TRAINING WORKSHOPS ON THE

Harper Methodology and BMPTRAINS Model

Dates: **Monday, May 21 and Tuesday, May 22, 2018**

Location: **Renaissance Orlando Airport Hotel - 5445 Forbes Place; Orlando, FL 32812** (on SR 436 at last intersection before airport) - Complimentary self-parking for Workshop attendees

Join us for Intensive Training Workshops on Stormwater Management
Your choice of one day or two days

DAY 1: **Harper Methodology** - Basis of Stormwater Loading, BMP Calculations, and Pre- vs. Post- Analyses (**See page 2 for more information**)

DAY 2: **BMPTRAINS Model** – Fundamentals of program usage and examples (**See page 3 for more information**)

CEU/PDH Hours: All attendees present for an entire workshop will receive a Certificate of Attendance for that Workshop. **Certificates to receive credit for 6 CEU/PDH hours per day will be provided for an additional $35 per day fee.**

Cost: **Workshop Fee is $240 per one-day Workshop, or $460 for both days,** and includes continental breakfast, buffet lunch with beverage service, and breaks each day. **A reduced rate of $199 per one-day workshop is available for government employees.** (**See page 4 for more registration information)**

Hotel: If you would like hotel accommodations, please contact the Renaissance Hotel directly at 407-240-1000. The hotel is not offering discounted rates for the Workshops, but there are many hotels and restaurants within walking distance of the Renaissance Hotel.

ERD Water Quality Engineering

SPONSORED BY:

University of Central Florida Stormwater Management ACADEMY "Managed Stormwater is Good Water"

DAY 1 – Monday, May 21, 2018 – Harper Methodology

A full day workshop on the Harper Methodology used by Water Management Districts throughout Florida to calculate runoff volumes, BMP efficiencies, and pre- vs. post- development loadings for discharges to Impaired Waters and OFWs. Learn the assumptions, methods, data, and calculations upon which the Methodology is based, how to use summary tables, and where to find the data to conduct these analyses. This Workshop is an excellent introduction to the Day 2 BMPTRAINS Workshop which uses the Harper Methodology to calculate rainfall/runoff relationships, nutrient loadings, and BMP efficiencies.

Workshop Objectives:

1. Importance of stormwater management – when are higher levels of stormwater treatment required?
2. Use of LID to enhance BMP effectiveness
3. Understand the theory for estimating annual runoff volumes, mass loadings, and nutrient mass removal
4. How to properly select runoff emc data
5. Understand the removal mechanisms and performance efficiencies of common BMPs and selection of appropriate BMPs
6. How to evaluate the effectiveness of BMPs in series
7. Use of alum for stormwater treatment
8. Understand pre- vs. post loading calculations and common mistakes

Agenda:

TIME	INSTRUCTOR	TOPICS
8:15-9:00 am	--	Registration and Continental Breakfast
9:00-9:10 am	Harper	*Introduction *Training expectations
9:10-10:30 am	Livingston	*When are higher levels of stormwater treatment required? *How to design LID BMPs to achieve them
10:30-10:50 am	--	Morning Break
10:50-12:00 noon	Harper	*Rainfall characteristics *Runoff generation *Runoff emc values *Calculation of mass loadings
12:00-1:00 pm	--	Lunch
1:00-2:45 pm	Harper	*BMP efficiencies and calculations for typical designs to include: *Dry retention/infiltration techniques, pervious pavement, swales *Wet detention and harvesting *Gross pollutant separators/street sweeping *Alum treatment *BMPs in series *Common mistakes in BMP selection
2:45-3:00 pm	--	Afternoon Break
3:00-4:15 pm	Harper	*Pre- vs. Post- loading calculations *Common mistakes in pre- vs. post- analyses
4:15-4:35 pm	Harper and Livingston	*Questions

Course Materials: Each participant will receive a link to download the presentations and materials presented in the Workshop

Instructors: Harvey Harper and Eric Livingston

DAY 2 – Tuesday, May 22, 2018 - BMPTRAINS

A full day Workshop to help in understanding the use of the BMPTRAINS model, which is acceptable for ERP applications and assessment of credits within the TMDL program. The program is accepted by water management districts, FDEP, and FDOT. Navigation of the program from worksheet to worksheet with definition of terms is presented. Example problems from around the State are used to illustrate the use of the model.

