Virginia Stormwater BMP Clearinghouse Committee Meeting

Date: September 11, 2008
Location: Virginia Transportation Research Council
Charlottesville, Virginia

Sponsored by Virginia Department of Conservation and Recreation (DCR) and Virginia Water Resources Research Center (VWRRC)

Minutes by Jane Walker, VWRRC

Virginia Stormwater BMP Clearinghouse Committee Members Present
Lee Hill (Committee Chair), DCR
Scott Crafton (Substitute Committee Chair), DCR
Rishi Baral, County of Stafford, Planning Department, E & S Plan Review
Joseph G. Battiata, Contech Stormwater Solutions Inc.
Dean R. Bork, Virginia Tech, Department of Landscape Architecture
Larry Coffman, Filterra
Joanna Curran, University of Virginia, Department of Environmental Engineering
Gregory Johnson, Patton Harris Rust & Associates
Roy Mills, Virginia Department of Transportation, Location & Design Division
Douglas H. Moseley III, GKY & Associates, Inc.
David B. Powers, Michael Baker Jr., Inc.
David Sample, Virginia Tech, Department of Biological Systems Engineering
Randy Sewell, Vanasse Hangen Brustlin, Inc.

Virginia Stormwater BMP Clearinghouse Committee Members Not Present
W. Douglas Beisch, Jr., Williamsburg Environmental Group, Inc.
Gary Boring, New River Highlands RC&D Council
Michael Gerel, Chesapeake Bay Foundation
David J. Hirschman, Center for Watershed Protection
Mary E. Johnson, Thomas Jefferson Soil and Water Conservation District
David W. Rundgren, New River Valley Planning District Commission
James S. Talian, City of Lynchburg
Scott J. Thomas, James City County Environmental Division
Kevin D. Young, Virginia Tech, Dept. Of Civil and Environmental Engineering

Virginia Department of Conservation and Recreation (DCR) Staff Present
Eric Capps
Chuck Dietz
John McCutcheon
Ved P. Malhotra

Virginia Water Resources Research Center (VWRRC) Staff Present
Stephen Schoenholtz
Jane Walker

Others Present
Tom Fitzpatrick, Hydro International
Steve Kindy, Virginia Department of Transportation, Location & Design Division
Gene LaManna, Terre Hill Stormwater Systems
John MacKinnon, Hydro International
Maita Pang, Imbrium Systems
Glen Payton, Filterra
Scott Perry, Imbrium Systems, Inc.
David Scott, Hydro International

Scott Crafton, DCR, called the meeting to order at 10:15 a.m. Everyone introduced herself or himself. There were no corrections or additions to the minutes of the Clearinghouse Committee meeting held June 12, 2008.

Stormwater Regulations Update

BMP Design Charrette

Scott Crafton, DCR, reported that approximately 35 participants attended a BMP design charrette held last week concerning the beta version of the design spreadsheet developed by the Center for Watershed Protection. About half of the attendees were design consultants and half were representatives of local governments. Some agency personnel and a few representatives of environmental organizations also participated.

Scott Crafton stated that the first version of the spreadsheet dealt only with pollution control to meet a target total phosphorus load of 0.28 lbs. P/acre/year. The beta version is set to meet the proposed phosphorus reduction goal and also incorporates the water quantity control criteria in the proposed regulations. The quantity control criteria are intended to prevent flooding from a 10-year storm and to protect the receiving streams from erosive impacts of the 1-year storm. For stable channels, BMPs must protect the stream at its present condition. For unstable channels, the stream must be protected by ratcheting back the flows to the forested condition for a 1-year and 10-year storm.

In the first version of the spreadsheet, the treatment level of each BMP in a treatment train was simply added to the treatment level of prior BMPs in the train. The beta version is set to more accurately represent the treatment levels expected for BMPs incorporated into a treatment train.

The participants at the charrette were divided into smaller groups, and each group was given one of two sites to design – a residential site or a commercial site. The new version of the spreadsheet is improved by allowing the user to adjust the land cover number for use in quantity-related calculations. The design exercise showed that at some sites reducing the runoff volume to reduce pollution also helps to achieve the water quantity standards.

The Center for Watershed Protection staff continues to refine the spreadsheet, based on participant feedback. A second charrette is planned for September 16th in Northern Virginia.

The Center for Watershed Protection will update the beta version of the spreadsheet based on input from both charrettes.

Stormwater BMP Handbook

Scott Crafton summarized that DCR has completed three chapters of the Stormwater BMP Handbook: (1) Introduction, (2) Why Stormwater Matters, and (3) Sizing. Other chapters are in various stages of completion. DCR may post the draft chapters on the clearinghouse web site, but a definite decision has not yet been reached by DCR.

Stormwater Management Regulation Technical Advisory Committee (TAC)

Lee Hill, DCR, reported that the TAC had its final meeting last week before the September 2008 meeting of the Soil and Water Conservation Board. He explained that concern was raised about the scientific validity of setting a total phosphorus goal of 0.28 lbs./acre/year. He clarified that the goal was based upon Chesapeake Bay Program nutrient reduction goals and best professional judgment.

