

September 28, 2004
Pennsylvania Department of Environmental Protection (PADEP)
Stormwater Manual Oversight Committee (OC)
Rachel Carson Building, First Floor Conference Room

DRAFT MINUTES

I. PADEP Announcements and Inputs

Ken Reisinger chaired the meeting with Ken Murin and Denny Stum. The next OC meeting will be on October 26, to be followed by the final OC meeting on December 8 after a completed revised draft manual has been released to the OC. There were no other major announcements.

II. Review of Seventh OC Meeting Minutes and Comments Received

Draft meeting minutes from the August 24, 2004 OC meeting were approved without comment. Cahill's Wes Horner summarized the new comments received since the last OC meeting on the draft sections that have been distributed. (No comments have been received thus far from the PAPSS.) Apologies for omitting a Maya Van Rossum comment which will be provided in next month's comments and minutes. Pennsylvania Department of Transportation's (PADOT) Tony Miller has provided especially detailed comments on Section 7 and other sections.

Warren Cohn distributed additional tabularized comments regarding his work relating to geosynthetic products and their successful application on stormwater and overall site design; Warren is concerned that the manual will not point out how these products can facilitate good stormwater design as effectively as it should.

As the result of the last OC meeting, a special PADOT meeting was held with PADEP and PADOT representatives to update the Section 7 discussion, to include current PADEP practices, "dirt and gravel road program" inputs, and other additional information. This section will be re-drafted and presented as soon as possible.

Section 9's Case Studies are in preparation. An announcement went out to all state conservation districts to solicit additional examples of successfully constructed Best Management Practices (BMP's), especially those in other regions of the state.

III. Review of Additional Section 8.0: Methodologies for Implementation

Michele Adams of Cahill Associates distributed 2 sets of coordinated handouts which are designed to provide guidance for Section 8, the "methodology" chapter of the manual. These worksheets are attached to these minutes. This process is intended to provide a way to integrate both the many non-structural BMP's presented in Section 4, as well as the more structural BMP's presented in Section 5, in terms of actual stormwater

calculations. Michele indicated that this proposed methodology is based on research studies, other respected state stormwater manuals, such as Maryland and Georgia, and applied research centers, such as the Center for Watershed Protection. At the same time, there are methodological assumptions which are made to make these work with our existing methodologies. Devising a methodology to integrate nonstructural and structural BMP's is critical if these BMP's are to be used throughout the state. Michele walked through the series of handouts, noting that a variety of non-structural BMP's are self-crediting and, therefore, don't need to be methodologically addressed. Others are given special volume credits as well as peak rate credits.

Perhaps the most significant single methodological direction relates to the calculation of runoff for smaller storms. This problem has been frequently addressed in terms of the soil cover complex method which has been developed for larger storm flood control and which is reputed to be deficient for smaller storms. Michele recommended that the manual advocate use of the Small Storm Hydrology Method, as developed and refined by Dr. Robert Pitt (Pitt, 2003) at the University of Alabama.

Multiple questions followed. Are we replicating Initial Abstraction? (No, these credits go beyond Initial Abstraction.) Are these credits based on adequate science, are they proven? (Credits are based on the best available science which will be provided in the manual, although there certainly are assumptions being made.) Given all of the recent flooding events, are we going to make flooding worse and fail to do the calculations that are necessary? (No, the larger storm flooding events still must be safely routed.) Some of these BMP's using volume control may simply not work on many sites (when rigorous site and soil testing indicate, alternative BMP's will have to be used). Will the fact that so many of these soil- and vegetation-based systems have reduced function during frozen ground periods lead to problems? (In such cases, existing runoff was occurring at a high rate.) Are we getting ourselves in trouble as the result of excessive generalization and minimalist engineering? (Engineering practices currently in use are estimates, the challenge is to sort out those practices which make sense and build on and expand those practices to achieve better preventive and mitigative stormwater plans and overall site designs.)

IV. Dr. Lin, Penn State, Discussion of Soil Hydrology

Dr. Lin spoke on the diversity of soils in Pennsylvania and focused on "where and how fast water flows." He stressed that he wanted to maintain a neutral stance on some of the OC questions which have emerged and acknowledged that he might raise more questions than he answers. He talked about a watershed versus a site scale in understanding soils, and briefly described concepts such as fragipan, depth to water table, depth to bedrock, soil structure (granular, prismatic, blocky, platy) which influences water movement in important ways. He stressed importance of layering and soil horizons, importance of root systems (living and dead), importance of macropores, and other factors. Dr. Lin stressed that much more research needs to be undertaken before many soil questions, particularly as relates to stormwater management and infiltration processes, can be answered with adequate certainty. There should be more focus on feasibility of different BMP's in different parts of the state.

Dr. Lin was asked several questions, including how much of the state had soils which are unacceptable for infiltration BMP's (left unanswered).

Contact henrylin@psu.edu in the Department of Crop and Soil Sciences.

V. Stormwater Standards Update

Villanova Urban Stormwater Partnership's (VUSP) Clay Emerson described the last/best modifications which have been made by VUSP for recommendation to the committee on the issue of recommended site control guidelines to appear in Section 3 of the manual. Most of the initial portions of the presentation have remained unchanged from previous presentations; however, control guidelines for volume control have changed (VUSP Powerpoint presentation is posted on the PADEP stormwater webpage):

Primary Control Guidance

Match existing conditions runoff hydrograph for the 2-year
Peak rate control from 1-100 year

Secondary Control Guidance

Now requires no increase in runoff from first 1.5 inches of rainfall
(First 0.5 inches must be infiltrated; infiltrate or capture next 1.0 inches.)

Control 1-year peak discharge equal to flow achieved by 24-hour extended detention of the pre-development 1-year.

Control Guideline 3 - Added, based on Scott Brown recommendations - VUSP clearly indicates that Primary is the preferred control guideline and should yield more rigorous results. If site conditions and constraints preclude Primary from being achieved, then Secondary should be used.

VI. Stormwater Standards: Recap of Section 3 - Standards, Infiltration Loading Rates, Other Issues

Given the lateness of the hour, Tom Cahill deferred this final part of the presentation for a later date.

VII. Public Q & A

There were no additional questions from the public.

Attachments