

# Morgan and Little Creeks Local Watershed Planning Initiative



## Meeting Announcement & Summary

Thursday, April 3, 2003 meeting held at the Totten Center

### Next meeting:

May 8, 2003

2:00-4:00 pm

**Totten Center, NC Botanical  
Gardens**

### Directions to the Totten Center:

From I-40: Take exit 273 from the West, 273-B from the East. Turn right onto Highway 54 W, go 2.4 miles; turn left at the traffic light onto Finley Golf Course Road. Go 0.6 mile and curve right onto Old Mason Farm Road. Go 0.7 mile, see North Carolina Botanical Garden sign on left; turn left into parking lot.

From the 15-501 and 54 Bypass (Fordham Blvd.): Look for the brown landscaped wall on the south side of Fordham Blvd., 0.6 mile west of the Hwy 54 overpass. Turn onto Old Mason Farm Road at the east end of the wall. See North Carolina Botanical Garden wooden sign on immediate right and turn right into parking lot.

Maps can be found at the following URL:

<http://www.unc.edu/depts/ncbg/info.htm#Directions>



### May 8th Meeting Agenda

- ▶ Welcome and introductions
- ▶ Review and approval of April minutes
- ▶ Watershed Assessment Preliminary Summary of Findings Results; the focus will be on Monitoring Location Recommendations
- ▶ Plans for next meeting

### ***Team members present at 4/3/03 meeting:***

Shari Bryant, NC Wildlife Resources Commission  
Patricia D'Arconte, Town of Chapel Hill  
Ed Holland, Orange Water and Sewer Authority  
Sharon Myers, UNC-Chapel Hill  
Syd Miller, Triangle J Council of Governments  
Tina Moon, Orange County Environment & Resource Conservation Dept.  
Doug Nicholas, Triangle Land Conservancy  
Philip Prete, Town of Carrboro  
Johnny Randall, NC Botanical Gardens/Morgan Creek Valley Alliance  
Hollie Rennell, Orange County Erosion Control

### ***Team Members Not Present:***

Brent Bogue, Natural Resources Conservation Service  
Dave Cook, Piedmont Bioregional Institute  
Jonathan Parkinson, Friends of Bolin Creek  
Karen McAdams, NC Cooperative Extension Service  
John-Ann Shearer, U.S. Fish and Wildlife Service  
Jim Ward, Chapel Hill Town Council  
Richard Whisnant, UNC-Chapel Hill School of Government

### ***Guests Present:***

Cynthia Crossen, Haw River Assembly  
Bruce Ellis, NC Department of Transportation  
Nancy Ferris, Town of Chapel Hill  
Joanna Massey, Carrboro Collaborative Development Assoc.  
Brian McRae, NC Wildlife Resources Commission  
Kathy Paull, Watershed Assessment and Restoration Project  
Diana Tetens, NC Division of Water Quality

### ***Support Staff Present:***

Deborah Amaral, Cape Fear River Assembly  
Jim Blose, NC Division of Water Quality  
Rob Breeding, Watershed Assessment and Restoration Project  
Sarah Bruce, Cape Fear River Assembly  
Jason Doll, Tetra Tech, Inc.  
Bonnie Duncan, N.C. Wetlands Restoration Program  
Don Freeman, Cape Fear River Assembly

## Summary of the 4/3/03 Meeting

### Meeting Agenda / Stakeholder Introductions

Deborah Amaral of the Cape Fear River Assembly opened the meeting and went over the agenda items. Participants then introduced themselves and stated which organization they represented.

Minutes summarizing the January 2003 meeting were approved by stakeholders present. Minutes summarizing the February 2003 meeting were approved as amended, as proposed by Ed Holland of OWASA via email. Minutes distributed at the meeting and posted online reflected the correction noted by Mr. Holland. Deborah emphasized that corrections to meeting summaries are important to the success of the process.



### Little Creek Water Quality Study

Jim Blose of the NC Division of Water Quality (DWQ) presented draft findings of biological impairment in the Little Creek watershed. The study was conducted by the DWQ with funding from the Clean Water Management Trust Fund. The study looked at Bolin Creek, Booker Creek, and Little Creek upstream of Pinehurst Dr. from 2000 to 2002. A draft report was under development and has become available for comment since the meeting. Comments on the draft are due by May 6, 2003. The full report and an executive summary can be obtained online at <http://h2o.enr.state.nc.us/swpu/special.htm>.

All three streams are considered impaired by DWQ, and are on North Carolina's §303(d) list (criteria for listing can be found at 40 CFR 131). The purpose of the study was to identify causes and sources of biological impairment and to suggest general strategies for addressing observed problems. The study did not examine issues of fecal coliform, flooding, or Jordan Lake. Activities undertaken by the study team were bioassessment, stream surveying, chemical sampling, toxicity analysis, and watershed surveying.

**Bioassessment.** The bioassessment examined benthic macroinvertebrates populations and diversity (often referred to as "critters" or "benthos"). The study found that Little Creek was impaired (little

diversity of benthic macroinvertebrates) at each sampling period and that its status on the 303(d) list is correct. Sampling of Bolin Creek shows mixed results at different points in space and time. The condition of the Bolin Creek fish community does not indicate impairment. Booker Creek benthos indicated impairment at Piney Mountain Road in 1998 and extreme impairment at Piney Mountain Road, Willow Drive, and Barbara Circle in 2001. Booker Creek was not rated by DWQ in 2001 because of its small size (not enough is known about baseline conditions of small streams to make accurate judgements about biodiversity). A bar graph of the Morgan Creek discharge at NC 54 was discussed by the group, as it seemed to illustrate the difficulty of obtaining good measurements when droughts and heavy precipitation potentially obscure impacts of non-natural activities.

