

1. Report No. FHWA/TX-98/1756-1		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES FOR PRIVATE TOLL ROAD PROJECTS BY STATES AND PRIVATE ENTITIES INVOLVED IN THE EVALUATION, APPROVAL OR FINANCING OF PRIVATE TOLL ROAD PROJECTS				5. Report Date February 1998	
				6. Performing Organization Code	
7. Author(s) Thomas L. Glenn				8. Performing Organization Report No. Research Report 1756-1	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. Study No. 0-1756	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Transfer Office P. O. Box 5080 Austin Texas 78763-5080				13. Type of Report and Period Covered Research Report September 1, 1996-December 31, 1996	
				14. Sponsoring Agency Code	
15. Supplementary Notes Research performed in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration. Research Study Title: Feasibility of Private Toll Roads: An Evaluation Procedure for TxDOT – Phase II					
16. Abstract This is the first in a series of six research reports focusing on the process of preparing and evaluating feasibility studies for private toll road projects in Texas. At present, one of the requirements for preliminary approval of a private toll road by the Texas Transportation Commission is that the Commission must find, on the basis of a feasibility study submitted by the sponsors of a private toll road project, that the project will be financially viable. An attempt to evaluate the financial viability of one private toll road project seeking preliminary approval by the Commission revealed some problems in the evaluation process, stemming from an inadequate list of the data and information that should be included in the required feasibility study, and an imprecise definition of financial viability. 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 data and information that other states, investment banks, and rating agencies require in feasibility studies for private toll roads.					
17. Key Words Private Toll Roads, Feasibility Studies			18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161		
19. Security Classif.(of this report) Unclassified		20. Security Classif.(of this page) Unclassified		21. No. of Pages 34	
				22. Price	

**DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES
FOR PRIVATE TOLL ROAD PROJECTS BY STATES AND
PRIVATE ENTITIES INVOLVED IN THE EVALUATION,
APPROVAL OR FINANCING OF PRIVATE TOLL ROAD
PROJECTS**



PB99-101347

by

Thomas L. Glenn
Associate Research Scientist
Texas Transportation Institute

Research Report 1756-1
Research Study Number 0-1756
Research Study Title: Feasibility of Private Toll Roads:
An Evaluation Procedure for TxDOT - Phase II

Sponsored by the
Texas Department of Transportation
In Cooperation with the
U.S. Department of Transportation
Federal Highway Administration

February 1998

TEXAS TRANSPORTATION INSTITUTE
The Texas A&M University System
College Station, Texas 77843-3135

DISCLAIMER

The contents of this report reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Federal Highway Administration or the Texas Department of Transportation. This report does not constitute a standard, specification, or regulation.

ACKNOWLEDGMENTS

This research was performed in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration.

Project Director:

Peggy D. Thurin, Transportation Planning & Programming Division

Project Monitoring Committee:

Emily Braswell, Texas Turnpike Authority

Michelle Conkle, Transportation Planning & Programming Division

TABLE OF CONTENTS

	Page
CHAPTER 1—INTRODUCTION	1
Background	1
Research Problem	3
Study Objectives	5
Report Organization	6
 CHAPTER 2—DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES FOR PRIVATE TOLL ROAD PROJECTS BY OTHER STATES	 7
Data and Information Required by Arizona	7
Data and Information Required by California	7
Data and Information Required by Florida	10
Data and Information Required by Minnesota	12
Data and Information Required by Virginia	13
Data and Information Required by Washington	14
 CHAPTER 3—DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES FOR PRIVATE TOLL ROADS BY INVESTMENT BANKS AND RATING AGENCIES	 17
Data and Information Required by Investment Banks	17
Data and Information Required by Rating Agencies	18
 CHAPTER 4—SUMMARY	 21
Practices of Other States	21
Practices of Investment Banks	24
Conclusions	24

CHAPTER 1

INTRODUCTION

This is the first in a series of six research reports focusing on the process of preparing and evaluating feasibility studies for private toll road projects in Texas. At present, one of the requirements for preliminary approval of a private toll road project by the Texas Transportation Commission is that the Commission must find, on the basis of a feasibility study submitted by the sponsors of a private toll road project, that the project will be financially viable. An attempt to evaluate the financial viability of the first private toll road project to seek preliminary approval by the Commission revealed some problems in the feasibility study evaluation process, stemming from omissions in the list of the data and information that should be included in the required feasibility study, and an imprecise definition of financial viability. 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 data and information that other states, investment banks, and rating agencies require in feasibility studies for private toll roads. The second report will describe the procedures and criteria used by other states, investment banks, and rating agencies to evaluate feasibility studies for private toll roads (i.e., to determine whether a proposed private toll road will be financially viable). The third report will present a set of suggested guidelines that TxDOT can promulgate to guide the preparation of feasibility studies for private toll road projects by their sponsors. The purpose of these more detailed guidelines is to ensure that all data and information required to evaluate the financial viability of each private toll road project will be provided with sufficient documentation to eliminate the necessity of repeated requests for additional data, information, and/or documentation. The fourth report will present a set of suggested guidelines for TxDOT's use in evaluating the completeness of feasibility studies for private toll road projects received by the Department. The fifth report will present suggested procedures and more precise criteria for TxDOT's use in determining whether a proposed private toll road will be financially viable on the basis of a complete feasibility study. The sixth report (a project summary report) will summarize the work accomplished, the research findings, and provide recommendations for implementing the research findings.

