

## **DRAFT MEETING MINUTES**

**August 24, 2004**

**PADEP Stormwater Manual Oversight Committee  
Seventh Meeting  
Rachel Carson Building First Floor Conference Room**

### **I. PADEP Announcements and Inputs**

Ken Reisinger chaired the meeting with Ken Murin and Denny Stum assisting. There were no announcements.

### **II. Review of Sixth OC Meeting Minutes and Comments Received**

July meeting minutes were adopted with one change. Tony Miller requested that there be clarification in the Minutes relating to the Draft Soil Testing Protocol presentation, indicating that EPA guidance recommends that design rates be assumed to be one-sixth of the field tested rate and that the existing Pennsylvania manual recommends one-third of the field tested rate. Additional response(s) from the PA Association of Professional Soil Scientists on the draft protocols is/are expected.

Cahill's Wes Horner indicated that a modest number (4) of comments have been received since the July meeting. These comments were copied and distributed to the OC. Cahill will continue to take comments on all sections that have been drafted, including the additional Sections 6 and 7 being distributed at this meeting.

A question was raised concerning how OC comments to the various drafts that were submitted to PADEP are going to be addressed by Cahill. Although each individual comment will not be addressed in writing, Cahill and PADEP will meet, and review the comments to ensure they were considered and integrated into the document where appropriate. DEP with Cahill will review the comments and responses with the committee prior to releasing the draft for public comment.

### **III. Treatment of Commercially Available Products**

OC's Warren Cohn added comments based on his presentation at last month's meeting. He stressed the generic nature of his draft "supplemental" materials and usefulness for the BMP manual. Specific proprietary names would be avoided. Warren explained that total length could be reduced and kept manageable. After a brief discussion, there was no group consensus integrating this information as a separate chapter or as a reference chart. Tom Cahill thought that much of the information would be included within the discussions of the specific BMP's. There was also a discussion of providing this type of information through a DEP

website or a link to other sites. Ken Reisinger suggested that the writers continue their work and if the committee determines after a review of the final draft that a separate chapter, reference list, chart or other information would be helpful we have the option of including such information at that time.

#### IV. Revisiting the Question of Stormwater Management Standards

##### -Section 3 Stormwater Standards Tom Cahill

Tom Cahill gave a condensed powerpoint presentation (to be posted in webpage) recapping the presentation of stormwater standards for site management as drafted and posted in Draft Section 3. These standards include:

<b>Volume Control Standard</b>	<i>Do not increase runoff volume, pre-development to post-development, for up to the 2-year frequency, 24-hour duration rainfall</i>	For Groundwater/Water Table/Stream Base Flow
		For Stream Conservation/Stream Bank Flow Protection
<b>Peak Rate Control Standard</b>	<i>Do not increase peak rate of runoff for larger storms (2-, 10-, 25-, 100-year storms at minimum), pre-development to post-development; as necessary, provide additional peak rate control for largest storms through the Act 167 planning</i>	For Flood Protection: 2- through 100-Year Storms, Site by Site
		Cumulative Flood Protection as Needed through Act 167 Planning
<b>Water Quality Control Standard</b>	<i>A reduction of 85% of particulate-associated pollutants (as represented by TSS) and 50% of solutes (as represented by NO3-N) is required.</i>	Groundwater Quality
		Surface Water Quality - reduction of 85% particulate-associated NPS; reduction of 50% solute loads
		Temperature

##### Dr. Robert Traver, VUSP

Rob Traver recapped his presentation from VUSP (Villanova Urban Stormwater Partnership), which now presents 2 control standards, CG1 (volume) and CG2 (volume/treatment/detention). Rob acknowledged that when to use 1 or 2 has not been clearly defined thus far. Furthermore, Rob indicated that it was not clear which was “more rigorous” or “better.” Rob spent most time defining CG2 (runoff from first half inch of rainfall for baseflow, runoff from next half inch of rainfall to be infiltrated or captured for water quality, then control the 1-yr peak to the equivalent flow achieved by 24-hr extended detention of the 1-yr, plus peak

rate control for the 2- through 100-year storms. Act 167 “modeled” standards could/should be used to expand upon the CG2 requirements. Water quality standards have been treated more generally as a draft water quality goal/water quality statement. Rob’s presentation included a variety of technical analyses and comparisons, including information from Maryland DEP and various other researchers (see powerpoint presentation on website).

