

TRAINING LOCATION

WSP USA Inc., One Penn Plaza, 4th Floor
New York City, NY 10119



ACCOMMODATIONS IN NYC

Hotel Stanford - New York

43 W 32nd Street
New York, NY 10001
(212) 563-1500
From \$136.99 per night with
3-night stay discount

Staypineapple, An Artful Hotel, Midtown New York

337 W 36th Street
New York, NY 10018
(866) 866-7977
from \$144.25 per night

The Hotel @ Fifth Avenue

17 W 32nd Street
New York, NY 10001
(212) 736-1600
from \$168 per night

TRYP New York City Times Square South

345 W 35th Street
New York, NY 10001
(212) 600-2440
from \$169.87 per night

The New Yorker, A Wyndham Hotel

481 8th Avenue
New York, NY 10001
(212) 971-0101
from \$156.53 per night

Stewart Hotel New York

371 7th Avenue
New York, NY 10001
(212) 563-1800
from \$146 per night

Holiday Inn Express New York City-Chelsea

232 W 29th Street
New York, NY 10001
(212) 695-7200
from \$181.11 per night

ADDITIONAL INFORMATION

Instructor Substitution: WSP reserves the right to substitute an equally-qualified instructor for any seminar should unforeseen circumstances arise.

Cancellations: Cancellations must be made in writing via email and must include registrant's name, confirmation # and name/date of the seminar. If you cancel 7 business days or less prior to the seminar start date, no refund/credit/personal transfers will be issued. You may transfer your registration to another registrant with no penalty up until the day of the seminar.

PDH's: Continuing education credit in the form of Professional Development Hours will be awarded to qualifying attendees. WSP is a sponsor organization (#SM000020) of continuing education, approved by the Practicing Institute of Engineering, Inc. (PIE) on behalf of the New York State Education Department.

Dress: Casual business attire is appropriate for all seminars.

Send a Team and Save: Register three or more from one organization to the same seminar/date/location and save 10% on each seminar registration. Registrations must be made at the same time to receive this discount.

REGISTER

NOW for

\$590*

for the 2-day session!

Space is limited so reserve your spot early!

REGISTRATION AND PAYMENT INFORMATION

REGISTRATION: Please email your

- 1 registration information below **and**
- 2 a copy of your check to:

catherine.bondoc@wsp.com

Name _____
Title _____ Nickname for Badge _____
Company _____
Address _____
City _____ State _____ Zip _____
Telephone _____ Fax _____
Email (required for confirmation) _____

Once the check payment is received via mail, a confirmation for your secured spot will be sent via email.

PAYMENT by check:

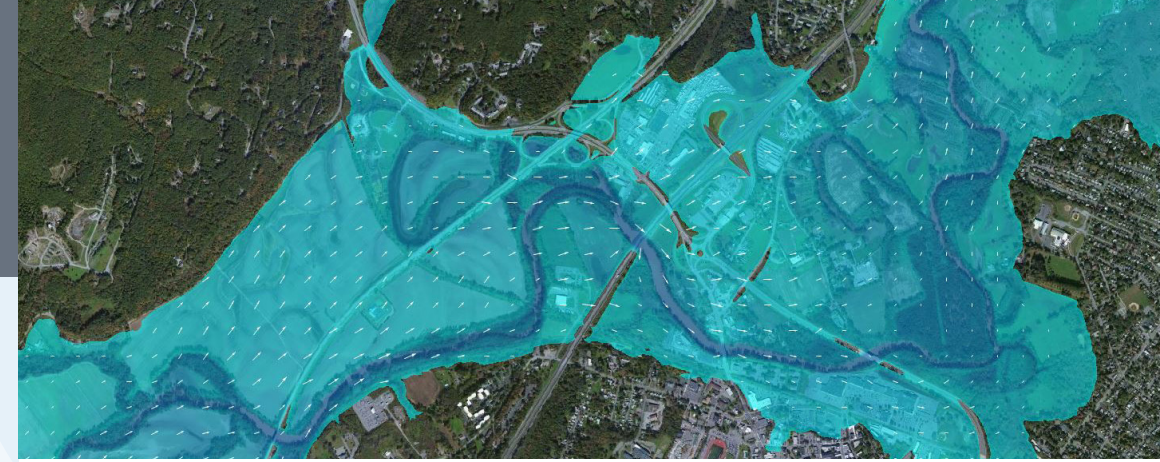
Remit check payment, made out to WSP USA Inc., to:
Catherine Bondoc
WSP USA Inc.
One Penn Plaza, 2nd Floor
New York City, NY 10119