Background

In 1991, the Texas Legislature passed new legislation governing the construction of private turnpikes and toll projects in Texas and set a deadline (June 1, 1991) for chartering private

toll road projects in Texas. The provisions of that legislation have been codified as Chapter 362, Subchapter C (Private Turnpikes and Toll Projects), Sections 362.101-362.104 of the Texas Transportation Code.

Section 362.101 defines a “turnpike or toll project” as a project that is financed in whole or in part through the issuance of revenue bonds payable from toll revenues.

Section 362.102 prohibits a private entity or corporation from constructing 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.

Section 362.103 requires that the Texas Transportation Commission adopt procedural and substantive rules and regulations for the approval of construction of a project, including rules requiring consideration of: (1) the integration of the project into the state highway system embodied in the existing regional transportation plan, including the plan developed by the metropolitan planning organization, if any, of a municipality, the territory, or extraterritorial jurisdiction in which the project is proposed to be located; (2) the potential effect of the project on the economy of the region in which the project is located, including the economy of each county in which the project is located and the economy of each municipality in those counties; and (3) the potential effect of the project on the free flow of trade between the United Mexican States and this state, if the project is located in whole or in part in (A) a county bordering the United Mexican States, or (B) a county adjacent to a county bordering the United Mexican States.

Section 362.104 requires that prior to requesting approval of construction by the commission, a private entity or corporation must conduct studies concerning the feasibility, route or alignment, and environmental impacts of the proposed turnpike or toll project.

To implement Section 362.103 of the Transportation Code, the Texas Transportation Commission adopted Sections 27.30-27.37 under Title 43 of the Texas Administrative Code. These sections prescribe the procedures and conditions by which a private entity or corporation may obtain the approval of the Commission and TxDOT to construct a privately owned toll project. Section 27.32 (a) (1) deals with the required feasibility study, and Section 27.36 (a) provides the Commission’s criterion of financial viability.

Section 27.32 (a) (1) states that, prior to submitting an application to TxDOT for approval of a project, an applicant must conduct a feasibility study. The feasibility study must determine

the financial viability of the project, and must include (A) the proposed method of financing the planning, design, construction, maintenance, and operation of the project; and (B) traffic data and projections.

Section 27.36 (a) states that the Commission may grant preliminary approval for the construction of a project if it finds that the project (A) will be consistent with the state transportation plan and (for projects located within the jurisdiction of a metropolitan planning organization in an urbanized area) an existing regional transportation plan developed by a metropolitan planning organization; (B) will have no significant overall adverse impact on the economy of the region in which the project is located; (C) (for projects located in a border county or a county adjacent to a border county) will have no significant overall adverse impact on the free flow of trade between the Republic of Mexico and the State of Texas; and (D) “will produce the revenue sufficient to finance the construction, maintenance, operation, design, and planning of the project based on accurate traffic data and projections.”

As of the deadline for chartering private toll road projects set by the 1991 legislation, a total of 45 potential private toll road projects had been chartered by six private toll road corporations. To date, only one private toll road project (the proposed Camino Colombia Toll Road) has actively pursued and obtained preliminary approval by the Department of Transportation and the Commission under the provisions of Sections 27.30-27.37 of Title 43 of the Texas Administrative Code. Other projects chartered prior to the deadline set by the 1991 legislation may pursue approval at any time, because neither the Legislature nor the Commission have set a deadline for such projects to obtain approval. In addition, TxDOT’s search for additional sources of revenue to finance new highways may lead to a second phase of private toll road construction in Texas. Thus, even though the one project that applied for preliminary approval has already received it, there is still reason to improve the content requirements for feasibility studies and the criterion of financial viability.

Research Problem

The problem addressed by this research project is that, aside from the requirement of a feasibility study “to determine the financial viability of the proposed project” which must include “the proposed method for financing the planning, design, construction, maintenance, and operation of the project” and “traffic data and projections” in 43 TAC §27.32 (a) (1), there are no explicit guidelines to direct the preparation of the required feasibility studies in such a way as to ensure that all the data and information needed to evaluate the financial viability of a proposed

project is provided to TxDOT and the Commission. In other words, a feasibility study that fully complies with the requirements of 43 TAC §27.32 (a) (1) by providing the proposed method for financing the project and traffic projections will not suffice to determine the financial viability of the project. Furthermore, the criterion of financial viability—that the project must “produce the revenue sufficient to finance the construction, maintenance, operation, design, and planning of the project” in 43 TAC §27.36 (a) (1) (D)—is susceptible to a variety of interpretations as it stands and should be made more specific.

