



Washington Stormwater Center
 2013 Stormwater Treatment Engineering Workshop
Friday April 5, 2013
 8:30 am to 5:00 pm
 University of Washington Tacoma
 Tacoma, WA
 JOY Building, room 117

8:30-8:45	Welcome – <i>Dr. Joel Baker and Dr. John Stark: co-directors, Washington Stormwater Center</i>
8:45-9:00	Overview of Washington Stormwater Center and the TAPE program – <i>Kurt Marx, Emerging Technology Coordinator, Washington Stormwater Center</i>
	Current status and needs for stormwater treatment – industrial, municipal, transportation
9:00-9:30	Industrial stormwater treatment needs <i>Lisa Rozmyn, Business Resource Program Manager, Washington Stormwater Center</i>
	Stormwater treatment status and needs from the viewpoint of one municipality. <i>Doug Hutchinson, Stormwater Monitoring Lead, Seattle Public Utilities</i>
	“Automobile habitat” - The Stormwater Working Group – Highway and Roads Subgroup is working to define monitoring needs related to roads and highways in Washington state and make specific recommendations on how monitoring should address those needs. This presentation will discuss the progress on and the ideas being considered, such as characterization, new and existing BMP monitoring, and maintenance practice effects on stormwater quality. <i>Mark Maurer, PLA, PE. Highway Runoff Program Manager, Washington State Department of Transportation.</i>
9:30-9:45	Discussion
	Maintenance of stormwater treatment systems
9:45-10:10	A Comparison of Maintenance Cost, Labor Demands, and System Performance for LID and Conventional Stormwater Management. This presentation will cover empirical data on maintenance of stormwater control measures in terms of costs and maintenance staff burden. <i>Tim A. Puls. Site facility manager, University of New Hampshire Stormwater Center.</i>
10:10-10:35	ODOT’s treatment device maintainability protocol and testing facility. The Oregon Department of Transportation (ODOT) and municipalities in Oregon are being required more frequently to provide high effectiveness stormwater treatment to protect water quality in streams and rivers. Maintenance needs for



	<p>stormwater treatment facilities are largely unknown, making it difficult to assess the life cycle costs of treatment alternatives. ODOT is partnering with many other local agencies to develop a program that will fill two primary needs:</p> <ul style="list-style-type: none"> • Provide a protocol and process to evaluate the maintainability of stormwater treatment systems • Provide a testing facility that can be used to evaluate different stormwater treatment technologies for both treatment effectiveness and maintainability <p><i>John Lenth, Water Practice Director at Herrera Environmental Consultants</i></p>
10:35-10:50	Discussion
10:50-11:00	Break
	Treatment systems examples: engineering and performance
11:00-11:25	<p>The Media Filter Drain - Inspired by retrofit goals and site constraints in highly urban areas, Washington State Department of Transportation (WSDOT) has been developing several options for its Media Filter Drain treatment system. Alan will discuss design and details, installations, and lessons learned.</p> <p><i>Alan D. Black, PE, CPESC, CPSWQ. HNTB/WSDOT Northwest Region Eastside Corridor Program</i></p>
11:25-11:50	<p>Performance and Design of Subsurface Gravel Wetlands and Manufactured Stormwater Control Measures.</p> <p>This presentation will cover long-term water quality and quantity performance of various stormwater control measures.</p> <p><i>James Houle, MA, CPSWQ. Program manager, University of New Hampshire Stormwater Center.</i></p>
11:50-noon	Discussion
noon-1:00	LUNCH – A light lunch will be provided for registered attendees. Several restaurants and stores are also in the vicinity.
	“What’s down the road?”
1:00-1:25	<p>Evaluation and selection of biofiltration media.</p> <p><i>Robert Pitt, Ph.D., PE. University of Alabama</i></p>
1:25-2:15	<p>Increased regulations and the need to treat emerging contaminants (with a focus on metals and PAH’s)</p> <ul style="list-style-type: none"> • <i>Eric Strecker, PE. Geosyntec Consultants</i>—Eric will discuss new and evolving regulatory drivers for stormwater including recent activity involving NMFS, freshwater aquatic life criteria, and the potential effect of fish consumption rates on water quality regulations. • <i>Andy James, PE, Ph.D. University of Washington Tacoma – Center for Urban Waters</i> – Dr. James will present a summary of stormwater characterization based on recent sampling conducted by Washington State’s NPDES Phase I permittees, focusing on PAH’s, pesticides, and