Workshop Objectives:

1. Getting started and navigation of the model
2. Understand the 15 Best Management Practices included in BMPTRAINS
3. Define input data required for the BMPTRAINS Program
4. Use BMPTRAINS for the selection of stormwater best management practices
5. Example applications
6. Introduction to upgrades expected for BMPTRAINS 2020 Program

Agenda:

TIME	INSTRUCTOR	TOPICS
8:00-9:00 am	--	Registration and Continental Breakfast
9:00-9:10 am	Wanielista	*Introduction to Version 8.6 BMPTRAINS *Training expectations
9:10-10:15 am	Wanielista	Getting started, navigation, definitions, worksheets, help buttons, input data and drop-down menu choices, DCIA, NDCIA-CN, catchments, catchments configurations, emc inputs, multiple land use and soil conditions, co-mingling, cost analysis, user-defined BMPs, example input and results
10:15-10:30 am	--	Morning Break
10:30-12 noon	Wanielista and Livingston	Actual use of the model to include retention and wet detention, harvesting, disconnected impervious areas, depression storage, pervious pavements, exfiltration, and others
12:00-1:00 pm	--	Lunch
1:00-2:15 pm	Hardin and Livingston	*Disconnecting impervious areas using depression storage options (such as rain gardens, tree wells, planter boxes, and swales) *Typical retention basins and wet detention ponds and other LIDs *Others as defined by participants
2:15-2:30 pm	--	Afternoon Break
2:30-3:30 pm	Hardin and Wanielista	*BMPTRAINS case studies (continued) *Upgrades for BMPTRAINS 2020, cost analysis, and others
3:30-4:00 pm	Hardin and Livingston	*Discussion *Comments *Review

Course Materials: For maximum benefit, each participant should have a computer with the latest Release 8.6 BMPTRAINS model loaded. The model download is free and is available at www.stormwater.ucf.edu

Instructors: Marty Wanielista, Mike Hardin, and Eric Livingston

REGISTRATION INFORMATION

REGISTRATION:

To pre-register and reserve your seat at one or both Workshops, please e-mail your information to:

Sharon Darling at: sdarling@erd.org.

Then confirm your reservation by completing the information below and mailing with your check or purchase order to:

Sharon Darling
Environmental Research & Design, Inc.
3419 Trentwood Blvd., Suite 102
Belle Isle, FL 32812-4864

Please make checks payable to: Environmental Research & Design, Inc.

We are unable to accept credit card payments at this time.

(Cut here and mail along with your registration check)

REGISTRATION FORM
HARPER METHODOLOGY AND BMPTRAINS WORKSHOPS
May 21-22, 2018

I am registering for: ☐ Day 1: Monday, May 21, 2018 (Harper Methodology) ($240; $199 for government employee)

☐ Day 2: Tuesday, May 22, 2018 (BMPTRAINS) ($240; $199 for government employee)

☐ Days 1 and 2 (May 21-22, 2018) ($460; $398 for government employee)

Attendee's Name: _____

Florida PE License # _____ E-mail Address:_____

Requesting CEU Credits: **Day 1**: ☐ yes ($35) **Day 2**: ☐ yes ($35) **Days 1 and 2**: ☐ yes ($70)

Affiliation/Company: _____

Address: _____

_____

Phone (cell and work): _____

Special Dietary Request: ☐ None ☐ Vegetarian ☐ Vegan ☐ Other_____

Amount Enclosed: $_____