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SUGGESTED GUIDELINES FOR REVIEWING PRIVATE TOLL ROAD REVENUE FORECASTS IN TEXAS

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16. Abstract

This is the fifth in a series of six research reports focusing on the process of preparing and evaluating feasibility studies for private toll road projects in Texas. State legislation requires that the sponsors of a proposed toll road project submit a feasibility study to the Texas Department of Transportation (TxDOT). The financial viability of a proposed project, as documented in the feasibility study, must be considered by the Texas Transportation Commission as part of the approval process. The overall objective of this research project is to develop improved procedures for TxDOT's use in determining whether a proposed private toll road project will be financially viable. This report describes the suggested guidelines for reviewing private toll road revenue forecasts.

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CHAPTER ONE–INTRODUCTION

This report is the fifth in a series focusing on the preparation and assessment of feasibility studies for private toll road projects in Texas. State legislation requires that sponsors of a proposed toll road submit a feasibility study to the Texas Department of Transportation (TxDOT). Preliminary approval of a proposed facility by the Texas Transportation Commission must consider the financial viability of the project based on this feasibility study.

This research project was undertaken to examine the factors that should be included in feasibility studies for private toll facilities in the state and to provide guidance to TxDOT on key elements to be considered in the review of these studies. The activities conducted as part of the research project and the suggested guidelines for reviewing private toll road feasibility studies are documented in other reports.

Background

Legislation passed in 1991 governs the construction of private turnpikes and toll road in Texas. The legislation established June 1, 1991 as the deadline for chartering private toll road projects in the state. Those legislative provisions have been codified in Chapter 362, Subchapter C (Private Turnpikes and Toll Projects), Section 362.101-362.104 of the Texas Transportation Code. The following elements highlights the major requirements of the legislation (1).

- A private entity or corporation may not construct any privately owned toll project which connects to a road, bridge, or highway included in the state highway system unless the project is approved by the Texas Transportation Commission.

- The Commission must adopt procedures and substantive rules and regulations for use in approving private toll road projects. These procedures must consider the integration of the project into the state roadway system and the potential impact on the economy of the area. If the proposed project is located along the Texas/Mexico border, the potential impact on the free flow of trade between the United States and Mexico must also be examined.

- A private entity or corporation must complete a feasibility study addressing the alignment, environmental impacts, and the financial viability of a proposed project. The financial assessment must include the proposed methods of financing, traffic data, and forecasted revenues.

- The Commission may grant preliminary approval for construction of a project if it finds the facility is consistent with state and metropolitan transportation plans, will have no significant negative impacts on the economy of the area, will not adversely impact the free flow of trade between Mexico and the United States, and is financially viable.

A total of 45 potential private toll road projects were chartered by six private toll road corporations by the 1991 legislatively mandated deadline. The Camino Columbia Toll Road project is the only facility actively pursued to date. This project has been preliminarily approved by the Commission. The other chartered projects may be pursued at any time.

Research Objectives

Although the legislation requires that a feasibility study determining the financial viability of a project be completed, only limited guidance is provided on how these studies should be conducted and the specific elements to be included. The legislation indicates that the feasibility study must include the proposed method of financing for planning, designing, constructing, operating, and maintaining the proposed toll project, and must address traffic data and revenue projections. This research study was conducted to assist TxDOT in identifying the key elements that should be included in toll road feasibility studies and the process the Department should use to review these, including the revenue projections.

The objectives of the research study were to develop suggested guidelines for the preparation of feasibility studies for private toll roads in the state, as well as suggested guidelines for the review of these studies by TxDOT, and criteria for assessing the revenue and cost projections. A number of activities were conducted to accomplish these objects. First, a state-of-the-art literature review was completed to identify relevant information on toll road feasibility studies, experience with toll facilities, and revenue and cost estimation procedures. This review included an examination of the experience with revenue forecasts on recently completed toll projects in the United States. Second, information on the approaches and requirements used in other states was obtained through a survey of state departments of transportation. Third, interviews were conducted with representatives from eight investment banks and rating agencies. The results of these activities were used to develop the suggested guidelines outlined in this report.