Lee Hill explained that DCR set a permit fee structure that was based on approximately 70% of the fee going to the local governments and approximately 30% being used by DCR. He stressed that DCR does not reflect a reduction in the amount of money local governments will need to administer their stormwater programs. DCR estimated collective program administration costs based on DCR's history of processing about 3,000 permits per year. A fee amount was proposed that meets the costs of both DCR and local governments. With their portion of the fee, DCR plans to hire 54 individuals (30 people for oversight and 24 to implement local programs for which DCR is responsible).

The stormwater regulations cannot move forward without completion of the handbook, enterprise website, and BMP Clearinghouse website. The Soil and Water Conservation Board will meet September 24, 2008 to consider the proposed regulations. DCR plans to present the new regulations as their first item of business. If approved, the proposed regulations will be filed for review by the Administration and subsequently released for public comment.

Virginia Stormwater BMP Clearinghouse Web Site Update

Jane Walker, VWRRC, showed the draft pages that have thus far been developed for the clearinghouse web site. DCR requested that the site not be available to the public for the next 10 days until the layout and information could be reviewed by staff. It was suggested that having a password would be desirable so the Committee members could view it and provide input. Several members suggested reasons for making the site available to the public sooner, and others added that posting draft information could cause confusion. It was decided that until the Board approves the new regulations, the site should not be available to the public in case additional updates were required related to the Board's actions.

Several small modifications were proposed:

- Place frames around the photos

- Remove the logo place-holder
- Read through text and remove wording that dates the page; e.g., under the Regulatory Programs page for the TMDL text, change, "The most recent list was published in 2006. It individually describes segments …." with "The most recent list describes segments…."

Jane Walker requested that other suggestions be sent to her or Tracey Sherman (whose email is listed on the website under "Contact Us.").

Virginia Technology Assessment Protocol

Jane Walker provided a brief history of the work of the Research Protocol Subcommittee in developing a technology assessment protocol for Virginia. She noted that Virginia supports the Technology Acceptance Reciprocity Partnership (TARP) and the TARP protocol. The Research Protocol Subcommittee has compared and contrasted the TARP protocol with that developed by Washington state's Department of Ecology: *Technology Assessment Protocol–Ecology* (TAPE). The TAPE guidance was revised and made available to the public in January 2008. Several manufacturers who have used the updated TAPE document have found it useful in specifying the required information. It was suggested that Virginia model its protocol document after the TAPE and incorporate the TARP requirements. Jane Walker has been working on this project and found it difficult to mesh the two documents in this way. She is presently developing a new document with its own organizational format that combines the TARP and TAPE documents. In this process, she has generated many questions. She intends to send a draft of the document and the generated questions to the Clearinghouse Committee and Research Protocol Subcommittee for feedback. The questions will be posted as an online survey, and once feedback has been received, the document will be updated to reflect aspects where there is general agreement. The Subcommittee will meet to discuss topics where various viewpoints are presented and propose a generally accepted process for assessing emerging technologies in Virginia.

Presentation: "Reducing Verification Program Redundancy – Promoting Reciprocity"

David Scott, Stormwater Product Manager, and John MacKinnon, Regulatory Specialist, with Hydro International gave a presentation on how to reduce redundancy in the stormwater BMP emerging technology assessment process by using reciprocity. They provided background information concerning the known information about BMP assessment protocols in other states and the proposed regulations in Virginia. They used this information to propose that Virginia could speed up its approval of stormwater BMPs by relying on reciprocity to reduce the need for field testing specifically in Virginia and by relying on the relationship between Total Suspended Solids (TSS) and Total Phosphorus (TP) to reduce the amount of field testing needed for BMPs with TSS certifications in other states.

John MacKinnon offered that their proposal to use reciprocity to reduce redundancy in the verification process is based on Virginia's proposed TP load limit of 0.28 lbs/acre/year. In general, the process to reduce treatment volume and phosphorous load requires three steps:

1.-Apply site design practices;
2.-Apply runoff reduction practices; and
3.-Apply pollutant removal practices.

John MacKinnon stated that the generally accepted performance data for runoff reduction practices and pollutant removal practices are largely derived from the National Pollutant Removal Performance Database (NPRPD), Version 3. NPRPD is primarily limited to studies of seven major groups of BMPs:

- Dry ponds
- Wet ponds
- Wetlands
- Filtering
- Bioretention
- Infiltration
- Open channels.

Manufactured treatment devices (MTDs) provide an alternative technology at sites where traditional practices and low impact development are not practical. Manufactured treatment devices, however, do not "fit" into any of the seven major NPRPD groups. To test these needed manufactured devices, therefore, states are developing assessment protocols and posting the results of performance testing of manufactured products on their respective clearinghouse web sites.

Dave Scott cited three reasons for using common protocols:

- Provide a clear understanding of the performance expectations of state regulators.
- Collect and evaluate data on technology performance for interstate sharing (eliminates unnecessary duplication of technology testing and demonstration).
- Allow states to identify technologies that can achieve their environmental goals.

