

# Agenda

*Presented by Brad Flack*

## Stormwater Management System Objectives and Design Considerations

- Complying with stormwater regulations
- Site assessment
- Preparing stormwater pollution prevention plans
- Stormwater goals
- Design considerations

## Stormwater Basin/Underground System Design

- Selection criteria
- Impact area
- Watershed and terrain considerations
- Stormwater contents
- Community and environmental factors

## Choosing Basin Types

- Detention basins
- Stormwater routing, sediment handling, outlet
- Retention ponds
- Stormwater routing, sediment handling, soils and vegetation
- Infiltration basins
- Stormwater routing, sediment and chemical handlings, soils and vegetation

## Choosing an Underground Storage System

- Retention systems
- Stormwater routing, sizing, design criteria
- Detention/infiltration systems
- Stormwater routing, infiltration, sizing, design criteria

## Sustainable Best Practices in Stormwater Detention/Retention

- Naturalizing detention/retention basins
- Small detention areas vs. large detention area
- Rain gardens
- Underground storage and water reuse options

### 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.

## Stormwater Basins and Underground Systems

Austin, TX - Thursday, October 3, 2019



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PO Box 278  
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## Learning Objectives

### You'll be able to:

**Learn** about preparing stormwater pollution prevention plans.

**Comply** with stormwater regulations.

**Discuss** selection criteria for stormwater basins and underground systems including impact area, watershed and terrain considerations and stormwater content.

**Choose** stormwater basin types, including detention basins and retention ponds.

**Evaluate** underground retention and detention/infiltration systems.

**Consider** sustainable best practices including rain gardens, underground storage and water reuse.



# Stormwater Basins and Underground Systems

Austin, TX - Thursday, October 3, 2019



**Understand** stormwater management system objectives

**Identify** design considerations

**Examine** sustainable best practice in stormwater detention/retention

**Explore** basin types, including retention ponds and infiltration basins

**Learn** how to choose an underground storage system

### Continuing Education Credits

**Professional Engineers**  
6.5 PDHs

**Architects & Landscape Architects**  
6.5 HSW CEHPs/CE Hours  
6.5 AIA LU|HSW  
6.5 LA CES HSW PDHs

**Contractors**  
Non-Credit Continuing Ed.

**Floodplain Managers**  
6.5 ASFM CECs



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**Brad Flack** *President & CEO at Integrity Stormwater*

Mr. Flack has earned his designation as a certified professional in erosion and sediment control as well as his designation as a certified erosion, sediment and stormwater inspector and instructor, lending his experience and training to his customers for all of their stormwater needs. He has served as the president and the administrative vice president of the South Central Chapter of the International Erosion Control Association (IECA). Mr. Flack was the Region 6 president for EnviroCert International and has served as the Region 7 representative for CPESC, Inc. He was technical vice-chair for the Council, and he is on the Education Committee: Stormwater Management Track for the International Erosion Control Association Region 1 which encompasses North America, South America and Europe, where he has served as chair. Mr. Flack was awarded Young Professional of the Year for 2014 by the IECA Region 1 and is also an IECA Mentor. He also served as a member of the Policies and Procedures Committee and the Certified Professional in Industrial Stormwater Management Committee for EnviroCert International. He is also an EnviroMentor for the Texas Commission on Environmental Quality (TCEQ) as well as a member of the TCEQ Houston Area Small Business Advisory Council. Mr. Flack has been involved with stormwater quality management since 2004, when he learned about permitting, turf establishment, erosion control and detention pond maintenance. He has since continued to learn and develop his stormwater knowledge and skills and is now a speaker at many conferences, sharing his expertise across the US and internationally.

## Seminar Information

|                                                                                                    |                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hilton Garden Inn Downtown</b><br>500 North Interstate 35<br>Austin, TX 78701<br>(512) 480-8181 | Registration<br>8:00 - 8:30 am<br>Morning Session<br>8:30 am - 12:15 pm<br>Lunch (on your own)<br>12:15 - 1:15 pm<br>Afternoon Session<br>1:15 - 4:30 pm |
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**Tuition**  
**\$289** for individual registration  
**\$269** for three or more registrations.  
**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](http://www.halfmoonseminars.org).