Organization of this Report

The remainder of this report is divided into three chapters. The criteria used in other states to review the revenue forecasts on proposed toll roads, the factors examined by investment banks and rating agencies, and the literature review results are summarized in Chapter Two. Chapter Three presents the suggested guidelines for reviewing private toll road revenue forecasts in Texas. The report concludes with a summary of the main elements covered in the research study.

CHAPTER TWO—SUMMARY OF CRITERIA USED IN OTHER STATES AND FACTORS EXAMINED BY INVESTMENT BANKS AND RATING AGENCIES

This chapter summarizes the criteria used in six states to review the revenue forecasts on proposed toll road projects. The information presented was obtained through a survey of state departments of transportation. Information obtained through interviews with representatives from eight investment banks and rating firms is also presented, along with key elements from the literature review. A more detailed description of these topics is presented in Research Reports 1 and 2.

Criteria Used in Other States

Information on the criteria used to examine the revenue and cost projections on proposed toll roads and public/private roadway projects in Arizona, California, Florida, Minnesota, Virginia, and Washington is presented in Table 1 and summarized below. Additional information on the approaches used in these states, the specific proposal requirements, and the guidelines for reviewing proposals are documented in other Research Reports.

Arizona. Arizona uses requests for proposals (RFPs) for preliminary financial plans of toll facilities. The RFP provided by the Arizona Department of Transportation (ADOT) was for a 1995 preliminary financial plan for a project in Maricopa County (2). According to this document, the Department's general criteria for considering a proposed project financially viable is a debt coverage ratio of 1.5 or better in each year of operation.

California. California uses a combination of requests for qualifications (RFQs) and RFPs to obtain financial information on proposed toll facilities. Information on the financial plan elements is included in the 1990 California Department of Transportation (Caltrans) *Guidelines for Conceptual Project Proposals for Toll Revenue Transportation Projects* (3). Although the Department requires a variety of financial information in a proposal and requires that a third-party financial consultant examine the adequacy of the plan, it does not have specific criteria for assessing the financial viability of a project. Rather, Caltrans considers the general adequacy and reasonableness of the forecasts, revenues, and costs.

Florida. The Florida Administrative Code (4) addresses the requirements of financial plans for Private Transportation Facilities in the state. The financing plan must include the level, type, and source of financing for the various phases of the project. The Department uses a debt coverage ratio of at least 1.5 as the key financial viability criteria in the review process.

Table 1. Criteria Used in Other States to Examine the Financial Viability of Proposed Toll Roads

State	Criteria for Financial Viability
Arizona	Debt coverage of 1.5 or better in each year of operation.
California	No specific criteria — general adequacy of forecasts, revenues, and costs examined.
Florida	Debt coverage of 1.5 or better.
Minnesota	No specific criteria.
Virginia	Debt coverage of 1.3.
Washington	Reasonableness of projections — no criteria on debt coverage ratio.

Minnesota. The Minnesota Department of Transportation (Mn/DOT) issued a request for public-private toll facilities in 1995 (5). No specific criteria were included in the RFP addressing how the financial viability of a project would be evaluated.

Virginia. The development of proposals for private toll facilities in Virginia is governed by the *Public-Private Transportation Act of 1995: Implementation Guidelines* (6). Toll projects may be put forward by the Virginia Department of Transportation (VDOT) or through unsolicited proposals from interested parties. A proposed project must have a debt coverage ratio of 1.3 or better to be considered financially viable by VDOT.

Washington. The *New Partners Program 1993-1995: Summary* (7) highlights the Washington State Department of Transportation (WSDOT) requirements for innovative public-private projects. Although a variety of financial data was required in proposals, WSDOT did not use a minimum debt coverage ratio as a criteria of financial viability. Rather, the Department considered the reasonableness of the proposed financial plan.

