



THE BLACK CREEK WATERSHED WIRE

News from Black Creek Watershed, Cary, NC

May 2009

Visit the project website at www.ncsu.edu/WECO/blackcreek

Black Creek Highlights March-April '09

The Black Creek Watershed Association (BCWA) met last on March 30 at Bond Park, and heard an overview of watershed modeling. Thanks to Charles Brown for securing the location.

The next BCWA meeting is scheduled for Monday, May 18 at Town Hall, Engineering Conference Room on the second floor.



Watershed Assessment Update

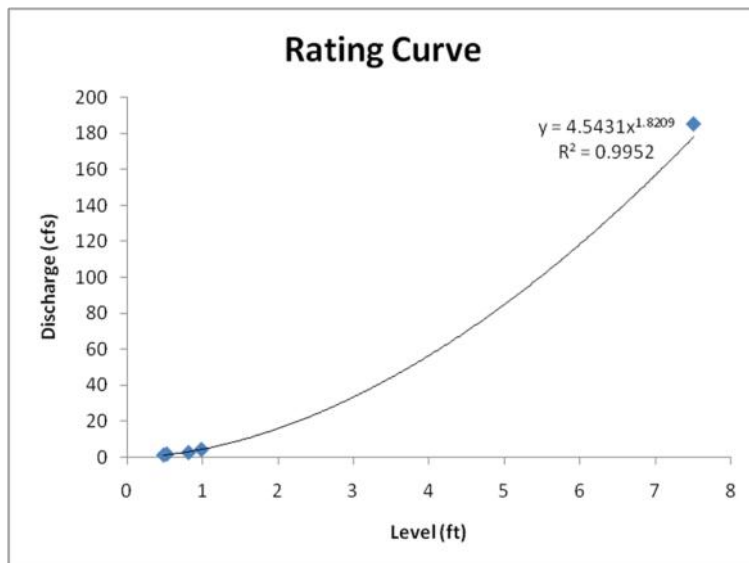
Stacy Nelson provided an overview of assessment results for the watershed plan.

The geodatabase has been completed, and provides an accurate map that can be used for identifying stormwater retrofit projects.

The streamgauge data shows that stormflows in the stream are high. The stream is flashy- after a rainfall the stream show

high volume and high velocity flows. Stacy showed a *hydrograph*, which tracks the flow of runoff into a stream, and a typical *rating curve* for Black Creek. A rating curve is calculated using level of water in the stream, and the velocity (speed) of the stream. This example graph is shown below. The curve on a healthy stream would look non-linear (rising slower).

(Continued on page 2)



The Black Creek Watershed Association typically meets on the last Monday of the month, but will meet early in May due to Memorial Day.

Next meeting:

Monday, May 18

6:15-8:30 p.m.

(Social time 6:15-6:30)

LOCATION:

Town Hall,

Engineering Dept.

Conference Room,

2nd floor

Agenda:

- ◆ Determine topics to propose for Citizen Advisory Committee application
- ◆ Review and discuss draft Watershed Plan

Inside this issue:

Black Creek highlights	1
Watershed assessment update	1-2
Funding watershed improvmt	3
Misc updates	4
meeting rosters	4

Watershed Assessment continued

(Continued from page 1)

Hydrology Modeling

The tech team decided to use a TR-55 model to try to ascertain an impact from the stormwater infrastructure in the watershed. Created by the US Natural Resources Conservation Service (NRCS), the model shows how a watershed behaves hydrologically. Specifically it shows how long it takes runoff to get to a stream system.

A runoff curve number is a coefficient given to different land uses based on imperviousness. The higher the number, the more impervious the land use. A runoff number for watersheds can be calculated. Inputs into the model include: land use / land cover; soil hydrologic group; channel / Reach - slope, length, flow velocity; drainage area.

