

**Little Lick Creek Local Watershed Plan
Summary of Technical Team Meeting #2
March 17, 2005**

Prepared March 18, 2005

Introductions, Agenda, and Announcements

The Technical Team guiding the Little Lick Creek Local Watershed Plan met at 2:00 P.M. on Thursday, March 17, 2005 in the Rollingview Community Center on Falls Lake.

Chris Dreps of the Upper Neuse River Basin Association (UNRBA) began the meeting by asking Technical Team members and others to introduce themselves.

Meeting attendees are listed below.

Name	Technical Team or Community Stakeholder	Organization	E-mail address or phone number
Laura Webb Smith	TT	Durham Stormwater Services	Laura.smith@durhamnc.gov
John Cox	TT	Durham Stormwater Services	John.cox@durhamnc.gov
Joe Pearce	TT	Durham County Engineering	Jpearce@co.durham.nc.us
Joe Albiston	TT	Durham County Engineering	Jalbiston@co.durham.nc.us
Eric Alsmeyer	TT	US Army Corps of Engineers	Eric.c.alsmeyer@usace.army.mil
Shari Bryant	TT	NC Wildlife Resources Comm.	Bryants5@earthlink.net
Allen McNally	TT	The Crossings Golf Club	Amcnally2@nc.rr.com
Andy McDaniel	TT	NC DOT Highway Stormwater	Amcdaniel@dot.state.nc.us
Deborah Amaral		NC Ecosystem Enhancement Program	Deborah.amaral@ncmail.net
Rita Mroczek		NC Ecosystem Enhancement Program	Rita.mroczek@ncmail.net
Amy M. Poole	TT	Rollingview Marina	Rollingview@aol.com
Perry Allen	TT*	City of Raleigh Pub. Utilities	Perry.allen@ci.raleigh.nc.us
Dean Naujoks	TT	Neuse River Foundation	Dean.nrf@att.net
Steve Kroeger	TT	NC Division of Water Quality	Steve.kroeger@ncmail.net
Cherri Smith	TT	Durham City/County Planning	Cherri.smith@durhamnc.gov
Mitch Woodward	TT	NCSU Cooperative Extension	mitchell_woodward@ncsu.edu
Sally Hoyt		Ctr. for Watershed Protection	sch@cwp.org
Chris Dreps		UNRBA	dreps@tjcoq.org
Sarah Bruce		UNRBA	sbruce@tjcoq.org

*Attended in place of a technical team member

Chris Dreps then presented the agenda (decision items marked with *):

- 2:15 Progress Updates
- 2:30 Subwatershed Characterization (continued)
- 2:40 Build-out land use scenario*
- 3:00 USA Fieldwork Results

There were several announcements:

- 1) Chris Dreps announced the Falls Lake monitoring meeting to be held March 29th at 1 PM at Triangle J Council of Governments (see <http://www.tjcog.dst.nc.us/whereis.htm> for directions). The reservoir monitoring plan and the tentative plan for modeling and assessment of the reservoir will be discussed at this meeting. The monitoring study plan can be found at: <http://h2o.enr.state.nc.us/tmdl/SpecialStudies.htm#Falls>
- 2) Mitch Woodward of NCSU Cooperative Extension announced that his organization is conducting workshops on NPDES Phase II requirements for local governments. He invited interested parties to contact him if they were interested in holding or attending workshops in their areas.
- 3) Laura Webb Smith of Durham Stormwater Services announced that she is undertaking a drainage labelling project with local Girl Scouts.
- 4) Dean Naujoks announced an article in the News and Observer on the Falls Lake nutrient pollution trades and encouraged the Technical Team to follow the issue.

Progress Updates

Chris then presented the major steps involved in achieving project objectives:

1. Involve Stakeholder Group
2. Analyze Existing Data
3. Identify Project Area
4. Set Goals
5. Assess Subwatersheds
6. Conduct Stream Monitoring
7. Conduct Fieldwork
8. Present Initial Findings
9. Recommend Management Strategies (write Local Watershed Plan)
10. Implement Highly Ranked Management Strategies

This meeting covered information pertaining to steps 5 through 8.

