

**Little Lick Creek Local Watershed Plan  
Summary of Technical Team Meeting #1  
January 18, 2005**

Prepared February 7, 2005

---

**Introductions and Meeting Objectives**

The Technical Team guiding the Little Lick Creek Local Watershed Plan met at 2:00 P.M. on Tuesday, January 18, 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. He then presented the agenda (decision items marked with \*):

- 2:15 Project Overview & Progress Update
- 2:45 Group Charter\*
- 3:00 Draft Watershed Planning Goals\*
- 3:30 Initial Subwatershed Prioritization Exercise\*

Meeting attendees are listed below.

<b>Name</b>	<b>Technical Team or Community Stakeholder</b>	<b>Organization</b>	<b>E-mail address or phone</b>
Laura Webb-Smith	TT	Durham Stormwater Services	<a href="mailto:Laura.smith@durhamnc.gov">Laura.smith@durhamnc.gov</a>
Scott Kershner	CS	NC State Parks (Falls Lake)	<a href="mailto:Scott.kershner@ncmail.net">Scott.kershner@ncmail.net</a>
Glen Whisler	TT*	Durham County Engineering	<a href="mailto:Gwhisler@co.durham.nc.us">Gwhisler@co.durham.nc.us</a>
Bill Patrick	CS	Shaw Hills	596-1692
Eric Alsmeyer	TT	US Army Corps of Engineers	<a href="mailto:Eric.c.alsmeyer@usace.army.mil">Eric.c.alsmeyer@usace.army.mil</a>
Allen McNally	TT	The Crossings Golf Club	<a href="mailto:Amcnally2@nc.rr.com">Amcnally2@nc.rr.com</a>
Bill Mills	CS	Civil Consultants, Inc	<a href="mailto:Bill.mills@civil-consultants.com">Bill.mills@civil-consultants.com</a>
Andy McDaniel	TT	NC DOT Highway Stormwater	<a href="mailto:Amcdaniel@dot.state.nc.us">Amcdaniel@dot.state.nc.us</a>
Deborah Amaral		NC EEP	<a href="mailto:Deborah.amaral@ncmail.net">Deborah.amaral@ncmail.net</a>
Bobby Louque	TT	Durham Stormwater Services	<a href="mailto:Robert.louque@durhamnc.gov">Robert.louque@durhamnc.gov</a>
Chris Outlaw	TT	Durham Stormwater Services	<a href="mailto:Chris.Outlaw@durhamnc.gov">Chris.Outlaw@durhamnc.gov</a>
Amy M. Poole	TT	Rollingview Marina	<a href="mailto:Rollingview@aol.com">Rollingview@aol.com</a>
Kathy Paull	TT	NC Division of Water Quality	<a href="mailto:Katherine.paull@ncmail.net">Katherine.paull@ncmail.net</a>
Marti Gibson	TT*	City of Raleigh Pub. Utilities	<a href="mailto:Marti.gibson@ci.raleigh.nc.us">Marti.gibson@ci.raleigh.nc.us</a>
Dean Naujoks	TT	Neuse River Foundation	<a href="mailto:Dean.nrf@att.net">Dean.nrf@att.net</a>
Glenn Johnson	CS	Chandler/Breedlove Homeowners Association	<a href="mailto:Officialdjq1@netzero.net">Officialdjq1@netzero.net</a>
Steve Kroeger	TT	NC Division of Water Quality	<a href="mailto:Steve.kroeger@ncmail.net">Steve.kroeger@ncmail.net</a>
Cherri Smith	TT	Durham City/County Planning	<a href="mailto:Cherri.smith@durhamnc.gov">Cherri.smith@durhamnc.gov</a>
Stratford Kay	TT	NC Division of Water Quality	<a href="mailto:Stratford.kay@ncmail.net">Stratford.kay@ncmail.net</a>
Chris Dreps		UNRBA	<a href="mailto:dreps@tjcog.org">dreps@tjcog.org</a>

\*Attended in place of a technical team member

## Little Lick Creek Project Overview

Chris Dreps presented the project objectives and major steps as an overview for the Technical Team. The general Little Lick Creek Local Watershed Plan project objectives are:

1. Identify watershed problems & possible causes;
2. Conduct planning, fieldwork, and monitoring to analyze problems;
3. Recommend management strategies;
4. Create a Watershed Management Plan with a focus on restoration; and
5. Implement the plan through partnerships.

Chris then presented the major steps involved in achieving these objectives.

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

This meeting addressed steps 2 (present results of data analysis), 4 (review and adopt draft project goals), and 5 (present initial subwatershed-level information and begin process of prioritizing subwatersheds for management strategies).