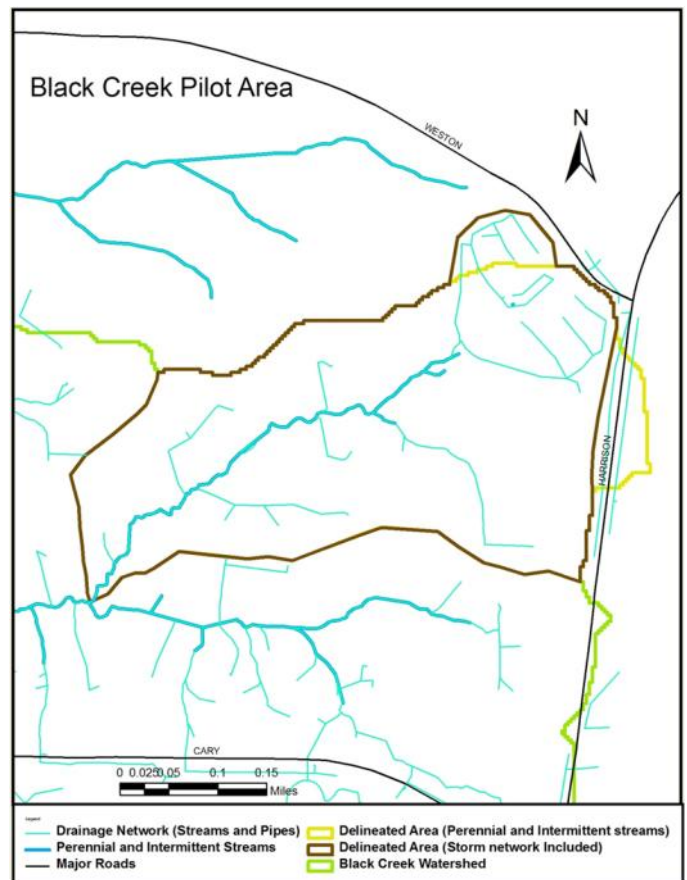
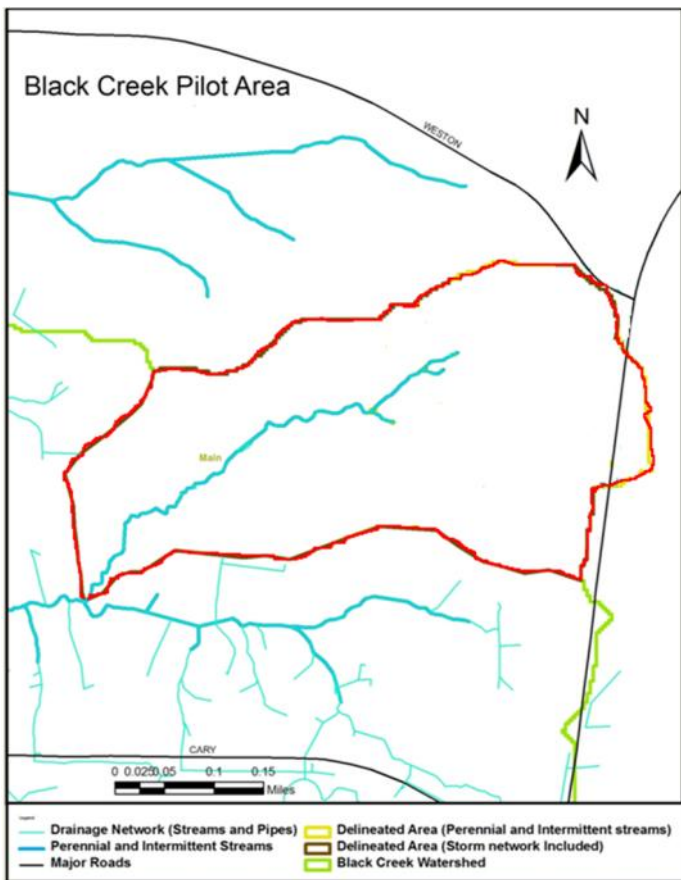
To do this calculation, a small drainage area was chosen as a pilot. The area that drains the Arboretum and part of Beechtree was chosen, since it drains both commercial and residential land uses. The stream system was modeled with and without storm pipes & drains. In this exam-

ple, adding the pipes & drains changed the location of the watershed boundaries, but did not change the overall amount of land in the watershed.

The results show the stormwater network contributes to a minor reduction in the amount of time it takes for the peak runoff to be established in the stream. In addition we find that the peak runoff rate increases from 85 cubic feet per second (cfs) to 92 cfs for a 2 year 24 hour storm*. The curve number was 72. The difference was less than expected, but this is likely because the TR-55 model is coarse.

The diagram on the lower left shows the natural drainage area that would be used in a typical runoff curve calculation. The diagram on the right incorporates the stormwater drainage network, illustrating how the watershed boundaries change.