5. Assess Subwatersheds

The Triangle J Council of Governments (TJCOG) and UNRBA have done a current and build-out land use assessment for each subwatershed. The Center for Watershed Protection (CWP) is using these to conduct simple, planning-level models nitrogen, phosphorous, and sediment (total suspended solids) loading for each subwatershed. The results from the planning-level models will help guide the Little Lick Creek Technical Team decision-making process.

A participant asked what question the model is intended to answer. Chris Dreps responded that the model is intended to help quantify and assess sources of nutrient loads by subwatershed. Quantification of nutrients and nutrient reductions are critical to NC EEP in prioritizing projects for implementation.

6. Conduct Stream Monitoring

At the January 18, 2005 Technical Team meeting, Stratford Kay of the Division of Water Quality gave a review of existing data. The monitoring plan is appended to Technical Memorandum #1.

Chris showed a map of existing and new monitoring stations in the Little Lick Creek watershed. Steve Kroeger of DWQ clarified for the group that NC DWQ has just begun physical/chemistry sampling and will initiate benthic macroinvertebrate sampling in early April.

Reassessment of the monitoring strategy is ongoing. For example, the strategy has already been modified to increase the number of storm samples. No storm sampling has yet been done.

After 2 months of monitoring, DWQ will do a formal assessment of the monitoring strategy and present a long-term monitoring strategy to the Technical Team.

7. Conduct Fieldwork

Sally Hoyt of the Center for Watershed Protection discussed fieldwork progress later in the meeting.

Subwatershed Characterization

Chris Dreps continued a discussion of subwatershed characterization begun at Technical Team meeting #1 in January. At that meeting, the Technical Team characterized subwatersheds as "high", "moderate", or "low" for three management categories:

1. Level of current development
2. Potential for future development
3. Level of land protection

This characterization is useful in helping the technical team form an initial understanding of issues facing each of the 13 subwatersheds in Little Lick Creek. In addition, the characterizations were used to guide fieldwork, prioritizing subwatersheds for fieldwork. For example, fieldwork staff faced with time constraints would assess areas with "high" or "moderate" levels of developed land rather than areas with "low" built area where stream conditions are more stable.

In addition, subwatershed characterizations may be useful in guiding future planning and project prioritization schemes the technical team may develop.

Chris provided three handouts with preliminary information on land uses by subwatershed. The first handout showed existing land use and estimated pollutant loads (except for TSS). Chris emphasized that land currently under forest or agricultural use is potentially developable (there is no zoning designation for those uses).

Approximately 34% of the land area in Little Lick Creek is developed, 13% is protected or greenspace, and 50% is potentially developable. Future land development is likely to be a major factor affecting water quality and habitat to the creek and Falls Lake. Future

development is of particular concern because Little Lick Creek is already impaired and because the watershed has highly erodible soils.

Subwatersheds with at least 49% currently developed land and 15% impervious cover are categorized as highly developed. A subwatershed with between 23% and 41% of the land developed is considered moderately developed. A subwatershed with less than 15% of its land developed and less than 5% impervious cover receives a "low" score.

Build-out Land Use Scenario

The second handout showed draft land use estimates at build-out. Build-out is a planning scenario that assumes the watershed is built to the maximum extent allowable under current zoning and watershed regulations. Build-out scenarios do not consider growth rates or time frames, and they do not assume development or redevelopment that might occur independently from current zoning. The Little Lick Creek build-out scenario considers new highways that will be built in the watershed.

The last handout showed results of a preliminary analysis of land use change Little Lick Creek. This analysis projects that the highest number of institutional, commercial, and industrial growth could occur in subwatersheds 1 and 2, and the greatest amount of growth in residential uses could take place in subwatersheds 9 and 12. Additional roads are particularly a concern with conversion of land to residential uses.

Chris Dreps asked the Technical Team to consider how this information might inform subwatershed prioritization and project ranking.