HOW TO REACH US:



Contact Catherine Bondoc at
Tel: +1 646 484 4318
Email: catherine.bondoc@wsp.com

* Seminar fees include all course materials and breakfast for both days. Fees do not include hotel accommodations or additional meals.



HEC-RAS 5.0.7 Training

Build, Run, and Animate 1D & 2D Flood Models



*A hands-on computer
workshop using FREE
software in this intensive,
interactive course*



New York City, NY
July 29-30, 2019
8:30am - 5:00pm



JOIN US for a 2-DAY HYDRAULIC MODELING COURSE

COURSE TOPICS INCLUDE

- ✓ Background theory
- ✓ Workshops for building, running, troubleshooting, and interpreting one- and two-dimensional HEC-RAS models.
- ✓ Floodplain mapping
- ✓ Hydraulic structures
- ✓ Flood routing
- ✓ Risk assessment
- ✓ GIS interfacing
- ✓ Grid development

PURPOSE AND BACKGROUND

The proposed course balances theoretical knowledge with practical applications. Theoretical and computational differences for selection between 1D, 2D, and 3D approaches will be covered, with the course workshop material structured with a focus on applying HEC-RAS 2D and coupled 1D-2D models. Input/output formats and interfacing with CAD/GIS programs will also be included.

The course will prepare attendees to create, run, and animate basic two-dimensional flood models in HEC-RAS 5.0.7. Following completion of this course, consultation and training for more advanced topics may be provided under separate agreement through web-based screen-sharing applications or additional in-person support as warranted.

SEMINAR BENEFITS (Learning Outcomes)

- ✓ Learn how to use the U.S. Army Corps of Engineers' HEC-RAS (River Analysis System) computer program
- ✓ Gain hands-on HEC-RAS experience by participating in practical computer workshops
- ✓ Get an overview of hydraulic principles for rivers, waterway bridges, and culverts
- ✓ Optimize the effectiveness of your next flood control or drainage projects
- ✓ Obtain valuable insights in model development and floodway optimization for FEMA flood insurance studies

WHO SHOULD ATTEND?

- ✓ Consulting engineers
- ✓ Water resource planners
- ✓ Engineers employed by local, state, or federal government agencies

Participants should have some experience in floodplain hydrogeology and/or hydraulics. They should also bring a laptop, download the free HEC-RAS software prior to arrival, and be familiar with the Windows operating system.

DOWNLOAD THE FREE HEC-RAS SOFTWARE:
<https://www.hec.usace.army.mil/software/hec-ras/downloads.aspx>

