



Project Summary

Texas Department of Transportation

0-6634: Potential Value Extraction from TxDOT's Right of Way and Other Property Assets

Background

Many State Departments of Transportation, including the Texas Department of Transportation (TxDOT), are increasingly challenged by inadequate funding from traditional federal and state fuel taxes. Conceived in the 1950s as an indirect charge to recover the costs of vehicle travel on the U.S. highway system, these taxes have not increased with the inflation rate and, given increasing maintenance and construction costs, and more fuel-efficient vehicles, the fuel tax has become largely inadequate.

In Texas, a number of recent analyses, including the 2030 and 2035 Committee reports, have consistently pointed to an increasing gap between available funding and growing maintenance and capacity needs. This has sparked interest in the extraction of additional value from TxDOT's right-of-way (ROW) and other land holdings. The objectives of this research study were to provide TxDOT with insight and guidance in determining when, where, and under what circumstances, to pursue the implementation of potential value extraction applications (VEAs).

What the Researchers Did

During this research effort, the research team:

- reviewed reports, documented research, and other publicly available information on VEAs that have been implemented - or conceived- in the US and internationally;
- reviewed and assessed any legal issues or concerns, including review of the current statutory framework for utilizing ROW or other DOT property for non-highway use;
- identified best practice VEAs and conducted interviews with stakeholders, and federal and state transportation agencies about these applications;
- compiled and synthesized the collected VEA information in terms of seven evaluation criteria;
- developed a VEA methodological framework that embedded a multi-attribute criteria analysis matrix to guide agency staff through the process of identifying, evaluating, comparing, and selecting appropriate VEAs;
- developed a stakeholder analysis framework to provide structured guidance to identify and involve key stakeholders in the implementation of feasible VEAs, and
- conducted a series of meetings to gain feedback for finalizing the VEA methodological framework.

Research Performed by:

Center for Transportation Research (CTR)
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What They Found

The researchers identified the following potential VEA categories: property management, airspace leasing, ROW leasing, advertising, solar panels, wind turbines, geothermal energy, special roads, carbon sequestration and biomass, and wildlife crossings. The literature review; however, revealed that most VEAs lacked in-depth research, scientific data, and conclusive results. Most of the literature comprised short articles, commercial presentations, and pilot project information. This research has thus contributed to an increased understanding of the different VEAs that can help TxDOT and other DOTs save costs, increase revenue streams, or enhance societal goals.

This research also provides TxDOT and other DOTs with a framework to systematically review and identify potentially feasible VEA(s) given an agency's property asset and intended objective. The multi-attribute criteria analysis and evaluation matrix has sequential steps that filter potential VEAs through a series of questions that the user has to answer. The initial questions address conditional factors – i.e., type of asset, primary objective, and major characteristics of the property - that could prevent the implementation of specific VEAs or impede the agency from achieving its objective. Seven criteria are subsequently used in analyzing potential VEAs: technical feasibility; political/public concerns; legal considerations; financial/economic feasibility; environmental considerations; potential social impacts/benefits; and safety considerations. The scores and criteria weights assigned by the user are then used to convert qualitative attributes into quantitative measurements. This allows for direct comparisons among VEAs. The evaluation matrix ultimately produces a feasibility and impact score for each VEA, which are plotted onto an impact versus feasibility quadrant diagram.

What This Means

Based on the research conducted, the research team recommends that:

- TxDOT consider pursuing a formal property management program – e.g., including investment in a GIS and/or other information management system. A formal property management program can facilitate the identification of opportunities for VEA implementation, as well as the actual implementation of feasible VEAs.
- When evaluating potential VEAs, TxDOT should involve employees with a diverse background and expertise to evaluate and anticipate potential challenges and concerns. In addition, TxDOT should assign one person to champion and lead the process. This person should be empowered to make decisions.
- TxDOT should document lessons learned, monitor results, and conduct a post-evaluation of implemented VEAs to enhance the decision-making process and methodological framework.
- Even if the evaluation matrix and methodological framework indicates a VEA is potentially economically feasible, TxDOT should conduct a detailed financial assessment to determine the actual financial benefits, payback period, and costs involved.
- Since most of the VEAs involve a private party, TxDOT should carefully evaluate who to partner with. Special attention should be given to the financial resources of, and sureties and warranties provided by the private entity. TxDOT should also retain legal counsel to review any agreement.

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