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Enhancing Intermodal Service through Public-Private Partnerships in Texas: Summary Report

PROJECT SUMMARY REPORT

The increasing levels of truck traffic on the state’s highway system create an array of issues for the Texas Department of Transportation (TxDOT) ranging from highway safety, congestion, and air quality to the need for accelerated maintenance and capacity expansion. At the same time, railroads face challenges of their own. As a capital- and labor-intensive industry, railroads struggle to earn the cost of capital to maintain and operate their extensive networks. The opportunity for establishing a win-win scenario is apparent: by improving the efficiency of intermodal rail service through targeted public-private partnerships, rail transportation may capture a larger market share of intercity freight in Texas and allow important public

benefits to accrue—thereby justifying the investment.

What We Did...

This research project analyzed the opportunities for public investment in intermodal rail service through a partnership with railroad companies as a means to develop mutually beneficial solutions to transportation problems. The research team focused on several research activities in order to perform this analysis.

The first involved developing a foundation of information related to shipping and carrier considerations; intermodal shipping, equipment, and services; and trade corridors in Texas. In order to provide guidance for overcoming the challenging institutional, legal, financial, and political impediments to forming effective public-private partnerships in Texas, the researchers extensively examined previous material related to public-private partnerships. This

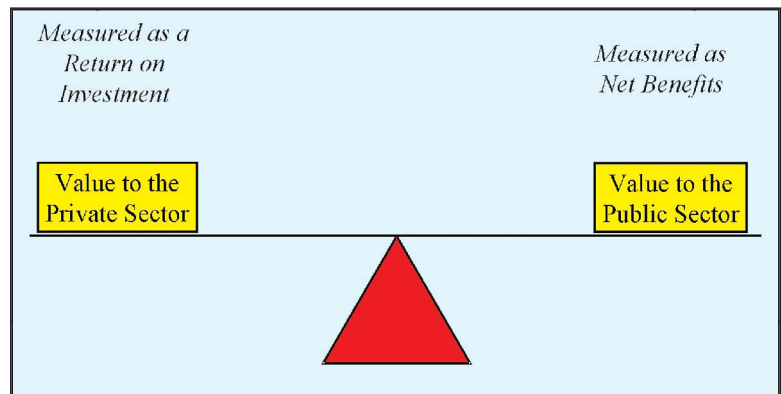


Figure 1. Balancing the Value of Public-Private Partnerships.



information and the examination of existing and past instances of public-private partnerships for intermodal freight movement played a significant part in the identification of the vast array of public-private partnership forms and the potential applications in Texas.

Also undertaken during this research project was the examination of three case study scenarios, each focusing on a particular transportation corridor in Texas involving both highway and railroad routes and a specific intermodal solution. An evaluation tool was developed for the economic analysis of two of the corridors and for future corridor evaluations.

What We Found...

Strategic public investment through public-private partnerships in the rail freight network, specifically in enhanced intermodal rail service, is a possible solution for lessening the state's roadway burdens. The concept of public-private partnerships for transportation projects is not new, and recent studies and a multitude of examples point out the fact that a variety of partnership arrangements currently are possible. The success of partnerships may depend on developing an understanding of the flexibility required to cultivate a mutually beneficial agreement while analyzing all the possible opportunities.

A successful public-private partnership depends on overcoming the legal, institutional, and political impediments as well as on the financial justification of the project. Public transportation agencies must select the best investments for the public's transportation dollar, while private railroads must increase stockholder value by earning a reasonable rate of return on investments. A decision-making tool that jointly performs both of these analyses is useful if it allows each party to understand the full range of costs and benefits accrued by the other.