The effort to arrive at a conclusion regarding the financial viability of the proposed Camino Colombia Toll Road project clearly illustrated the difficulties created by the absence of more detailed guidelines regarding the content of feasibility studies for private toll road projects in 43 TAC §27.32 (a) (1). This effort was an expensive, drawn-out, and ultimately inconclusive process consisting of multiple rounds of (a) submission of a feasibility study by Camino Columbia, Inc. (CCI), (b) review of that study by TxDOT and TTI, and (c) requests for additional estimates or documentation to support projections made in the feasibility study. The absence of estimates for significant expense items and documentation sufficient to verify or establish the reasonableness of revenue and cost projections, and CCI’s reluctance or refusal to supply the missing estimates or documentation requested on the grounds that the original feasibility study had complied with all of the Commission’s requirements caused these iterations. Even after a number of revisions of the original feasibility study extending over several years, however, neither the Department nor its consultants were able to arrive at a conclusion regarding the ability of the proposed Camino Colombia Toll Road project to produce the revenue sufficient to finance the construction, maintenance, operation, design, and planning of the project. Two unresolved problems caused this impasse: the continuing absence of an allowance for liability insurance in the cost projections, and the questionable methodology used to develop revenue projections. In the end, the Commission granted preliminary approval to CCI (Minute Order 106730, dated February 29, 1996) based in part on TxDOT’s equivocal finding that “there is evidence to believe that CCI *may* [emphasis added] produce the revenues sufficient to finance the construction, maintenance, operation, design, and planning of the project.”

The experience with the Camino Colombia evaluation suggests that, if the Commission and the Department continue to make a demonstration of financial viability a condition of preliminary approval for private toll road projects, and the Commission and the Department wish to avoid acrimonious, drawn-out, and ultimately inconclusive efforts to evaluate the financial viability of private toll road projects in future, then the Commission and the Department need:

(1) A more detailed set of requirements regarding the content of feasibility studies for private toll road projects to ensure that all data and information required to evaluate the financial viability of each project will be provided.

(2) An explicit set of procedures for the evaluation of the financial viability of proposed toll road projects, including a more precise (preferably numerical) criterion of financial viability.

Study Objectives

The overall objective of this study is to provide TxDOT with a more comprehensive and systematic set of guidelines and procedures for its use in evaluating the financial viability of private toll road projects on the basis of the feasibility studies mandated by Sections 27.32 (a) (1) and 27.36 (a) (1) (D) under Chapter 43 of the Texas Administrative Code. The more specific objectives of the study are:

(1) To develop more comprehensive guidelines to direct the preparation of feasibility studies for private toll road projects mandated by 43 TAC §27.32 (a) (1) to ensure that all data and information required to evaluate the financial viability of each project will be provided with sufficient documentation to eliminate the necessity of repeated requests for additional data, information, and/or documentation.

(2) To develop guidelines and procedures for TxDOT's use in evaluating the completeness of feasibility studies for private toll road projects mandated by 43 TAC §27.32 (a) (1).

(3) To develop guidelines and procedures for TxDOT's use in evaluating the accuracy or reasonableness of all revenue and cost projections presented in feasibility studies for private toll road projects mandated by 43 TAC §27.32 (a) (1).

(4) To develop a more specific criterion of financial viability and procedures for TxDOT's use in determining whether, on the basis of a feasibility that is both complete and contains revenue and cost projections that are demonstrated to be either accurate or reasonable, a private toll road project “will produce the revenue sufficient to finance the construction, maintenance, operation, design, and planning of the project” mandated by 43 TAC §27.36 (a) (1) (D).

Report Organization

Chapter 2 describes the data and information that other states require in feasibility studies for private toll roads. Chapter 3 describes the data and information that investment banks and rating agencies require in feasibility studies for private toll roads. Chapter 4 identifies the common patterns in the data and information requirements of these three types of organizations involved in the approval and financing of private toll roads.

CHAPTER 2

DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES FOR PRIVATE TOLL ROAD PROJECTS BY OTHER STATES

TTI researchers contacted all state DOTs (except TxDOT) in the lower 48 states during 1996 to determine which states permitted private or public/private toll roads and required project approval by the state DOT. Ten states indicated that private or public/private toll roads were permitted by state law provided that state DOT approval had been granted: Arizona, California, Colorado, Florida, Minnesota, Missouri, New Hampshire, Oregon, Virginia, and Washington. Of these ten states, six states had developed Requests for Proposals or specific procedures governing the data and information that must be provided to obtain state DOT approval of private or public/private toll roads at the time of our survey: Arizona, California, Florida, Minnesota, Virginia, and Washington. Each of these six states sent a copy of their Request for Proposals or procedures governing the data and information that must be provided to obtain state DOT approval.

Data and Information Required by Arizona

Arizona utilizes Requests for Proposals to specify the data and information required in feasibility studies for private toll roads. The specific RFP sent by ADOT was *Proposal No. 95-52, Privately Financed Transportation Facility/Highway Construction Projects for the Maricopa County Regional Transportation System*, dated July 1995. In the guidelines regarding proposal content, Arizona does not require a feasibility study *per se*, but rather a “preliminary financial plan.” Aside from noting that the preliminary financial plan is to include sources and uses of funds, ADOT does not specify any other data and information that must be included in the preliminary financial plan.

