one or two ug/liter increases would not be considered significant. Kimberly Brewer also noted that Lake Rogers has no chlorophyll a target because it is already impaired and the goal is to hold the line on nutrient loading until a specific study of the Lake Rogers Watershed is done.

The Draft Plan presents predicted watershed conditions assuming full implementation of existing regulations for three scenarios:

- Year 2025
- Buildout low
- Buildout high

The key findings of the analysis are that, for water supply:

- Existing regulations are barely adequate to meet targets through 2025
- Low build-out exceeds targets for most watersheds
- High build-out exceeds targets for all watersheds except Falls Lake intake

(The build-out scenarios are not tied to a particular point in time, they only say what water quality would be like if, under current zoning, property owners exercised their rights to develop. These scenarios assumed that 15% of the land is not suitable for development. The low build-out scenario uses an effective density and conservative estimates of removal efficiencies for stormwater best management practices.) Keith Luck asked if the build-out models assume the full build out of zoning without regard to other overlays. Kimberly Brewer answered that the analysis takes into account all local regulatory overlays, such as Water Supply Watersheds.

For habitat impacts,

- Eutrophication - existing regulations are adequate to meet targets
- Impervious Area - existing regulations pose threats to habitat and recreation

Ms. Brewer showed the Figures 11 and 13 from the Draft Management Plan, which depict the chlorophyll a and impervious surface analysis results.

Recommended Management Strategies

So, what is the plan? Ms. Brewer reviewed the strategies recommended in the Draft Plan. She began by summarizing the general management strategies proposed in the Draft Plan. The

following five general watershed management techniques are proposed:

- New Development Site Management
- Monitoring and Enforcement
- Education/Citizen Stewards
- Point Source Controls
- Stream Restoration Projects

Ms. Brewer presented a table (handout) with 'Management Plan Components'. She explained that these components should be seen as a suite of components that will only work effectively when implemented together. Dale Crisp pointed out that the Management Plan Components handout is a summary of the plan's recommendations. He asked if the plan shows whether doing the 'essential' measures will achieve our goals and objectives. This is a key issue for people attempting to make cost-effective decisions about management strategies. For example, he made a point that the recommendation to monitor septic tanks every five years will be very expensive; however, this recommendation is only shown as 'reduces risk' and not as 'essential'. Yet, septic tank inspection and certification is the most expensive portion of the plan. This type of conclusion could be damaging to the Plan's acceptance. This comment led to a discussion of the costs of management strategies. Pat Davis suggested that the group might want to consider a risk management strategy approach that targets septic tank owners in certain, more ecologically sensitive areas (ie, based on soils).

The presentation focused primarily on new development and site management strategies. Ms. Brewer presented a map of the Draft Plan recommended 'watershed management zones' (Figure 15 in the Draft Plan). The watershed management zone approach divides the Upper Neuse Basin into urban development zones, suburban zones, and conservation zones. The overarching strategies are to:

- Shape where growth occurs;
- Hold the requirements for new development constant in the existing and future urban development and suburban zones; and
- Increase requirements in the conservation zones to the level needed to meet water quality targets.

Ms. Brewer explained that, early in the planning process, the UNRBA Board of Directors emphasized the need to shape new growth in the watershed. The Board asked the consultant to examine two management strategies: performance standards and zoning densities. The consultant used a variety of criteria, including location of sensitive watersheds and water and sewer infrastructure, and proposed a strategy defining the outlying areas as conservation zones.

George Norris made the point that the NC Conservation Resource Enhancement Program (CREP) is a voluntary program with the objective of protecting lands, through long-term, 30-year, or 10-year easements. Chris Dreps reminded the group that there are many other approaches available to local governments, and the UNRBA Technical Advisory Committee has begun establishing task groups

to research issues such as this one. Specifically, there is a task group being formed to focus on critical land protection strategies.

Next, the group reviewed the Draft Plan recommendations for new site development management. Again, the plan makes recommendations for urban/suburban and conservation zones, with more stringent recommendations applicable to conservation zones. For both areas, performance standards are offered as an alternative approach to zoning density changes as a strategy for managing new site development. These recommendations are shown in the table below.

	Urban/Suburban	Conservation
Performance Standards		
Nitrogen (lbs/ac/yr)	3.6 (existing*)	1.7
Phosphorous**	0.6	0.3
Stream Buffer	50 feet (existing)	100 feet
Enhanced Peak Flow Control	For new development with greater than or equal to 10% total impervious cover	For new development with greater than or equal to 10% total impervious cover
Zoning Density		
Density Limits	Existing zoning	3-5 acre lots***
Impervious Limits	Existing zoning	3.5%-5% impervious area
Stream Buffer	50 feet (existing)	100 feet
Enhanced Peak Flow Control	For new development with greater than or equal to 10% total impervious cover	For new development with greater than or equal to 10% total impervious cover

* --Refers to the existing standards established in the Neuse River Local Nutrient Sensitive Water rules.

**--There are currently no existing standards for phosphorous

***--The 3-acre minimum lot option for Orange, Durham, and Person County also allows one mixed use village per township. The 3-acre minimum lot option for Granville County also allows 10% of the watershed to develop at 50% imperviousness (with stormwater controls).

