

Agenda

2016 MA and 2017 NH MS4 Permit Overview for Nutrient Control and BMP Optimization Stormwater

Next Generation Innovative Stormwater Management

- What is low impact development and green infrastructure
- Space efficient subsurface storage
- Mechanical treatment and screening
- Vegetated/biological treatment systems
- Runoff reduction techniques

Infiltration and Filtration BMPs for Nutrient Reduction

- BMP examples
- Pollutant load reduction analyses examples

Nutrient Control Planning and Pollutant Source Identification Reporting

- Calculation of total MS4 area draining to impaired waters, Impervious area and DCIA for the target catchment
- Identification and prioritization of areas high N loading
- BMP retrofit and development opportunities

BMP Optimization and Prioritization for the New MS4

- Optimization for retrofitting and redevelopment
- BMP sizing to achieve the greatest performance for least cost by type and size while factoring in multiple land uses, soils, performance, cost, and constraints
- Optimization at multiple scales: sizing an individual system, optimization by land use and watershed-scale

Collaboration in Green Infrastructure/LID/MS4 Projects from Design to Post-Construction

- Lessons from the field
- Municipal partnerships for success

The Importance of Pretreatment for Low Maintenance BMPs

- Most pretreatment approaches are hugely inadequate
- Goal is to use existing staff and equipment
- Appropriate selection for land-use trash and debris load
- Separate maintenance for aesthetics and functionality
- Cost to maintain versus cost of pretreatment

The Cost of LID/Green Infrastructure – Capital Cost and Long Term Cost of Ownership

- What are the typical metrics
- Green vs conventional
- What is included in upfront capital costs
- What are the long-term costs

Advanced Stormwater Management:
2016 MA/2017 NH MS4 Permits for Nutrient Control
Natick, MA - Tuesday, April 23, 2019



HalfMoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

NON-PROFIT
U.S. POSTAGE PAID
EAU CLAIRE, WI
PERMIT NO. 2016

Learning Objectives

You'll be able to:

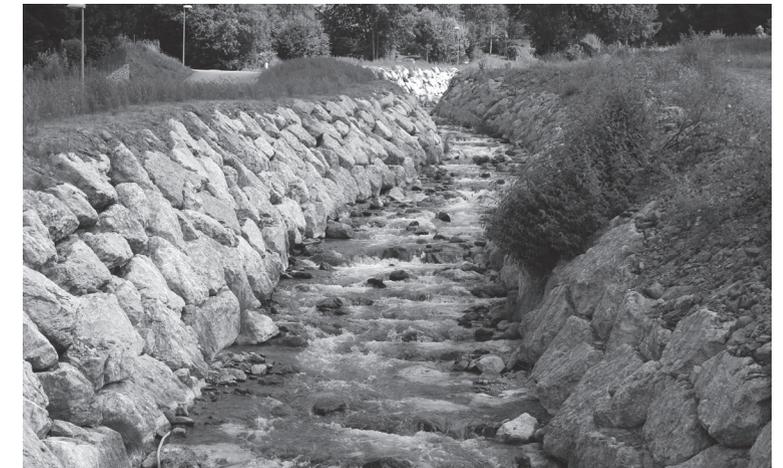
- Discuss** next generation innovative stormwater practices.
- Explore** infiltration and filtration BMPs for nutrient reduction.
- Learn** about BMP optimization and prioritization for the new MS4 permit.
- Consider** the importance of pretreatment for low maintenance BMPs.
- Examine** the upfront costs and long terms costs of LID and green infrastructure.



Advanced Stormwater Management:

2016 MA/2017 NH MS4 Permits
for Nutrient Control

Natick, MA - Tuesday, April 23, 2019



Explore the MA and NH MS4 permit overview for nutrient control

Learn about the next generation innovative stormwater management

Examine filtration and infiltration BMPs for nutrient reduction

Discuss collaboration in green infrastructure/MS4 projects from design to post construction

Study the importance of pretreatment for low maintenance BMPs

Continuing Education Credits

Architects & Landscape Architects

- 6.0 HSW Contact Hours
- 6.0 AIA HSW Learning Units
- 6.0 LA/CES HSW PDHs

Professional Engineers

- 6.0 PDHs/CE Hours

Wastewater Operator

- 6.0 TCHs

Floodplain Managers

- 6.0 ASFPM CECS

Contractors

- Non-Credit Continuing Ed.



HalfMoon Education Inc.
WWW.HALFMOONSEMINARS.ORG



Faculty

Newton Tedder *Environmental Scientist at EPA Region 1*

Mr. Tedder holds a masters degree in Geology from Boston College, specializing in surface water and groundwater contamination due to road salt application. He has more than 12 years of experience in hydrology and hydrogeology in the public and private sectors where he has worked developing public water supplies, tracking surface water pollution and, most recently, regulating surface water contamination due to stormwater. Mr. Tedder has been at EPA Region 1 for seven years and currently serves as the lead permit writer for the Massachusetts Municipal Separate Storm Sewer System (MS4) permit and the Massachusetts Department of Transportation Separate Storm Sewer System (TS4) permit.