Data and Information Required by California

California uses a combination for Requests for Qualifications followed by Requests for Proposals to specify the data and information required in “financial plans” for toll projects. In the *Guidelines for Conceptual Project Proposals for Toll Revenue Transportation Projects* dated March 1990, Caltrans lists a financial plan as one of the required deliverables.

With respect to the content of the financial plan, Caltrans states that “the Financial Plan must provide sufficient detail to demonstrate a reasonable basis for funding the conceptual project.” A more detailed list of the data and information that should be included in the financial

plan is implicit in Attachment 7 of the *Guidelines* (“Representative Tasks for Consideration”). It should be noted that Caltrans does not evaluate the financial viability of proposed projects; rather, it requires that an opinion as to the adequacy of the financial plan be obtained from a third-party financial consultant. The list of tasks to be performed by the financial consultant in evaluating the adequacy of the financial plan suggests what data and information should be included in the financial plan. In fact, Caltrans explicitly states that “it will help the proposal, and assist the financial consultant selected, if the general Financial Plan is organized to match, if appropriate, the structure of Representative Tasks for Consideration.”

The following implicit data and information requirements can be extracted from the Representative Tasks for Consideration:

1. Financing Structure
 - A. Equity Contribution
 - 1) Current and proposed equity contributions, if any, to the proposed project. Source and nature of equity contributions (cash, in-kind services, materials, real estate, etc.).
 - B. Debt Financing
 - 1) Total aggregate of debt financing required for the proposal.
 - 2) Type and mix of debt financing to be used for the proposal, including foreign debt.
 - 3) Terms of any proposed debt structure including the following: maturity schedule, refunding opportunity, redemption provisions, defeasance procedures, default options, coverage ratios, and debt service reserve requirements.
 - 4) Where assessment or other special district financing is proposed, all assumptions regarding the boundaries of the districts, level and reasonableness of assessments, historical appreciation rates, impact of the proposed project on property values, projected development, and reasonableness of build-out development scenario.
 - C. Credit Support Letters or Lines of Credit
 - 1) Letter of credit/line of credit agreements.
 - 2) Requirements concerning assignment of revenues to the credit support provider.

- D. Bank Lending
 - 1) Secured and unsecured loans which are or are to be part of the proposed financial plan.
 - 2) Nature of collateral pledged to support bank loans.
 - 3) Loan guarantees which are part of the proposed financial plan.
 - E. Real Estate Financing
 - 1) Loan-to-value ratio of all real estate financing required as part of the finance plan.
 - 2) Security for real estate financing.
 - F. Other Funding
 - 1) Agreements with any multilateral development banks or other supranational lending institutions.
 - 2) Local government agreements which provide funding for the proposal.
2. Cash Flow
- A. Cash Flow
 - 1) Cash flow projections for the construction period and all years the facility is proposed to remain under private operation.
 - 3) Interest rates including assumptions regarding the cost of funds and borrowing rates.
 - 4) Costs of issuance, underwriters discount, legal fees, trustee fees, letter/line of credit fees, origination and commitment fees for bank loans, and other transactional related costs associated with the debt financing.
 - 5) Expected rate of annual return required by investors, pre-tax and after tax.
 - 6) Proposed project Internal Rate of Return (IRR) over the operating life of the proposed project and the design and construction period.
 - 7) Toll and fee structure of the proposal.
 - 8) Traffic count estimates for the proposal.
 - 9) Projected operations and maintenance costs of the proposed project, and the proposed funding sources for these costs.

- 10) Non-toll revenues including airspace, advertising, roadside concessions, special truck fees, emergency road service fees, access fees, local governmental contributions, real estate, and other sources.
- B. Sensitivity Analysis
- 1) Test the financial plan under different assumptions regarding traffic volume, toll structure, inflation, interest rates, time delay, and project area development.
 - 2) As part of the sensitivity analysis, identify a best-case, a most-probable, and a worst-case scenario under specified assumptions.
 - 3) For any proposals that assume real estate development or assessment revenue as part of the financial plan, develop sensitivity models that test different assumptions regarding property values, development timetables, and market absorption.

Data and Information Required by Florida

Florida also utilizes Requests for Proposals to develop private toll roads, but the specific data and information required in “finance plans” are listed in Chapter 14-107 (“Private Transportation Facilities”) of the Florida Administrative Code under Section 003 (“Proposal Requirements”) as follows:

- (5) Financial Plan and Cost Information
 - (a) A plan to finance the facility shall be presented and explained. The finance plan must indicate the quantity, type, and source of funding that will be used for each major project phase, including but not limited to:
 1. The level and source of public sector funding required including the amounts and periods over which it will be required.
 2. The amount and source of equity funds to be contributed by the private entity. The cash equity commitment must be

substantiated through bank letters of intent or other appropriate banking instruments.

