

Agenda

Presented by Rocky J. Keehn & Joseph D. Foley

Building a Hydrologic and Hydraulic Foundation

- Hydrology 101 – the cornerstone of all stormwater designs
 - Rainfall, losses and runoff
- Hydraulics 101 – understanding basic equations and concepts for better designs
 - Flow conveyance, detention, retention, weirs, orifices, and culverts
- H&H Modeling 101 – tools you use or should know about
 - Rational method
 - TR-55
 - Computer models

Water Quality Design Foundation

- Why we do what we do from Nationwide Urban Runoff Program (NURP) to Stormwater Pollution Prevention Plan (SWPPP)
- The science behind successful BMPs
 - Which storm to use?
 - Stokes Law verses Hazen's Surface Load Theory
 - Water quality capture volume (WQCV)

Stormwater Management from a Watershed Perspective

- Introduction of the unified sizing criteria – Iowa Stormwater Management Manual
- The 2-year, 10-year, 100-year rate control, conversion of a watershed
- Incorporating over all watershed concepts to improve your project
- Is peak and volume control on each site good or maybe not so good
- Impact of your projects/site conditions outside your project
- Case studies – two Nebraska residential developments with lots of outside flow from adjacent watersheds

Stormwater Management for Large, Possibly Multi-Use Projects

- Incorporating low impact development in the design process
- Detention/retention where do I build?
- Regional stormwater management verses multiple smaller stormwater components.
- Using natural concepts such as rivers with floodplains in the design process
- Creating habitat diversity with better engineering design
- Case studies – Spring Lake Park in Omaha Nebraska as well as other examples in Iowa, Nebraska, and South Dakota

Stormwater Management for Larger Single Use Sites

- Conversion from pervious to impervious – mitigation
- Pre-construction verses post construction rate and volume control challenges
- Underground BMPs
- Special BMP's such as vegetated roofs and porous pavement
- Aesthetic verses back of the building BMPs
- Water re-use
- Case studies – Various project sites in Nebraska, Iowa and South Dakota will be used as examples of the good, the bad and the ugly

Stormwater Management for the Smaller Single Use Sites

- Small development challenges
- Residential neighborhoods as part of a MS4 education program
- Case studies – various examples project will be highlighted

Stormwater Management for the Linear Project

- Challenges of working within urban rights-of-way
- Linear highway projects
- Vegetation selection may be the key design component
- Case studies – various example project will be highlighted

Challenges of Permitting Projects in the Midwest – are we that much different?

- 404 permits
- Local environmental permits
- SWMP
- Working in a floodplain

Stormwater Management in the Midwest 2021

(Nebraska, Iowa & South Dakota)

Live, Interactive Webinar - Monday, September 13, 2021

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Learning Objectives

You'll be able to:

Discuss hydrology and hydraulics, and explore tools for stormwater modeling.

Consider the science behind successful stormwater best management practices.

Manage stormwater considering your watershed, and examine the impact of your project on downstream property.

Manage stormwater for large single-use and large multi-use sites.

Explore management techniques for smaller single-use sites and highway rights-of-way.

Evaluate real-life case studies of large and small projects in Nebraska, Iowa and South Dakota.



HalfMoon Education Online Learning Stormwater Management in the Midwest 2021 (Nebraska, Iowa & South Dakota)

Live, Interactive Webinar - Monday, September 13, 2021



Understand hydrologic concepts that are the foundation of stormwater management

Preserve and improve water quality while managing stormwater

Manage stormwater from a watershed perspective

Explore site design for large projects and multi-use projects

Discuss stormwater challenges for small sites

Review case studies from South Dakota, Iowa and Nebraska

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7.0 LA CES HSW PDHs

Floodplain Managers

7.0 ASFPM CECs

International Code Council

.7 CEUs (Sitework)



