TEXAS A&M UNIVERSITY KINGSVILLE

PROJECT SUMMARY

Texas Department of Transportation

0-6929: Enhanced Cost Estimating and Project Development Procedures for MPOs

Background

To obtain state and federal funding for proposed transportation projects in metropolitan areas, local governments submit project proposals to their metropolitan planning organization (MPO) for approval during the early stages of project development. This project's purpose was to help local governments enhance the quality and accuracy of their transportation project proposals, thus facilitating the MPO project review process. Improving the accuracy and efficiency of project proposals will help to ensure a streamlined approval process, and ultimately provide better transportation services at a lower cost.

The vital components of transportation improvement proposals include (a) comprehensive evaluations of the scope of work to be completed, (b) reasonably accurate cost estimates for completing the work, and (c) a feasible project schedule. If any of these components are not accurately defined, then there is a strong possibility of unexpected difficulties and complications arising during the project implementation. Poor scoping, cost estimates, and/or scheduling can lead to serious budget difficulties, delays and cancelations of transportation improvements, and sometimes even a "domino effect" that can negatively impact the entire area's transportation planning.

The accurate project scoping, cost estimates, and schedules is paramount, and yet obtaining this accuracy can be very difficult during the early project-planning stages. When transportation improvement proposals are first created, detailed design work has not yet been carried out, and the sources of uncertainty (including market prices, supply chains, weather conditions, and unanticipated site characteristics) are numerous. Information gaps at early stages of project planning create difficulty in obtaining accurate estimates of scope, cost, and schedule. Nonetheless, planners are called upon to use their experience, knowledge, and available historical data to account for the unknowns and create reliable analyses.

What the Researchers Did

The goal of this research project was to create an accessible guidebook that can be used when carrying out scoping analyses, cost estimation, and scheduling for metropolitan transportation improvement projects. The target audiences of the guidebook are local governments, MPOs, and other metropolitan area project sponsors. The information presented in the guidebook can be used by local governments to help prepare accurate transportation project proposals, and also by MPOs when reviewing those proposals.

To develop the framework that is presented in the guidebook, the research team engaged in a review of relevant literature, surveys of MPOs, and targeted interviews to identify critical areas of improvement and national best practices. The project-development process that is suggested in the guidebook has been tailored specifically to the needs of metropolitan projects and organized according to the standard review and approval process carried out by MPOs. Several Texas MPOs and TxDOT district-level planning personnel assisted in making recommendations for the guidebook and in vetting its final contents.

What They Found

Three main decision-points arise during MPO project development: (a) review for inclusion in the Metropolitan Transportation Plan (MTP), (b) review for inclusion in the active Transportation Improvement

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Plan (TIP), and then (c) entering the detailed design phase. The researchers recommended an iterative process in which the scope, cost estimate, and project timeline are progressively developed during each of these three stages. Specific tasks were defined for each project stage, and these tasks were described in detail in the guidebook. During each stage of project development, a greater investment is made in gathering information and conducting analyses, thus allowing for the accuracy of the scope, cost estimate, and timeline to be verified and refined.

During this research it became apparent that local governments and MPOs can both benefit from more rigorous and streamlined project development procedures. The research team identified several critical areas in which common practices were falling short of optimal practices that have been demonstrated to produce successful results. The critical areas for improvement were emphasized in the guidebook development. For local governments, an improved approach to project scoping, cost estimation, and scheduling can help to ensure that their projects obtain swift approval and proceed with a minimum of unpleasant surprises during implementation. For MPOs, the development of rigorous and consistent review practices can greatly assist in evaluating and comparing projects and ensuring that the public's money is well-spent.

What This Means

Cost overruns and scheduling delays are a serious and ongoing problem in the transportation construction industry. Furthermore, insufficient project development and approval processes can result in money being spent on poorly conceived endeavors while other, more efficient ideas fail to achieve the necessary funding support. The findings of this research and the resulting guidebook, if adopted by local governments and MPOs, can help to address these issues and improve the productivity and cost-effectiveness of transportation programs.

Project-Scoping Process for Projects Submitted to MPOs

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