



# Standards Oversight Council (SOC)

Supporting Technical Standards for Urban and Rural Soil and Water Conservation

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## DRAFT PERMEABLE PAVEMENT MEETING NOTES

Tuesday, June 25, 2013 || 9:30am – 3:30pm

Conference Room 121A, Dane County LCD Office, 5201 Fen Oak Dr., Madison, WI 53718

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

### Welcome / Team Member Updates

#### Research Plot Update

USGS/WDNR/County Materials shared progress with research plot. The research committee decided to move forward with three cells, which may need to be installed in phases. The asphalt industry is most likely to be involved in the research, and the concrete industry will most likely not be in the initial research. The second and third cells will both have interlocking concrete pavers, which will be compared to see what filtering is happening through the pavement surface. The third cell of pavers can be dismantled and another system could be installed at a later date. The hope is that more industries will come on board once the research is better understood and underway. This plot could serve as a testing facility.

David Smith was in Madison recently and talked with Roger and Bill about research design. He thought that this might be the first research project that sealed off the bottom of the system, preventing infiltration. All other research projects had some infiltration ability.

The committee is working on routing power to the monitoring stations. Video cameras will be set up to observe the plot particularly during storms and winter snow melt. Specific cleaning will not occur in the first year to get data on clogging. No parking will be allowed on research cells, but plenty of dirty water from the rest of the parking lot will be moving through the system. USGS will be going out to take GPS locations of the site to better understand the run-on ratio and understand how much drainage the plot will be receiving. There is some concern about how to disperse the water evenly across the three cells. The research group has several options for dispersing the flow as evenly as possible. Some of these approaches may not be ideal for “real” installed systems versus this one designed for specific research questions. The research group aims to mimic how systems are installed in the field as much as possible, although within in reason to still reach the research goals.

A suggestion was made to install a riser or something to clean out the underdrain to check sediments.

The next meeting will be held in later July. The installation/construction is still scheduled for some time this summer. The water quality monitoring will not begin until next spring.

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## Review of other state standards

The team's draft WI standard was compared to other permeable pavement standards from Minnesota, North Carolina, Maryland, Virginia, and California. MN and NC were considered the best. NC's is 43 pages, very comprehensive, and is more like a manual.

- Consider a table on site conditions or criteria. Virginia and Maryland have a table on site conditions, including what would be considered a hotspot, setbacks, and depth to groundwater. Should setbacks be calculated by area of drainage or amount of permeable pavement? Groundwater is referenced in NR 151. Considerations F discusses groundwater. We may include a distance or specific measure to groundwater. The team considered having more detailed companion documents, and concluded that having one document is better that references other documents like NR 151. Right now we feel like we're okay with what we have for consistency with the other standards.
- Pavement surface design. Other standards include photos, diagram, and description of pavement types. This is good content for companion/outreach documents. Each industry has documents on how to build these pavements, so is that enough? The team reiterated our need to focus on the tech standard and what is required to meet our water quality goal, not construction.
- Surface Infiltration Design. Since we use the model, we have this section. Other standards don't have this section.
- Run-on Ratio. Other states typically have lower run-on ratios, 1:1, 2:1, or 3:1. The ratios could go up to 5:1 if there is clean run-on or source areas. Is this based on years of experience? Our ratio is much higher. Chicago went down from 5:1 to 3:1. Why? Before it was released, the ratio went down to 3:1, because of high traffic and the thought that it was going to clog too fast. There is some concern about deviating from the norm without much serious justification. Potential modification of language to Consideration A. "Shall not exceed 5:1 "dependent on source water quality" ". The team will consider cleaning frequency and source area, elaborate in the considerations. The listed run-on ratio would be a significant part of outreach effort to make sure designers know when the higher run-on ratio could be an option. Some team members were still concerned about listing the ratio as high as 5:1. Designers may not choose to or suggest designing to that ratio, but clients could reference state standard. Pete will strengthen considerations for now and the team will continue to discuss.
- Pollutant Removal Credit. Several standards do not include pollutant removal credit. NC – 70% for TSS, 10% TP. MN – assuming no volume reduction: 74% TSS, 45% TP. Our numbers are in the ballpark. Are there any comparisons that look at the differing minerals in the aggregate and the amount of concentrations leaving the system? There is documentation of sediment coming off of the media, which is not from the actual run-on water. Is the TSS coming out of the media/pavement materials or the stormwater?
- Denver also has an excellent storm water manual. Puget Sound also has another manual. We didn't have time to also look at those.
- Run-on ratio is the biggest take away.

## Construction Practices & Construction Management

This section was reviewed and modifications were suggested. We consolidated the Tech Note back into the Tech Standard to make a concise document. The team decided to move Crit N. 1 into Criteria for Construction Practices, and delete the other bullets in Construction Management.

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## Plans & Specifications

This section was reviewed and modifications were suggested.

## Review Operations & Maintenance.

This section was reviewed and modifications were suggested.

## Cross-section diagram of permeable pavement.

Comments on the diagram were written and given to Pete. The team will consider including a diagram of observation well. John will send example.

## Outreach for New Standard.

The team brainstormed outreach options for training users on the new standard after publication. For proper implementation we need to reach out to the industries, municipalities, designers, NASECA, WAPA, DNR staff. Then, there is training for contractors. County Materials already schedules field days and other educational events. The team will plan to hold a webinar after the release of published standard potentially in late winter, early spring. We will continue to think about outreach and training.

**Develop plan for next meeting, August 23.** The next meetings will be on Oct 15, Dec 11.

- Research update.
- Consider simplified infiltration tests. (Roger)
- Review Considerations and Definitions section.
- Review full standard.
- Agree on initial reviewers and process for compiling comments.
- Continue outreach planning. Addition of companion documents.

**Considerations** discussion moved to the next meeting.

## Action Items

- Roger will send standard comparison document by email.
- Gini will send out comparison document of WI draft standard to other state permeable pavement standards with links to other state examples.
- Roger will play with the model to consider evaporation/evapotranspiration.
- Roger will check with John about WinSLAMM to see if he has added run-on options from parking lot and/or rooftop, etc.
- Bob will get more clarification from industry's recommendation for/against power washing.
- Pete will make discussed revisions to the draft standard using track changes.
- Gini will add Simplified Test Method topic to next agenda.
- David will create a draft outreach plan.
- John will look at observation well detail and send to Pete.
- Gini, Pete, and Roger to review Resources and References section. Consider citations.
- Gini will bring a list of other reviewers for other standards to the next meeting.
- All team members will thoroughly review considerations and definitions.

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