3. The amounts, timing, terms, conditions, and methods of obtaining bond financing. Estimated costs of underwriting and issuing the bonds.
 4. Amount and source of other debt financing along with the methods and conditions for obtaining such financing. Cost associated with underwriting and issuing this debt instrument. Method of assurance (e.g., public offering or private placement).
 5. Contributions from net operating revenues. Amount of net operating revenues that will be used toward capital infrastructure costs and for debt retirement.
- (b) A proposed operating budget containing detailed annual costs of proposed activity and subactivity expenditures consistent with the project schedule. The following major project phase costs shall be included: traffic and revenue studies, project financing and debt service, preliminary engineering, environmental impact, engineering design, right of way acquisition, construction, equipment acquisition, operations and maintenance, renewal and replacement, support services, and administration. The methods and assumptions used to develop the cost estimates must be presented for verification.
- (c) Operating revenue projections along with the methods and rationale used to develop the estimates. Elements to be described include but are not limited to the following:
1. Toll revenues. Based on the estimate of ridership and the anticipated fare structure, a forecast of annual toll revenues. The method of producing the estimates must be described in sufficient detail to allow the projections to be verified. All assumptions used in the process shall be clearly indicated.
 2. Other operating revenue streams. Forecasts of any additional sources of revenue anticipated from the proposed facility with clearly stated assumptions, and data and methods used to develop the forecasts. Sources for revenue

- might include advertising, station concessions, royalties, and licenses.
3. Associated development and supplemental revenues. Amount of associated real estate development and supplemental revenue sources that will be used to supplement operations.
 4. Public sector subsidies. If subsidies will be required in the early years of operation, the source, amount, how they are to be used, and the years in which they will be needed.
- (d) A total cash flow analysis beginning with project implementation and extending for a 30 year period.
- (e) The sensitivity of project financing scenarios shall be tested and results presented with respect to the following conditions:
1. +/-25% on interest rates,
 2. +/-25% on inflation,
 3. +/-25% on capital costs,
 4. +/-25% on ridership estimates,
 5. +/-25% on operating and maintenance costs, and
 6. +/-25% on other revenue streams.

In addition, Florida explicitly reserves the right to request additional information under Section 006 ("Proposal Evaluation") of this same chapter:

- (2) The Department may request additional information or clarification regarding deficiencies in submitted proposals. Proposals which do not meet the requirements of this rule chapter shall be judged as incomplete by the Department. Additional information or corrections necessary to complete the proposal can be requested by the Department.

Data and Information Required by Minnesota

Minnesota utilizes Requests for Proposals to specify the data and information required in "financial proposals" for private toll facilities. In the Minnesota Department of Transportation's *Request for Proposals for TRANSMART: Minnesota's Toll Facilities Public-Private Initiatives*

Program dated July 1995, Initial Proposals must contain a Financial Proposal. In turn, the Financial Proposal must:

- Provide traffic and demand forecasts for the proposed project, together with an explanation of the manner in which such forecasts were derived and major assumptions.
- Provide a financial plan for the project.

Hence, Minnesota is much like Arizona in that Minnesota does not require a feasibility study *per se*, but rather a financial proposal. Aside from noting that the financial proposal is to include traffic and demand forecasts and a financial plan for the proposed project, Minnesota does not specify any other data or information that must be included in the financial proposal.

Data and Information Required by Virginia

Virginia is rather unique among the states permitting private toll roads in that the state utilizes Requests for Proposals but also accepts unsolicited proposals for prospective projects. The Commonwealth of Virginia's *Public-Private Transportation Act of 1995: Implementation Guidelines* dated July 1995 stipulates under the heading of "Proposal Preparation" that the financial plan for the project must contain enough detail so that an analysis will reveal whether the proposed project financing is feasible.

Virginia's proposal submission process has two phases. In the first phase, a Conceptual Proposal must be submitted. In the Conceptual Proposal, proposers must:

- a. Provide an estimate of the cost of the project by phase (e.g., planning, design, construction, etc.).
- b. Submit a plan for the development, financing, and operation of the project, showing the anticipated schedule on which funds will be required and proposed sources for such funds.
- c. Include a list and discussion of assumptions (user fees or toll rates and usage of the facility) underlying all major elements of the plan.
- d. Identify the proposed risk factors and methods for dealing with these factors.

- e. Identify any local, state, or federal resources that the proposer contemplates requesting for the project. Describe the total commitment (financial, services, property, etc.), if any, expected from governmental sources and the timing of any anticipated financial commitment.

In the second phase of the proposal submission process, certain “specific deliverables” might be requested, including:

- e. Provide the proposed total life-cycle cost of the facility or facilities and the proposed project start date. Include anticipated commitment of all parties; equity, debt, and other financing mechanisms; and a schedule of project revenues and project costs. Include in the life-cycle cost analysis a detailed analysis of the projected rate of return.
- f. Include a detailed discussion of assumptions about user fees or toll rates, and usage of the facility such as traffic forecasts and assumptions.

