



COURSE NUMBER

FHWA-NHI-135067

COURSE TITLE

Practical Highway Hydrology

The course provides engineers and designers with the background and skills necessary for the practical application of hydrologic principles to highway design. Participants will be required to work example problems that stress actual design situations. The course is based on the Hydraulic Design Series (HDS) No. 2, "Highway Hydrology" which is also used in the course as a reference manual.

Participants will learn how to select and effectively implement techniques for estimating peak flows and flood hydrographs in gaged and ungaged streams for watersheds of the size typically encountered in highway drainage design. Through a series of optional modules, additional topics including channel routing, wetland hydrology, arid lands hydrology, and snowmelt hydrology are available given host agency preferences.

The overall course objectives enhance the understanding of basic hydrologic concepts and principles as they pertain to highways, and enable application of appropriate hydrologic concepts and tools in the design of drainage facilities and hydraulic structures.

OUTCOMES

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

- Identify which peak flow design methods are suitable for given watershed characteristics and design requirements
- Estimate times of concentration
- Apply the SCS, regression and rational methods for peak flows
- Analyze gage flows using Log-Pearson III Frequency Analysis
- Develop hydrographs using the unit hydrograph and other techniques
- Perform storage routing calculations
- Design a storm water management facility

TARGET AUDIENCE

Highway engineers and designers who are responsible for designing channels, storm drains, and stormwater detention, as well as those involved in the hydraulic design of bridges and culverts. Attendees will benefit from, but are not required to have, a basic knowledge of hydrologic science. The course is a useful primer for those new to the subject and a thorough review for experienced hydrologic and hydraulic engineers.

TRAINING LEVEL: Intermediate

FEE: 2021: \$460 Per Person; 2022: N/A

LENGTH: 3 DAYS (CEU: 1.8 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

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