



Risk Assessment Tool

Problem Description

An accurate estimation of a transportation project cost is essential to ensure timely completion of such project within the available budget that was approved during the fiscal year and long-term planning. However, past studies have shown that transportation construction project cost often exceeds the amount initially assigned during the planning phase. If any project exceeds its budget, other projects may be delayed or removed from the program, the project itself may be halted, or the scope of the project may be reduced. Thus, a reliable estimate must be prepared early during the project development instead of waiting till the bidding phase. However, producing an accurate estimate during the early phase is a challenge as limited information about the project may be known at that time. As such, instead of focusing solely on producing an accurate estimate, state highway agencies should also consider identifying, evaluating, and quantifying various risk factors that can affect the overall project cost.

Research Objectives

The overall goal of the study is to develop a reliable and transferable TDOT-specific risk assessment tool. The specific objectives to accomplish this goal are:

- Determine the current state-of-the-practice in analyzing various types of transportation project risks by conducting an extensive review of existing literature and interviews of state DOT personnel.
- Develop a guide and an automation tool based on the knowledge extracted from historical project data and learnings from the existing practices from across the nation to assist TDOT in identifying various categories of the risks based on project type, location, and time.
- Document a methodology and provide an automation tool to systematically quantify the risks associated with project planning, development, design, and construction.
- Provide a user guide to produce a comprehensive risk assessment report that can be included as a part of the project development cycle.
- Disseminate the results of the study to TDOT engineers and to other state DOTs via meetings and conferences such as Transportation Estimators' Association Conference.

Potential Implementation and Expected Benefits

This study will develop a tangible tool that can be used to identify, assess, evaluate, and quantify the risks associated with upcoming projects. The tool will provide a risk assessment report that can become a part of project development lifecycle to aid any future project management decisions. Case studies will be conducted by collecting data from upcoming future projects. The result of the research will be disseminated to TDOT engineers, other state highway agencies, and other relevant parties with permission from TDOT. On-site or online training will be provided, and video modules will be developed to train any other future TDOT engineers to utilize the tool.

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PROJECT SCHEDULE:

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