Data and Information Required by Washington

Washington appears to have followed the example of Virginia in developing its guidelines for proposals described in *New Partners Program 1993-1995: Summary* issued by the Washington Department of Transportation. Thus, in its general instructions for proposals, the Washington DOT states that “the financial plan for the proposal must contain enough detail so that a financial analysis can reveal whether the proposed project financing is feasible.”

Washington’s specific financial data and information requirements are listed under “Project Characteristics” in the Guidelines for Proposal Development:

- Provide an estimate of the cost of the project by phase (e.g., planning, design, construction, etc.).
- Submit a plan for the development and operation of the project, showing among other things, the anticipated schedule on which funds will be required; potential sources for funds including equity, debt, and other financing mechanisms; a schedule of project revenues, project costs, and return on an investment. Include a list and discussion of assumptions

underlying all major elements of the plan, including assumptions about user fees or toll rates, and usage of the facility.

CHAPTER 3

DATA AND INFORMATION REQUIRED IN FEASIBILITY STUDIES FOR PRIVATE TOLL ROADS BY INVESTMENT BANKS AND RATING AGENCIES

Data and Information Required by Investment Banks

The author interviewed bankers in the headquarters offices of the following investment banks (listed alphabetically): Bear, Stearns & Co.; Goldman, Sachs & Co.; J. P. Morgan & Co.; Morgan Stanley & Co.; Paine Webber; Salomon Brothers; and Smith Barney Shearson. Since the individuals interviewed all said essentially the same thing regarding the data and information that should be required in feasibility studies for private toll roads, the investment banks are treated as a group, rather than as individual institutions.

First, it should be noted that investment banks receive traffic and revenue studies for private toll road projects from traffic consultants and produce feasibility studies for prospective investors and rating agencies. The traffic and revenue studies provide projections of traffic, toll revenues, operating costs, and maintenance costs. A complete feasibility study for a private toll road must add projections of interest and principal repayments, and projections of local, state, and federal taxes. These additional projections are developed by the investment banks after the debt structure for the project has been determined. Thus, the investment bankers interviewed for this study were describing their requirements for traffic and revenue studies, but they agreed that their requirements for traffic and revenue studies could also be applied to feasibility studies.

First, all the investment bankers interviewed for this study emphasized the fact that, to date, very few private toll road projects have been done in the United States. Each private toll road project is therefore regarded as somewhat unique, and standardized procedures such as a pre-determined list of revenue and cost items that ought to be included in every project traffic and revenue study have not yet been developed. Hence, none of these institutions have prepared a detailed set of guidelines for the preparation of traffic and revenue studies for private toll roads.

On the other hand, these individuals were unanimous in saying that traffic and revenue studies should include complete documentation (including, where appropriate, the rationale) of every assumption, every calculation, and the source of every number presented in the study so that they (the investment bankers) can perform their required due diligence function. They also were unanimous in saying that feasibility studies for private toll roads should include projections

of revenues and costs and cash flows for the entire term of the bonds being issued to finance the project.

Data and Information Required by Rating Agencies

Attempts by the author to contact senior personnel in the principal rating agencies (Standard & Poor's, Moody's, and Fitch's Investor Services) resulted in two interviews with senior personnel at Standard & Poor's. As the most active agency in the provision of credit ratings for revenue bonds issued to finance both public and private toll roads, Standard & Poor's has a written set of criteria ("Public Finance Criteria") covering, among other things, toll road revenue bonds and start-up toll roads. Since the credit rating process is far more rigorous than the determination of financial viability, Standard & Poor's criteria are presented more as an illustration than as a model that TxDOT should adopt to govern the content of feasibility studies for private toll roads. With respect to feasibility studies, Standard & Poor's "Public Finance Criteria" declares that a "well-documented feasibility study" includes:

- A market and demand analysis that examines the following factors: demographic patterns; historical and projected traffic patterns; traffic mix (by type of vehicle and nature of trip); competing facilities; historical and projected toll rates; and, where practicable, the sensitivity of motorists to various toll levels.
- A financial analysis examining revenues and operating costs, as well as projecting the impact of planned improvements, competitive highways, and motor fuel availability.

With respect to start-up toll roads, Standard & Poor's criteria states that there are "consistent themes" in evaluating credit risk:

- Demand analysis, which reviews the service area and local economy, the nature of the facility, its traffic composition, and competitor facilities; and
- Operational and financial analysis, which generally follows the revenue bond cash-flow model, focusing on revenue collections and expenditures, and debt coverage.

The “Public Finance Criteria” goes on to state that “Standard & Poor’s expects a detailed feasibility study reviewing the underlying economic underpinnings and project-specific issues that result in the projected traffic and revenue forecast. The forecast should clearly state all assumptions used and be sufficient to analyze the debt through its repayment term.” In addition, “Standard & Poor’s also expects several sensitivity analyses to be performed to simulate normal changes in economic conditions, external factors, such as fuel price or vehicle operating cost increases, and price changes to help gauge the project’s ability to withstand change.”

