

**Little Lick Creek Local Watershed Plan
Summary of Technical Team Meeting #5
August 31, 2005**

Prepared September 1, 2005

Introductions, Agenda, and Announcements

The Technical Team guiding the Little Lick Creek Local Watershed Plan met at 2:00 P.M. on Wednesday, August 31, 2005 in the Rollingview Community Center on Falls Lake.

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
Chris Outlaw	TT	Durham Stormwater Services	Chris.Outlaw@durhamnc.gov
Bobby Louque	TT	Durham Stormwater Services	Robert.Louque@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
Allen McNally	TT	The Crossings Golf Club	Amcnally2@nc.rr.com
Kristie Corson		NC Ecosystem Enhancement Program	Kristie.Corson@ncmail.net
Zack Mondry		NC Ecosystem Enhancement Program	zackary.mondry@ncmail.net
Daniel Ngandu		NC Ecosystem Enhancement Program	Daniel.ngandu@ncmail.net
Chris Mankoff		NC Ecosystem Enhancement Program	Chris.mankoff@ncmail.net
Amy M. Poole	TT	Rollingview Marina	Rollingview@aol.com
George Rogers	TT	City of Raleigh	George.Rogers@ci.raleigh.nc.us
Steve Kroeger	TT	NC Division of Water Quality	steve.kroeger@ncmail.net
Cherri Smith	TT	Durham City/County Planning	Cherri.smith@durhamnc.gov
Shari Bryant	TT	NC Wildlife Resources Commission	bryant5@earthlink.net
Chris Dreps		UNRBA	dreps@tjcog.org
Sarah Bruce		UNRBA	sbruce@tjcog.org

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

- 1:45 Critical Lands Protection Analysis*
- 3:00 Monitoring Findings and Subwatershed Information
- 3:30 Prioritizing Restoration Projects*

There were two announcements:

- 1) Chris Dreps announced that Durham Stormwater Services is helping a local Girl Scout Troop in the Oak Grove area to "adopt" Little Lick Creek.
- 2) Chris Dreps announced that the UNRBA won a section 319 nonpoint source grant to conduct a local watershed planning effort in Lick Creek. The project will likely get underway in late Spring 2006.

Critical Lands Protection Analysis

Chris Dreps first reviewed the process by which the critical lands protection analysis is proceeding. The following table summarizes this process:

Step (Action)	Product
Step 1: Set goals	Watershed management goals
Step 2: Establish landscape analysis criteria & prepare data	Data for landscape analysis
Step 3: Perform landscape analysis	Scored potential land protection sites
Step 4: Perform parcels-level analysis	Flagged parcels
Step 5: Overlay landscape analysis results with flagged parcels	Spreadsheet and map of high resource-value tracts

A draft run of the analysis has been completed. The landscape analysis revealed areas that are high-priority for protection. This information was overlaid with parcels that were scored per the draft parcels criteria (see Technical Team meeting #4). The analysis identified 320 parcels that scored highly enough on the landscape analysis to merit further investigation.

Of the 320 parcels, the following "flags" occurred.

- 78 are over 10 acres
- 62 are adjacent to protected lands
- 14 contain prime farmlands
- 3 have historical or cultural features
- 41 have ¼-mile stream frontage
- 57 intersect planned trails
- 133 are developable
- 31 were subdivided in floodplains
- 201 parcels were more than 10 acres with at least one "flag."
- 65 of the 320 parcels were more than 15 acres in size.

Chris added that the "developable" designation was checked against aerial photos, but that a GIS landscape-level analysis would be difficult to base a definite determination on. Generally, "developable parcels" are those without a structure.

Chris asked the Technical Team for feedback on the analysis and on how the results are to be presented. Joe Pearce said that it would be helpful to see the parcels listed in descending order of high-scoring area (>12 points). Cherri Smith said that she would like to see parcels sorted simply by acreage.

John Cox said that 320 parcels and the total acreage identified were too high. He said that one way to save money on lands acquisition is to buy a targeted parcel, subdivide it, and sell off the portion that is not critical.

Bobby Louque commented that it might be appropriate to exclude undevelopable parcels, but the group upon further discussion generally agreed that developments can be put in many places where they would not be allowable by right.

Eric Alsmeyer asked if small but contiguous parcels could be identified. This might help identify areas where areas in floodplains have been subdivided.

John Cox asked how many of the 320 parcels have owners in common, that is, it is possible that one person owns several high-priority parcels.

Laura Webb Smith mentioned that she would like to see parcels listed by the percent of the parcel that is high scoring.

