

**Stormwater Implementation Group  
Notes  
11/23/2005**

**UNC-CH School of Government  
Knapp-Sanders Building, Room 2401  
Chapel Hill, NC  
11:00 a.m. – 2:00 p.m.**

Richard Whisnant welcomed the group of about 25 (a good turnout considering the imminent start of the Thanksgiving holiday) with introductions of new participants and recap of recent meetings .

The main presentations were on BMP maintenance, by Warren Simmons, PE, PLS, CFM, Guilford County and Dan McLawhorn, J.D., City of Raleigh.

Warren presented a very useful and thorough, step-by-step document that explains how BMPs are implemented in Guilford County. The document is called “Birth of a BMP” and is attached to the end of these notes. Warren also presented a complete set of document templates for all the letters, agreements and checklists normally used by Guilford County in association with BMP maintenance. With Warren’s permission, we will post these on the SWIG website.

Discussion ensued on a number of points in the “Birth of a BMP.” In regard to setting the amount of bonds (which for Guilford cover construction phase only), Guilford takes the cost estimate of an engineer and adds 25%. Durham and Chapel Hill discussed their use of maintenance bonds. Others in the group have ordinances that rely on liens to recover costs of forced maintenance; this has already presented problems for residential subdivisions.

Warren discussed the enforcement challenges, which involve handing off cases to Zoning enforcement after a 3d inspection. Stormwater presents some issues in getting the legal department motivated—both complexity and perceived severity of the case having to compete with child support cases and the like can mean they are pushed to the back burner.

This was a good segue to Dan McLawhorn’s presentation on Raleigh’s new system which relies on private attorney self-certification that all requirements for a new stormwater BMP have been met. See documents at [www.raleigh-nc.org](http://www.raleigh-nc.org) , click on “Departments”, click on “City Attorney”, look on the right side of the screen and click on “City Attorney Forms.

Dan noted the continuing importance of basic old legal theories such as nuisance and abatement in getting stormwater problems fixed; these are especially attractive in that they can form the basis for getting a lien on property that must have a stormwater nuisance abated, so the abatement costs can be recovered.

Dan noted the attorney self-certification forms were motivated by the extremely large amounts of attorney time it was taking to negotiate and finalize the basic up-front agreements for stormwater BMPs.

He and the legal department are now beginning to run into issues of nonpayment of annual payments by homeowners associations, so the entire field of maintenance and enforcement is only going to get trickier.

Lunch was served in the room, with discussion of points raised by Warren and Dan

After lunch, the group discussed the maintenance approach recommended in Reese and Presler, [http://www.stormh2o.com/sw\\_0509\\_municipal.html](http://www.stormh2o.com/sw_0509_municipal.html). They recommend separating “geographic extent of service” and “level of service” and being very explicit about what level and where different stormwater service is provided. The group generally thought the recommended approach had merit, but for many jurisdictions just starting out in stormwater with Phase II, it will be a matter of crawling before they run, and this seems like the formula for running.

Bill Diguide gave a state and regulatory and the group discussed a plan for future meetings, issue resolution and communications. Some particular topics suggested for future meetings were “outreach and education” (“What’s the State looking for? When is enough “enough”?) and “staffing and organization” (use of the Streets division versus other facets of local governments to be responsible for stormwater Phase II).

Tentative list of topics for future meetings (subject to discussion and revision)

1/18/06 – Universal program/issues in integrating programs

2/15/06 – Annual reporting

3/22/06 –Financing

4/26/06-- Understanding the BMP manual

5/24/06—Retrofits

6/28/06—Illicit discharges

### Birth of a BMP

By Warren Simmons, PE, PLS, CFM, Guilford County

As presented to the SOG Stormwater Implementation Working Group 11/23/05.