Chris Dreps presented general findings about watershed geology, hydrology, soils, habitat, and land use from the UNRBA's watershed characterization study. For more detailed information, see the power point presentation for this meeting or draft Technical Memorandum #1 on [www.unrba.org/littlelick](http://www.unrba.org/littlelick).

Little Lick Creek lies over Durham Triassic Basin geology, a sedimentary formation about 2 million years old. Triassic soils are mainly clay and sand soils, with White Store soil series comprising almost 70% of the watershed's soils. The floodplain soils are primarily of the Chewacla series. Soils in Little Lick Creek are prone to in-stream erosion when the watershed is vegetation is removed and the land is developed.

Little Lick Creek's hydrology is a function of its low relief, Triassic Basin Soils, and impounded water. The watershed has abundant wetlands (almost 800 acres based on NC EEP functional wetland assessment data) and large floodplains. The watershed is divided into 13 subwatersheds for the purposes of this project.

The lower Little Lick Creek watershed, near Falls Lake, is part of the Falls Lake Shoreline and Tributaries Natural Heritage Area. This area has not been adequately explored for possible Natural Heritage Element Occurrences (rare and endangered species). Species of note are mainly migratory birds like Bald Eagles, osprey, and cormorants attracted to Falls Lake's impounded waters.

The watershed's land use consists primarily of agricultural, forestry, and other undeveloped lands zoned for residential use. This category of land use makes up almost 60% of the watershed. Twenty-two percent (22%) of the land is already built upon residential land. About 10% of the watershed is protected natural areas, although most of the protected land is adjacent to Falls Lake. The undeveloped land is rapidly developing, and as Durham moves its urban growth boundary throughout most of the watershed, there is reason to believe that Little Lick Creek is the next frontier of the city's growth.

Dr. Stratford Kay of the NC Division of Water Quality (DWQ) reviewed findings from a review of existing water quality data in Little Lick Creek and offered recommendations for additional monitoring to be done for the Local Watershed Plan project. The initial findings were presented at the December 6, 2004 project kickoff meeting and can be found under meeting summaries on [www.unrba.org/littlelick](http://www.unrba.org/littlelick). Little Lick Creek is impaired from its source to Falls Lake. Biological impairment<sup>1</sup> upstream of Patterson Rd. has been attributed by DWQ to low levels of dissolved oxygen.

The project-related monitoring recommendations are listed below.

Little Lick Creek Local Watershed Plan: Monitoring Recommendations

- Monthly baseflow monitoring on main stem Little Lick Creek and major tributaries
- Stormwater monitoring at least once on main stem Little Lick Creek and major tributaries
- Stormwater toxicity testing (*Daphnia* or *Ceriodaphnia* feeding inhibition studies) at least once on main stem Little Lick Creek and major tributaries
- Sediment toxicity testing (Microtox) at all benthic macroinvertebrate sampling stations
- Seasonal continuous monitoring of dissolved oxygen compared with a reference stream
- Full habitat assessments at all benthic macroinvertebrate monitoring stations during biological assessment activities
- Benthic macroinvertebrate monitoring on the mainstem of Little Lick Creek and selected tributaries
- Fish sampling on Little Lick Creek and selected tributaries
- Continuous monitoring of stream flow and water level on Little Lick Creek
- Benthic macroinvertebrate monitoring and fish sampling during the same time period on a relatively undisturbed Triassic Basin creek (such as Smith Creek) for use as a reference for comparison with Little Lick Creek.

---

<sup>1</sup> Biological impairment is the loss or reduction of biological communities as the result of one or more external factors, such as low dissolved oxygen, toxic chemicals, excessive sedimentation, or disturbance.

## Group Charter

The Technical Team discussed the Little Lick Creek Local Watershed Plan Group Charter. The charter is a document describing the Technical Team and Community Stakeholders, their role in the project, and the ground rules guiding how we conduct meetings and make decisions. Chris Dreps had sent the charter to the group prior to the meeting.

The Technical Team agreed to adopt the Charter. In doing so, the Technical Team agreed to a consensus approach to decision-making. The Group Charter is available for download on the project website.

## Watershed Planning Goals

Chris Dreps presented a list of proposed goals to guide the Little Lick Creek Local Watershed Plan. These goals comprise an original set of draft goals created by the Little Lick Creek project partners (see October 24, 2004 meeting summary on website) and the list of interests written by Technical Team members and Community Stakeholders at the project kickoff meeting (see December 6, 2004 meeting summary).

The proposed goals presented are listed below.

