## Course Number

FHWA-NHI-132031

## Course Title

# Subsurface Investigations

This course is designed to help participants understand the importance of a properly planned, reviewed, and executed subsurface investigation program to the design and construction of transportation facilities and to provide them with the skills to do this work. The course presents the latest methods and procedures in the planning, executing, and interpreting the various subsurface investigation methods and for developing appropriate parameters for soil and rock design and construction for engineering applications. Topics include the geotechnical specialist's role in subsurface investigations; exploration methodologies; types of exploratory equipment and their suitability for various subsurface conditions; the use of in situ testing and geophysical surveys for subsurface characterizations; the handling, transportation, and storage of soil and rock samples; and laboratory testing techniques and interpretation of data. In addition, the course covers contracting for soil and rock investigations, correlation of soil and rock properties, and preparation of clear and concise geotechnical reports. Classroom instruction includes participant exercises and example problems to reinforce course outcomes.

## Outcomes

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

- Recognize the importance of performing an adequate subsurface investigation
- Plan and execute a subsurface exploration program for a typical surface transportation project
- Use existing information in planning the investigation program
- Apply appropriate in situ testing procedures based upon the expected subsurface conditions and obtain high-quality soil and rock samples for laboratory testing
- Assign appropriate laboratory testing procedures for determining soil and rock design parameters
- Interpret the results of laboratory tests and determine soil and rock parameters to be used in design
- Summarize the results of a subsurface investigation in a concise geotechnical report

## Target Audience

The target audience for this course includes FHWA, State, and local transportation agency employees; college and university faculty; and consultant engineers who are or will be involved in the planning, execution, review, and interpretation of subsurface investigations. An undergraduate degree in geology, engineering geology, civil engineering, or equivalent engineering experience in the highway/transportation field is desirable.

**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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