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16. Abstract

The Texas Department of Transportation (TxDOT) and other agencies continue to explore new and innovative methods to address concerns related to traffic congestion, mobility, and accessibility. Expanding the use of toll facilities in Texas is one approach receiving increased emphasis.

This report presents the results of a research project developing guidelines for TxDOT – regional toll authority cooperation and coordination. The report summarizes the use of toll authorities and new institutional arrangements in other states. It also highlights examples of coordination between TxDOT and toll authorities in Texas. Common themes from the national and state case studies are presented, along with the differences and similarities between state transportation agencies and toll authorities.

The report includes the guidelines for TxDOT – regional toll authority cooperation and coordination. The guidelines cover the areas of planning, environmental review, funding, design, construction, monitoring and evaluation, and management and operations. The guidelines are flexible to meet the unique characteristics and needs of different areas, while providing a common direction for all groups involved in toll projects. They provide guidance for agency staff involved in toll projects, rather than mandating a specific approach.

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DEVELOPMENT OF GUIDELINES FOR TXDOT – REGIONAL TOLL AUTHORITY COOPERATION AND COORDINATION

by

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Performed in cooperation with the
Texas Department of Transportation
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DISCLAIMER

This research was performed in cooperation with the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA). The contents of this report reflect the views of the author, who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of TxDOT. This report does not constitute a standard, specification, or regulation. Trade names are used solely for information and not for product endorsement. The researcher in charge of this project is Katherine F. Turnbull, Ph.D.

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CHAPTER ONE – INTRODUCTION

BACKGROUND

The Texas Department of Transportation (TxDOT) and other agencies continue to explore new and innovative methods to address concerns related to traffic congestion, mobility, and accessibility. Expanding the use of toll facilities in the state is one approach receiving increased emphasis.

Interest in toll roads goes back to the early 1840s, when the Republic of Texas authorized the Houston and Austin Turnpike Company to build a toll road between the two communities. It was not until the 1950s, however, with the passage of the Texas Turnpike Act, that the first toll road was built in the state. The Dallas-Fort Worth Turnpike opened in 1957 and operated as a toll road until 1977, when it was turned over to the Texas Highway Department (THD) upon repayment of the bonds.

Toll roads are part of the transportation system in the Houston area, the Dallas-Fort Worth Metroplex, and Laredo. The Sam Houston Toll Road and the Hardy Toll Road are operated by the Harris County Toll Road Authority (HCTRA). The North Texas Toll Authority (NTTA) operates the North Dallas Tollway, the President George Bush Turnpike, the Mountain Creek Lake Toll Bridge, and the Addison Tunnel. The Fort Bend County Toll Road Authority (FBCTRA) is developing two toll roads. The TxDOT Texas Turnpike Authority (TTA) Division is constructing the Central Texas Turnpike Project in the Austin area. The Camino Columbia Toll Road in Laredo is the only privately owned toll road in the state.

Although toll roads are not new in Texas, there is growing interest in expanding their use to address traffic congestion and mobility concerns. Legislation approved in 2001 allows for the creation of regional mobility authorities (RMAs) to construct and operate toll facilities. House Bill 3588, passed in 2003, provides RMAs with additional authority, creates new opportunities for toll facilities, and promotes collaboration among agencies.

Enhanced coordination among TxDOT, toll authorities, and RMAs is critical to help ensure that new facilities are planned, designed, funded, constructed, and operated as part of a safe, efficient, and effective transportation system. This research project developed guidelines for TxDOT, toll authority, and RMA cooperation and coordination.

RESEARCH OBJECTIVES

The major objective of this research project was to develop guidelines for enhancing cooperation and coordination among TxDOT, regional toll authorities, and RMAs. The guidelines address planning, environmental review, funding, design, construction, monitoring and evaluation, and management and operation of toll facilities. Other objectives of the research project included documenting the history of toll facilities in the state, examining existing coordination between TxDOT and regional toll authorities, and exploring the experiences of toll projects in other parts of the country.

ACTIVITIES CONDUCTED

Activities completed during the project accomplished these objectives. First, researchers examined the experience of toll authorities and toll facilities throughout the country. The national case studies included both toll authorities established during the 1950s and new approaches involving regional toll agencies in California and Colorado. The case studies are based on information gathered from reports and Websites, as well as telephone calls and e-mails with representatives from state transportation agencies and toll authorities.

Researchers reviewed the history of toll facilities in Texas and examined the interaction between TxDOT and toll authorities on recent projects. The Texas case studies documented the experience in Houston, the Dallas-Fort Worth Metroplex, Laredo, and the Austin area. Researchers monitored the establishment of the Central Texas Regional Mobility Authority (CTRMA) and related activities in other parts of the state. Researchers gathered information on the Texas case studies through reports, Websites, and meetings with TxDOT, toll authority, and RMA personnel.

Working with the Project Monitoring Committee, researchers used the results from the state and national case studies to develop draft guidelines for enhancing cooperation and coordination among TxDOT, regional toll authorities, and RMAs. The guidelines address planning, environmental review, funding, design, construction, monitoring and evaluation, and management and operation.