CHAPTER 4

SUMMARY

Practices of Other States

The survey of the practices of other states that require DOT approval of private toll road projects revealed that two states (Arizona and Minnesota) are similar to Texas in regard to the specific financial data and information require; two states (Virginia and Washington) have somewhat more detailed requirements than Texas, and two states (California and Florida) have significantly more detailed requirements than Texas. In particular, Florida's requirements might serve as a model for Texas because Florida's very detailed data and information requirements have been incorporated into the Florida Administrative Code. The data and information requirements of the other states are incorporated into Requests for Proposals rather than Administrative Codes.

More specifically, our survey of the states revealed that Arizona does not require a feasibility study *per se*, but rather a "preliminary financial plan." Aside from noting that the preliminary financial plan is to include sources and uses of funds, ADOT does not specify any other data or information that must be included in the preliminary financial plan. Minnesota is much like Arizona in that Minnesota does not require a feasibility study *per se*, but rather a "financial proposal." Aside from noting that the financial proposal is to include traffic and demand forecasts and a financial plan for the proposed project, the Minnesota DOT does not specify any other data or information that must be included in the financial proposal.

Virginia's proposal submission process has two phases. In the first phase, a Conceptual Proposal must be submitted that includes (a) an estimate of the cost of the project by phase (e.g., planning, design, construction, etc.); (b) a plan for the development, financing, and operation of the project, showing the anticipated schedule on which funds will be required, and proposed sources for such funds; (c) a list and discussion of assumptions (user fees or toll rates, and usage of the facility) underlying all major elements of the plan; (d) the proposed risk factors and methods for dealing with these factors; and (e) the total commitment (financial, services, property, etc.), if any, expected from governmental sources and the timing of any anticipated financial commitment. In the second phase of the proposal submission process, certain "specific deliverables" might be requested, including the proposed total life-cycle cost of the facility or facilities and the proposed project start date; anticipated commitment of all parties; equity, debt, and other financing mechanisms; a schedule of project revenues and project costs; and a detailed dis-

cussion of assumptions about user fees or toll rates, and usage of the facility such as traffic forecasts and assumptions.

Washington's specific financial data and information requirements include: (a) an estimate of the cost of the project by phase (e.g., planning, design, construction, etc.); (b) a plan for the development and operation of the project, showing the anticipated schedule on which funds will be required; potential sources for funds including equity, debt, and other financing mechanisms; a schedule of project revenues, project costs, and return on investment; and (c) a list and discussion of assumptions underlying all major elements of the plan, including assumptions about user fees or toll rates, and usage of the facility.

Both Virginia and Washington are quite concerned with the cost of the project and the method of financing the project (i.e., sources of funds and, in the case of debt equity, the annual debt service requirements). In essence, both states require fairly detailed statements of the sources and uses of capital, but neither state specifies a particular format for this information. Both states also require schedules of project revenues and project costs, but neither state specifies what expenses should be included in the schedule of project costs. Finally, both states require a discussion of the assumptions underlying the projections of toll revenues.

Of the two states (California and Florida) that require significantly more detailed data and information than Texas, California implicitly requires a very detailed description of the financing structure of the project, including: (1) current and proposed equity contributions, if any, to the proposed project, including source and nature of equity contributions (cash, in-kind services, materials, real estate, etc.); (2) type and mix of debt financing to be used for the proposal, including foreign debt; (3) terms of any proposed debt structure including maturity schedule, refunding opportunity, redemption provisions, defeasance procedures, default options, coverage ratios, and debt service reserve requirements; (4) where assessment or other special district financing is proposed, all assumptions regarding the boundaries of the districts, level and reasonableness of assessments, historical appreciation rates, impact of the proposed project on property values, projected development and reasonableness of build-out development scenario; (5) letter of credit/line of credit agreements and requirements concerning assignment of revenues to the credit support provider; (6) secured and unsecured loans which are or will be part of the proposed financial plan, nature of collateral pledged to support bank loans, and loan guarantees which are part of the proposed financial plan; (7) loan-to-value ratio of all real estate financing required as part of the finance plan and security for real estate financing; (8) agreements with any multilat-

eral development banks or other supranational lending institutions; and (9) local government agreements which provide funding for the proposal.

In connection with the description of the financing structure for the project, California also requires a detailed statement of the costs of issuance, underwriters discount, legal fees, trustee fees, letter/line of credit fees, origination and commitment fees for bank loans, and other transaction costs associated with the debt financing.

With respect to cash flow projections, California requires: (1) cash flow projections for the construction period and all years the facility is proposed to remain under private operation; (2) interest rates including assumptions regarding the cost of funds and borrowing rates; (3) toll and fee structure of the proposal; (4) traffic count estimates for the proposal; (5) projected operations and maintenance costs of the proposed project and the proposed funding sources for these costs; and (6) non-toll revenues including airspace, advertising, roadside concessions, special truck fees, emergency road service fees, access fees, local governmental contributions, real estate, and other sources.

