

SEDIMENTS

Newsletter of the North Carolina Sedimentation Control Commission

Wake County Conducts Lunch & Learn

by Byron E. Brady, PE, Manager
Sedimentation & Erosion Control Program
Wake County Environmental Services

SINGLE HOME CONSTRUCTION is the number one cause of off-site sedimentation in Wake County, North Carolina. In an effort to reduce this offsite sedimentation, the Wake County Sedimentation & Erosion Control (S&EC) Program conducted a Lunch & Learn Seminar on June 21, 2006. The seminar, which targeted homebuilders, was coordinated and advertised by the Home Builders Association of Raleigh/Wake County.

A home under construction in a subdivision in the northern part of the county was the site of this first seminar. Forty-two were in attendance which included Wake County building inspectors, engineers, developers,



Debbie Greene, CPESC with the Wake County, NC Erosion Control Program staff, explains the Neuse River Basin Buffer Regulations during the Lunch & Learn, June 21, 2006.



Homebuilders view the Wake County, NC display of "The Good, the Bad, and the Ugly of Erosion Control" during the Lunch & Learn, June 21, 2006.

municipality representatives, and twenty-one homebuilders. The seminar included an explanation of the new provisions in the ordinance, the proper protection of a single lot, acceptable devices, and buffer encroachment regulations.

Recently, the Wake County Commission adopted major changes to their Sedimentation and Erosion Control Ordinance giving the county personnel added enforcement over construction in their jurisdiction, especially on sites less than one acre.

The S&EC Program has also partnered with the Wake County Building Inspection Department to coordinate inspection of all

single home construction. The distribution of a two-page flyer with each building permit began on February 1, 2006.

This flyer states the new changes in the regulations and shows the approved silt fence and construction entrance details and their proper placement. This protection must now be in place on each site prior to the approval of the builder's footing inspection.

The next Lunch & Learn will be scheduled in the Spring of 2007. (Date TBD. Email bbrady@co.wake.nc.us for details.)

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New Wake County Newsletter

In addition to their Lunch & Learn Seminars, Wake County has become one of the first local government erosion and sedimentation control programs in the nation to have its own informational newsletter entitled Wake County Erosion Control News. This quarterly electronic publication was established to

help educate the development community as well as the general public on Wake County's Sedimentation & Erosion Control Program. Anyone wishing to subscribe can do so by contacting Byron Brady, P.E. at bbrady@co.wake.nc.us with your email address and request to be added to the email list.

State of North Carolina,
Department of Environment
and Natural Resources
William G. Ross, Jr. Secretary

Land Quality Section
Division of Land Resources
James D. Simons, Director
and State Geologist

Updates in NC Erosion & Sedimentation Control

by Ashley Rodgers
State Sedimentation Education Specialist

WELCOME TO THE NEWLY designed *Sediments* newsletter! We have been hard at work updating our format and shifting toward electronic readership. And *Sediments* isn't the only thing that's been updated recently in the field of NC erosion & sedimentation control. The legislature has also amended the NC Sedimentation Pollution Control Act of 1973 this year. Changes include:

Addition of a 5th mandatory standard:

"The land-disturbing activity shall be conducted in accordance with the approved erosion and sedimentation control plan."

Requirement for Self-Inspections: *"The landowner, the financially responsible party, or ... agent shall perform an inspection of the area covered by the plan after each phase of the plan has been completed and after establishment of temporary ground cover"*

- Maintain and make available onsite the inspection reports
- Make note of any significant deviation from the plan, measures that may be needed to correct this deviation, and document the completion of those measures
- Records will be maintained until permanent groundcover has been established

Establishment of Local Program Fees: *"An ordinance adopted by a local government may establish a fee for the review of an erosion and sedimentation control plan and related activities."*

Availability of Limited Local Programs:

- Local government only responsible for inspection and the assessment and collection of fees
- Land Quality Section does plan review and enforcement

Furthermore, the NC Erosion & Sedimentation Control Planning and Design Manual has also undergone revisions, published in June of 2006. These revisions will be effective January 1, 2007. Some major changes include:

Surface Stabilization

- Updates include the addition of Rolled Erosion Control Products (6.17)

Outlet Protection

- New options, including Plunge Pools

Inlet Protection

- New measures include Hardware Cloth & Gravel Inlet Protection (6.51) (replacing

Fabric Drop Inlets), Rock Doughnut Inlet Protection (6.54), and Rock Pipe Inlet Protection (6.55)

Sediment Traps and Barriers

- Sediment Basin (6.61) must dewater from the surface and use baffles
- Temporary Sediment Traps (6.60) have increased minimum volume required to 3600 cf/acre disturbed
- Rock dam (6.63) maximum drainage area has decreased to 10 acres
- Silt Fence (6.62): steel posts are now required (no wood allowed), and slicing is discussed as a method of installation
- Baffles (6.65) and skimmers (6.64) have new sections

Stream Protection

- Temporary Stream Crossing (6.70)
- Buffer Zones (6.74)

Other Measures

- Check dam (6.83): drainage area has decreased to 0.5 acre
- Flocculants (6.86) have a new section

Until January 1, 2007, design specifications from either the existing manual or the revised manual are acceptable. However, the Sedimentation Control Commission encourages the immediate use of the revised manual. Specifications are guidelines, and are intended to minimize the time required to design practices for use under typical site conditions. Unusual conditions may dictate that specifications be modified and practices specially designed. Exceptions to these guidelines may be made based on best professional judgment.

Current design manual owners may contact the Land Quality Section for the June 2006 revision packets at no charge. New complete manuals may also be purchased by a check or money order payable to NC DENR for \$65.00 (in state) or \$75 (out of state). For more information, please contact:

Ashley Rodgers

Division of Land Resources
Land Quality Section
1612 Mail Service Center
Raleigh, NC 27699-1612

Ashley.Rodgers@ncmail.net • (919) 733-4574

The Planning and Design Manual is available online in its entirety at:

<http://www.dlr.enr.state.nc.us/pages/manualsandvideos.html>



SEDIMENTS is published quarterly by the NC Sedimentation Control Commission to provide information and assistance to the regulated community and to facilitate communication among personnel of state and local erosion and sedimentation control programs.

Send comments to Ashley Rodgers, NC DENR-Land Quality, 1612 Mail Service Center, Raleigh, NC 27699-1612. Email: Ashley.Rodgers@ncmail.net. Send change of address and subscription information to Soil Science Dept., Campus Box 7619, North Carolina State University, Raleigh, NC 27695-7619 (919) 513-1678; joni_tanner@ncsu.edu). Fifty-five hundred copies of this newsletter were printed at a cost of \$1,320 or 24 cents per copy.

Personnel of the Land Quality Section of the NC Department of Environment and Natural Resources provide information and assistance for implementation of the NC Erosion and Sedimentation Control Program. For assistance, please contact the Regional Engineer or the Raleigh headquarters listed below:

Janet Boyer, PE
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500

Doug Jones, PE
225 Green Street, Suite 714
Fayetteville, NC 28301
(910) 433-3300

Zahid Khan
610 East Center Ave., Suite 301
Mooresville, NC 28115
(704) 663-1699

John Holley, PE
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200

Pat McClain, PE
943 Washington Sq. Mall
Washington, NC 27889
(252) 946-6481

Dan Sams, PE
127 Cardinal Dr. Ext.
Wilmington, NC 28405-3845
(910) 796-7215

Matt Gantt, PE
585 Waughtown St.
Winston-Salem, NC 27107
(336) 771-5000

Gray Hauser, PE
Raleigh Central Office
512 N. Salisbury St., 1612 MSC
Raleigh, NC 27699-1612
(919) 733-4574

The North Carolina Sedimentation Control Commission

The Sedimentation Control Commission (SCC) was created to administer the Sedimentation Control Program pursuant to the NC Sedimentation Pollution Control Act of 1973 (SPCA). It is charged with adopting rules, setting standards, and providing guidance for implementation of the Act. The composition of the Commission is set by statute to encompass a broad range of perspectives and expertise in areas related to construction, industry, government, and natural resource conservation and quality. All members are appointed by the Governor and serve three-year terms, except for the Director of the Water Resources Research Institute of The University of North Carolina, who serves as long as he remains Director. The chairman of the SCC is named by the Governor. The following is a list of current members with the organizations they represent:

