

SEDIMENTS

Newsletter of the North Carolina Sedimentation Control Commission

City of Wilson and City of Winston-Salem / Forsyth County Win Awards for Excellence in Erosion and Sediment Control

By Janalyn Vo, Land Quality Section, Raleigh, NC

The annual Local Programs Workshop and Awards Banquet was held at the Sheraton Atlantic Beach Oceanfront Hotel on February 3 and 4, 2010. This annual workshop brings together delegates from each of the 53 local programs throughout the state and specializes in training and discussion of erosion and sediment control issues in North Carolina.

Local erosion and sediment control programs have the ability to exercise greater control over erosion and sediment control in their respective jurisdictions and may often inspect sites more frequently than the state erosion and sediment control program. Furthermore, local erosion and sediment control program ordinances may be more restrictive than state law, giving additional control over

erosion and sedimentation control during the development occurring within their respective jurisdictions. The North Carolina Sedimentation Control Commission recognizes the importance and the value of local erosion and sediment control programs in controlling pollution by sedimentation to the waters of North Carolina. In addition to training, the workshop seeks to recognize outstanding local programs. Each year awards of excellence are presented to programs in two categories:

- Small program – program providing 0-3 man-years or full-time equivalents supporting erosion and sediment control
- Large program – program providing 3+ man-years or full-time equivalents supporting erosion and sediment control



Pictured from left: Michael Voiland, NC Sedimentation Control Commission; R. Bryant Bunn, III; Michael Horan; and Bryan Spell, City of Wilson

This year, City of Wilson received the Local Program Award of Excellence for a small program. This new program is located within the City of Wilson Stormwater Division which is a division in the Engineering Department. Bryan Spell, the Stormwater Program Manager has direct oversight over the program. Michael Horan was hired in December 2008 as the Erosion and Sediment Control Specialist. On January 13, 2009 the City of Wilson local program began to receive projects from

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State of North Carolina,
Department of Environment & Natural Resources
Dee Freeman, Secretary

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

Awards for Excellence

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the Raleigh Regional Office. A program for Erosion Control for Single Family Home Construction went into affect July 1, 2009. Gowon Goode, Assistant State Sediment Specialist, who nominated the program for this award said "The City of Wilson is a young local program that is aggressive about sediment and erosion control. The City has been innovative and instrumental in creating workshops for contractors and design professionals educating them on the principles of sediment and erosion control as well as new technologies available."

The City of Wilson will be holding an Erosion Control Seminar on May 5, 2010 at the City of Wilson Operations Building at 1800 Herring Ave. in Wilson, NC. The event will host a number of speakers discussing controlling turbidity on construction sites to Low Impact Development and other seminars as well.

More information on the City of Wilson Erosion and Sediment Control program may be found on their website at

<http://www.wilsonnc.org/Departments/PublicServices/Stormwatermanagement/erosioncontrol/>

The Erosion & Sedimentation Control Program for Winston-Salem and Forsyth County, which is operated by the City-County Inspections Division, received the Local Program Award of Excellence for a large program. The award comes after a concerted effort to turn around a program that was briefly put on probation a little over five years ago because of shortcomings in administration and enforcement. Although the

program made enough progress to come off probation in just six months, it took almost two years to implement all the changes the Inspections Division adopted to bring the program up to speed. The action plan totaled eight steps, and included making revisions to city and county erosion-control ordinances, adding staff, obtaining professional certifications and revising the way the division tracked and reported violations.

Mathew Gantt, the Land Quality Engineer for the Winston-Salem Regional Office of DENR, nominated the program for the award because of its initiative in creating a program to control erosion from single-family house lots, which are too small to fall under state regulations. "At the time, single family homes were causing quite a bit of off-site sedimentation," Gantt said. "Jeff (Kopf, the division's erosion control engineer) and his folks have done an excellent job." Previously, the division inspected for erosion control compliance when lots and roads for a housing development were graded, but once the lots were sold, it did not check on homebuilders. Now, Kent Wall's full-time job is to check individual building lots for compliance. Between 2004 and 2008, over 7000 single family home sites were permitted by the program.

The division also hired a third erosion control inspector, Jeff Kopf said. "This allows us to increase our inspection frequency from 6 to 8 weeks to 3 or 4 weeks. So we are inspecting each site almost twice as often, and we are able to identify non-compliance issues on-site a lot quicker and get them corrected."

