

**COURSE NUMBER**

FHWA-NHI-135092

**COURSE TITLE****Highway Hydrology: Basic Concepts and Methods Web-Based**

NHI Web-based Training Course #135092 Highway Hydrology: Basic Concepts and Methods provides training on basic hydrologic concepts that will enable users to determine peak flow for transportation hydraulic structures. For engineers, the course teaches basic hydrologic concepts as a review before taking more advanced hydraulic courses. For non-engineers the course enables learners to better understand hydrologic concepts used by engineers.

The Web-based training uses a range of text, graphics, animations, and problem solving in its three lessons. The first lesson focuses on the hydrologic cycle, associated terms, and the relationship of risk to return period and probability of exceedance. The second lesson explains the variability of storms based on three general types of storms, how variations in storm duration and intensity impact runoff, and the watershed characteristics that influence runoff. The third lesson discusses the Rational Method, the NRCS Graphical Method, and Regression Equations as methods to determine peak flow quantities. At the end of the training, learners will be able to apply basic hydrologic concepts to fundamental methods to determine peak flow for highway drainage and hydraulic structures.

OUTCOMES

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

- Identify the hydrologic cycle processes most important to transportation hydraulic engineering.
- Define the relationship between return period and probability of exceedance in hydraulic design.
- Define the temporal and spatial variations observed in precipitation patterns.
- List watershed characteristics that affect peak flows.

TARGET AUDIENCE

Highway Hydrology: Basic Concepts and Methods is a Web-based training course designed for 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 (both culverts and bridges). Designers and reviewers of erosion and sediment control plans may also benefit from the course.

TRAINING LEVEL: Basic

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

LENGTH: 2 HOURS (CEU: .2 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

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