Chairman:

Kyle Sonnenberg
Fayetteville
NC League of Municipalities

Vice Chairman:

Donnie W. Brewer
Greenville
NC Environmental Management Commission

Commissioners:

W. T. "Buzz" Bryson
Raleigh
NC Public Utilities

Elaine C. Chiosso
Brynum
Non-governmental Conservation

John William Miller, Jr.
Burnsville
NC Mining Commission

Joseph H. Kleiss
Raleigh
NC State University, Dept. of Soil Science

Grover McPherson
Winston-Salem
NC Soil and Water Conservation Commission

David H. Moreau
Raleigh
Water Resources Research Institute of
The University of North Carolina

Joseph Rudek
Raleigh
Non-governmental Conservation

Mark A. Taylor
Greensboro
Professional Engineers of NC

Richard Vick
Wilson
Carolinas Associated General Contractors

F. Roger Watson
Asheville
NC Home Builders Association

NC Sedimentation Control Commission: August and November Actions

AT ITS MEETING ON August 16, 2006, the NC Sedimentation Control Commission (SCC) took the following actions:

- Approved the continued delegation of the City of Asheville program with the condition of certain improvements to their inspection reports.
- Deferred approval of delegation of the Swain County local program with a staff update in November and another full review in February 2007.
- Approved the continued delegation of the City of Burlington local program.
- Approved the continued delegation of the New Hanover County local program contingent upon the county's plan to hire additional erosion control staff.
- Approved a 30-day notice to the Town of Ocean Isle Beach that the delegation of their local program will be rescinded.
- Approved a 12-month extension for Wake County to revise their ordinance, allowing sufficient time for the seven included municipalities to renew the new ordinance.
- Approved minor amendments to local program contracts including the 2006 application deadline, the number of application copies to submit, clarifications within the Scope of Work, clarification that reimbursable workshops must take place within the contract time period, and a number of small changes to grammar and sentence structure.
- Approved the date and location of the November SCC meeting. The 2-day meeting was held November 15-16, 2006 in the Concord/Kannapolis area and included a field tour on November 15.

At its meeting on November 16, 2006, the NC Sedimentation Control Commission (SCC) took the following actions:

- Approved amendments to the model ordinance.
- Reviewed written response of Swain County's Program Review, and requested that notice be sent to ask them to inform the SCC by its next meeting when a qualified professional will be available to review plans for approval.
- Approved the following dates for the 2007 Commission meetings: February 15, May 17, August 16, and November 15-16. A field tour will be planned for November 16, in conjunction with the regular meeting on November 15.

Acted on the following proposals recommended by the Sedimentation Education Committee:

- Approved a resolution that requests the General Assembly remove the restrictions on the use of educational funds for sedimentation education activities.
- Approved the allocation of \$20,000 to the Land Quality Section for funding of a temporary employee to assist the sediment program.
- Approved reimbursement of actual mailing costs of design manual revisions, up to a maximum of \$5,000.
- Approved allocation of \$5,000 to Land Quality Section for revision and reprinting of publications to reflect updates to law, design guidelines, and contact information.

Final Agency Decision on Hensley:

The SCC reviewed the ruling of an administrative law judge regarding the appeal of the issuance of a waiver of the trout buffer zone requirement for impacts at the Mountain Air golf course. The Commission issued a final agency decision that affirmed the judge's ruling that the mandatory standard for buffer zones did not prohibit construction of facilities on, over or under a lake or natural watercourse. It rejected the judge's ruling that the mandatory standard requiring disturbance within the buffer zone to be "temporary and minimal" prohibited the land disturbing activity because the land use change was not temporary and minimal. The SCC upheld the Department's interpretation that temporary and minimal only applies to erosion and sedimentation. In other words, a land disturbing activity which results in temporary and minimal erosion and sedimentation could be exempt from the buffer standard by the SCC.