The economic model developed for this project provides a basic framework for the State to clarify its relationship with railroads and describe the effects of assumed costs, benefits, financial requirements, and operating conditions. The model was used to perform an economic analysis for Union Pacific's 450-mile Laredo-Dallas corridor and Burlington Northern Santa Fe Railway's (BNSF) 230-mile Houston-Dallas corridor to demonstrate the recommended strategy for TxDOT to evaluate its investment decisions. Figure 2 shows the results of this analysis for the Laredo-Dallas corridor, whereby

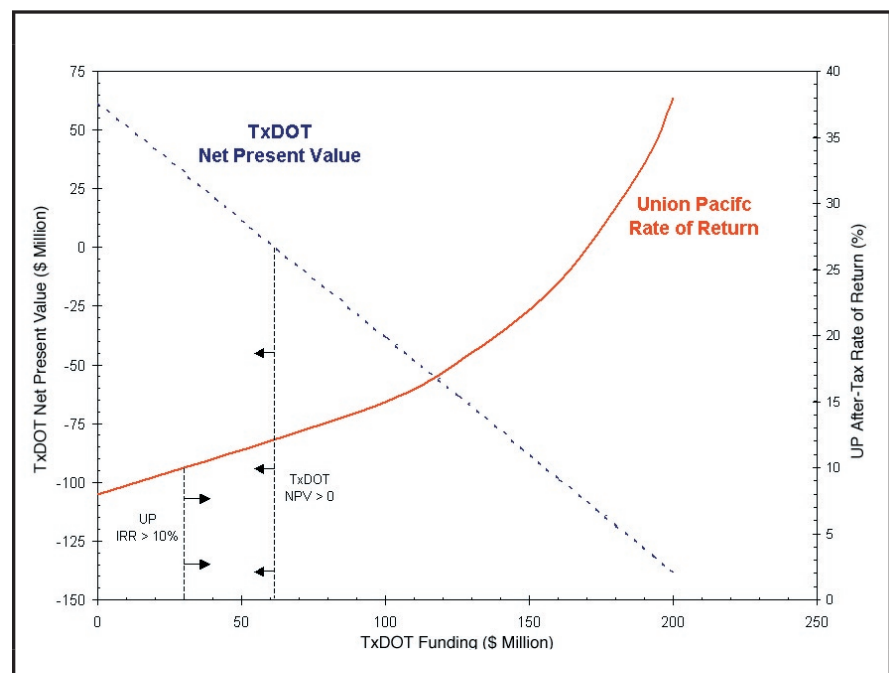


Figure 2. Public and Private Economic Benefits for the Laredo-Dallas Corridor.

Figure 1 illustrates this balance that must be achieved by an economic model used to analyze the economic feasibility of public-private partnerships.

the net value to TxDOT (due to reduced pavement damage) is plotted on the left vertical axis and the return on investment to Union Pacific is plotted on the



