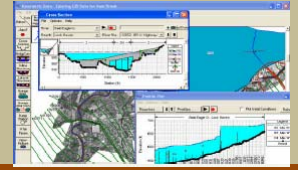


Two-Dimensional Modeling Using HEC-RAS

January 27 – 29, 2016

Pierce County Environmental Services Building
9850 64th Street West
University Place, WA 983 (12 CECs for CFMs)



Summary

This intensive 3-day workshop prepares water resources professionals to use the HEC-RAS (Hydrologic Engineering Center River Analysis System) for modeling two-dimensional (2D) unsteady flow applications. Participants will learn how to approach and construct a 2D model for unsteady flow conditions, and to effectively view and analyze results.

Day 1

- Introduction to Two-Dimensional Modeling (2D) in HEC-RAS
- HEC-RAS Unsteady Flow Review
- Computer Workshop on Lateral Structures and Storage Areas
- Review of 2D Flow Theory
- Features and Capabilities of RAS Mapper

Day 2

- Computer Workshop on Creating a 2D Mesh
- Preprocessing 2D Flow Areas
- Computer Workshop on Offline 2D Projects
- Viewing 2D Model Results
- Computer Workshop on Inline 2D Projects

Day 3

- Computer Workshop on Inline 2D Projects (Continued)
- Troubleshooting Errors
- Differences in 1D versus 2D Modeling
- Computer Workshop on Troubleshooting Errors
- Calibrating a 2D HEC-RAS Model

COURSE FEES

\$845-NORFMA Members/\$945-Non-members*

*Become a member for 2015-2016!
Cancellation Policy: \$50 fee until Jan. 18, no refunds after this date.

This course is subject to cancellation due to insufficient number of students.

LAPTOPS REQUIRED

INSTRUCTOR: Dr. Ray Walton, P.E., D.WRE is the Lead Hydraulic Engineer with WEST Consultants in Bellevue, Washington. He has nearly 40 years experience directing water resources projects for a variety of federal, state, local government and private clients. He is a nationally-recognized expert in water resources and computer modeling, including surface water, groundwater, and water quality systems, and has been involved with numerous river and floodplain studies using HEC-RAS. He is a frequent instructor of short courses for ASCE Continuing Education and others in various aspects of numerical modeling using the HEC programs. He received his B.Sc. in Mathematics from University College, London, his M.Sc. in Engineering Hydrology from the University of Newcastle-Upon-Tyne, and his Ph.D. in Hydraulics from the University of Florida.

WHO SHOULD ATTEND? Consulting engineers, water resource planners, engineers employed by local, state, or federal government agencies. Participants should have some experience in floodplain hydrology and hydraulics, and sound experience in HEC-RAS steady and unsteady flow computer modeling.

COURSE BENEFITS AND OUTCOMES: Participants will: Learn to use HEC-RAS to model 2D unsteady flow hydraulics; Get an overview of 2D flow theory and the differences between it and one-dimensional modeling; Gain hands-on HEC-RAS experience by participating in practical computer workshops; Understand how to develop a stable and calibrated 2D flow model; Obtain valuable insights in methods for minimizing computation errors and instabilities for 2D unsteady hydraulic models; Learn from "real world" projects and applications

REGISTRATION DEADLINE: January 18, 5:00 p.m. Register by e-mailing the information below to hhu@westconsultants.com. **Seating limited to 30 students.**

[Online registration – www.norfma.org](http://www.norfma.org)

For checks, make payable to "NORFMA" and send to: NORFMA C/O Henry Hu, WEST Consultants, 12509 Bel-Red Road, Suite 100, Bellevue, WA, 98005. Visa or Master Card only.

Registrant Information

Name: _____

Company: _____

Address: _____

City, State, Zip: _____

E-mail: _____

Circle Applicable Course Fee: \$845 / \$945; TOTAL: _____

Card No: _____ Sec. code: _____

Exp. Date: _____ Billing zip code: _____

Cardholder Name: _____ Signature: _____