

**COURSE NUMBER**

FHWA-NHI-142063

**COURSE TITLE****Highway Traffic Noise: Basic Acoustics - WEB-BASED**

This Web-based training (WBT) course provides an overview of Acoustic Principles related to highway traffic noise. The course incorporates the Interactive Sounds Information System (ISIS) -- a customized noise simulation model -- to demonstrate Acoustic Principles.

The WBT begins with the characteristics of sound and discusses how to apply basic concepts of acoustics to solve sample problems. It proceeds to the propagation of sound: a presentation on the four phenomena of divergence, ground effects, atmospheric effects, and shielding by natural and man-made features. The interaction between highway noise and barriers is described and key noise barrier concepts are presented (i.e. direct, incident, transmittal, reflected, and diffracted). Traffic noise sources are discussed, as well as a brief overview of traffic noise modeling and vehicle classification types.

The goal for the Highway Traffic Noise: Basic Acoustics WBT is to explain the basic principles of highway traffic acoustics.

OUTCOMES

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

- Apply basic concepts of acoustics to solve sample problems
- Add levels in decibels
- Describe characteristics affecting noise propagation
- Describe how noise interacts with barriers
- Determine the increase in level for N sources vs. one source
- Determine the change in level with changing distance for a point source and for a line source

TARGET AUDIENCE

The Basic Acoustics of Highway Traffic Noise WBT is intended for FHWA staff; State department of transportation (DOT) environmental specialists, designers, planners or engineers; city or county environmental engineers, coordinators or specialists, and consultants. The training design for this WBT assumes that participants have basic computer skills (e.g. manipulating windows, using directories, a web browser, etc).

TRAINING LEVEL: Basic

FEE: 2017: \$25 Per Person; 2018: N/A

LENGTH: 2 HOURS (CEU: 0 UNITS)

CLASS SIZE: MINIMUM: 1; MAXIMUM: 1

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