Invitations to review the draft guidelines and to participate in workshops in Austin and Houston were issued to representatives from TxDOT districts and divisions, toll authorities, the CTRMA, metropolitan planning organizations (MPOs), transit authorities, and other groups.

Researchers finalized the guidelines based on comments and suggestions received at the workshops.

ORGANIZATION OF THIS REPORT

This report is divided into three chapters following the Introduction. Chapter Two presents the national case studies. Toll projects and coordination between toll authorities and state departments of transportation in Pennsylvania, Massachusetts, New Jersey, New York, Oklahoma, Kansas, Maryland, Virginia, Florida, Missouri, Colorado, and California are described. Chapter Three highlights the Texas case studies. The history of toll facilities in Texas is summarized. Toll projects in Houston, Dallas-Fort Worth, and Laredo are presented and the new regional mobility authorities are described. Chapter Four presents the common themes from the national and state case studies, along with the differences and the similarities between TxDOT and toll authorities. Chapter Four also presents the guidelines for TxDOT – regional toll authority cooperation and coordination.

CHAPTER TWO – NATIONAL CASE STUDIES

This chapter summarizes the results of the national case studies. Based on a review of toll facilities in the country, researchers selected the case studies to provide a mix of projects, institutional arrangements, and funding sources. The chapter starts with examples of older toll facilities in the country, followed by case studies of newer toll projects using innovative institutional arrangements and financing methods.

PENNSYLVANIA

The history of the Pennsylvania Turnpike starts in 1791, with approval by the Pennsylvania Commonwealth legislature of a statewide transportation plan. Established by legislation in 1792, the Philadelphia and Landcaster Turnpike Company constructed a 62-mile log-surfaced road. A canal later replaced the turnpike. A railroad line was started in the same corridor but never completed.

Legislation in 1937 established the Pennsylvania Turnpike Commission. Work started that same year on a 160-mile turnpike following part of the old railroad right-of-way using funding from the Works Progress Administration (WPA) and other federal and state sources. The turnpike, opened in 1940, represented the first "superhighway" in the country.

Now in its sixth decade of operation, the Pennsylvania Turnpike Authority has expanded the original 160-mile turnpike into a 531-mile system. The section from the Delaware River to the Ohio state line is 359 miles long, the northeast extension is 110 miles, and the western extension is 62 miles. There is a direct link to the New Jersey Turnpike. The system also includes 59 toll collection facilities, 21 service plazas, 2 traveler information centers, and 21 maintenance facilities. The turnpike uses the E-Z Pass electronic toll collection (ETC) system.

The Turnpike Commission comprises five members, including the chair, who is the secretary of the Pennsylvania Department of Transportation (PennDOT). This organizational structure provides a link between the Turnpike Commission and PennDOT. The Turnpike Commission's 2001 *Strategic Plan* provides a focus for future activities. Major projects include reconstructing and expanding sections of the turnpike, enhancing operations, and fostering customer services.

MASSACHUSETTS

State legislation established the Massachusetts Turnpike Authority in 1952. The authority built the 123-mile Massachusetts Turnpike (MassPike), which opened in 1957. The MassPike extends from the border with New York to the Route 128/I-91 interchange near Boston. The 15-mile Boston extension connects Route 128/I-91 through the Ted Williams Tunnel and I-90 to Logan Airport and Route 1A. The authority also operated the Callahan Tunnel connecting Boston and Logan Airport and the Sumner Tunnel.

In 1997, the legislature created the Metropolitan Highway System (MHS) and transferred responsibility for overseeing construction and management of the Central Artery/Ted Williams Tunnel project from the Massachusetts Highway Department (MassHighways) to the Turnpike Authority. The project will become part of the authorities' MHS when completed. The authority uses an ETC program called FAST LANE. The FAST LANE toll tags are also good on all E-Z Pass systems in New York, New Jersey, Maryland, Delaware, West Virginia, and Pennsylvania.

The authority coordinates activities with MassHighways, the Massachusetts Port Authority, the City of Boston, and other agencies. Periodic attempts have been made over the years to merge the Turnpike Authority and MassHighways. To date, no legislation has been passed, however, modifying the current structure.

NEW JERSEY

A number of toll facilities are in operation in New Jersey. This section highlights the projects developed by the New Jersey Turnpike Authority, the New Jersey Highway Authority, and the South Jersey Transportation Authority.

New Jersey Turnpike Authority and New Jersey Turnpike

The New Jersey Turnpike Authority was established by state legislation in 1948. The enabling legislation directed the authority to construct, maintain, repair, and operate turnpike projects in the state. Construction of the 118-mile New Jersey Turnpike started in 1950, with the first 53 miles opening in 1951. The full 118 miles became operational in 1952. A link to the Pennsylvania Turnpike and additional spurs were completed in the late 1950s. Extensions in the 1970s and the purchase from the state of a 4-mile section of I-95 approaching the George Washington Bridge brought the total turnpike mainline to 148 miles.