Three of the five members of the erosion control section are now professionally certified in erosion and sediment control, and the other two are in the process of obtaining their certification.

More information on the Winston-Salem/Forsyth County Erosion and Sediment Control program may be found on their website at:

<http://www.ci.winston-salem.nc.us/Home/Departments/Inspections/Articles/Inspections>

Congratulations to these two well-deserving programs in recognition of their excellence in erosion and sediment control. ❖



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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:

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Pictured from left: Michael Voiland, NC Sedimentation Control Commission; Jeff Kopf, David Evans, Matt Gantt, Kent Wall, Russ Yoder and Fred Bowen. (Gantt is with the Winston-Salem Regional Office; Kopf, Evans, Wall, Yoder and Bowen are with the City of Winston-Salem/Forsyth County Local Program.)

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:

Donnie W. Brewer
Greenville

NC Environmental Management Commission

Commissioners:

W.T. "Buzz" Bryson
Raleigh

NC Public Utilities

Elaine C. Chiosso
Bynum

Non-governmental Conservation

Tommy Esqueda
Wake County

NC Association of County Commissioners

Joseph H. Kleiss
Raleigh

NC State University, Dept. of Soil Science

Grover McPherson
Winston-Salem

NC Soil and Water Conservation Commission

John William Miller, Jr.
Burnsville

NC Mining Commission

Michael P. Voiland
Raleigh

Water Resources Research Institute of
The University of North Carolina

Robin Smith
Burnsville

Non-governmental Conservation

Joseph E. Glass
Fayetteville

Professional Engineers of NC

Richard Vick
Wilson

Carolinas Associated General Contractors

Rob Weintraub
Wake Forest

NC Home Builders Association

NC Sedimentation Control Commission: February Actions

At its meeting on February 18, 2010, the NC Sedimentation Control Commission (SCC) took the following actions:

Delegated Local Programs:

- City of Winston-Salem/Forsyth County: Approved the continuation of Local Delegation of erosion and sediment control (ES&C) programs.
- City of Burlington: Approved the continuation of Local Delegation.
- Town of Holly Springs: Approved the continuation of Local Delegation.
- Town of Cary: Approved the continuation of Local Delegation.
- Town of Wake Forest: Approved the continuation of Local Delegation.
- Cabarrus County: The review of the program will continue until the May SCC meeting.
- NC Department of Transportation: In the Administrative Review, NCDOT was praised for improving their skimmer sediment basins. NCDOT was encouraged to use the current methods used by USDA-NRCS and USGS to determine peak discharge and sizing of culverts in watershed of less than one square mile. It was noted that the NCDOT certification training for contractors and staff given by NC State University since 2006 has strengthened the NCDOT program. The LQS staff suggested that the Level III course for design of erosion and sedimentation control would be better if taught as a two-day class (as compared to the current 1-day) to allow for discussion and deeper understanding of design concepts. The SCC approved the continuation of Local Delegation with the following recommendations:

- 1) Enhanced sediment settling with flocculants should be integrated with traditional practices when adequate surface area cannot be provided for (erosion control) measures. This should be implemented immediately on all maintenance projects as well as contract construction projects, especially

in High Quality Waters (HQW) and Trout Waters of the State.

- 2) County maintenance forces and landscaping crews need to coordinate which unit will prepare steep back slopes or cut banks for seeding to train staff to provide adequate sediment control for the clearing and grubbing of cut slopes, as well as prepare the slopes for seeding in steep terrain.
 - 3) Sediment controls should be kept in place until ground cover sufficient to restrain erosion is established rather than being removed for the convenience of the seeding contractor.
 - 4) The Land Quality Section and NC DOT need to continue to evaluate the need for environmental review of projects in High Quality Waters and Trout Waters, and achieve a consistent level of environmental protection. Included may be a training program to familiarize personnel on the requirements for trout buffers and how to design plans for (minimal) disturbance in the buffer.
- NCDOT Rail Division: Approved the Delegation of NCDOT Rail Divisions to operate under the Division of Highways Delegation. This would cover rail projects where NCDOT has operational control and not where there is Federal jurisdiction (note: much of the railroad roadbeds are under Federal jurisdiction).
 - NC Turnpike Authority: Approved the Delegation to exclusively operate under the Division of Highways Delegation since NC Turnpike Authority become part of NCDOT in 2009.