California also requires proposers to subject their cash flow projections to a "Sensitivity Analysis" consisting of the following tasks: (1) test the financial plan under different assumptions regarding traffic volume, toll structure, inflation, interest rates, time delay, and project area development; (2) identify a best-case, a most-probable, and a worst-case scenario under specified assumptions; and (3) for any proposals that assume real estate development or assessment revenue as part of the financial plan, develop sensitivity models that test different assumptions regarding property values, development timetables, and market absorption.

Like California, Florida has very detailed requirements regarding the financing structure for the project: (1) the level and source of public sector funding required, including the amounts and periods over which it will be required; (2) the amount and source of equity funds to be contributed by the private entity, substantiated through bank letters of intent or other appropriate banking instruments; (3) the amounts, timing, terms, conditions, and methods of obtaining bond financing, and estimated costs of underwriting and issuing the bonds; and (4) amount and source of other debt financing along with the methods and conditions for obtaining such financing, cost associated with underwriting and issuing this debt instrument, and method of assurance (e.g., public offering or private placement).

Although Florida does not specify a format for required projections, Florida implicitly requires a projected income statement and cash flow projections. With respect to the projected income statement, Florida's requirements include: (1) operating revenue projections including toll revenues based on the estimate of ridership and the anticipated fare structure, other operating revenue streams such as receipts from advertising, station concessions, royalties, and licenses, and amount of associated real estate development and supplemental revenue sources that will be used to supplement operations, and public sector subsidies; (2) a proposed operating budget that contains detailed annual costs of proposed activity and subactivity expenditures consistent with the project schedule including traffic and revenue studies, project financing and debt service, preliminary engineering, environmental impact, engineering design, right of way acquisition, construction, equipment acquisition, operations and maintenance, renewal and replacement, support services, and administration; and (3) contributions from net operating revenues that will be used toward capital infrastructure costs and for debt retirement.

With respect to the cash flow statement, Florida requires a total cash flow analysis beginning with project implementation and extending for a 30 year period.

Florida also requires that the sensitivity of project financing scenarios be tested and results presented with respect to 25 percent variations in (1) interest rates; (2) inflation rates; (3) capital costs; (4) traffic estimates; (5) operating and maintenance costs; and (6) other revenue streams (i.e., receipts from advertising, station concessions, royalties and licenses, and amount of associated real estate development and supplemental revenue sources that will be used to supplement operations, and public sector subsidies).

Both California and Florida are obviously concerned with the sources of funds used to finance projects, including the amounts and terms on which these funds will be made available. Both states require cash flow projections for 30 years or more, and Florida implicitly requires an income statement as well. Both states are clearly concerned about revenues, requiring separate projections of a number of different kinds of revenue, including toll revenues and, in the case of California, airspace, advertising, roadside concessions, special truck fees, emergency road service fees, access fees, local governmental contributions, real estate and other sources, or, in the case of Florida, receipts from advertising, station concessions, royalties and licenses, and amount of associated real estate development and supplemental revenue sources that will be used to supplement operations, and public sector subsidies. On the other hand, neither state appears to be very concerned about detailed projections of costs after the proposed facility opens to traffic. California requires projected operations and maintenance costs only, while Florida requires an-

nual costs of operations and maintenance, renewal and replacement, support services, and administration. Like the other four states that require DOT approval of private toll roads (Arizona, Minnesota, Virginia, and Washington), neither California nor Florida specifies a particular format for these projections.

Compared to Texas, perhaps the most significant practice of Florida is the required documentation of all financial data presented in the required projections. Thus, in connection with the required cost estimates, Florida stipulates that the methods and assumptions used to develop the cost estimates must be presented for verification. In connection with the required revenue projections, Florida requires a description of the methods and rationale used to develop the estimates. For toll revenues, Florida stipulates that the method of producing the estimates be described in sufficient detail to allow the projections to be verified and that all assumptions used in the process be clearly indicated. For other operating revenue streams, Florida requires clearly stated assumptions, data, and methods used to develop the forecasts.

Practices of Investment Banks

All of the investment bankers interviewed for this study stressed two requirements for feasibility studies: (1) that there be projections of revenues and cash flows for the entire term of the revenue bonds issued to finance the toll road; and (2) that there be sufficient documentation of all numerical projections in the feasibility study to permit due diligence to be performed. On the other hand, these same investment bankers said that there have not been enough private toll road financings in the United States to establish a formal list of line items that should be required in every feasibility study.

Conclusions

Two states (California and Florida) and the investment banks have established several precedents that Texas can follow in developing more detailed requirements for the content of feasibility studies for private toll road projects. California and Florida require a great deal more detail in financial plans for private toll roads than Texas (particularly in such areas as sources and uses of funds and sources of revenue), but neither state requires a specific format for financial plans. Florida and the investment banks require documentation of all projections so that they can be verified or validated. The investment banks require two specific types of financial projections for the entire term of the revenue bonds issued to finance the project (revenues and costs, and

cash flows), but none of the investment banks require a specific set of line items in these projections.