Potential causes of impairment at **Little Creek and Lower Bolin Creek** (below East Franklin Street) include poor habitat, toxicity, scouring (stormflow volume impacts), and low dissolved oxygen in 2002. Sedimentation, poor habitat, and limited organic habitat could be caused by past channelization, altered watershed hydrology, and ongoing riparian area disturbance.

**Toxicity impacts.** Midge community composition and *Chironomus* deformities in Little and Lower Bolin Creeks indicate what appear to be cumulative effects of toxicity, however limited chemical analysis did not clearly identify a problem pollutant. There are no clear point sources in the discharge area to investigate.

**Scour impacts.** Increased development leads to frequent scouring of stream beds and banks by high-velocity streamflows. This phenomenon contributes to habitat degradation by eroding banks, flushing out organic habitats, and burying downstream habitats beneath sediment.

**Dissolved oxygen.** Low dissolved oxygen (DO) was an important stressor in the summer of 2002. Occasional low DO has been observed in previous years. Low DO is probably not a cause of impairment in normal years, but it continues to be a source of stress for Little Creek.

**Middle Bolin Creek** (from East Franklin Street to Waterside Drive in Carrboro) is also impaired. The midge (fly larva) community samples point to toxicity in some samples. Some degraded habitats and scouring impacts are evident, especially

downstream. In general, issues are not as clear-cut as further downstream.

Causes of impairment in **Lower Booker Creek** (below Eastwood Lake) include poor habitat, toxicity, low DO (esp. in 2002), scour (stormwater volume impacts), and impacts from Eastwood Lake. The Creek has massive sedimentation, which may be from past channelization, altered watershed hydrology, and ongoing riparian area disturbance. Toxicity impacts were evident in midge community samples and in a toxicity bioassay; however, limited chemical analysis did not clearly identify problem pollutants. Pollutants identified included metals, surfactants, detergents, and automobile exhaust and tire components. Lower Booker Creek's watershed is highly developed.

Eastwood Lake provides some pollutant removal during storms, but it reduces DO and baseflows, traps woody debris, interferes with organism movement, changes available food types, and modifies sediment transport characteristics.

Upper Booker Creek above Eastwood Lake is too small to receive a formal stream rating, but biological degradation is evident. Geology and size of its watershed area cause low-flow impacts, and it is likely suffering impacts from development. Lake Ellen may impact the stream in a manner similar to Eastwood Lake. Toxicity bioassays indicate toxic conditions in Crow Branch, which enters below Lake Ellen. High conductivity and TDS in area of old UNC landfill sites indicate a potential source area.

General observations for the watershed include that sources of pollution and stormwater are diverse, and impacts are probably cumulative. Specific concerns include dense commercial areas, leaking underground storage tanks, occasional sewer overflows, and old UNC landfills. Riparian area disturbance is widespread.

Draft recommendations for the report that will guide the Clean Water Management Trust Fund include the adoption of a long-term incremental approach and development of organizational infrastructure for ongoing adaptive management. A watershed-wide strategy to address toxicants is needed, which should focus on source reduction, stormwater treatment and BMPs where feasible, and additional sampling and investigation. A process is needed whereby watershed improvements are considered alongside capital improvements. For example, BMPs may be available in the future that

will help retrofit and mitigate stormwater impacts, in addition to measures that can be taken now. Stream channel restoration is needed, especially in the lower watershed. Riparian vegetation needs to be re-established and further disturbance limited. Protection from further development impacts is needed, especially for Upper Bolin Creek, which is still relatively undeveloped.

Next steps include revision and completion of the Draft Technical Report (see URL above), which includes a watershed description, biological assessment, chemical and toxicological conditions, channel and riparian conditions, causes and sources of impairment, and recommendations. Comments may be submitted through May 6th, and the final report available in early July.



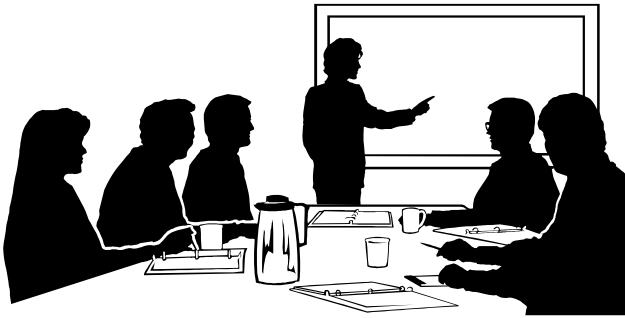
### **Department of Transportation Plans in the Watershed**

Bruce Ellis of the Project Development and Environmental Analysis Branch of the Department of Transportation (DOT) presented an overview of DOT plans in the watershed. He also discussed the Transportation Improvement Program (TIP) and the NEPA/mitigation process. NC DOT has 14 Divisions in the North Carolina. Orange County is in Division 7. The Department follows a series of transportation planning steps: long-range planning (determines the need), program development (project funding), project planning (minimizing impacts), project design, and construction and maintenance. Federal funding has become more scarce due to declining air quality.

The TIP schedules and funds transportation projects, creates a seven-year statewide program, provides public information, facilitates public involvement, advances transportation projects, and provides responsive transportation systems. The TIP is multimodal but does not include maintenance projects. The TIP is developed and updated every two years and must be approved by the Board of Transportation. The public, Departmental staff,

A participant asked if independent erosion control officers inspected DOT sites for best practices compliance. Mr. Ellis responded that DOT self regulates and has its own inspectors since the burden of utilizing outside enforcement would be very great due to the large number of projects DOT implements per year.

**For more information about the TIP and up and coming road projects, please visit:  
<http://www.ncdot.org/planning/development/TIP/TIP/>**



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