Rule for Self-Inspections (15A NCAC 04B .0131 SELF-INSPECTIONS):

- Adopted as a Final Rule and forwarded to the Rules Commission for their review. A Public Comment period ended February 15, 2010, and a Public Hearing was held in January. No public comments were received. The rule adopted is essentially the same as published in *Sediments, Vol 15(3) September 2008* with a few minor grammatical changes.

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SCC February Actions

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Qualified Personnel to Conduct Inspections:

- A draft bill to Amend the SPCA to allow the SCC to set minimum guidelines for any license, certification or certificate of sufficient training, education or experience to qualify an individual as qualified (inspection personnel) was adopted. This proposed bill would apply to land disturbing activities 1 acre or greater; Local Programs could be more restrictive to include areas less than 1 acre if they so choose. The Commission would set the guidelines for the inspectors who possess the skills necessary to:
 - a) Assess the operation and performance of erosion and sedimentation control measures and devices in the field;
 - b) Identify corrective actions necessary to prevent sedimentation damage; and
 - c) Complete documentation of sedimentation inspection reports, self-inspections or self-monitoring.

Technical Advisory Committee:

- Approved members for the SCC Technical Advisory Committee to include: Greg Jennings (PE, PhD, NCSU, Biological and Ag Engineering), Kenny Waldroup (City of Raleigh Public Utilities), Curtis J. Richardson (PhD, Duke, Resource Ecology), Rich McLaughlin (PhD, NCSU, Soil Science), Kevin Martin (LSS, Soil Science consultant), Berry Jenkins (PE, Association of General Contractors), David Harris (PE, NCDOT, Roadside Erosion Control and Vegetation Management), Mark Senior (PE, City of Raleigh Stormwater), Mark A. Taylor (PE, Engineering consultant), Mack Little (RLA, Landscape Architecture consultant), Dennis M. Glazener (RLA, Landscape Architecture consultant). Additional members can be continued to be added in the future with SCC approval. Editor's note: at the February 18, 2010 meeting, additional members approved were: Fred Roger Watson (PE, Metropolitan Sewerage District of Buncombe County), Chris Roberts (PE, Durham County, Division Manager Sedimentation & Erosion Control Division), Wyatt L.

Brown (LSS, NC Ecosystem Enhancement Program), and Jimmy Kizer (PE, Engineering consultant). The Technical Advisory Committee's roles will include being a technical advisory for the development of draft rules for upcoming rule-making regarding the Falls Reservoir and Upper Neuse River (these also may apply to other basins) water supply and evaluating potential revisions to the Sediment and Erosion Control Manual.

Adoption of 2010 SCC Meeting Dates:

- Thursday, February 18
- Thursday, May 20
- Thursday, August 19
- Tuesday, November 30

Support documents for SCC actions may be found online at
<http://dlr.enr.state.nc.us/scc.html>



To report possible violations of the NC SPCA call
1-866-STOPMUD 786-7683

Erosion Control Seminar

May 5, 2010

City of Wilson Operations Center,
Wilson, NC

Agenda items include:

- Vendor Meet and Greet
- Pervious Pavement/Stormwater Detention Techniques
- Mitigation Banking
- New EPA Guidelines and meeting requirements with PAM and other innovative measures
- Introduction to LID/LEED
- ECB & TRM Overview
- Using the right seed mixtures; Staged Seeding
- Erosion Control Basin conversion to Post BMPs

<http://www.wilsonnc.org/departments/publicservices/stormwatermanagement/erosioncontrol/>

International Erosion Control Association Annual Meeting

By Richard A. McLaughlin, PhD.
Soil Science Department, NCSU

Jan Patterson, Biological & Agricultural Engineering, Department, NCSU

The IECA Environmental Connection Conference and Expo was held in Dallas on February 16-20 this year and the lagging economy was reflected in the attendance, with half the usual number by some estimates. With that said, more than 1,500 individuals attended from 23 countries. There were 63 technical sessions and 22 training courses presented during the five day conference. An Expo hall was filled to capacity with close to 150 exhibits of innovative erosion and sediment control technology. The theme of this year's conference was "Discover New Frontiers".