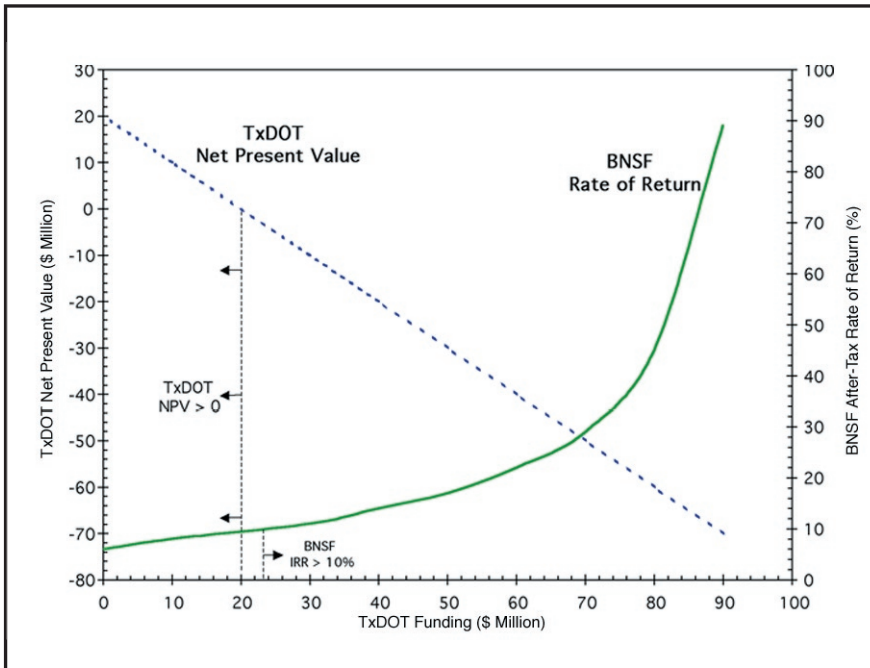


Figure 3. Public and Private Economic Benefits for the Houston-Dallas Corridor.

right vertical axis for varying amounts of state funding. Of particular importance to this intermodal feasibility study, Figure 2 brackets TxDOT contributions in the range of \$30 to \$61 million that would produce favorable results for both TxDOT and Union Pacific—that is, a net savings for TxDOT and at least a 10 percent rate of return for Union Pacific. This “range of opportunity” suggests that a favorable partnership could be formed, assuming that all input parameters to the model (i.e., infrastructure costs, reductions in truck traffic, etc.) are reasonable.

Figure 3 shows the results of analysis for the Houston-Dallas corridor, with a similar demarcation of TxDOT funding levels that would benefit

TxDOT and BNSF. Unlike the Laredo-Dallas case, this plot shows that based on preliminary input parameters, there are no levels of TxDOT funding for the Houston-Dallas corridor that would result in benefits shared by both investors (i.e., TxDOT and BNSF). Consequently, a more challenging approach to formulating an agreeable partnership would likely be required than that for the Laredo to Dallas corridor. Nevertheless, the fact that these analyses were based on limited information on the cost of upgrading infrastructure and trucking industry participation reinforces the fact that a more comprehensive study should be made in order to refine input parameters.

The Researchers Recommend...

Recent Texas legislation broadened the scope under which the public sector can participate in public-private partnerships. TxDOT will now take these expanded opportunities and develop rules under which to define these roles. The research team recommends that during the rule-making process TxDOT maintains flexibility in developing public-private partnerships. The multitude of possible arrangements, along with the vast array of projects possible in seeking transportation solutions, requires that the rules established for forming partnerships do not unduly limit the type and form of relationships that are possible.

Project evaluation of public-private partnerships should incorporate a consensus-building tool that provides transparency in identifying costs and in determining the benefits that may be realized by each party. As a result, both public and private entities can be confident that their investments are providing the value they seek on behalf of their respective stakeholders. It is recommended that a more refined, detailed model be developed subsequent to this project in order to more realistically capture the highly complex financial situation of both parties.



For More Details . . .

The research is documented in Report 0-4565-1, *Enhancing Intermodal Service through Public-Private Partnerships in Texas*. The report includes two products:

0-4565-P1, *Benefit Calculation Methodology*

0-4565-P2, *Summary of Case Studies*

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TxDOT Implementation Status

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Report 0-4565-1, *Enhancing Intermodal Service through Public-Private Partnerships in Texas*, containing the two products identified above, will be utilized by planners in TxDOT's Multimodal Section to assess the efficacy of possible public-private partnerships. In addition, a follow-on implementation project is being planned to refine the benefits calculation model and to provide hands-on training to TxDOT personnel on its use.

For more information, contact Andrew Griffith, P.E., RTI Research Engineer, at (512) 465-7403, or e-mail agriffi@dot.state.tx.us.

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Disclaimer

This research was performed in cooperation with the Texas Department of Transportation (TxDOT) and the U.S. Department of Transportation, Federal Highway Administration (FHWA). The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the FHWA or TxDOT. This report does not constitute a standard, specification, or regulation, nor is it intended for construction, bidding, or permit purposes. Trade names were used solely for information and not for product endorsement.