The turnpike today is a four-to-fourteen lane, divided, limited access roadway with 28 interchanges. A section of the turnpike is a dual-dual roadway with the inner lanes reserved for cars only and the outer lanes accommodating automobiles, trucks, and buses. A new lane added in 1996 between the Garden State Parkway and Liberty International (Newark) Airport is reserved for high-occupancy vehicles (HOVs) during the morning and afternoon peak periods. Other ongoing improvements continue to be made in the turnpike.

The E-Z Pass ETC system is in use on the turnpike. Intelligent transportation systems (ITS), highway advisory radio (HAR), and highway advisory telephone (HAT) all provide enhanced operations and incident management response. The authority works with the New Jersey Department of Transportation (NJDOT), other turnpike authorities, and other agencies to coordinate these activities. The I-95 Coalition, which includes transportation agencies along the I-95 corridor from Maine to Florida, provides one example of the coordination among toll authorities and public agencies. As noted in the next section, the authority assumed control of the Garden State Parkway in 2003.

New Jersey Highway Authority and Garden State Parkway

Legislation in 1952 established the New Jersey Highway Authority. The legislation authorized the authority to construct a toll road along the New Jersey shoreline and to develop recreational facilities along the route using financing from the sale of bonds and the collection of tolls. The first section of the Garden State Parkway opened in 1954 and the approximately 150-mile facility was completed in 1955. A link to the New York State Thruway opened in 1957 and the authority assumed operating responsibility from NJDOT for a 20-mile section in 1987, bringing the total length of the parkway to 173 miles.

Since the 1970s, the authority focused on maintaining and upgrading the parkway, including introducing the E-Z Pass ETC system. The authority coordinated with NJDOT, the New Jersey Turnpike Authority, and other agencies in the region on the ETC system, ITS, and ongoing operations. As noted previously, the New Jersey Turnpike Authority assumed control of the Garden State Parkway in 2003. The consolidation of the two authorities is intended to save money and enhance the operation of both facilities.

South Jersey Transportation Authority and Atlantic City Expressway

The South Jersey Transportation Authority (SJTA) was established by state legislation in 1991. The authority encompasses Atlantic, Camden, Cape May, Cumberland, Gloucester, and Salmen Counties. The six-county area is known as "South Jersey." The SJTA is responsible for coordination and operation of the transportation system in the area, including highways, expressways, the Atlantic City International Airport, public transit services, and related economic development facilities. The SJTA is the successor agency to the New Jersey Expressway Authority and the Atlantic City Transportation Authority.

The SJTA took over operation of the 44-mile Atlantic City Expressway, which opened in 1965. The expressway links Philadelphia and Atlantic City. Use levels were relatively modest when the expressway first opened. Vehicle volumes started increasing in 1978 after the opening of the first legal hotel-casino in Atlantic City.

The Brigantine or Atlantic City Expressway Connector provides a link between the Atlantic City Expressway, through the Marina District to Brigantine Island. The 2.5-mile connector includes 10 bridges, 15 ramps, and a 2200-foot long tunnel. The project was undertaken to provide improved access to the Marina District and Brigantine Island, which have become major tourist centers with the recent development of new resorts and casinos.

The Connector represents the joint efforts of the SJTA, the State of New Jersey, Mirage Resorts Incorporated (MRI), and the Casino Reinvestment Development Authority (CRDA). An agreement was signed in 1997 outlining the roles, responsibilities, and funding levels for these groups on the project. The SJTA provided $60 million from the sale of bonds and the state contributed $95 million from the New Jersey State Transportation Trust Fund. MRI's share of $110 million came from a $55 million bond purchase in lieu of tax credits. CRDA provided a $65 million reimbursement from new casino parking fees. The project was constructed using a design/build method. The Connector was opened in July 2001.

NEW YORK

Toll roads have been part of the transportation system in New York since the 1800s. Toll facilities are operated by a number of entities, including the New York State Thruway Authority, the New York State Bridge Authority, and the Port Authority of New York and New Jersey. This section highlights the New York State Thruway Authority.

New York State Thruway Authority

The New York State Thruway Authority was created by state legislation in 1950. The authority was charged with building, operating, and maintaining self-supporting facilities financed through bond sales and toll revenues. The 641-mile thruway system is the longest state toll road system in the country. The authority also operates and maintains the 524-mile New York State Canal System. This historic waterway includes the Erie, Champlain, Oswego, and Cayuga-Seneca Canals.

Most of the thruway system was constructed in the 1950s and 1960s. The mainline from New York City to Buffalo is 426 miles long. Portions of the thruway have Interstate designations. The thruway provides direct connections to toll roads in Connecticut, Massachusetts, and New Jersey. In 1991, the authority acquired the Cross Westchester Expressway (I-287) and I-84 from the state.

The Governor Malcolm Wilson Tappan Zee Bridge is a key element of the thruway. The 3-mile long bridge crosses the Hudson River 13 miles north of New York City. Opened in 1955, the bridge replaced ferry service connecting Westchester and Rockland counties. Some 18,000 vehicles crossed the bridge daily in 1955. Today 132,000 vehicles typically cross the bridge each day.