The Effluent Limitation Guidelines (ELG) issued on December 1 by the United States Environmental Protection Agency (EPA) generated much interest in various approaches to treating turbidity in construction site runoff. The pre-conference workshop on controlling turbidity was nearly sold out, with people from all regions of the country plus Australia attending. While the focus of the workshop was on passive treatment systems using polyacrylamide (PAM), other approaches were also discussed including the full portable treatment plants currently used on some sites. There was a great deal of discussion among the attendees about what would be allowable in their states. Resistance to the use of chemical treatment for turbidity was indicated in states such as New Hampshire and Colorado due to concerns about the fate of flocculants and possible misuse by contractors. The states on the West Coast have specific requirements such as field tests for residues of flocculants, which stems largely from their use of chitosan and the indicator test kit available for it. How these current policies will be affected by the ELG-imposed need to achieve 280 NTU for most storms will be interesting to watch.

A pre-conference workshop entitled "Innovative Designs for Erosion, Sediment, and Turbidity Control" was led by Jan Patterson of NC State University. This workshop took

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participants through a step-wise process of predicting runoff and erosion from construction sites and options for groundcovers for erosion prevention. Participants also had hands on experience in the selection and design of sedimentation control Best Management Practices (BMPs) and turbidity reduction methods including the use of PAM and surface skimming devices. Thirty five participants attended this one-day training session with attendees from all regions of the United States including Alaska.

An Erosion and Sediment Control Technology Section paper entitled "Innovative Check Dams that Aid in Meeting ELGs" was presented by Ted Sherrod. The focus of this case study was on techniques used in the reduction of sediment and turbidity in ditches through the use of fiber and wrapped rock check dams utilizing flocculants. This talk gave participants innovative tools for use in meeting the ELG requirement of a maximum daily average 280 NTU discharge from construction sites. The ELGs will be implemented by NCDWQ on construction and development sites with 20 acres or greater disturbance beginning mid 2011.

The active treatment system, involving portable pumps, tanks, and filtration units, was described in detail by Joe Gannon of Clear Creek Systems in California. These systems are occasionally mandated by state and local governments to protect sensitive waters such as salmon and trout streams. The system involves runoff storage and subsequent treatment by pumping the water through a series of mixing/settling tanks and sand filters after injecting it with chitosan, a cationic biopolymer. The entire system is tightly controlled for pH and turbidity using in-line sensors which can switch the flow back to the storage pond if values are not within acceptable limits. The system is completely modular and can be sized for any amount of pumping. It was pointed out that there is a tradeoff between storage pond size and pumping capacity, so sites with limited space can just pump and treat water faster during runoff events instead of storing it. Costs vary widely, but several attendees who have used these systems suggest \$50,000-100,000 per month might be typical. There have been a number of these systems deployed in North Carolina at WalMart construction sites.

A wide variety of uses for PAM were presented by Seva Iwinski of Applied Polymer Systems. A standing-room only audi-

ence heard about a series of case studies in which PAM was used either to stabilize soil or to reduce turbidity in runoff. Soil stabilization was achieved by applying granular PAM to the soil surface and covering it with jute matting followed by sod. This was shown to be effective during high wave and wind storms on the coast of Florida. Applying PAM to "soupy" sediment in basins, followed by mixing with a backhoe, was shown to effectively solidify the sediment for hauling. The use of PAM logs in many situations was also presented. Many of the applications in-



involved pretreatment with settling in a basin or by pumping through a sediment bag prior to passing the water through a constructed watercourse design for PAM logs.

IECA convened a meeting with select members to discuss the potential to collect data on the performance of sediment control devices or systems as part of a database. This would be similar to a database already established for stormwater systems such as detention basins and constructed wetlands. The EPA and the Water Environment Research Foundation (WERF) are sponsoring this effort through Wright Water Engineer-

ing, represented by Jane Clary and Jennifer Keyes. The 20 people in attendance were very supportive of the concept, but they also pointed to difficulties that monitoring construction site sediment controls have relative to stormwater systems. First, a construction site is constantly changing so the inputs are going to change significantly over time. Second, the transient nature of sediment controls makes monitoring difficult to achieve over enough events to characterize it. Finally, the sediment loads are often so high that sampling during a storm event is nearly impossible. However, the attendees voted to have IECA assist in this effort.