	<p>metals concentrations for 20 residential, commercial, and industrial basins.</p> <ul style="list-style-type: none"> • <i>Jenifer McIntyre, Ph.D. WSU Puyallup Research & Extension Center – Stormwater Program</i> – Dr. McIntyre will present recent preliminary toxicity and PAH testing on urban highway runoff.
2:15-2:30	Discussion
	How treatment BMP performance affects water quality
2:30-3:00	<p>A Framework for Linking BMP Performance to Receiving Water Quality including Uncertainty - This talk will present an overview of a WERF project being undertaken by a team comprising CSU, Geosyntec, ACR LLC, and Univ. of Utah to develop a framework for modeling that allows a user to link their preferred watershed model to their preferred receiving water model and analyze results in a Decision Support System. Built into the Framework are BMP algorithms that take into account the uncertainty in runoff water quality concentrations, and uncertainty in BMP model constants. This uncertainty is propagated through the receiving water model to show uncertainty associated with predicted water quality constituent concentrations.</p> <p><i>Larry Roesner, PE, Ph.D. Colorado State University, Civil and Environmental Engineering.</i></p>
3:00-3:10	Break

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	Working toward a national verification/certification program.
3:10-3:35	<p>Evaluating Manufactured Treatment Devices for Treatment of Stormwater in Virginia - David will discuss the Virginia Technology Assessment Protocol (VTAP). VTAP will evaluate the sediment, phosphorus, and nitrogen removal of manufactured treatment devices.</p> <p><i>David J. Sample, PE, Ph.D. Assistant Professor and Extension Specialist, Department of Biological Systems Engineering, Virginia Tech.</i></p>
3:35-4:00	<p>Treatment Device Testing Protocols in the Garden State: Current Status of Laboratory Testing and Field Longevity Monitoring</p> <p><i>Ryan Janoch, PE. and Chris French, SWEMA Members.</i></p>
4:00-5:00	<p>PANEL DISCUSSION – Can we establish a national certification/verification program? Facilitated by Dr. Joel Baker.</p> <p>Panelists:</p> <ul style="list-style-type: none"> • <i>Seth Brown, PE. Stormwater Program and Policy Manager. Water Environment Federation: Breaking Down Barriers to Innovation in the Stormwater Sector: An Investigation of a National Stormwater Product Testing and Evaluation Program. The Water Environment Federation (WEF) is driving innovation in the water sector. One noted barrier to the growth of innovative technologies in the stormwater industry is the parochial approach to approval of stormwater products, which often requires producers of manufactured proprietary stormwater devices to go through costly and time-consuming efforts in a jurisdiction-by-jurisdiction or municipality-by-municipality fashion. This limits the growth of effective technologies that are sorely needed to address the growing problem of polluted urban stormwater runoff. WEF recently convened a meeting of stakeholders to discuss the scale, scope and nature of this problem. Based upon the strong interest in this topic in this meeting and other indicators of interest, WEF has formed a workgroup to investigate a national stormwater testing and evaluation program to help meet a need and a demand in the sector. It should be noted that this is an exploratory effort only at this point, and that a white paper will be produced in 2013 that will provide the results of this investigation as well as next steps on this topic.</i> • <i>Chris French, Filterra Bioretention Systems (representing SWEMA)</i> • <i>Jim Lenhart, PE. D. WRE. Stormwater Northwest LLC.</i> • <i>Tom Stevens, NSF International</i>



Focus and Goals of the 2013 Washington Stormwater Center Stormwater Treatment Engineering Workshop

(1) Connecting stormwater treatment developers/researchers with users

- Getting new technologies in the ground. How well are we doing connecting new treatment technologies with users in Washington?
- What ideas/needs do users have that will spark research by manufacturers/vendors?
- Connecting the Board of External Reviewers (BER), the Stakeholder Advisory Group (SAG), and manufacturers/vendors.
- Maintenance: Do we need to do a better job? And how do we do it?

(2) TAPE in the future

- Are there needs for a "TAPE 2.0", and what would it look like?
 - Revisit "TAPE 2.0" topics that we shelved in 2010-2011.
- What needs should be met by TAPE (expand TAPE?); or what needs could be met with other programs/resources?
- Are the current TAPE pollutants¹ being adequately certified/treated?
- Do additional parameters need to be added to TAPE? (or a different certification/verification program)?
 - Nitrogen?
 - Bacteria?
 - Are other regions in the country doing stuff that we can learn from?
- Is there a need for TAPE to cover industrial stormwater treatment technologies? Or a separate program?

(3) National stormwater treatment certification/verification program

- What is the status of a national verification/certification program?
- What are the benefits of a national verification/certification program?
- What role can/should Washington state play?

Desired outcomes of the workshop

- (1) A further developed connection between stormwater treatment users/owners and those that are developing/manufacturing stormwater treatment technologies.
- (2) Direction to guide three (or so) key research or resource projects that the WSC can focus on to advance the above topics discussed during the workshop.

¹ TSS, dissolved copper and zinc, total phosphorus, oil