The thruway was developed using bond sales and toll revenues, with a portion of the bond sales backed by the full faith and credit of the state. There are some non-toll sections of the thruway which were funded partially with federal assistance. The authority's revenues support operating and maintaining the thruway and meeting bond retirement costs. The thruway uses the E-Z Pass ETC system. The authority coordinates with the New York Department of Transportation (NYDOT), other toll authorities, and other agencies in operating the system and expanding the thruway.

OKLAHOMA

The Oklahoma Turnpike Authority was established in 1947 to construct, operate, and maintain turnpikes in the state. The first turnpike between Oklahoma City and Tulsa opened in 1953. System extensions occurred during the 1960s and 1970s, and four more turnpikes were constructed in the 1990s. The authority currently operates 10 turnpikes in the state, totaling approximately 550 miles. Some of the turnpikes have an Interstate designation. The PIKEPASS ETC system is used on the turnpikes.

In 1999, the Oklahoma legislature changed the name of the Turnpike Authority to the Oklahoma Transportation Authority (OTA). The legislature has the exclusive right to authorize turnpike routes and the OTA has responsibility to complete engineering and economic feasibility studies before any facility can be constructed. The Executive and Legislative Board Oversight Commission must approve the sale of bonds.

A combination of revenue bonds and user tolls have been used to fund construction, operation, maintenance, and enforcement of the turnpikes. The OTA is governed by a six-member board of directors. Members are appointed by the governor from each of the six turnpike districts in the state.

KANSAS

Established by state legislation in the early 1950s, the Kansas Turnpike Authority was charged with developing and operating a toll road system in the state. Bonds were issued in 1954 and construction was initiated in 1955. The 236-mile turnpike opened in October 1956. The turnpike extends from Kansas City to the Oklahoma border south of Wichita. The turnpike interchanges have increased from 14 to 21 to provide connections to new freeways. The turnpike carries an Interstate designation.

The Authority Board of Directors is comprised of five members. Two members are appointed by the governor, one member is chairman of the Kansas Senate Transportation and Utilities Committee, one is a member of the House Transportation Committee, and one is the secretary of the Kansas Department of Transportation (KDOT). The participation of the KDOT secretary helps promote coordination between the authority and the department.

MARYLAND

The Maryland Transportation Authority (MdTA) is responsible for managing, operating, and improving the state's toll facilities. Originally established in the 1930s, the MdTA is governed by an eight-member board. Seven members represent geographic regions of the state and are appointed by the governor with the advice and consent of the senate to stagger three-year terms. The secretary of transportation serves as the authority's chairman.

The MdTA operates seven toll facilities in the state – four bridges, two tunnels, and one section of freeway. The oldest facility, the Thomas J. Hatern Memorial Bridge (US 40) over the

Susquehanna River in northeast Maryland, opened in 1940. The two tunnels and two bridges are located in Baltimore. Additional projects are under consideration.

The MdTA may also finance and construct capital projects to improve the state's transportation system on behalf of the Maryland Department of Transportation (MDT), including terminal facilities at the Baltimore/Washington International (BWI) Airport and at the Port of Baltimore. The MdTA is also responsible for law enforcement at BWI and the port. The Maryland toll facilities use the E-Z Pass ETC, which is compatible with the toll systems in New York, New Jersey, Delaware, Pennsylvania, Massachusetts, and West Virginia.

VIRGINIA

Virginia Highway Act and the Dulles Greenway

The Virginia Highway Act, passed by the state legislature in 1988, allows for the development and operation of private toll projects in the state. The act authorizes the Virginia Department of Transportation (VDOT) to enter into comprehensive agreements with private authorities to fund, construct, and operate toll roads. The Virginia State Corporation Commission (VSCC) regulates toll authorities. The legislation identifies a targeted rate of return between 0 and 14 percent in the comprehensive agreements, depending on the scheduling of a project.

This legislation initiated the Dulles Greenway. The Greenway is a 14-mile, four-lane toll road connecting the town of Leesburg with the Dulles Toll Road adjacent to the Washington-Dulles International Airport. VDOT and the Toll Road Investors Partnership II entered into a comprehensive agreement in 1990. The $325 million project was initially funded by two fixed-rate loans from three insurance companies, revolving credit and financing from three banks, and standby equity from the Toll Road Investors Partnership II. To take advantage of new legislation, the project was refinanced in 1999 with the issuance of bonds to cover the note agreements.

The project used a build-transfer-operate approach. Construction started in 1993 and the Greenway opened in September 1995. The project is intended to foster development in certain areas, while reducing the potential for urban sprawl in other areas. Development of the Greenway included significant reforestation, waste disposal, and preservation of wetlands and

other natural areas to maintain the character of the corridor. The project right-of-way includes space for expansion to six lanes, two additional interchanges, and mass transit.

Traffic volumes have been growing on the Greenway. Marketing efforts include the introduction of incentives for frequent users. New developments in the corridor have helped increase use of the Greenway. Daily traffic volumes in mid-2002 averaged approximately 60,000 vehicles.