### Little Lick Creek Local Watershed Plan: Project Goals

- **Improve hydrology of the Little Lick Creek Watershed**—Little Lick Creek's natural hydrology is vastly altered from its original state by human development in the watershed and in the stream channel. In recognition that this alteration is the key factor affecting all other water quality and aquatic habitat conditions in the watershed, we should implement management strategies to improve natural hydrology. Strategies should 1) restore hydrologic balance, to the greatest extent practicable, to impacted areas and 2) maintain hydrologic balance where it currently exists.
- **Restore and protect aquatic and riparian habitat**—in areas where impacts have occurred, implement projects that will provide measurable improvement to habitat in the stream and riparian system. In areas where good aquatic and riparian habitat exists, protect habitat functions, specifically seeking measures to protect special areas.
- **Improve water quality**—implement management strategies that will improve water quality in the stream system. In the long term, restore Little Lick Creek to a state of non-impairment. This project can help achieve the latter by taking initial monitoring and planning steps in conjunction with the NC Division of Water Quality.
- **Protect water quality and habitat in Falls Lake**—Falls Lake is a drinking water supply for over 300,000 people in the region and an important regional recreation area. The Little Lick Creek Local Watershed Plan seeks to protect these uses through the protection of water quality and habitat in the lake. This can be accomplished through multiple short and long-term management strategies that reduce nutrients, sediments, and toxic pollutants entering the lake from Little Lick Creek.

- **Improve natural conditions for people living in the watershed**—Little Lick Creek is becoming urbanized, and Durham plans to extend the Urban Growth Area through most of the watershed. Search for opportunities to improve human use of managed natural areas and trails, improve aesthetics, and reduce destruction from flooding where these objectives align with the protection of water quality and habitat functions.
- **Foster community stewardship of the watershed**—In Little Lick Creek’s watershed, many diffuse factors may be causing degradation to the watershed. Just as there are many possible causes, the watershed needs many solutions, and these solutions can only be achieved through an active stewardship of the watershed. This project will educate and involve the local community in the creation of the plan, implementation of projects, and long-term stewardship of the watershed.

The Technical Team agreed to adopt this list of goals.

### **Initial Subwatershed Prioritization Exercise**

Chris Dreps led the first in a series of Technical Team discussions that will eventually yield an approach for prioritizing both subwatersheds and specific projects (or groups of projects) by management strategy type. Chris discussed reasons why we prioritize subwatersheds. Prioritization should be an ongoing process to guide the Technical Team in defining subwatershed characteristics, determining general management needs, and deciding on best and most appropriate management strategies. At this early stage in the process, the activity is a quick way to get the Technical Team actively thinking about subwatershed characteristics and potential management approaches.

Chris provided the group with the following information for each of the 13 subwatersheds in Little Lick Creek.

- Percent impervious cover
- Percent developed land
- Percent Potentially developable land
- Percent protected natural area and green space
- Total nitrogen and phosphorous loading<sup>2</sup> (estimated by Center for Watershed Protection)

The Technical Team then divided into three small groups, each group reviewing a different subset of the subwatershed data. Groups were given different information about the subwatersheds and were asked to rank the 13 subwatersheds as either high, medium, or low based on the type of information provided.

1. Group one was provided with data plots of percent impervious cover and percent developed land. The group was asked to rate the subwatersheds as having a high, medium or low level of development.

---

<sup>2</sup> Nutrient loading estimates are initial estimates to be used for planning purposes only. The UNRBA, Triangle J Council of Governments, and Center for Watershed Protection will update these estimates for use by the Technical Team after fieldwork and further data review.

2. Group two received data plots of the percent of potentially developable land, or land that is currently undeveloped and zoned for development. This group was asked to rank each subwatershed for its potential for development (high, medium, or low potential).
3. Group three received data plots of percent protected natural area and green space and asked to rate the subwatersheds for their existing level of protection (high, medium, or low level of protection).

The groups completed the exercise, and the following table shows the initial results.

Subwatershed Number	Level of Development	Potential for Future Development	Level of Protection
1	High	Medium	Low
2	High	Medium	Low
3	High/Medium	Medium	Low
4	High	Medium	Low
5	High	Low	Medium
6	High	Medium	Medium
7	Medium	High	Low
8	Medium	High	Medium
9	Low	High	Medium
10	Low/Medium	High	Low
11	Low/Medium	High	Medium
12	Low	High	Medium
13	Low	Low	High

The Technical Team will revisit this exercise again at the next meeting, once we have learned more about the Little Lick Creek subwatersheds. The Technical Team will review previous assumptions, discuss our objectives for prioritizing subwatersheds, learn more subwatershed-level information, and discuss how the prioritization scheme should be used.

### Next Steps

The next meeting of the Technical Team will be March 17, during the period when stream assessment and upland reconnaissance fieldwork will be conducted.