Dave compared the assessment processes of TARP and TAPE as illustrated with one of Hydro International's products. He showed the similarities and differences between the requirements of the protocols. By undergoing performance evaluation under the two processes, Hydro International has received similar ratings (approved for pretreatment) and limitations for use (must meet flow rate conditions) for the same device. The resulting verified performance information and certification level (with limitations of use) is reported on the respective websites for New Jersey (TARP) and Washington (TAPE). It is also summarized on the website for the New York Department of Environmental Conservation, which presents summary tables of proprietary stormwater management practices verified in any state. By using the information already obtained and verified in other states, Virginia could speed up its approval process.

Because the regulations in Virginia are expected to be based on TP instead of TSS, which is currently used in most states, John MacKinnon offered that Virginia could use TSS data and the relationship between TP and TSS to conditionally approve technologies that have already received approval for TSS.

John MacKinnon provided several examples of TSS-TP studies that showed that TP is closely associated with TSS, particularly with small particles. John proposed a two-tier system in Virginia for conditional approval of manufactured BMPs tested under TARP and TAPE:

- For technologies with certified TSS removals >80% for particle sizes greater than 20 microns, Virginia could grant a conditional pollution removal rating of 30-50%.
- For technologies with certified TSS removals >80% for particle sizes less than 20 microns, Virginia could grant a conditional pollution removal rating of 50-70%.

To receive a general use designation, the pollutant removal rating would need to be determined based on field performance testing and verification.

John MacKinnon summarized how reciprocity could help Virginia:

- Build robustness in Virginia's BMP performance database by accepting data from other studies and verification programs;
- Expand the choices of BMPs technologies offered;
- Lead to a better understanding of the relationships between TSS removal and the removal of associated pollutants (e.g., TP);
- Provide a mechanism for vendors of manufactured treatment devices to enter the Virginia verification program with credible data; and
- Streamline the Virginia verification program.

Discussion of Presentation

In summary, the presenters are suggesting that (1) Virginia could speed up its approval of BMP technologies by reverting to reciprocity without requiring as much testing in Virginia and (2) accept technologies demonstrated to successfully remove TSS to equate to TP removal. Several committee members cautioned that accepting technologies approved in environments with different rainfall patterns might give different results. Dave Scott stated that certain conditions might need to be set, e.g., for a given particle size distribution, type of flow rate, particular geographic region, and/or specific type of land cover. The technologies approved for conditional use could be limited in the number of installations allowed.

Lee Hill, DCR, added that he envisions manufacturers submitting data along with a prediction of, for example, 50% removal. After examining the performance data, DCR may say, "Based on this data, we will rate you at 25% removal, and if you do X, Y, and Z, we will give you the 50% removal rating."

One member asked why TSS was being used instead of suspended solid concentrations (SSC). It was explained that early stormwater regulators aimed at the most likely runoff pollutants from among a list of pollutants typically associated with wastewater engineering. Stormwater regulators are recognizing that SSC is a more appropriate constituent to focus on in stormwater runoff, so future regulations will likely be based on SSC instead of TSS.

Other Items of Business

One member asked for clarification of the role of the Clearinghouse Committee. He specifically wanted to know if the Clearinghouse Committee or a subcommittee would review the performance data. As a volunteer group, he did not envision that the committee members would have the time to review the substantial amount of data needed to make a particular rating.

Instead, he envisions that a supplemental support group (e.g., from Virginia Tech or other academic institution) could review the data and provide a summary and recommendation. The committee could then base its decision from the summarized data and recommendations of the support group.

Scott Crafton said he envisions that through fees, the manufacturers would fund a contractor or contractors at academic institutions to serve as a screening tool. The role of the Clearinghouse Committee is to verify the data, and the role of DCR is to certify the technology. Scott reiterated that the manufacturers would need to pool their money to pay for the work, or other sources of funding will need to be found. Lee Hill added that through discussions with his supervisor at DCR, Jack Frye, he is confident that DCR does not intend to fund technical reviews. The process should be fee-based to cover the costs of contracted reviews.

A committee member commented that Washington state has a volunteer committee that reviews the use application and performance data.

One member noted that New Jersey has contracts with Rutgers, etc. Another member voiced support for Virginia following the New Jersey example. Someone else added that it costs $40,000 every time New Jersey reviews a technology so the use of reciprocity could help lower costs. Scott Crafton added that perhaps Virginia could set lower fees for technologies with certification in other states and higher fees for unproven technologies (i.e., new technologies).

Scott Crafton stated that the Research Protocol Subcommittee should work on proposing a fair fee structure in the near future. Someone asked who serves on the subcommittee, and Jane Walker offered to provide the list of members serving on the subcommittee. It was announced that participation on any of the subcommittees is open to any interested individual.

Lee Hill reminded the group that finalization of the stormwater regulations is targeted for December 2009, so moving this process forward will need to happen quickly.

With no further business, the meeting was adjourned.

The next meeting is set for December 11, 2008 in the Charlottesville area.