



## COURSE NUMBER

FHWA-NHI-132083

## COURSE TITLE

### Implementation of LRFD Geotechnical Design for Bridge Foundations

The Implementation of Load and Resistance Factor Design (LRFD): Geotechnical Design for Bridge Foundations is a Web-conference training (WCT) that is designed to assist transportation agencies with the successful development of LRFD Design Guidance for bridge foundations. The training follows the 2010 American Association of State Highway Transportation Officials (AASHTO) LRFD Bridge Design Specifications, Fifth Edition, while incorporating local experiences of design engineers and various transportation agencies. The course is presented in two sessions with a variety of interactive discussions and exercises to verify achievement of learning objectives.

The training introduces a step-by-step procedure for implementing the LRFD platform and provides recommendations to assist transportation agencies in implementing these steps. It also highlights principal changes in the AASHTO design specifications regarding the transition from allowable stress design (ASD) to LRFD and discusses options for selecting LRFD design methods.

## OUTCOMES

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

- Describe an LRFD implementation plan for development of LRFD guidance
- List and discuss the principal changes between ASD and LRFD
- Identify, implement, and compare three options for selection of LRFD Geotechnical Design Methods
- Calibrate resistance factors ( $f$ ) by fitting to ASD methods
- Summarize the procedure for and evaluate results of reliability calibration of  $f$
- List the conditions to adhere to when using AASHTO's LRFD design methods
- Select conditions for development of local LRFD geotechnical design methods
- Evaluate and address project site variability
- Recall the advantages of development of local LRFD geotechnical design methods through reliability calibration
- Describe a road map for the development of LRFD Design Guidance for bridge foundations

## TARGET AUDIENCE

The Implementation of LRFD Geotechnical Design for Bridge Functions WCT is intended for State DOT engineers who are involved with the development of LRFD specifications for foundations, or who manage and conduct LRFD geotechnical research studies, or who are involved with LRFD design of bridge foundations. All intended learners are expected to have completed NHI Course 130082 or have equivalent knowledge of AASHTO LRFD Specifications for structural foundation, and are expected to be familiar with AASHTO Standard Specifications (ASD) design methods for foundations.

**TRAINING LEVEL:** Basic

**FEE:** 2016: \$50 Per Person; 2017: N/A

**LENGTH:** 4 HOURS (CEU: 0 UNITS)

**CLASS SIZE:** MINIMUM: 20; MAXIMUM: 0

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