



COURSE NUMBER

FHWA-NHI-135010

COURSE TITLE

River Engineering for Highway Encroachments

The course provides training in the theory and application of alluvial channel flow, fluvial geomorphology, sediment transport, and river mechanics to the planning, location, design, construction, maintenance, and operation of highways. Material for this course comes from “Hydraulic Design Series 6 (HDS-6): River Engineering for Highway Encroachments Highways in the River Environment.” The course includes detailed coverage on how to estimate rates of sediment transport by selecting appropriate equations for use in the computations. Additional topics include sediment properties and sediment measurement techniques. Case histories provide practical examples of problems that occur at highway crossings and encroachments of streams and rivers. A computer generated 360-degree virtual tour site visit is used for a comprehensive workshop. Example problems in sediment transport will be worked by the course participants.

Prior to the beginning of the course, participants are strongly encouraged to enroll in the Web-based training entitled, 135091 basic Hydraulic Principles Review. Mastery of the concepts covered in this WBT is important to successful completion of the Instructor-led training.

OUTCOMES

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

- Apply open channel flow equations and concepts to flow in alluvial channels
- Determine resistance to flow and sediment transport at highway crossings
- Apply sediment transport and sediment continuity relationships for the analysis of streambed degradation and aggradation
- Evaluate the inter-relationships between fluvial (river) geomorphology and highway hydraulic design

TARGET AUDIENCE

Engineers who are responsible for the evaluation of stream stability and the design of highway hydraulic structures. The course is designed for graduate engineers (BS) who have been trained in basic hydraulics of rigid-boundary, open channel flow.

TRAINING LEVEL: Intermediate

FEE: 2013: \$720 Per Person; 2014: N/A

LENGTH: 3 DAYS (CEU: 1.8 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

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