



## COURSE NUMBER

FHWA-NHI-130056

## COURSE TITLE

### Safety Inspection of In-Service Bridges for Professional Engineers

In accordance with the National Bridge Inspection Standards (NBIS), a Bridge Inspector must successfully complete an FHWA-approved comprehensive training to become a certified Bridge Inspection Team Leader, or Program Manager. This FHWA-approved course, intended for Professional Engineers (PEs), is based on the "Bridge Inspector's Reference Manual" (BIRM) and provides training on the safety inspection of in-service highway bridges. It has been streamlined to better suit experienced Professional Engineers, while retaining strong emphasis on bridge inspection, documentation, and coding requirements. The course is a 5-day adaptation of FHWA-NHI 130055 training course and includes one virtual bridge inspection trip (VBI) or bridge inspection field trip; new instruction on critical findings, their identification and response; curriculum on the new AASHTO Element level evaluation; and updated activities that maximize participant engagement throughout the course. This course does not go into depth on stream stability and scour or fracture critical, underwater, or complex bridge inspections. NHI does have other specialty courses in stream stability and scour (FHWA-NHI-135047) fracture critical inspection (FHWA-NHI-130078) and underwater safety inspection (FHWA-NHI-130091).

**Participant Prerequisite Requirement:** ALL participants must be certified professional engineers (PE) showing evidence of such certification upon arrival at the course, have met one of the three prerequisite requirements for participation in the FHWA-NHI-130056 course\* and bring a course completion certificate bearing their name to the first day of the NHI-FHWA-130056 session. The passing score for all prerequisites is 70% or better. Individuals have the option to complete one of the three prerequisite requirements: 1) Engineering Concepts for Bridge Inspectors (FHWA-NHI-130054), five-day instructor-led course; 2) Introduction to Safety Inspection of In-Service Bridges (FHWA-NHI-130101), 14-hour, Web-based training and assessment; and/or 3) Prerequisite Assessment for Safety Inspection of In-Service Bridges (FHWA-NHI 130101a), Web-based assessment.

**Host Requirement:** The host/sponsoring agency is required to provide transportation for course participants to attend the field trip portion of this course at the host/sponsoring agency's own expense if the VBI option is not chosen. Please coordinate with the instructor on the timing of the field trip. Additionally, the host must ensure that ALL students have successfully met the prerequisite requirements\*, are certified Professional Engineers, and have a valid course completion certificate for one of the three prerequisite options.

\*Please note: prerequisite must be completed within within the last 2 years prior to the FHWA-NHI-130056 session start date.

## OUTCOMES

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

- Describe the importance of bridge inspection
- Define the fundamental bridge inspection concepts
- Describe the basic bridge materials
- Identify and discuss mitigation strategies for personal and public safety issues associated with bridge inspections
- List the inspection equipment needs for various types of bridges and site conditions
- Describe the various components of bridge inspection reporting
- Identify, evaluate, and document the various deficiencies that can exist on bridge decks
- List design characteristics of common concrete superstructures
- Describe inspection methods and locations for common concrete superstructures
- Identify and evaluate the various bridge bearing, substructure, and waterway deficiencies
- Discuss the need to inspect underwater portions of bridges
- Describe nondestructive evaluation methods for the three basic bridge materials
- Demonstrate how to field inspect and evaluate a common concrete bridge
- List design characteristics of common steel superstructures
- Describe inspection methods and locations for common steel superstructures



- Identify and evaluate the various culvert deficiencies
- Demonstrate how to field inspect and evaluate a common steel bridge
- List design characteristics of common timber superstructures

## **TARGET AUDIENCE**

The target audience for this course are Federal, State, and local highway agency employees; and consultants with a Professional Engineer (PE) designation that are involved in inspecting bridges or in bridge inspection management and leadership positions. A background in bridge engineering is strongly recommended. All participants must successfully complete (score 70% or better) one of the following three prerequisite requirements within two years prior to attending this training: 1) 130054 Engineering Concepts for Bridge Inspectors; 2) 130101 Introduction to Safety Inspection of In-Service Bridges; or 3) 130101a Prerequisite Assessment for Safety Inspection of In-Service Bridges.

**TRAINING LEVEL:** Intermediate

**FEE:** 2018: \$1150 Per Person; 2019: \$1200 Per Person

**LENGTH:** 5 DAYS (CEU: 3.4 UNITS)

**CLASS SIZE:** MINIMUM: 20; MAXIMUM: 30

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