

**COURSE NUMBER**

FHWA-NHI-132034

COURSE TITLE**Ground Improvement Techniques**

This course covers important design and construction aspects associated with ground improvement techniques including Vertical Drains, Lightweight Fills, Vibro-Compaction, Dynamic Compaction, Stone Columns, Deep Soil Mixing, Column Supported Embankments, MSE Walls and Reinforced Soil Slopes, Soil Nailing, and Grouting. The goal of the course is to help participants determine the applicability and preliminary cost analysis for techniques that could be employed to improve the ground to permit construction of geotechnical facilities for transportation applications.

Participants will develop an appreciation for exploring and characterizing subsurface soil and rock in the laboratory, as well as the requisite design parameters necessary to develop a preliminary design and cost estimate. Instructors will discuss and summarize the advantages and limitations of each method. The course is designed to elicit maximum input from participants particularly regarding their understanding of application criteria, the impact of geotechnical features on the long-term performance, and contracting methods.

OUTCOMES

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

- Locate criteria to determine the applicability of each ground improvement method for a specific project and soil condition under consideration
- Describe advantages, disadvantages, and limitations for each ground improvement method discussed
- Prepare conceptual and basic designs, and be able to check contractor-submitted designs
- Discuss appropriate QA/QC methods for each type of ground improvement method
- Summarize key elements of a preferred contracting method for each technique
- Develop a preliminary cost estimate based on a preliminary design

TARGET AUDIENCE

The target audience is bridge, geotechnical, or transportation engineers with 0 to 20 years of experience and responsible for the planning, design, or construction for ground improvement on surface transportation facilities.

TRAINING LEVEL: Intermediate

FEE: 2013: \$760 Per Person; 2014: N/A

LENGTH: 3 DAYS (CEU: 1.8 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

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