Project Summary

Texas Department of Transportation

5-4617-01: Implementation of the Right-of-Way and Utility Adjustment Duration Planning (RUDI) Tool

Background

Constructing highway projects demands effective coordination among all disciplines involved in such projects. These projects require securing the approval of federal, state, and private agencies. Moreover, there are various pre-construction activities that need to be successfully completed in the planning and designing phase of a highway project. Right-of-way acquisition and utility adjustment are among such tasks that have been considered to be sensitive issues by the Texas Department of Transportation (TxDOT). TxDOT has focused on the successful completion of right-of-way acquisition and utility adjustment processes because these can help ensure the timely delivery of highway projects. Accurately forecasting the amount of time required for right-of-way acquisition and utility adjustment in the planning phase, in particular, has been considered one of the necessary skills of districts in TxDOT. However, making such forecasts for these processes is challenging and complex because it requires a sophisticated understanding of the numerous conditions involved in a highway project.

In order to establish an effective methodology for predicting the duration of right-of-way acquisition and utility adjustment processes, research project 0-4617, *Identify Delays in the ROW and Utility Relocation Processes Affecting Construction and Develop Methods for Expediting the Processes,* was initiated by TxDOT and was undertaken from 2005 to 2006. One of the accomplishments of this research project is the Right-of-Way Acquisition and Utility Adjustment Process Duration Information (RUDI) tool. This tool assists in decision making by enhancing the department's capability to predict the duration of right-of-way acquisition and utility adjustment processes in a given highway construction process. However, application of RUDI still requires team members' understanding of the key factors that drive the duration needed for acquiring right-of-way and adjusting utilities in a highway project. It was necessary to beta test this tool to identify additional needs for enhancing the tool.

What the Researchers Did

The first activity undertaken by the research team was to develop a RUDI training tutorial for providing TxDOT right-of-way staff with RUDI training and related information. In addition, a system procedural guide aimed to help users understand the structure of and functions embedded in the tool.

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Second, the research team documented the methods by which the tool is applied in project development and planning processes.

Third, additional key drivers that may affect right-of-way acquisition and utility adjustment durations were identified and assessed in terms of importance. During the training sessions, suggestions and recommendations were gathered from TxDOT personnel for future improvements of the RUDI system.

What They Found

Based on the information collected from interactive RUDI training sessions at selected TxDOT districts, it is apparent that RUDI can be useful to TxDOT project planners and other relevant stakeholders in forecasting the necessary durations for acquiring right-of-way and adjusting utilities. The accuracy of RUDI in predicting the durations of right-of-way acquisition and utility adjustment is relatively high compared to the manual estimation methods that are based on personal judgments, even though RUDI was based on limited sample data.

The assessment results of the duration drivers' importance reveal that there are perceptual differences among experts in their evaluations of the importance of various duration drivers. One apparent reason for such discrepancies is that estimators with more accurate duration estimates do not overestimate the importance of many duration drivers in right-of-way acquisition and utility adjustment processes. There are drivers that appeared to be the most significant in estimating durations of right-of-way acquisition and utility adjustment, respectively.

What This Means

Although RUDI is an effective informational tool in estimating durations of right-of-way acquisition and utility adjustment processes, it has not covered some key drivers that may affect both of these preconstruction processes. Therefore, the identified drivers from this implementation study may be used as important data points that need to be identified and recorded in the TxDOT database ROWIS. In addition, the RUDI tool could be further enhanced to act simultaneously with ROWIS. In other words, it is necessary to include a function that would allow parallel and real-time analysis because that would enable users to search and filter data that are similar to their own projects. These efforts could make RUDI more dynamic and beneficial.

For More Information:

5-4617-01-1 Findings on Determining Durations of Right-of-Way Acquisition and Utility Adjustment on Highway Projects

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