*A two year 24 hour storm is the rainfall in 24 hours which is expected to be exceeded once in 2 years.





Funding Black Creek Watershed Improvements

The EPA 319 watershed planning grant that has funded the Black Creek effort ended on April 30, 2009. WECO staff have submitted grant proposals to fund implementation of the watershed plan.

1. NC Clean Water Management Trust Fund

Due to State budget shortfalls, NC Clean Water Management Trust Fund (CWMTF) grant for Black Creek has been put on hold. The CWMTF Board has indicated that they will fund the FY08 projects (including the Black Creek project) when funding is returned by the State. We'll keep you updated.

2. Environmental Protection Agency (EPA) 319 Grant

Christy Perrin and Doug McRaney, Town of Cary, participated in an interview for a EPA Section 319 funds for stormwater runoff with the NC Division of Water Quality in May. We expect to receive notice of a decision soon.

3. NC State University Extension, Engagement, and Economic Development

A small proposal has been submitted to this department to fund NCSU's involvement this summer in searching for stormwater best management projects on public land.

First Springtime Big Sweep for Black Creek

Sixteen volunteers participated in a springtime trash clean-up along the creek and greenway on Saturday, May 2. They picked up 24 large black bags of trash and 18 kitchen bags of recyclables. Heather Morell, Conservation Specialist-Volunteer Coordinator for the Town of Cary partnered with us to make it an official Spruce event and provide breakfast snacks. Spruce is the new litter clean-up and beautification program for the Town. See www.townofcary.org/depts/pwdept/spruce.htm

The Public Works and Utilities Dept. picked up the recyclables and trash.

Thank you to all of our volunteers, who are listed on the back of this newsletter!



At left, Heather, Darryl Stepp, Nathan Cobb, and Rachel Smoak record their totals from the clean-up. Above, Rachel shows some of their haul.

Christy Perrin
Watershed Education for Communities and Officials
Dept. Agricultural and Resource Economics, NCSU
Campus Box 8109
Raleigh, NC 27695-8109



Presentations to Homeowners Associations

Christy provided a presentation on the Black Creek watershed plan and upcoming opportunities at the Beechtree HOA annual members meeting, by the HOA Board's request. If anyone would like help presenting at their own HOA meeting, contact her. She can provide you with the presentation or possibly join you at the meeting to help give it.

Miscellaneous Discussion

Clearing of trees in utility easements

Vicki Maxwell expressed concerns about tree clearing of sewerage lines in the watershed. Watershed residents have noted clearing in excess of what has been seen before, and also expressed concern about resulting erosion, and a desire to have notice ahead of time regarding clearing. Heather Morell, Town of Cary, mentioned that clearing is probably required to prevent roots from damaging sewer lines. We will work with the Town of Cary to find answers to these questions:

- ◆ What is the schedule for clearing in Black Creek? Is it completed?
- ◆ Can neighbors/homeowners associations be given advanced notice of clearing?
- ◆ What are options for more sensitive clearing practices? (preventing erosion from machines, leaving overhead tree canopy connection for example)

Black Creek Greenway Renovation Design

Due to budget issues, the design for the greenway renovation is on hold for now.



Volunteers prepare for the stream clean-up

March Meeting Participants

- Liz Adams, Silverton
- Patrick Beggs, *WECO; NCSU*
- Bianca Bradford, *resident*
- Charles Brown, *Town of Cary*
- Susan Davenport, *Beechtree, Cary*
- PRCR*
- Amin Davis, *Beechtree resident*
- Marilyn Grolitzer, *North Raleigh*
- Elena Horvath, *Silverton*
- April James, *NCSU*
- Eric Kulz, *North Harrison Trace, DWQ*
- Vickie Maxwell, *Wessex HOA*
- Heather Morell, *Town of Cary*
- Bob Morris, *Silverton HOA, Cary*
- Greenways Committee*
- Stacy Nelson, *NCSU*
- Christy Perrin, *NCSU; Windchase*
- Vicki Maxwell, *Wessex HOA*

Big Sweep participants

- Liz Adams
- Patrick Beggs
- Nathan Cobb
- Amin Davis
- Amy & Maggie Kneifel
- Owen & Judy Hitchcock
- Dan Hitchcock
- Heather Morell
- Christy Perrin
- Michael Stayton
- Darryl Stepp
- Rachel Smoak
- Chris Walker
- Sam & Lisa Whitaker