Public-Private Transportation Act and the Pocahontas Parkway

In 1995 the state legislature passed the Public-Private Transportation Act. The act provides for the use of both pubic and private funding of transportation projects to meet the growing needs of the state. The act allows VDOT to consider proposals from private entities to build highways or other facilities using private funds.

The Pocahontas Parkway (Route 895) represents the first project implemented under the act. The 9-mile parkway, connecting I-95 and I-295 and improving access to the Richmond International Airport, has been under consideration for 25 years. Although a top priority in the area for the last 10 years, insufficient funding kept the project from moving forward.

An unsolicited proposal was submitted to VDOT in 1995 by a consortium headed by Fluor Daniel/Morrison Knudsen. The consortium proposed to develop the parkway based on the new act with VDOT operating and maintaining the parkway. Funding for the project came from both public and private sources. A not-for-profit group, the Pocahontas Parkway Association, was organized and issued $354 million in tax-exempt revenue bonds. VDOT provided a state infrastructure bank loan of $18 million and used traditional Federal Highway Administration (FHWA) sources for project design.

A comprehensive agreement was executed in June 1998, with tax-exempt bonds sold the same month. Construction started in October 1998 and the parkway opened in 2002. The Smart Tag (ETC) system is used on the parkway. Smart Tags can be used on all of the state's toll facilities.

FLORIDA

The development, ownership, and operation of toll facilities in Florida has evolved over the past half century. The Florida State Turnpike Authority was established by legislation in 1953. Opening in 1954, the Sunshine Skyway Bridge south of St. Petersburg was the first toll

facility constructed by the authority. The 1953 legislation also authorized development of the Sunshine State Parkway, now called Florida's Turnpike.

The authority built additional toll facilities in the 1960s. Legislation in the 1960s through the 1990s also designated county expressway and bridge authorities in specific parts of the state. Legislation in 1969 reorganized the Turnpike Authority into the Department of Transportation (FDOT). The Florida Expressway Act, passed by the legislation in 1990, provided more uniform guidelines for the creation of expressway authorities and allows FDOT to enter into lease purchase agreements with express and bridge authorities. Finally, legislation in 2002 created Florida's Turnpike Enterprise within FDOT to pursue private sector innovation, streamline operations, enhance service quality, increase revenues, and expand the capital program.

Today, there are three basic types of toll facilities in Florida:

1) toll facilities owned and operated by FDOT;
2) toll facilities operated by FDOT, but owned by an expressway authority or a bridge authority; and
3) toll facilities owned and operated by an expressway or bridge authority.

Currently, FDOT owns and operates five toll facilities. Florida's Turnpike System, which includes 499 miles of toll roads, is also owned and operated by FDOT. The Department operates two toll bridges and one toll expressway for other authorities. Other major toll systems in the state include the Miami-Dade Expressway Authority, the Orlando-Orange County Expressway Authority, and the Lee County System.

Toll authorities in Florida are authorized through individual legislation and the 1990 Florida Expressway Act. Of the 10 expressway authorities and four bridge authorities in the state, the Dade County Expressway Authority is the only one established based on the 1990 act. The major difference in the enabling legislation is that only expressways governed by the 1990 act are required to be consistent with MPO plans and priorities.

FDOT uses a number of methods to coordinate with toll and bridge authorities in the state and to assist with funding projects. Financing methods include the state infrastructure bank (SIB), lease purchase agreements, operations and maintenance covenants, and other loans and contributions.

Created in 1986 with a capitalization of $68 million in department resources, the Toll Facility Revolving Trust Fund (TFRTF) program provides loans to local governments for

projects. The funds from repaid loans are available for new local projects. Through 2002, the program provided some $159 million in loans. Funding from the program assisted with the development of toll facilities and TFRTF loans have helped support the early operations of other toll projects.

The Florida SIB has two parts. Florida was one of the 10 states selected in the initial SIB pilot program authorized in the 1995 National Highway Act. The Transportation Equity Act for the 21st Century (TEA-21) continued the SIB program. In addition, a state funded SIB was established in 2000 as part of the governor's Mobility 2000 initiative. The federal SIB program is limited to projects meeting the TEA-21 requirements and other federal guidelines. Eligible projects for the state SIB must be on the State Highway System or provide increased mobility as defined by state statute.

The Florida Expressway Act authorizes FDOT to enter into lease purchase agreements with toll authorities. Under this approach FDOT is the lessee and the toll authority is the lessor. The Department may covenant any lease purchase agreement that pays all or part of the cost of operations and maintenance of an expressway system, enabling the toll authority to sell more revenue bonds through pledges of gross, rather than net toll revenues. The title to the facility is transferred to the Department upon performance and termination of the agreement. Lease purchase agreements are in place for six toll authorities.

State legislation also allows FDOT to pledge funding for toll operations and maintenance. These pledges enhance the credit quality of bonds and the cash flow during the initial operation of a toll facility. Initially, toll authorities were required to repay the operation and maintenance expenditures upon retirement of the bonds. Since 1996, toll authorities must show the ability to pay operation and maintenance costs from toll revenues within 10 years after opening.