Information Examined by Investment Banks and Rating Agencies

Researchers interviewed representatives from seven investment banks and one rating agency to obtain additional information on the financial viability criteria used by these groups when considering proposals for private toll facilities. Firms providing information were Bear, Stearns & Company; J.P. Morgan & Company; Morgan Stanley & Company; Paine Webber; Salomon Brothers; Smith Barney Shearson; and Standard & Poor's. Table 2 highlights the financial viability criteria identified by these individuals for toll road projects.

A debt coverage ratio was the most commonly reported criteria, although the exact level varied by firm. Two agencies use a debt coverage ratio of 1.5, while one each reported using a ratio of 1.3 1.25, and 1.0. The firm reporting the 1.0 ratio indicated this was a minimum level and a 1.3 ratio was desired. One individual reported that the minimum debt coverage was dependent on the desired credit rating.

In addition to using a minimum debt coverage ratio, some firms noted the use of other financial viability criteria. For example, the experience and record of the project sponsor was identified as an important consideration by one agency. Other factors noted included cash flow availability to cover debt service requirements, the share of equity related to total capitalization, and projection of at least 20 percent to 25 percent of the total trips in the corridor.

Table 2. Financial Viability Criteria Used by Investment Banks and Rating Agencies

Group	Criteria for Financial Viability*
Investment Banks	• Debt coverage ratio of 1.5 or better (2). • Debt coverage ratio of 1.3 or better (1). • Debt coverage ratio of 1.25 or better (1). • Debt coverage ratio of 1.0 or better (1). • Investment grade rating from a rating agency (2) • Minimum debt coverage ratio dependant on desired credit rating (1). • 20-25% of total trips for corridor projected for toll road.
Rating Agencies	• Experience of sponsor. • Record of sponsor. • Share of equity in total capitalization. • Cash flow available to cover debt service requirements.

***Number in parenthesis represents the number of firms reporting use of the criteria.**

Literature Review

The literature review identified additional elements to consider in developing suggested guidelines for private toll road feasibility studies. A 1996 study examined the experience with 14 recent toll projects and compared the estimated traffic levels and revenues with the actual use and tolls collected (8).

Only two of the 14 project examined in the study had revenues above those projected during the first four years of operation. Factors identified that appeared to contribute to the over estimations of revenues included overly optimistic economic growth projections in the area and the

corridor, assumptions of fairly high rates of revenue growth, travel time savings of less than five minutes over competing routes, and toll charges in excess of 10 cents per mile (8). Factors that seemed to be part of forecasts closer to the actual experience include conservative economic projections with moderate levels of growth, congested travel corridors, travel time savings of 5 to 10 minutes over competing routes, toll charges averaging eight cents per mile, and revenue growth forecasts under five percent per annum during the first four years of operation (8).

The literature review did not identify any procedures that can consistently identify when a forecast for a proposed project is overestimated or if the estimated debt coverage ratio will be achieved. There is also no clear guidance from available literature on how to adjust evaluation procedures or financial viability criteria to take account of the high probability of an overestimate of toll revenues.

CHAPTER THREE—SUGGESTED GUIDELINES FOR REVIEWING PRIVATE TOLL ROAD REVENUE FORECASTS IN TEXAS

This chapter presents the suggested guidelines for reviewing private toll road revenue forecasts in Texas. The requirements contained in the legislation, and the information obtained from other states, investment banks, rating firms, and available literature were all used in the development of these guidelines. The elements suggested for use by the Department in reviewing toll road forecasts and considering the financial viability of a project are summarized next.

The suggested guidelines for preparing toll road feasibility studies in Texas are presented in the third research report completed as part of this project. Detailed traffic forecasts and financial information represent two of the key recommended elements of a feasibility study. As documented in the fourth report, the major focus of the review process is also on these elements. Based on the national experience with recent toll road projects, it is suggested that the review process focus on the traffic forecasts, the level and rate of traffic growth, travel time savings, toll charges, revenue growth forecasts, economic growth assumptions, and the debt coverage ratio. Each of these elements is described in this chapter.

