

**COURSE NUMBER**

FHWA-NHI-380095

**COURSE TITLE****Geometric Design: Applying Flexibility and Risk Management**

Highway designers often face complex trade-offs when developing projects. A “quality” design may be thought of as satisfying the needs of a wide variety of users while balancing the often competing interests of cost, safety, mobility, social and environmental impacts. Applying flexibility and risk management in highway design requires more than simply assembling geometric elements from the available tables, charts and equations of design criteria. This transportation training provides participants with knowledge of the functional basis of critical design criteria to enable informed decisions when applying engineering judgment and flexibility. The training exercises and case studies provide practical applications of current knowledge from research and experience of safety and operational effects for various design elements.

**OUTCOMES**

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

- Explain the relationships and inherent flexibility among design criteria, guidelines, standards, and policies.
- Explain key concepts and assumptions of design “rules” as a basis for judging risks and making tradeoffs.
- Apply FHWA’s Controlling Criteria and justify Design Exceptions.
- Identify available tools and techniques to quantify safety and operational effects and manage risks.
- Recognize opportunities to use performance analysis in decision-making
- Demonstrate confidence to make design choices that are flexible, for which risks are understood, leading to better outcomes in implementing projects.

**TARGET AUDIENCE**

This training targets transportation engineers responsible for selection of roadway design criteria in the development of street and highway projects. This training will be most advantageous for practicing engineers from state highway agencies, local agencies, engineering design consultants and FHWA field offices. We encourage participation from diverse agencies in this transportation training. A mixture of professional backgrounds will facilitate conversations regarding opportunities to apply design flexibilities on actual projects involving multiple stakeholders at the state and local levels.

**TRAINING LEVEL:** Accomplished

**FEE:** 2022: \$550 Per Person; 2023: \$550 Per Person

**LENGTH:** 2 DAYS (CEU: 1.2 UNITS)

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

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