FDOT also supports toll projects through loans and contributions of right-of-way acquired by the Right-of-Way Acquisition and Bridge Construction Trust Fund. Established by the legislature in 1988, it is funded by proceeds from bonds sold by the state backed by the full faith and credit of the state with repayment from the motor and diesel fuel taxes. FDOT also oversees the SunPass ETC system, coordinating toll collection among the toll authorities.

Orlando-Orange County Expressway Authority

State legislation in 1967 established the Orlando-Orange County Expressway Authority. Construction of SR 538, a limited access expressway, was the authority's first project. The

initial 14-mile segment of SR 538, the Martin Anderson Bee Line Expressway, opened in 1967. The 13-mile SR 408, Spessard Hollard East-West Expressway, opened in 1973. FDOT completed extensions to SR 538 in 1973 and 1974.

Planning for an international airport was moving forward in the late 1970s. The authority identified the need for roadway improvements to serve the new Orlando International Airport and issued $17 million in bonds to finance improvements to SR 528. The authority also raised toll rates to support the bond issue. The initial improvements were completed in 1983.

The authority's 1983 long-range study contained a number of projects targeted to open before 2000. Facilities in the plan included a beltway around Orlando, an extension to SR 408, and a connector between downtown Orlando and the new airport. To fund these projects, the authority refinanced its debt and issued new bonds. A toll increase in 1987 was also part of the financing effort. The expressway system doubled in length during the late 1980s and early 1990s, increasing from some 40 miles to approximately 80 miles. During the early 1990s, opposition from local citizen groups stopped planning for the central connector, but the southern portion of the beltway, SR 417, opened.

The second planned toll increase became effective in 1990. The public reacted negatively to this second toll increase. In response to the strong public opposition, the authority lowered the toll rates in 1992 from $0.75 to $0.50 at several locations as part of a demonstration. The increase in use off-set the lower tolls and the authority made the toll decrease permanent in 1993. The E-Pass ETC system was introduced in 1995.

During the early 1990s the authority also assumed responsibility for operating and maintaining the expressways from FDOT. To help improve customer service, the authority contracted for maintenance and for toll collection. Preliminary design and engineering on the western beltway, SR 429, was completed in 1996. The initial traffic and revenue projections did not justify the project, however, creating difficulties in financing the new toll road. A combination of financial support from FDOT's Right-of-Way Acquisition and Bridge Trust Fund, a TFRTF loan, a commitment from Florida's Turnpike District, and authority issued bonds provided financing for the project. The first segment of SR 429 opened in 2000.

The authority also completed the *2025 Expressway Master Plan* in 2000. The plan includes both a vision element and a capital improvements element. The vision focuses on leveraging the authority's strengths and assets to address evolving regional transportation and

community needs in a manner consistent with its mandate and mission. Capital improvements include some $2 billion into existing expressways, construction of new expressways links, and consideration of alternative tolling strategies.

Miami-Dade Expressway Authority

The Miami-Dade Expressway Authority (MDX) was established by the Miami-Dade County Commission in 1994. As noted previously, MDX is the only expressway authority in the state formed under the 1990 Florida Expressway Act. In 1996 MDX assumed operational and financial control of the five expressways in the county from FDOT. MDX issued $80 million in bonds to finance this takeover. Four of the expressways are toll roads and one is a non-toll road.

Since assuming control of the five expressways in the county, MDX has accomplished a number of activities. First, MDX developed a 20-year, $2.7 billion master transportation plan addressing short- and long-term needs. Second, the authority initiated construction on the five-year improvement program, completing two road-widening projects. New toll plazas with automated toll collection are under construction. The authority introduced a roving patrol motorist assistance program and initiated SunPass ETC lanes. Financing for these and other projects include a mix of bonds, SIB loans, TFRTF loans, and toll revenues.

Transportation and Expressway Authority Membership of Florida

The Transportation and Expressway Authority Membership of Florida (TEAMFL) represents a collaborative effort between the State of Florida's Expressway Authorities System, toll-related businesses, FDOT, and other organizations. Formed in 1997, TEAMFL provides a forum for sharing ideas, discussing issues, and identifying new approaches to toll development and operation. TEAMFL grew out of a predecessor organization, the Florida Association of Transportation and Expressway Authorities, Inc.

TEAMFL has three levels of membership. Class A membership includes toll authorities, expressway authorities, and bridge authorities established under Florida's statutes. Class B membership is comprised of government and non-government entities with an interest in planning, financing, developing, and operating toll facilities. Examples of Class B members include Florida's Turnpike Enterprise, FDOT's Office of Toll Operations, the Florida Transportation Commission, the Florida Metropolitan Planning Organization, and the Florida Division of Bond Finance. Class C membership includes professional and service-based

organizations that provide products and professional services to toll entities. Only Class A members have voting privileges.