W. Scott Gorneau, P.E.

National Manager of Stormwater Solutions, ACF - Convergent Water Technologies Alliance

As national manager of stormwater solutions for the ACF-CWT Alliance, Mr. Gorneau is responsible for offering innovative green infrastructure/low impact stormwater solutions that enable new applications and raise the bar on performance, cost effectiveness and verification. Mr. Gorneau previously served as regional vice president for FABCO Industries where he was responsible for engineering design, specification and installation of manufactured stormwater management systems. He earned a BS degree in Biological Systems Engineering and an MS degree in Agricultural and Biological Systems Engineering from the University of Nebraska-Lincoln which provided the necessary knowledge for him to launch his career into the technical sales and specified engineered products industry. He spent the subsequent time since graduation gaining experience and expanding his knowledge of the industry on a wide variety of civil and environmental engineering design projects for private and public sector clients. Mr. Gorneau is a registered professional engineer in Maine and New Hampshire, and he is a Maine certified stormwater inspector. He has been a member of the American Society of Civil Engineers (ASCE) since 1999, serving as section president in 2014.

Rob Woodman, P.E. *Senior Stormwater Engineer, ACF*

Mr. Woodman serves ACF as senior stormwater engineer. His skill set bolsters ACF's engineering technical support service allowing ACF to better serve their clients and customers with value added, project specific and engineering technical support. Mr. Woodman earned a BS degree in Civil Engineering in 2004 from the University of Wollongong in Wollongong, Australia. His schooling provided the necessary knowledge for Mr. Woodman to launch his career into site civil design and the ever-trending green infrastructure industry. He spent the first 10 years as a design and project engineer for a private engineering consulting firm, gaining experience and expanding his knowledge of the industry on a wide variety of civil and stormwater engineering design projects for private and public sector clients throughout New England. He is a registered professional engineer in Maine and Pennsylvania, a certified professional in erosion and sedimentation control, Maine DEP certified stormwater inspector, master gardener and entrepreneur.

Dr. Robert M. Roseen, P.E. *Principal and Owner, Waterstone Engineering, PLLC*

Dr. Roseen is a recognized industry leader in green infrastructure and urban watershed renewal, and he is the recipient of an Environmental Merit Award by the US Environmental Protection Agency Region 1. He consults nationally and locally on stormwater management and planning and currently leads one of the first-in-the-nation integrated planning efforts in coastal New Hampshire. He directed the University of New Hampshire Stormwater Center for 10 years and is well versed in the practice, policy and planning of stormwater management. Dr. Roseen has 20 years of experience in the investigation, design, testing and implementation of innovative approaches to stormwater management. His broad area of expertise includes water resources engineering, stormwater management, low-impact development (LID) design, porous pavements, nutrient and TMDL studies, stream restoration and erosion and sediment control. Dr. Roseen has led the technical analysis of numerous studies examining land use and climate change impacts on municipal flooding. He has participated in many significant and award winning green infrastructure projects.

Seminar Information

Courtyard by Marriott Natick

342 Speen Street
Natick, MA 01760
(508) 655-6100

Registration
8:00 - 8:30 am
Morning Session
8:30 am - 12:00 pm
Lunch (On your own)
12:00 - 1:00 pm
Afternoon Session
1:00 - 4:00 pm

Tuition

\$289 for individual registration
\$269 for three or more registrants from the same company at the same time.

Included with your registration: Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 6.0 HSW contact hours to architects in most states, including Massachusetts. Educators and courses for Massachusetts architects are not subject to pre-approval.

This course offers 6.0 PDHs/CE hours to professional engineers and 6.0 HSW CE hours to landscape architects in most states. Continuing education is not mandatory in Massachusetts. Refer to specific state rules to determine eligibility.

This course has been approved by the American Institute of Architects for 6.0 HSW Learning Units (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 6.0 HSW PDHs. Only full attendance can be reported to the AIA/CES and the LA/CES.

The Board of Certification of Wastewater Treatment Plant Operators approved this program for 6.0 TCHs.

The Association of State Floodplain Managers has approved this event for 6.0 CECs.

This seminar offers a non-credit continuing education opportunity to construction contractors. It has not been approved by any state with a construction contractor continuing education requirement.

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Additional Learning

Webinar Series

Structural Forensic Engineering

- **Introduction to Forensic Engineering Process**

Wed., March 27, 2019, 11:00 AM - 1:00 PM CDT

- **Causes of Failures and the Forensic Engineering Report**

Wed., March 27, 2019, 1:30 - 3:30 PM CDT

- **Forensic Examination of Structures and Use in Litigation**

Thurs., March 28, 2019, 11:00 AM - 1:00 PM CDT

For more information visit:
www.halfmoonseminars.org/webinars/

Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$269. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit..

Registration

Advanced Stormwater Management:

2016 MA/2017 NH MS4 Permits for Nutrient Control

Natick, MA - Tuesday, April 23, 2019

How to Register		Registrant Information
Online: www.halfmoonseminars.org		Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____
Phone: 715-835-5900	Code:	Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____
Fax: 715-835-6066		Complete the entire form. Attach duplicates if necessary.
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
() I need special accommodations. Please contact me.		

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.

() **I am not attending.** Please send me the self-study package:

- Downloadable MP3 Audio/PDF Manual for **\$269.00**.
- CD/Manual Package for **\$289.00**.

(S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

Credit Card: *Mastercard, Visa, American Express, or Discover*

Credit Card Number: _____

Expiration Date: _____ CVV2 Code: _____

Cardholder Name: _____

Billing Address: _____

City: _____ State: _____ Zip: _____

Signature: _____

Email: _____