

**COURSE NUMBER**

FHWA-NHI-133121

COURSE TITLE**Traffic Signal Design and Operation**

There is a need to understand that the congestion and delays that exist on our streets and roadways can be better managed with a thorough understanding of effective traffic signal timing and optimization. Well-developed, designed, implemented, maintained, and operated traffic signal control projects are essential to this process. Engineering tools are available to design, optimize, analyze, and simulate traffic flow. This course addresses the application of the "Manual of Uniform Traffic Control Devices" (MUTCD) to intersection displays, as well as signal timing, computerized traffic signal systems, control strategies, integrated systems, traffic control simulation, and optimization software. The course is divided into two primary parts: Traffic Signal Timing and Design, and Traffic Signal Systems.

OUTCOMES

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

- List the steps required to plan, design, and implement a signalized intersection
- Devise an appropriate data collection plan for planning, designing, and operating a signalized intersection
- Perform a warrant analysis using the MUTCD warrants, including local policies
- Design basic phasing of the intersection - which movements will get a separate phase, and how they are numbered
- Calculate signal timing at the design stage for both actuated and coordinated operational strategies, including pedestrian clearance intervals
- Determine location of signal displays
- Select signal-related signs and pavement markings, including turning-movement signs and advance warning signs

TARGET AUDIENCE

Traffic engineering personnel from State, Federal, and local agencies involved in planning, design, operation or maintenance of traffic signals or traffic signal systems. The course will not assume any prior knowledge of computers and thus will describe the theory of operation and the manner in which it can be applied to traffic signal controls.

TRAINING LEVEL: Basic

FEE: 2020: \$350 Per Person; 2021: N/A

LENGTH: 2 DAYS (CEU: 1.1 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

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