### **Scott Brown**

Scott Brown then presented a powerpoint titled Stormwater Management Standards for Pennsylvania: Another Look, which has been posted on the DEP stormwater webpage. The presentation focused on the complexities of the water cycle, especially infiltration processes, potential adverse impacts of using infiltration for volume control and an array of unanswered questions relating to infiltration. A major point was that the 2-yr storm standard for volume control results in considerably more infiltration occurring post-development, than occurred pre-development, with a variety of potential adverse impacts resulting from this “over-infiltration.” Case study results were presented, suggesting that over infiltration may impact headwater hydrology. Potential adverse impacts of loading rates were presented, including comparison with on-site septic systems. Quotes from Dr. James Hamlett, Penn State and from Dr. Gary Peterson, Penn State indicated potential problems from over-infiltration. Additional potential problems discussed by Scott included seeps, wet basements, foundation problems, and induced landslides. Scott concluded, questioning the need for standards and suggesting that if a volume control standard were to be included in the manual, it should be a moderate one, possibly to “infiltrate 33% of the difference between the pre- and post-development 2-yr 24-hour storm. Scott suggested for rate control, no increase in peak for 1 to 25-year storm, with safe conveyance for the 100-yr.

### **Pennsylvania Campaign for Clean Water**

Maya Van Rossum introduced Bob Wendelgass and Tracy Carluccio (handout was distributed), representing 22 statewide environmental groups (Pennsylvania Campaign for Clean Water). They presenting an argument for the need for stormwater management standards. Secondly, these standards must be rigorous. Manual must be based on following principles:

- Embrace the hydrologic cycle
- Address volume, recharge, water quality, and peak rate management
- Clearly establish standards for community and environmental protection
  - For volume control
  - For recharge
  - For water quality
  - For riparian buffers (300 ft, 150 ft, etc.)
  - Replication of pre- to post-development hydrograph
- Establish a hierarchy of strategies
  - Prevention
  - Infiltration

Storage on-site with re-use  
Water quality and peak rate mitigations

## **V. Review of Additional Section 6.0 BMP's for Urban/Developed Areas**

Cahill Associates' Tom Cahill presented a powerpoint highlighting Section 6 (passed out at mtg). These areas are defined as follows:

1. High densities of imperviousness, typically greater than fifty percent and sometimes approaching one hundred percent.
2. High property values on a square foot basis and limited physical space for stormwater BMPs. There may be build-out conditions at the site, or lot-line to lot-line development. The right-of-way may provide the only opportunity for municipal measures.
3. Previously compacted soils and disturbed site conditions, including residues.
4. An infrastructure network of underground utilities such as gas lines, steam lines, and sanitary sewers, plus building foundations, that may limit infiltration BMP options.
5. Severely impacted streams, with the original streams enclosed/buried in culverts.
6. Elimination of much of the original floodplain through placement of fill and structures.
7. Direct connection of impervious surfaces to the storm/sanitary sewers, with roof connections required
8. Combined sanitary-storm sewers in many older urban areas.
9. High levels of trash and debris and concentrated areas of pet waste.
10. A higher density of stormwater "hot spots" such as industrial areas, vehicle service areas, public works storage areas, dumpsters, etc.
11. Regulations and ordinances that may conflict with current BMP design strategies.
12. Limited economic resources, and the need to encourage – not discourage- redevelopment.

BMP's which are of special value in these conditions include:

Rain/Recharge Gardens/Bioretenion	(Structural)
Porous Pavement/Recharge Beds	(Structural)
Subsurface Infiltration Beds	(Structural)
Infiltration Trenches	(Structural)
Vegetated Roofs	(Structural)
Cisterns/Rain Barrels/Capture Reuse	(Structural)
Filters	(Structural)
Water Quality Inserts	(Structural)
Special Storage: Parking Lot, Rooftop, etc.	(Structural)
Hybrid/other – planter boxes	(Structural)
Reduce parking imperviousness	(Non-Structural)
Disconnect from rooftops	(Non-Structural)
Disconnect from storm sewers, etc.	(Non-Structural)
Street Vacuuming	(Non-Structural)

Tom presented a variety of case studies from Section 6, designed to illustrate successful use of these BMP's in Urban/Developed contexts.

Tom also indicated that a rough draft of Section 7 Transportation had been distributed. Tony Miller indicated some concern with the draft. Ken Reisinger stated that a meeting would be held in the near future to link PaDOT concerns with those of PADEP and this stormwater BMP manual. Kevin Abbey from the Pennsylvania Gravel/Dirt Roads Program was present and provided additional information on his program and how they see the potential use of the manual.

## **VI. Public Q & A/Closing Comments**

Opportunities for public comment had been provided throughout the meeting. No additional comments were offered at the closing. The next meeting will be September 28 and will feature Section 8, BMP Implementation Methodologies.