



# Standards Oversight Council (SOC)

Supporting Technical Standards for Urban and Rural Soil and Water Conservation

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## DRAFT PERMEABLE PAVEMENT MEETING NOTES

Wednesday, May 15, 2013 || 9:30am – 3:30pm

Attendees: Bob Roehrig, John McCarthy, Roger Bannerman, Kate Gleason, Pete Wood, Tom Price, Bob Givens, Chris Homburg, Josh Harder, Tim Troester, Laura Fenley, Gini Knight, Michelle Reynolds

### Action Items:

- Pete to check in with Mary Anne to confirm what standards titled as ‘interim’ really means? This conversation came about to understand all options for publishing a standard when we may not have all the research needed and/or questions answered.
- Roger will continue reviewing literature and bring summaries/recommendations to next meeting. Roger also will compare our draft standard to other state’s standards.
- Pete to update draft standard with discussion/decisions from meeting.
- All to review other state permeable pavement standards: MN, VA, NJ.
- Chris/Laura/Pete – Review and provide recommendations on Construction Practices & Tech Note.
- All team members to review considerations in the standard.
- Bob R. will send a typical diagram of a permeable pavement section to Pete, who will work with him to create a cross-section diagram for the team to review.
- John and Tom - Review Plans & Specs and bring recommendations.
- Tim, Bob – Review O & M, and bring recommendations.
- Bob R., Roger, John, Tom – Provide research update to team.
- David, Gini – Create plan for brainstorming session on outreach.
- Gini to schedule mid-October and mid-December meetings: <http://www.doodle.com/83kz99an9i5732i4>
- **Reminder to all team members to have materials for the next meeting to Gini by Monday, June 17<sup>th</sup> to send to the whole group along with meeting agenda.**

### Check in about Progress and Process

Responses to question posed regarding team process to either 1) continue momentum and publish a standard they may not have all of our questions answered or 2) take a process a bit slower to make sure we have thoroughly vetted all concerns and have more research available:

- Preference to move forward, but we’ll have to address where numbers come from if we have ‘guesstimates’ or just exclude those sections of the standard until we have more thorough research. Filtration credit is key to this standard and for developers wanting to use this BMP.
- Fall is a good time to review, so hope to continue with progress.
- Agreement that the standard we create will not necessarily be perfect, and we can change it as new information arrives.
- Ready to get it out there, because reviewers are already fielding questions and wanting to get credit.
- We need another option for TSS reduction and permeable pavement is another option.

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- We would like to be conservative with the credit we put in the standard.
- The industry's point of view is that all horizontal pavements are impervious right now, and this standard can show them the difference.
- **Proposed Timeline** Given previous conversation:
  - June 25 meeting – Research Plot Update. Criteria, Considerations, Plans & Specs, O & M. Outreach Brainstorm.
  - Aug 23 meeting – Finish up any unanswered questions/concerns. Review full standard. Agree on Initial Review candidates (then contact reviewers). Agree on process for compiling comments from initial review. Continue outreach planning.
  - September 9-30 – Send draft out for initial review. Comments submitted to me, Pete, and/or Roger? Compile comments, categorize, and send to the team. *If I categorize them, do we want subteams to be assigned reviewing comments for certain sections and they bring a proposal back to the team for debate.*
  - Mid-October meeting – Review comments and potentially recommendations from the subgroups. Adjust standard to prepare for broad review. Plan for outreach, potential November webinar.
  - November 5 – 26 (Tue) – out for Broad Review.
  - Early November - Statewide webinar – Describe process, review standard draft standard, ongoing research questions, and next steps for the team. Announce the broad review is open.
  - December 4 – send broad review comments to team.
  - Mid-December meeting to discuss comments.
  - February – publication of standard.
  - April annual meeting – Follow up on outreach. Hear first year's research results.

#### **Research Plot Update** (Bob R., Roger, John)

USGS/WDNR/County Materials research plot in Middleton was discussed, and team gave input on research and installation design.