The SCC issued a declaratory ruling in response to a request from Lake Toxaway County Club that the 'temporary and minimal' standard applies to stream restoration when (1) stream restoration reduces existing erosion and sedimentation impacts; (2) impacts are avoided, remaining impacts minimized and the area restored to native vegetation characteristic of an undisturbed buffer to the extent practical upon completion of construction; and (3) best management practices are used during and after construction.

NC Sedimentation Control Commission: August and November Actions

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The SCC issued a declaratory ruling in response to a request from NC DOT that the temporary and minimal standard for a trout buffer waiver encompasses the paving and improvement of secondary roads when NC DOT ultimately removes erosion and sedimentation impacts from the area by stabilizing an unstable, eroding road surface; avoids and minimizes impacts; restores the

area to native vegetation characteristic of an undisturbed buffer to the extent practical upon completion of construction; uses best management practices during and after construction; and limits disturbance to the amount necessary within the trout buffer in order to meet safety, right of way, and topographical constraints.

Stormwater Scoops

by Chrystal Bartlett

Stormwater Awareness & Outreach Coordinator
NCDENR Office of Public Affairs

NC Division of Water Quality's BMP Manual

After incorporating comments, DWQ is releasing the revised manual on a section-by-section basis. To review subchapter 3.10 "Permeable Pavement Systems," visit http://h2o.enr.state.nc.us/su/bmp_updates.htm.

Stormwater BMP Manual Mail List

To receive an e-mail notification when new chapters are released, please contact Boyd Devane at boyd.devane@ncmail.net and ask to be placed on the e-mail list.

Draft Stormwater Permits

Copies of the NPDES Phase II permits for Oak Island, Navassa, Leland, Kure Beach, Carolina Beach and Wrightsville Beach and the cities of Wilmington and Jacksonville are available at <http://h2o.enr.state.nc.us/su/publicnotice.htm>.

Free Outreach Materials

DENR just released TV, radio, print and outdoor ads for local governments to use in their outreach efforts. The Know Where It Goes campaign is available at

<http://www.ncstormwater.org/pages/toolkitfreecontent.html>. If you have questions, contact Chrystal Bartlett at chrystal.bartlett@ncmail.net or at 919.715.4116



One of three publicly available print ads in the "Know Where It Goes" campaign.



This "Know Where It Goes" ad is designed especially for full size, outdoor billboards and banners.

Personnel Changes

Matt Osborne is a new Environmental Technician in the Winston-Salem Regional Office.

Richard Peed, Assistant Regional Engineer, is the new Express Permitting Engineer in the Washington Regional Office.

Steve Kelly is a new Assistant Regional Engineer in the Mooresville Regional Office.

Karyn Pageau, Assistant Regional Engineer, is now coordinating Express Permitting in the Raleigh Regional Office.

Scott Sink, Assistant Regional Engineer, is now the Express Permitting Engineer in the Winston-Salem Regional Office.

Thad Valentine is a new Environmental Technician in the Raleigh Regional Office.

Scott Harrell is a new Assistant Regional Engineer in the Mooresville Regional Office.

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Subscribe Now:
www.soil.ncsu.edu/swetc/sed/index.htm

For more information on Sediment and Erosion Control, please visit:

NC Dept. of Environment and Natural Resources - Land Quality Section
www.dlr.enr.state.nc.us/pages/landqualitysection.html

International Erosion Control Association
www.ieca.org

University Viewpoint: Low Impact Development

by Dwane Jones
Area Specialized Agent
NC State University and NC Cooperative Extension

NORTH CAROLINA IS GROWING at an amazingly rapid rate. We are projected to add over one million people to our population over the next fifteen years (source: <http://demog.state.nc.us/>). Residential, commercial, and institutional development is expected to proliferate. This increase in population and decrease in open space means that we must change our development habits in order to maintain and protect water quality.

Conventional land development involves removal of all vegetation, compaction of the soil and putting in large areas of hard (impervious) surfaces like roads, parking lots and roofs. The compacted soil and impervious surfaces prevent stormwater from soaking into the ground (called infiltration). This results in a tremendous increase in surface runoff.