Cherri Smith said that on planned bike/pedestrian paths the city can require up to 100 feet for riparian buffers, but that it is preferable to get more so that any trails can avoid floodplains. Cherri said that the city obtains property and easements during the development process. Obtaining easements on parcels that are already developed is a much more complicated process. Easements may also be obtained at a time of land transfer.

George Rogers said that it would be helpful to view the important parcels by which tools are available to preserve them. Some parcels, such as small occupied parcels, may be best suited to outreach and education, which would allow these areas to be addressed while concurrently freeing up acquisition efforts for projects that are likely to have greater impacts. The group generally agreed that this approach would be worth considering for presenting the critical lands protection analysis findings in the final plan.

Chris Mankoff suggested presenting the average score of a site and the total stream frontage. The UNRBA and TJCOG will investigate the possibility of doing this and other suggestions and will present the findings in the final version of Technical Memorandum #2 describing the analysis and final results.

Monitoring Findings and Subwatershed Information

Steve Kroeger of the NC Division of Water Quality presented the results of the water quality monitoring done in Little Lick Creek and tributaries from March 2005 through July 2005. This information is also included in a Technical Memo that was circulated to the Technical Team on August 25th.

Water quality was monitored at 11 sites in the Little Lick Creek watershed. The physical and chemical data represent baseflow samples (samples collected at least 48 hours after a storm), stormflow samples, and physical data collected at 15-minute intervals using seven Hydrolab 4a datasondes. Datasonde data include dissolved oxygen, pH, specific conductance, turbidity, and water temperature. Grab sampling was done synoptically across subwatersheds.

Mr. Kroeger presented the results using scattergrams for each parameter and z-scores and cluster analyses to compare results for different watersheds. The intent of these analyses was to determine if groups of sites could be formed that had similar patterns in the results of the physical and chemical sampling. Z-scores depicted how averages from each sample location (subwatershed) differed from the grand mean (using results for all stations). Building on this approach, cluster analysis was used to group sites (subwatershed) with similar characteristics.

Cluster analysis was conducted twice, once using mean concentrations of parameters from each subbasin, and again using the median concentration. Overall the analyses using means or medians revealed similar patterns. Subbasins 1, 2, 3, and 5 had higher results for calcium magnesium, specific conductance, fecal coliform bacteria, and nitrite+nitrate nitrogen. Subbasins 8 and 13 had higher results for aluminum, turbidity, residues, iron, and phosphorous. Subbasins 9 and 10 generally had low results for the parameters using the cluster analysis (subbasin 9 was the "reference" condition).

Bobby Louque asked if it would be possible to show results in so that upstream versus downstream trends will be apparent.

The group noted a diurnal pattern with dissolved oxygen results, and speculated that these may be attributable to algal activity.

Mr. Kroeger is cautious about the results for turbidity, because this is the first effort in which datasondes were deployed to measure it and because some datasondes had to be deployed horizontally due to low flows. The group discussed turbidity standards (50 NTU is the state maximum for a single sample), but questioned whether the standard sufficiently accounts for local conditions (clay Triassic soils).

Mr. Kroeger also showed the biotic index scores from the macroinvertebrate sampling conducted during the spring. Subwatersheds 1, 2, and 5 show similar results in the 6.8 to 6.96 range, but subwatershed 9 results were somewhat lower at 6.15 (lower scores reflect a macroinvertebrate community intolerant of pollution). Mr. Kroeger also mentioned that toxicology tests were being considered as a water quality assessment tool.

Mr. Kroeger said he will prepare and circulate a report that includes all applicable water quality standards and benchmarks for the Little Lick Creek monitoring results.

John Cox requested results for total nitrogen. Chris Dreps asked if it would be possible to take another sample from subwatershed #8 to see if turbidity issues continue to exist after enforcement of sediment and erosion control regulations at Cardinal Lake.

Chris Dreps then asked who would be willing to participate on a Subwatershed Assessment Committee that will delve further into the monitoring results to help determine management needs for each subwatershed. The following people volunteered: Chris Mankoff, John Cox, Bobby Louque, Steve Kroeger, and Joe Albiston. (Note: additional people stayed after the meeting to discuss the results; please advise Sarah if you wish to participate on the Subwatershed Assessment Committee and are not listed here.)

Prioritizing Potential Restoration Projects

Due to time constraints, this agenda item was tabled until the next meeting. Chris said that the revised riparian restoration and stormwater restoration criteria would be sent to the Technical Team and asked the Team to comment on the criteria by Wednesday, September 7.

Next Steps

The next Little Lick Creek Local Watershed Planning Technical Team meeting was scheduled for Wednesday, October 5 at the Rollingview Community Center. This Fall is also an appropriate time to hold another public meeting.