A participant asked how these findings might dovetail with an open space plan. Chris responded that the Critical Lands Protection analysis that will occur in the coming months will be developed in conjunction with the Lick and Little Lick Creeks Open Space Plan.

USA Fieldwork Results

Sally Hoyt of the Center for Watershed Protection (CWP) reviewed findings from the Unified Stream Assessment, an assessment that CWP, the UNRBA, Durham City Stormwater Services, and the NC Division of Water Quality conducted in Little Lick Creek during the week of January 24-28. Over the course of the week, three or four teams walked the majority of the creek and its tributaries, identifying the major stream impacts and assessing habitat condition.

Sally Hoyt discussed the fieldwork process, the findings, and provided time for questions and answers. The general findings are listed below and in the Center for Watershed Protection's March 10, 2005 Technical Memorandum titled "Summary of Field Work Activities in Little Lick Creek – January 2005" (This memo and maps are available for download on the Little Lick Creek Website listed at the footer of this page).

Key Findings

The fieldwork team assessed 113 outfalls, 89 stream crossings, 39 utility crossings, and numerous impacted buffers, trash sites, and areas with severe erosion. Of these, the team identified the following areas for potential restoration: 38 outfalls; 17 stream crossings; 21

utility crossings; 21 impacted buffers; 16 severe erosion sites; and 16 areas of trash dumping. The technical memorandum lists these potential watershed restoration projects.

Besides these potential projects, several impacts to the watershed stand out as recurring problems. These include:

- Erosion and sediment control on active construction sites
- Sanitary sewage discharges from failing onsite septic systems and from damaged sewer laterals
- Other illicit discharges including wash water and cooking oil
- Trash dumping: trash heaps adjacent to homes and dumping of large items
- Impacted buffers with little or no undisturbed vegetation adjacent to the stream.
- Post-construction stormwater management and opportunities for retrofits.

The technical memorandum provides more detail on these issues.

Sally also discussed reach conditions, showing examples of excellent, good, fair, and poor reaches in the watershed. The individual reach scores are detailed in the technical memo and accompanying maps.

Discussion

The group discussed the need to address the high number of sand filters in the watershed. An attendee suggested that Mack Wiggins of DWQ be invited to participate for this segment of the project.

The group discussed how state regulations require minimal stream buffers (10 feet) for forestry operations in comparison to the 50 ft required by both City/County Planning and state Neuse Rules. John Cox said that state forestry regulations preempt local controls and to prevent developers from using forestry to clear a site, the City/County Unified Development Ordinance (UDO) provides that when land is forested and local buffers are not preserved, land may not be developed for five years. The state forestry regulations do not appear to be adequately protective.

The group discussed how developing properties can have a multiplicative effect with regard to watershed impacts. When a property is undeveloped, it provides water quality impact and stormwater mitigation to the runoff that flows through it. When that property becomes developed, it no longer provides those benefits, in addition to the contribution of its own impacts. John Cox said that there are two alternatives when runoff flows through an undeveloped site and that site is to be developed: flow can be routed around the new site or it can be routed through the new site, which must have its BMPs designed for the total amount.

The group noted a persistent problem with the draining of farm ponds, which previously provided water quality and runoff retention benefits. Ponds as small as 1/10th of an acre are being drained, USACE 401 certification and 404 permits are not needed if a dam is removed. Cherri Smith noted that this is often an attractive option for developers, because if the pond is there, pond buffers apply. (Cardinal Lake is a case where this took place.)

John Cox mentioned that many studies have correlated TSS or turbidity and bacteria, and that a group at UNC has now shown that most bacteria in the water are attached to settleable solids (TSS). Because roughly half the sediment being carried by these streams comes from bed and bank erosion, the concern is that stream sediment is getting colonized by bacteria, which get carried with the sediment when it is transported by runoff.

Next Steps

The Technical Team will not meet in April, but will be asked to review and comment on some questions via e-mail. In particular, the team will be asked to review and respond to the Critical Lands Protection Analysis criteria that will be drafted by UNRBA and Cherri Smith, Jane Korest, and Mike Giles.

The next meeting of the Technical Team will be scheduled via email for mid-May.