#### **Plan Review**

<u>Review Action</u>	<u>Point in Development Process</u>
Conceptual Location	Preliminary Subdivision Plan Stormwater Management Plan
BMP Construction Plan Approval	Prior to issuance of building permit (Site Plan) Prior to recording subdivision plat (Subdivision)

#### **Construction Inspection**

<u>Review Action</u>	<u>Point in Development Process</u>
Substantial Completion Inspection: <ol style="list-style-type: none"> <li>1. Constructed to approved lines and grades</li> <li>2. Slopes fine graded, seeded and mulched</li> <li>3. Principal and emergency spillways installed in accordance with approved plans</li> <li>4. Inlet and outlet protection in place</li> <li>5. Device can function as designed</li> <li>6. Surety for completion of pond (if not complete)</li> </ol>	Prior to Temporary Certificate of Occupancy Prior to recording subdivision plat
Final Construction Inspection and Acceptance: <ol style="list-style-type: none"> <li>1. Ground cover established</li> <li>2. Holding water for two weeks</li> <li>3. Submit Engineers Certification of completion</li> <li>4. Submit Record of Construction</li> </ol>	Prior to Final Certificate of Occupancy Prior to final acceptance of device Prior to release of bonds
Issue Letter of Acceptance	Final Acceptance

#### **Maintenance Program**

<u>Timeline</u>	<u>Activity</u>
Day 0 – 1 <sup>st</sup> Inspection	<ol style="list-style-type: none"> <li>1. Annual Inspection for function and maintenance</li> <li>2. September – November</li> </ol>

	3. Issue Inspection Report with 90 days to complete repairs
Day 90 – 2 <sup>nd</sup> Inspection	<ol style="list-style-type: none"> <li>1. Work completed – Issue completion report</li> <li>2. Work not completed – Issue Second Notice Letter with 30 days to complete work</li> </ol>
Day 120 – 3 <sup>rd</sup> Inspection	Refer violation to Zoning enforcement with penalties up to \$200.00 per day

**Additional Items**

1. General Record Plat notes
2. Maintenance Agreement – Shared use of a device
3. Device located in Common Area in subdivision, as opposed to an individual lot
4. Homeowners Association Documents – Required comments
5. Plat Comments

*Problems and possible approaches to post-construction BMP maintenance:*

- Staffing
- Political understanding and support
- Strong administrative and legal backing
- Understanding and acceptance by developers
- Education of the owners about continual maintenance
- Compliance and enforcement
- Possible revolving maintenance fund or stormwater assistance program

*How jurisdiction got involved in post-construction BMPs:*

- Guilford County is located at the headwaters of the Cape Fear River Basin. What this means is that the only water available for a water supply is from the water that falls on the County and is directed to reservoirs.
- Guilford County flows to and protects nine (9) different water supplies.
- Watershed protection regulations were adopted in April, 1984 – approximately ten (10) years before State water supply regulations took effect.
- Originally, only ponds were accepted as a BMP and they were converted permanent sediment basins.

*Historical information useful for the group to know. How thinking has evolved over time about maintenance:*

- At first BMPs were placed on individual lots without clear responsibility for maintenance
- Initially this was not a problem with routine mowing and minor maintenance
- Maintenance became a problem when the spillway system had served its useful life and had to be replaced
- Guilford county has since moved away from the use of corrugated, galvanized metal to accept only aluminum, aluminized steel, or concrete spillways
- The County also accepts all BMPs that the State accepts
- Bonds are now required to record a subdivision plat prior to final acceptance

*Critical choices for a jurisdiction starting into post-construction maintenance:*

- Will inspections be done by in-house staff, County hired consultant, or owner hired consultant
- Consistency in inspections
- Strong and clear enforcement action
- Keeping at least one roadblock ahead of developer (building permit, recording plat, certificate of occupancy)
- Fencing for BMPs

*How jurisdiction has handled fundamental questions as the geographic extent of public control:*

- Guilford County takes no action on direct responsibility for maintenance of BMPs or storm drainage system
- Advisory role to public
- Inspection program

*Access to and responsibility for BMP maintenance:*

- Responsibility:     Single commercial or industrial lot - owner  
                          Residential subdivision – Homeowners Association
- Recorded right of entry easement and note on plans and plats
- 20 foot access from public R/W, 15% maximum slope, 10 foot access bench, traversable
- Access to inlet end of pond and dam/spillway end of pond

*Resources useful to someone designing a maintenance system:*

Center for Watershed Protection  
Dr. Bill Hunt, NCSU  
Larger cities and counties