TEAMFL meets on a regular basis. Topics addressed at recent meetings include updates on legislation, status reports on toll projects, toll technologies, and toll enforcement issues. TEAMFL maintains a Website and conducts other activities to help disseminate information on toll operations in the state.

MISSOURI

The Missouri Transportation Corporation Act was passed by the state legislature in 1990. The act authorizes the formation of private, nonprofit transportation corporations to fund, promote, plan, design, construct, maintain, and operate eligible transportation projects. The Missouri Highway and Transportation Commission (MHTC), the governing body of the Missouri Department of Transportation (MoDOT), must authorize the formation of a transportation corporation, and projects must serve a public purpose.

Lake of the Ozarks Community Bridge

As the first transportation commission established in the state, the Lake of the Ozarks Community Bridge Corporation (LOCBC) was formed to build and operate a bridge over the Lake of the Ozarks. Following the required application, hearing, and review process, MHTC approved the LOCBC in May 1992. Formed in the early 1930s by the construction of the Bagnell Dam, the lake is a popular recreation and resort area. Travel around the lake is circuitous, with routes from the east side to the west side averaging some 20 miles in the south and 50 miles in the north. Additional bridges across the lake represent a long-standing need.

The Lake of the Ozarks Community Bridge represents the coordinated efforts of the local communities, private developers, and MoDOT. Much of the undeveloped land in the area is owned by the Lodge of the Four Seasons, a major resort in the area. The resort owners and other local groups supported the construction of the bridge on the east side of the lake, which would provide a 10-mile route from the east side to the west side, rather than the then existing 30- to 50-mile route.

The LOCBC entered into a feasibility study agreement with the MHTC. The study, funded equally by each group and conducted by consultants, indicated that toll revenues would be sufficient to finance construction of a two-lane bridge and approach roadway. The study also

identified that a four-lane bridge and roadway would be needed to meet the forecasted 20-year demand. The four-lane option was more viable from a financial and bond perspective.

After analyzing different alternatives and staging options, the selected option included two separate projects – a toll bridge and toll plaza financed by the LOCBC and a state highway approach roadway funded by the MHTC. A conventional design/construction bid delivery option was used on the project, but the bridge and the roadway project were bid as a required combination to help ensure coordination. Contractors were required to bid on both projects, with the total project awarded to the lowest bidder. Coordinated liquidated damages and other methods also helped expedite and coordinate the two projects.

Project financing included a mix of public and private sources. MoDOT provided $5.5 billion in funding for the approach roadways and provided technical assistance to the LOCBC. The LOCBC issued $40.1 million in tax-exempt, toll revenue bonds. Private land owners donated most of the needed right-of-way. The LOCBC and the MHTC signed a cooperative agreement outlining the roles and responsibilities of both groups. The LOCBC is responsible for toll collection and operations and maintenance of the toll plaza. MoDOT is responsible for roadway and bridge maintenance, but is reimbursed by the LOCBC for these services.

The project development process followed all state and federal environmental review requirements. The construction contracts were awarded in February 1996, with construction starting a month later. The bridge and approach roadway opened in May 1998 on schedule and within budget. Bridge vehicle volumes and toll revenues have exceeded projections. The project has also helped foster new developments in the area and has had a positive influence on the economies of local communities.

COLORADO

Toll facilities in Colorado are a recent development. Currently, one toll road is in operation in the Denver area and a second is under construction. State legislation approved in 1987 allows for the creation of multijurisdictional public highway authorities (PHAs) and provides local funding options to support the development and operation of PHA toll roads based on voter approval. In addition, the Colorado legislature created a Statewide Tolling Enterprise within the Colorado Department of Transportation (CDOT) in 2002.

Public Highway Authorities

The Colorado Legislature approved the Public Highway Authority law in 1987. This legislation allows cities and counties to enter into intergovernmental agreements to establish PHAs to finance, build, and operate toll roads. Participating jurisdictions must hold a public hearing on the proposed PHA, with the governing board approving participation. The legislation also gives PHAs the power of eminent domain and the ability to impose an annual motor vehicle registration fee of no more than $10 and to levy sales and/or use taxes in member jurisdictions after voter approval. PHAs also have the authority to sell bonds to finance projects.

The legislation provides for a PHA governing board comprising at least one elected official from each of the participating jurisdictions. The state, acting through the transportation commission, may join in the contract establishing a PHA and is entitled to at least one board member. Representatives from the appropriate regional transportation agency, regional planning commission, and air quality control commission serve as nonvoting members.

The legislation also provides direction on coordination with CDOT at interchanges; authorizes PHAs to adopt regulations relating to toll collection, including establishing a civil penalty with fines of not less than $10 and not more than $100; allows PHAs to enter into agreements with state and local law enforcement authorities for traffic and toll enforcement; and provides options for the use of photographic toll enforcement. The legislation also allows for the creation of local improvement districts and value capture areas to help facilitate funding, construction, operation, and maintenance of toll facilities.