- DOT, Uni-Lock, and Oldcastle are new funders to the research. DOT will be funding three of six monitoring stations on the project. Suggestion to contact Ozinga for funding. Ozinga is a concrete association in Chicago area that is pushing green infrastructure and pervious concrete.
- Research group can have three cells of materials, currently just have concrete pavers, and possibly concrete.
- Run ratio could be as high as 30:1. Team prefers reducing ratio to 10:1, and possibly 5:1 because most of literature uses the 5:1 ratio. We don't want to be criticized for not having the appropriate conditions. Team suggests to limit the ratio initially, and later see if we can load the system and increase ratio to 10:1 or more. Roger believes this run-on ratio is more realistic than many of the studies we reviewed, as many studies do not have any run-on to their pavements.
- This research will be monitoring influent and effluent. The control is that we know what is coming off of parking lots with no treatment and into the system.
- There are always site specific issues with the sites for research.
- There were concerns about how much maintenance Costco will do for parking lot. Roger's research typically prefers to maintain average conditions, so if Costco typically sweeps once per year, then they should continue to do so. Research team will just need to know if or how frequency Costco will be sweeping or cleaning the parking lot.
- Most permeable pavement studies have occurred on the east coast where they are mainly concerned about nitrogen. Here, we have more interest in TSS and phosphorus.

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- There are some concerns regarding variability in porous pavement systems. Different systems have different properties underneath the pavement surface. Different void space of material underneath alters the rate of flow through the system and arguably alters the variability of water quality impact.
- Design schedule: Middle of June for excavation.
- Team would like to have access to design plans once they are completed.
- Next Research Plot meeting is June 4<sup>th</sup>, 9:30am.

### **Analyzing Physical Properties of Pavement Systems** (Josh/Bob/Scot)

Josh didn't find any existing literature on the physical properties of pavements and how they impacted water quality. Most water quality research monitors what comes out of the system and not what goes on within the system or where any filtration occurs. Josh prepared a statement that addresses some of his concerns, which will be inserted into standard.

- Concern that all types of permeable pavements will get "70%" TSS removal. Someone could put a metal grate on pavement, say that it's porous, and get the credit. We wanted to include some language that guards us from this potential action.
- GlassPave, which is a crushed glass product that is glued together, may have large openings. There are lots of other products being developed, and we would like to give basic guidance on what components a system needs to achieve a water quality benefit and therefore receive this credit.
- Pete will insert draft language Josh presented in the standard with some word-smithing, including language about porosity or void space for a measurable reference.

### **Water Quality Literature Review for Filtration Credit** (Roger)

Roger presented literature review that highlighted a few EPA commissioned lit reviews and highlighted two case studies with very different results.

- Based on case study that found more pollutants coming out of a system than going in (suggested due to groundwater contamination), team may include language about groundwater proximity as a consideration.
- The team discussed sediment transport through a porous system. The existing research doesn't isolate where the filtering happens or distinguish between what is happening at the surface or underneath, just assesses what comes in and what goes out of system.
- Credit could be all sedimentation, filtration, etc in one package, offering a "whole system" filtration credit. Or we could offer a separate credit for filtration, evaporation, other loss, etc... Research does not exist to specific percentage reduction in different areas of system.
- Roger will continue with reviewing literature on pollutant reductions, and bring summaries to the team.
- Team decided to change name of Table 1. To Underdrain Discharge Credit
- Team also decided to include a diagram of a typical permeable pavement system, to offer minimum expectations. This will also help with Josh's concern above.
- Bob/industry will send a typical diagram to Pete, who will work with him to create a cross-section diagram for the team to review.

### **Refining Criteria L. Infiltration Volume and Pollutant Load and Criteria M. Peak Discharge Rate Control.**

*(Criteria reference in April 4 draft of standard)* (Pete)

Team discussed these to sections and agreed on crafting language that doesn't require users to use a model, such as WinSlamm, but could use other 'computational methods'. Pete will incorporate new language.

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**Develop plan for next meeting, June 25.**

- Research Plot Update
- Review Construction Practices and Tech Note.
- Review Considerations, Plans & Specs, and O & M.
- Brainstorm outreach plan.

We scheduled the following meeting for Friday, August 23<sup>rd</sup>.

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