

**COURSE NUMBER**

FHWA-NHI-135093

**COURSE TITLE****Hydraulic Toolbox (Web-Based)**

The Federal Highway Administration's (FHWA) Hydraulic Toolbox software contains a suite of calculators to assist with the routine hydrologic and hydraulic analyses and designs of transportation infrastructure including ditches, curb and gutter sections, drop inlets, weirs, detention basins, bridge foundations, and riprap installations. The calculators adapt procedures and methods found in FHWA Hydraulic Design Series (HDS) and Hydraulic Engineering Circular (HEC) technical publications and in NHI training courses. NHI-135093, Hydraulic Toolbox Web-based Training (WBT) serves as an introduction to the use of most of the Toolbox calculators through a combination of discussion, graphics, examples, and workshop problems. This course includes eight primary lessons, a course summary, and an end-of-course assessment. The lessons in this course include: Toolbox Overview, Rational Method Calculator, Roadway Drainage Calculators, Stormwater Calculators, Channel Calculators, Bridge Scour Calculator, Riprap/Rock Calculators, File Saving & Report Generation, and a concluding course summary.

Upon completing the course, participants will be able to use the Hydraulic Toolbox software to perform routine hydrologic and hydraulic computations for roadway drainage and hydraulic structure design applications.

Note: NHI-135093, Hydraulic Toolbox WBT is a prerequisite for Course 135027, Urban Drainage Design. Comprehension of many of the concepts covered in this WBT is important to successful completion of Course 135027.

OUTCOMES

Upon completion of the course, participants will be able to:

- Identify the major capabilities of the Hydraulic Toolbox and how they relate to transportation hydraulic engineering
- List the capabilities of the calculators in the Hydraulic Toolbox
- Recognize when to apply each of the calculators in the Hydraulic Toolbox
- Apply the Hydraulic Toolbox to complete hydrologic and hydraulic computations
- Identify the steps to generate Hydraulic Toolbox reports

TARGET AUDIENCE

The target audience is comprised of federal, state, and local hydraulic engineers, highway designers, design consultants, and environmental specialists who have responsibility for the analysis, design, and permitting of roadway drainage features and stream crossings.

TRAINING LEVEL: Basic

FEE: 2020: \$0 Per Person; 2021: N/A

LENGTH: 3 HOURS (CEU: .3 UNITS)

CLASS SIZE: MINIMUM: 0; MAXIMUM: 0

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