An increase in the quantity of stormwater runoff overwhelms streams causing flooding, damaging public and private property and destroying habitat for fish and wildlife. Further, conventional development practices collect and convey stormwater runoff through storm drains and pipes to a centralized, manmade stormwater facility to manage stormwater flow and remove pollutants. This requires a lot of pipes and sometimes large, costly, stormwater best management practices.

In contrast, low impact development seeks to design, construct, & maintain each development site to protect, or restore, the natural hydrology (the scientific study of the properties, distribution, and effects of water on the earth's surface) of the site so that the overall integrity of the watershed is protected. This is done by creating a "hydrologically" functional development.

The consequences of using low impact development principles typically include, but are not limited to: protection of water quality, increased open space, reduction of impervious surfaces,

protection of vegetation, decrease in infrastructure costs, and increase in profits. Even though there are many studies that compare the costs of low impact development to conventional land development, there are few comprehensive studies in North Carolina. NC State Cooperative Extension is currently conducting some of these economic studies. Please check our website at www.bae.ncsu.edu/stormwater or www.wen.ncsu.edu for updates.

In future articles we will discuss how low impact development can be used in several different land use settings. We will also highlight incorporating LID into ordinances and future conferences/workshops on low impact development. To schedule a low impact development educational session or receive more information, please contact Dwane Jones at 252.747.5831 or dwane_jones@ncsu.edu.

Low Impact Development	Conventional Development
• Minimize land clearing	• Remove most or all existing vegetation
• Amended soils	• Compact soils
• Minimize use of impervious surfaces	• Use of large amounts impervious surfaces
• Infiltration	• Costly infrastructure
• Natural hydrology	• Severely altered hydrology

Stormwater management during and after construction should be an intricate part of any comprehensive development program. Low impact development incorporates stormwater management by way of integrated management practices (IMPs). IMPs are incorporated or "integrated" into the existing landscape. These practices are typically directed at treating stormwater at the source. IMPs (structural) include bioretention, cisterns, greenroofs, and permeable pavement. Non-structural practices include public education & outreach.



LID: Residential Project Source: Puget Sound Water Quality Action Team



LID: Institutional Retrofit in Williamston, NC



LID: Commercial Project in Raleigh, NC

Calendar of Events

1/8-12/07	AutoCAD Use for Stream Monitoring and 3-D Stream Restoration Raleigh, NC http://www.soil.ncsu.edu/swetc/autocad/stream06.htm	1/30-31/07	Local Programs Workshop Winston-Salem, NC angela_morgan@ncsu.edu
1/16-17/07	Stormwater Treatment Practice Inspection & Maintenance Training & Certification Wilmington, NC http://www.bae.ncsu.edu/workshops/2007certification/index.htm	2/12-16/07	EC07: IECA's Environmental Connection Reno, NV www.ieca.org/applications/calendar.asp?eventID=126
1/17/07	EPA Watershed Academy: Connecting with Local Land Use Decision-Makers on Water Resource Protection Webcast Seminar (registration opens 1/10/07) http://www.epa.gov/owow/watershed/wacademy/webcasts/	2/22-23/07	WRRI Erosion and Sedimentation Control Workshop Raleigh, NC www.ncsu.edu/wrri/erosionseminars.html
1/23-24/07	Stormwater Treatment Practice Inspection & Maintenance Training & Certification Winsten-Salem, NC http://www.bae.ncsu.edu/workshops/2007certification/index.htm	3/12-14/07	2nd National Low Impact Development Conference Wilmington, NC www.soil.ncsu.edu/swetc/lid/home.htm
1/28-2/1/07	USDA-CSREES National Water Conference Savannah, GA www.soil.ncsu.edu/swetc/waterconf/2007/home07.htm	3/27-28/07	10th Annual Water Resources Research Institute Conference Raleigh, NC http://www.ncsu.edu/wrri/conference/index.html
		4/17-18/07	WRRI Erosion and Sedimentation Control Workshop Boone, NC www.ncsu.edu/wrri/erosionseminars.html