Traffic Forecasts. The estimated traffic on a toll road has a direct impact on the revenue projections. Given the recent national experience on some toll road projects with the over-projection of traffic and the subsequent under-generation of revenues, reviewing the traffic forecasts is critical step. As noted previously, there is no procedure that can assure accurate traffic projections or that can be used to assess the accuracy of these forecasts. A number of factors can be examined, however, to better determine the reasonableness of the traffic estimates included in a proposal. First, the forecasts can be compared to estimates and actual experience with similar projects throughout the country. Second, the diversion rates used in the forecasting process should be reviewed. Overly optimistic diversion rates may raise questions concerning the viability of the forecasts. Third, assumptions related to economic growth in the corridor should be examined. Very optimistic or high growth rates should be questioned.

Forecasted Traffic Growth. The literature review indicated that toll road projects that met or were close to meeting the forecasted traffic and revenue levels had moderate levels of projected growth. The assumptions related to projected traffic growth should be reviewed. A comparison of the projected growth rates with those actually experienced on similar facilities should be part of this analysis. Overly optimistic assumptions should be examined in more detail.

Travel Time Savings. The literature review indicated that many of the recent toll facilities with over-estimated traffic forecasts provided travel time savings of less than 5 minutes over competing routes. Although the travel time savings are related to the length of a facility, as well as the level of traffic congestion on alternate routes, the estimates contained in a

proposal should be reviewed for reasonableness. Projected travel time savings of less than 5 minutes should be examined in more detail.

Toll Charges. The anticipated toll charges will influence both use of a facility and revenues. The literature review indicated that toll charges in excess of 10 cents per mile were one of the factors associated with the overestimation of revenues on some recent projects, while those averaging 8 cents per mile appeared more realistic. The toll charges included in a proposal should be reviewed using the 8 cents per mile guideline associated with more successful recent projects. Comparisons of the proposed toll charges can also be made with existing projects.

Revenue Growth Forecasts. Similar to the traffic growth projections, the revenue growth forecasts should also be reviewed. Revenue growth forecasts of under five percent per annum were identified in the literature review as a reasonable level. This measure can be used as a general guideline in Texas or comparisons can be made with the experience in operation toll facilities.

Economic Growth Assumptions. The assumptions related to economic development and growth in the corridor should be reviewed. Overly optimistic economic growth projections were identified as a potential contributing factor with some of the recent toll projects that did not meet the traffic and revenue forecasts. It is suggested that conservative economic projections with moderate levels of growth should be used in proposals. Those with higher projections should be examined carefully.

Debt Coverage Ratio. Based on the criteria used by other states, investment banks, and rating agencies, it is suggested that debt coverage ratio of between 1.25 and 1.5 be used in Texas. It appears that the 1.5 ration is favored by more states and investment firms than lower levels.

CHAPTER FOUR – SUMMARY

This report provides suggested guidelines for reviewing private toll road revenue forecasts in Texas. The report is the fifth in a series prepared as part of a research study focusing on the development and assessment of feasibility studies for private toll road projects in Texas. The guidelines were developed based on a review of available literature, a survey of the criteria used in other states, and factors considered by investment banks and rating agencies.

The suggested criteria focus on seven major elements. These are traffic forecasts, the level and rate of traffic growth, travel time savings over competing routes, toll charge revenue growth forecasts, economic growth assumptions, and the debt coverage ratio. These elements can be examined to help assess the revenue forecasts and the financial viability of a proposed toll road project.

The information presented in this report and the suggested guidelines can be used by TxDOT in developing procedures and requirements for the preparation and review of feasibility studies for private toll road projects in the state. The suggested guidelines will help ensure that the review process focuses on critical elements related to successful projects. Ultimately, the proposed guidelines should assist in ensuring that future toll facilities are financially viable, represent sound transportation improvements, and contribute to the economic viability of the state.

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