Texas A&M Transportation Institute

PROJECT SUMMARY

Texas Department of Transportation

0-6624: Improving the Response and Participation by Utility Owners in the Project Development Process

Background

Coordination with utility owners during the project development and delivery process involves multiple activities, such as requesting and collecting data about the location and characteristics of existing facilities, identifying and analyzing utility conflicts, coordinating with utility stakeholders for the resolution of those utility conflicts, preparing and executing utility agreements, coordinating and inspecting utility adjustments, and coordinating reimbursements and audits. Effective communication, cooperation, and coordination among utility stakeholders are critical to keep transportation projects on schedule. Unfortunately, these elements are frequently lacking during project development and delivery to allow for the adoption of cost-effective solution strategies.

What the Researchers Did

The researchers reviewed strategies used by the Texas Department of Transportation (TxDOT) and other agencies to engage utility owners, and assembled a list of 64 potential strategies to improve utility owner participation in the project development and delivery process. This list was based on a comprehensive review of existing and recommended practices at various levels, including local, state, and national levels. The potential strategies were grouped into the following categories:

- Communication and coordination (21 strategies).
- Contracts and agreements (17 strategies).
- Utility data collection and management (19 strategies).
- Land use and corridor preservation techniques (3 strategies).
- Training (4 strategies).

The researchers also held meetings with TxDOT districts and divisions, project advisors, utility owners, and other relevant agencies in the state. These meetings enabled stakeholders to provide input into the strategies identified from the detailed literature review and recommend additional strategies.

What They Found

The result of the meetings with various stakeholders, including project advisors, TxDOT districts and regions, and utility owners, was a consolidation and ranking of potential strategies. The following strategies were selected for further development, reflecting the highest priorities that stakeholders identified:

- **Modernization of the utility process at TxDOT**. The researchers developed a modernized, streamlined view of the utility process at TxDOT using the Business Process Model and Notation (BPMN), along with written descriptions of activities. The

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researchers produced three diagrams with increasing level of detail: Level 1 (which provides a high-level depiction of the entire process), Level 2 (which provides an intermediate level of detail of the entire process and shows where utility-related activities fit into that process), and Level 3 (which provides a more detailed view of the process and is intended for use by utility coordinators).

- **Use of utility conflict matrices and associated procedures**. Utility conflict matrices (UCMs) enable users to organize and track utility conflict information. Strategic Highway Research Program (SHRP) 2 Research Project R15-B, Identification of Utility Conflicts and Solutions, involved the development and testing of a prototype UCM concept and development of training materials. The researchers adapted the findings from the SHRP 2 R15-B project to facilitate the implementation of the resulting research products at TxDOT: Product 1 (compact, standalone UCM spreadsheet), Product 2 (utility conflict data model and database), and Product 3 (UCM training course and course materials).
- **Streamlining and standardization of utility cost data submissions**. To assist utility owners during the preparation and submission of standardized utility cost estimates, the researchers prepared a prototype Microsoft Excel-based template with four integrated worksheets: Items, Unit Cost Analysis, Item Disaggregation Analysis, and Cost Category Summary. Implementing an updated framework for the development of utility adjustment cost estimates would have a number of benefits, including support for the development of utility adjustment cost estimates at various stages in the utility adjustment process; reduction in the level of uncertainty and risk for managing utility adjustments at TxDOT; and a more effective, less contentious relationship between TxDOT and utility owners.
- **Core skill training on utility topics**. The researchers developed a summary of training needs in utility-related topics at TxDOT and identified categories where the need for training opportunities was the greatest. Within each category, the researchers identified specific core skills that could serve as the foundation for proposed training courses or modules and identified a basic set of requirements for different levels of instruction. For each level of instruction, the researchers estimated the minimum number of training hours required to provide a basic level of understanding of the topic under consideration.

What This Means

The researchers developed an implementation plan and standalone guidebook and training materials (Product 0-6624-P1) to assist in the implementation of each of the four strategies described above. Intended users of these materials include stakeholders such as division and district officials, utility owners, consultants, and contractors.

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