TRAINING INSTRUCTORS



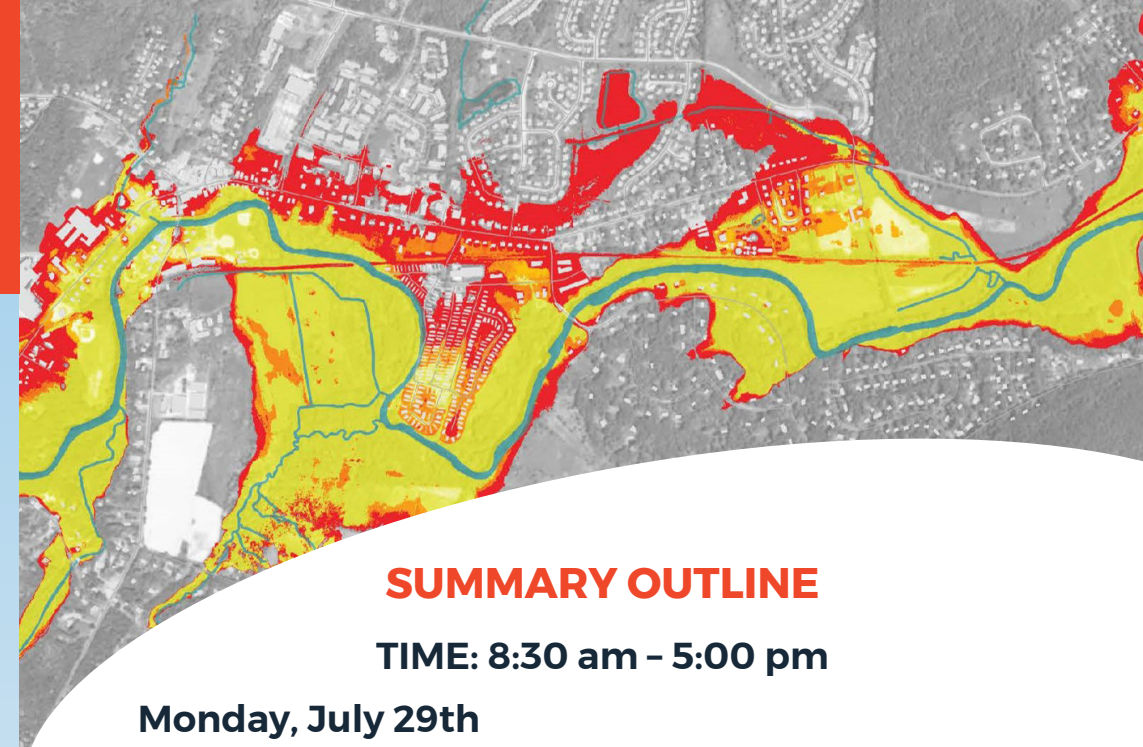
Gregory Shaffer, PE
Senior Water Modeler

- A senior water resource engineer for WSP, with 13 years of experience focused in advanced hydraulic modeling
- Extensive experience using HEC-RAS for bridge and culvert replacement projects, riverine flood studies, dam breach analyses and flood inundation mapping, and reservoir routing studies
- Group Lead for Advanced H&H modeling for WSP and Technical Lead in WSP's Resiliency Practice
- Presently serving as the technical lead for flood modeling and alternative's analysis for NYCDEP's Ashokan Reservoir Reconstruction Program



Krey Price
Director, Surface Water Solutions

- Trained over 800 attendees in 80 separate two-dimensional hydraulic modeling training courses
- Principal water resources engineer with extensive rainfall-runoff, flood modelling and project management expertise
- Managed water resources and flood mapping services across Australia for a \$2 billion international consulting firm
- 20-year technical career with diverse, international experience in numerical modelling, hydraulic design, and construction of flood protection structures
- Comprehensive background in teaching, training, mentoring, and managing professional development through academic partnerships and internship programs



SUMMARY OUTLINE

TIME: 8:30 am – 5:00 pm

Monday, July 29th

- Demonstration of HEC-RAS capabilities
- 1D vs 2D theory
- RAS Mapper & GIS interfacing
- Computer workshop on importing terrains and managing GIS layers
- Computer workshop on creating 1D geometries in RAS mapper
- Computer workshop on creating 2D areas, breaklines, and refinement areas
- Hydrologic boundary conditions
- Courant numbers and variable time step selection
- Computer workshop on entering unsteady flow data
- Computational options

Tuesday, July 30th

- Adding bridges and culverts in 1D and 2D Geometries
- Computer workshop on running a model with structures
- Linking 1D and 2D models
- Computer workshop on creating a coupled 1D/2D model
- Viewing and exporting results in RAS mapper
- Troubleshooting steps
- Computer workshop on fixing models and conducting sensitivity analyses
- Model calibration
- Introduction to advanced capabilities
- Computer workshop on building your own model from scratch