Those of you who are members of IECA are probably aware that the Southeast Chapter (NC, SC, GA, FL, AL, LA, TN, KY) won 4 of the 5 chapter awards from IECA this year. These include the Rick Granard Award of Distinction and awards for Chapter Management, Member Development, and Education.

Jesse Pritts of EPA provided a two-hour discussion period to update attendees on the ELG and to ask questions. He is in charge of the ELG and was the lead author of the 250-page rule. Many questions are still to be answered as EPA works through the implementation details in the four states and Washington D.C. where they have primary responsibilities (the other states have their own programs). They extended the Construction General Permit in these areas for one year to provide time to work out the details. One of the major questions involves the sampling requirements, which were not clearly specified in the rule. ❖

IECA's Environmental Connection- The World's Largest Soil & Water Event!

February 20-23, 2011

Disney's Coronado Springs Resort - Orlando, Florida USA

The premier educational event for the erosion and sediment control industry. Environmental Connection has more erosion, sediment control, and stormwater focused training, technology and networking events than any other event.

Over 4 days, Environmental Connection provides peer-reviewed education, products and technology which address eight technology sections:

- Slope Stabilization
- Stream Restoration
- Vegetative Establishment
- Stormwater Management
- Wetlands Technology
- Erosion and Sediment Control
- Beach and Shoreline Stabilization
- Wind Erosion Technology

Information: <http://www.ieca.org/conference/annual/ec.asp>





Newsletter of the North Carolina
Sedimentation Control Commission
c/o NCSU Water Quality Group
Campus Box 7637
Raleigh, NC 27695-7619

Calendar of Events

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|--------------|---|---------------|---|
| 5/5/2010 | Erosion & Sediment Control Seminar , Wilson, NC
http://www.wilsonnc.org/departments/publicservices/stormwatermanagement/erosioncontrol/ | 6/22/2010 | Level I & II Recertification: Erosion & Sediment Control/Stormwater Recertification , Raleigh, NC
http://www.bae.ncsu.edu/workshops/dot/ |
| 5/11/2010 | How to Control Turbidity on Construction Sites , Raleigh, NC
http://www.soil.ncsu.edu/training/training.php | 6/23/2010 | Level II: Erosion & Sediment Control/Stormwater Site Management , Raleigh, NC
http://www.bae.ncsu.edu/workshops/dot/ |
| 5/18/2010 | Level I & II Recertification: Erosion & Sediment Control/Stormwater Recertification , Hickory, NC
http://www.bae.ncsu.edu/workshops/dot/ | 6/24/2010 | Level I: Erosion & Sediment Control/Stormwater Inspector/Installer , Raleigh, NC
http://www.bae.ncsu.edu/workshops/dot/ |
| 5/18-20/2010 | River Course 201: Stream Restoration Design Principles , Asheville, NC
http://www.ncsu.edu/srp/rivercourse.html | 7/15-16/2010 | Bioretention Summit: Ask the Researcher , Annapolis, MD
http://www.bae.ncsu.edu/stormwater/training.htm |
| 6/02/2010 | Level III-A: Design of Erosion & Sediment Control Plans , Raleigh, NC
http://www.bae.ncsu.edu/workshops/dot/ | 7/18-21/2010 | 2010 Soil and Water Conservation Society (SWCS) International Annual Conference , St. Louis, Missouri. Abstracts Due Dec. 17.
http://www.swcs.org/en/conferences/ |
| 6/03/2010 | Level III-B: Design of Erosion & Sediment Control for Reclamation Plans , Raleigh, NC
http://www.bae.ncsu.edu/workshops/dot/ | 9/13-14/2010 | River Course 401: Construction Practices for Stream Restoration , Asheville, NC
http://www.ncsu.edu/srp/rivercourse.html |
| 6/03/2010 | Installation of Construction Site Erosion & Sediment Control Devices , Raleigh, NC
http://www.soil.ncsu.edu/training/training.php | 11/15-18/2010 | SE Regional Stream Restoration Conference , Raleigh, NC. Abstracts Due June 30.
http://www.ncsu.edu/srp/2010conference/ |
| 6/29-30/2010 | Bioretention Summit: Ask the Researcher , Raleigh, NC
http://www.bae.ncsu.edu/stormwater/training.htm | 2/20-23, 2011 | IECA Annual Environmental Connection. Orlando, FL. http://www.ieca.org/conference/annual/ec.asp |