Kimberly Brewer noted that the approach for urban and suburban areas proposed in the Draft Plan is the same as that required under the Neuse River Basin Stormwater Program Rules now in effect. The performance standards proposed for the Conservation Zone are stricter than those for the urban/suburban areas, allowing less than half the nutrient loading and requiring twice the base riparian buffer distance.

There was extensive discussion on the performance standards approach. Who will monitor this? The group acknowledged that monitoring is one of the major impediments to using a performance

standard approach. Another important question is what tools local governments will have at their disposal for meeting these standards on sites. Building expertise in local governments will be a great need.

Ms. Brewer presented a slide summarizing what the recommendations mean for each local government.

- For habitat protection, enhanced peak flow control (it was clarified that this means retaining the 1-year, 24-hour storm for one day)
- For water quality, the plan offers two options for management plus enhanced monitoring and enforcement, education, point source controls, and stream/wetland restoration projects.

Costs

Kimberly Brewer presented estimates of yearly costs assuming the Plan is fully implemented:

- Total programmatic cost: approximately \$4.9 million
- Marginal programmatic cost: approximately \$3 million
- Most costly component: septic tank inspection program (62% of total, 95% of marginal)

These costs do not include minor site design planning, review and inspection costs to local governments or costs to the developer/landowner. The point was made that costs will increase in future years with inflation and growth.

Discussion

The group held a lively discussion about potential issues surrounding the recommendations and steps to take in proceeding toward local implementation of the Plan.

Becky Heron asked if the consultant had considered possible strategies to offset costs or to spread the costs. Ms. Brewer responded that we (the UNRBA) still need to explore sharing costs through regional cooperation, user fees, or some other option. She suggested that an inspection program requiring inspection once every five years and charging \$65 per year for each individual tank inspected could be one alternative revenue source. Whatever the method, the implementation will require new revenue sources.

Next, Chris Dreps explained that the Board's charge to the TAC for releasing the Draft Plan includes:

1. Local staff review and informal discussions;
2. Local staff (TAC) recommendations to their UNRBA Board member (this could also be the time to familiarize local boards with the Draft Plan); and

3. Local staff(TAC) and board members return to UNRBA Board with review and recommendations at the next Board meeting.

Watson Brown asked whether the TAC ought to vote to send this plan forward to local government officials. At the 3/22/02 Board meeting, the Directors did not feel comfortable taking the plan to local governments until all local staffs have had a chance to review it in detail.

The group agreed that the next step is for local staff to gather in meetings by county and municipality (ie, Wake County, Raleigh, and Wake Forest) to review the Draft Plan. TJCOG and UNRBA staff will be available for these meetings. These meetings should occur during the next month, so that staff can present their full reviews to UNRBA Board Members next month. Board members will call their next meeting as soon as they have staff review of the plan.

Pat Davis and Chris Dreps committed to creating several draft 'issue briefs' that could be helpful to local staff in reviewing the Draft Plan analysis and recommendations. Some possible topics include:

- Septic System Operation and Maintenance
- Enhanced Peak Flow Control
- Performance Standards
- Conservation Zoning and Buffers
- Critical lands protection guidance (existing land inventories, programs, and funding opportunities)
- Limitations of Planning Approach (future changes in growth strategies--Stem, Roxboro and model error/uncertainty)
- Short-term vs. Long-term Resource Protection Perspective

In addition, Chris reminded the TAC that we have begun to organize ourselves to handle issues like those listed above. The TAC has already begun the process of organizing 'task groups' to focus on specific issues of implementation. Some issues that are currently the focus of a lot of attention and could warrant task group efforts are:

- **Critical Lands Protection**
 - In some areas, there is no inventory of lands for protection
 - There is a need to research several strategies (for example, transfer of development rights)
 - Researching funding sources (like CREP, WRP, CWMTF, land trusts, etc.)
- **Best Management Practices**
 - Researching "trading" schemes, rain gardens, incentive-based programs
 - Research of enhanced peak flow control issues
 - Researching models from other states (Georgia, Maryland, Washington stormwater programs)
- **Costs**
 - Could discuss and research methods for offsetting costs (ie, user fees) Several TAC members have already mentioned that they would be interested in participating in specific task groups. Chris will be calling those TAC members as needs arise.

Kimberly Brewer reminded the group that we are doing something truly unique in North Carolina. We are taking steps to protect a large watershed for the long term. If we truly want to protect our water supplies, we need to start taking action now.

George Norris added that the plan may be vague and general, but that to be effective it needs to 'hit' before the end of this Summer. He stressed that there should be a deadline and attention given to the Draft Plan if we want it to be a success. Becky Heron stressed the need for education, both of local government staff and of the communities involved.

Next steps

The group agreed to begin holding local staff review meetings. Each county and its municipalities will schedule review meetings, and UNRBA, TJCOG, and Kerr-Tar COG staff will be available to participate in or present information at these meetings. Pat Davis and Chris Dreps committed to providing the above-mentioned issue briefs to local government staff. Terry Rolan added that state comments and endorsement of the Draft Plan (staff-level comments) would be helpful as we move forward with recommendations.

The meeting adjourned at 12:30.