**How to Register**

- Visit us online at [www.halfmoonseminars.org](http://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. It offers 6.5 PDHs to professional engineers in all states. Educators and courses are not subject to preapproval in Texas.

This course offers 6.5 HSW CEPHs to Texas architects and landscape architects. The American Institute of Architects has approved this course for 6.5 LU|HSW, and the Landscape Architecture Continuing Education System has approved it for 6.5 HSW PDHs. Only full attendance can be reported to the AIA/CES and LA/CES. Educators and courses are not subject to preapproval in Texas. Visit [www.halfmoonseminars.org](http://www.halfmoonseminars.org) for complete AIA information under this course listing.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York architects and landscape architects.

The Association of State Floodplain Managers has approved this event for 6.5 CECs.

This course offers a non-credit continuing education opportunity to construction contractors. It has not been approved by any state contractor licensing entity.

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 Design and Ethics**

- **Structural Design: Ethical Issues**  
Thurs., August 15, 2019, 11:00 AM - 12:00 PM CDT
- **Structural Design: Gravity Forces**  
Thurs., August 15, 2019, 12:30 - 2:30 PM CDT
- **Structural Design: Lateral Forces**  
Fri., August 16, 2019, 11:00 AM - 12:30 PM CDT
- **Structural Design: Wind, Seismic and Connections**  
Fri., August 16, 2019, 1:00 - 2:30 PM CDT

**Proposal Writing**  
Wed., August 7, 2019, 11:00 AM - 3:30 PM CDT

**Technical Writing**

- **Planning Documents**  
Wed., August 14, 2019, 11:00 AM - 1:00 PM CDT
- **Writing Documents**  
Wednesday, August 14, 2019, 1:30 - 3:30 PM CDT
- **Revising and Editing Documents**  
Thurs., August 15, 2019, 11:00 AM - 1:00 PM CDT
- **Technical Writing Best Practices**  
Thurs., August 15, 2019, 1:30 - 3:30 PM CDT

**Introduction to Hydro Energy Logic Modeling Software (HELP-FL)**

- **Introduction to Hydro Energy Logic Program Modeling Software (HELP-FL), Part I**  
Tues., August 20, 2019, 11:00 AM - 2:00 PM CDT
- **Introduction to Hydro Energy Logic Program Modeling Software (HELP-FL), Part II**  
Wed., August 21, 2019, 11:00 AM - 2:30 PM CDT

**Small Wind Energy Systems**

- **Small Wind Energy System Components**  
Thurs., August 22, 2019, 11:00 AM - 1:00 PM CDT
- **Small Wind Energy Siting and Sizing**  
Fri., August 23, 2019, 11:00 AM - 1:00 PM CDT

For more information visit:  
[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)

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## Registration

Stormwater Basins and Underground Systems  
Austin, TX - Thursday, October 3, 2019

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| <div>How to Register</div> <div>Online:<br/><a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a></div> <div>Phone:<br/>715-835-5900</div> <div>Fax:<br/>715-835-6066</div> <div>Code:</div> <div>Mail:<br/>HalfMoon Education Inc.,<br/>PO Box 278, Altoona, WI<br/>54720-0278</div> <div>Complete the entire form. Attach duplicates if necessary.</div> | <div>Registrant Information</div> <div>Name: _____</div> <div>Company/Firm: _____</div> <div>Address: _____</div> <div>City: _____ State: _____ Zip: _____</div> <div>Occupation: _____</div> <div>Email: _____</div> <div>Phone: _____</div> <div>Additional Registrants:</div> <div>Name: _____</div> <div>Occupation: _____</div> <div>Email: _____</div> <div>Phone: _____</div> <div>Name: _____</div> <div>Occupation: _____</div> <div>Email: _____</div> <div>Phone: _____</div> <div>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.</div> <div>( )  I need special accommodations. Please contact me.</div> |
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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.

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