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Faculty

Rocky J. Keehn PE, D.WRE, CFM, ENV SP, LEED AP

Mr. Keehn has over 30 years of experience in the field of stormwater planning and design. Projects have included detention ponding for rate control; retention ponds for water quality improvements; wetland construction; underground and above ground BMPs including rain gardens, first flush diversion structures, and special outlet structures; and retrofit of existing sites for stormwater improvements. He holds the certification of diplomate water resource engineer (D.WRE) from the American Academy of Water Resource Engineers, and is a registered engineer in the states of South Dakota, Nebraska, Minnesota, and Wisconsin. Mr. Keehn is a registered hydrologist in Wisconsin, a certified floodplain manager (CFM), LEED accredited professional and Nebraska Department of Transportation (NDOT) erosion and sediment control certified inspector.

Joseph D. Foley *FoleyShald Engineering, LLC*

Mr. Foley is a senior project manager and civil engineer with experience on stormwater management, land development, transportation, environmental compliance and water resource projects. His experience includes design, construction management and project management of private land development projects, municipal transportation projects, stream stabilization, green infrastructure, permitting and compliance and infrastructure projects. Management and technical responsibilities included plans and specifications preparation, bidding services, construction oversight, environmental compliance and reporting. He has worked in several states and jurisdictions with client types that include private, municipal and state governments.

Webinar Information

Log into Webinar 8:00 - 8:30 am CDT	Break 12:30 - 1:30 pm CDT
Morning Session 8:30 am - 12:30 pm CDT	Afternoon Session 1:30 - 5:00 pm CDT

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Additional Learning

Slope Stabilization and Landslide Prevention

- Tues, Aug 3, 2021 | 8:30 am - 5:00 pm CDT

2021 International Wildland-Urban Interface Code

- Thurs, Aug 19, 2021 | 8:30 am - 4:30 pm CDT

Soil Mechanics, Bearing Capacity and Slope Stabilization

- Fri, Aug 20, 2021 | 8:30 am - 4:30 pm CDT

The Tree Course: Science, Design, and Sustainability

- Fri, Aug 20, 2021 | 9:00 am - 4:30 pm CDT

How To Handle Ethical Issues Associated with Defects and Failures

- Tues, Aug 24, 2021 | 9:00 - 11:00 am CDT

Highways, Byways and Private Roads

- Wed, Aug 25, 2021 | 11:00 am - 3:30 pm CDT

Pavement Design

- Wed, Aug 25, 2021 | 8:30 am - 4:30 pm CDT

Construction Cost Estimating

- Thurs, Aug 26, 2021 | 8:30 am - 3:50 pm CDT

International Building Code 2021

- Thurs, Aug 26, 2021 | 10:00 am - 2:30 pm CDT

- Fri, Aug 27, 2021 | 10:00 am - 1:30 pm CDT

Residential and Small Commercial Solar Photovoltaic Energy Systems

- Fri, Aug 27, 2021 | 8:30 am - 4:30 pm CDT

Stormwater Basins and Underground Systems

- Fri, Aug 27, 2021 | 9:00 am - 4:30 pm CDT

IBC Special Inspections under Chapter 17 of the International Building Code

- Tues, Aug 31, 2021 | 8:30 am - 5:00 pm CDT

Handling Ethical Issues in Construction

- Tues, Aug 31, 2021 | 3:00 - 5:00 pm CDT

For more information and other online learning opportunities visit: www.halfmoonseminars.org

Continuing Education Credit Information

This webinar offers 7.0 PDHs to professional engineers and 7.0 HSW continuing education hours to landscape architects and architects in most states, including Nebraska, Iowa and South Dakota. Educators and courses are not subject to preapproval in these states.

This webinar is approved by the American Institute of Architects Continuing Education System for 7.0 LU | HSW (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 7.0 HSW PDHs. Only full attendance can be reported to the AIA/CES and LA/CES.

The Association of State Floodplain Managers has approved this event for 7.0 CECs for certified floodplain managers.

This course is approved by the International Code Council for .7 CEUs in the specialty area of Sitework (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts, and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

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