



COURSE NUMBER

FHWA-NHI-134068

COURSE TITLE

Addressing Uncertainty in Cost Estimating

The course covers consideration of risk and uncertainty in project cost estimates when using either a deterministic or probabilistic method. This course will provide participants with an overview of current cost estimating practice and an appreciation of the importance of cost estimating. The course will compare and contrast deterministic and probabilistic methods of cost estimating, including which method is most appropriate during the various phases of project development. Upon completion, participants will be able to select the most appropriate methodology based upon the project's characteristics and phase of development. Participants will be able to assist more experienced estimators in preparing either a deterministic or probabilistic estimate. Case studies and exercises will provide participants with an understanding of how to account for risk and uncertainty in an estimate; however, the course will not teach all of the mechanics on how to prepare complete cost estimates.

Various forms of Federal legislation and guidelines exist that define the role of FHWA in the review and acceptance of State DOT cost estimates, especially for FHWA major projects, which have a total project cost of \$500 million or more. While this course will specifically address cost estimating for large and complex projects, the concepts presented are applicable and scalable for developing estimates for all transportation projects.

OUTCOMES

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

- Explain the principles of Probabilistic estimating
- List appropriate stages of estimating for using deterministic & probabilistic estimating methods
- Identify uncertainties and how to consider them in a cost estimate
- Quantify the likelihood of occurrence and consequence of risk events
- Determine how the results from a risk-based estimate can be applied to project development
- Determine when it is appropriate to use a deterministic, probabilistic, or combination of methods
- Analyze and evaluate the process of creating a cost estimate to determine if it is consistent with the FHWA Major Projects Cost Estimating Guidance
- Report cost and schedule estimates accurately and comprehensively to stakeholders

TARGET AUDIENCE

Target audience performs, or will perform, the following as part of their job responsibilities: preparing, analyzing and/or approving cost and schedule estimates; conducting pre-construction/early cost estimating that would be carried through the life of the project; and identifying risks/obstacles/red-flag issues that could trigger a cost increase or delay. This training is designed for Federal and State DOT personnel, local government personnel, MPOs, design consultants as well as engineers and planners. The training is valuable for both new and existing employees.

TRAINING LEVEL: Basic

FEE: 2013: \$400 Per Person; 2014: N/A

LENGTH: 2 DAYS (CEU: 1.2 UNITS)

CLASS SIZE: MINIMUM: 20; MAXIMUM: 30

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