Course Number

FHWA-NHI-135048

Course Title

Countermeasure Design for Bridge Scour and Stream Instability (2.5-Day)

This course provides an overview of countermeasures to highway related failures from the effects of stream instability, scour, erosion, and stream aggradation and degradation problems. Material for the 2.5-day course comes primarily from Hydraulic Engineering Circular (HEC) "Bridge Scour and Stream Instability Countermeasures - Experience, Selection, and Design Guidance" (HEC-23).

Given a stream instability and scour problem, participants will select appropriate countermeasures to correct the problem. The course provides training in recommended strategies for developing a plan that includes appropriate countermeasures, including alternatives to conventional riprap and filter design.

Participants will apply hydraulics analysis techniques to countermeasure design for seven design guideline workshops. The course provides an introduction to fixed and portable instrumentation for scour monitoring using slides and video demonstrations. Participants will receive training in designing a monitoring program to reduce the risk from scour.

NHI Course 135046 provides training in identifying and analyzing stream instability and scour problems at highway bridges and is recommended as a prerequisite for this course.

NHI Courses #135086 and #135087 are Web-based training module and are prerequisites for NHI Hydraulics courses 135047 and 135048.

Outcomes

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

- Develop a plan of action for a scour critical bridge
- Propose countermeasures for stream instability and scour problems
- Identify countermeasures for bridge scour and stream instability using the HEC-23 countermeasures matrix
- Design selected countermeasures with HEC-23 design guidelines

Target Audience

Federal, State, and local highway hydraulic, structural, and geotechnical engineers and bridge inspectors responsible for maintaining the integrity of highway bridges against possible hydraulic-related problems. Consultants who do bridge engineering work are also encouraged to attend.

Training Level: Intermediate

Fee: 2013: $655 Per Person; 2014: N/A

Length: 2.5 DAYS (CEU: 1.5 UNITS)

Class Size: MINIMUM: 20; MAXIMUM: 30

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