E-470 Tollway

Colorado Highway 470 (C-470) was identified as an outer beltway in the Denver area in state and metropolitan plans in the 1980s. The siting and development of the new Denver International Airport (DIA) in the northeastern portion of the metropolitan area intensified interest in developing C-470. A task force of land owners and representatives from local and county governments advocated construction of the facility.

Given the lack of available public funds, an interlocal agreement was signed in 1985 to establish a PHA to construct and operate E-470 as a toll facility. Parties of the interlocal agreement include the town of Parker; the Cities of Aurora, Commerce City, Brighton, and Thornton; and Adams, Arapahoe, and Douglas counties.

Funding for the construction and operation of E-470 comes from a number of sources. Arapahoe County issued a $772 million Capital Improvement Trust Fund Highway Revenue Bond in 1986 to provide initial funding for the project. Based on the 1987 PHA legislation, voters in the three participating counties approved a $10 per year vehicle registration fee. Revenues from the vehicle registration fee are part of the financing plan to design, construct, operate, and maintain E-470. The fee revenues can be used on other projects. The fees remain in place unless the E-470 PHA board should choose to eliminate them based on adequate revenue from tolls and other sources.

Constructed as a design-build project, development of the 47-mile E-470 occurred in four stages. The first segment opened in 1991 and the final section was completed in 2003. The facility provides for both electronic and manual toll collection. The EXpressToll ETC system tracks vehicles as they pass through toll plazas along E-470 and computes the appropriate toll based on distance and vehicle type. The calculated fee is automatically deducted from the user's prepaid account.

Western 470 (W-470) Public Highway Authority

The W-470 PHA was created in 1987 by the Cities of Arvada, Broomfield, Golden, Lafayette, Louisville, and Westminster; the town of Superior; and Adams and Jefferson counties. The PHA was established to construct and operate the proposed 32-mile W-470 toll road, which would have completed the outer beltway around Denver. Voters in participating jurisdictions did not approve a $10 per vehicle registration fee in 1989. As a result, the W-470 PHA board of directors voted to suspend operations in 1992.

Northwest Parkway Authority

The Northwest Parkway Authority was established in 1999 by an interlocal agreement among Broomfield and Weld counties and the Cities of Broomfield and Lafayette. The authority is constructing a 9.6-mile segment of the parkway, which forms the northwest section of the beltway. The project includes a freeway section and a segment of signalized arterial roadway, financed by $386 million in bonds issued in 2001. Voters in the participating jurisdictions were not asked to approve a $10 per vehicle registration fee to help finance the project.

Participating jurisdictions donated most of the right-of-way for the project. The facility design accommodates future multimodal opportunities, including light rail transit, commuter rail,

additional freeway lanes, and bicycle paths. A design-build approach was used on the project. An environmental assessment was approved by FHWA and CDOT in 2001. An environmental impact statement (EIS) was not required because no federal funds were used on the project and the only locations where state and federal right-of-way and operations are affected are at US 287 and I-25. The facility is scheduled to open in late 2003. Operation of the Northwest Parkway, including toll charges, will be coordinated with E-470.

Colorado Statewide Tolling Enterprise

A bill passed by the Colorado state legislature in 2002 authorized the Colorado Transportation Commission to create and operate a Statewide Tolling Enterprise as a government-owned business within the department. The legislation further established the Colorado Statewide Tolling Authority as a division within CDOT and directed that the transportation commission serve as the board of directors for the enterprise.

The legislation addressed funding for the enterprise in a number of ways. First, a statewide tolling enterprise special revenue fund was created. Toll revenues generated from enterprise facilities must be deposited into the special fund. Revenues from any tax otherwise available for general purposes are prohibited from being deposited into the special fund, but any other revenues may be used. A statewide tolling enterprise operating fund was also established. The commission was authorized to transfer funds from the state highway fund to the enterprise operating fund for the purposes of defraying expenses incurred by the enterprise prior to the sales of bonds or the generation of toll revenues.

Since its creation in 2002, the Statewide Tolling Enterprise has completed a number of activities. The board has elected officials, adopted articles of organization and bylaws, developed a vision statement and a mission statement, and selected an acting director. The board requested a $1 million loan from CDOT to cover start-up costs associated with the new organization and to conduct a traffic and revenue feasibility study for a statewide tolling system.

The board adopted both a vision statement and a mission statement in 2002. The vision of the Statewide Tolling Enterprise is *to enhance the quality of life and the environment of the citizens of Colorado by creating a tolling system to further move people and goods*. The mission of the Statewide Tolling Enterprise is *to enhance mobility in Colorado by increasing capacity through the creative development of a statewide system of toll facilities*.

CALIFORNIA

Orange County Transportation Corridor Agencies

Orange County, located in Southern California between Los Angeles and San Diego, has experienced rapid growth in population and employment over the last four decades. Studies conducted during the 1970s identified needed improvements in the transportation system to meet current and future travel demands. Although specific freeway corridors were identified in 1981, lack of funding prohibited initiating any projects.

In 1986 the county and local communities established the Foothill/Eastern Transportation Corridor Authority (TCA) and the San Joaquin TCA through joint power agreements. State legislation passed in 1987 authorized the creation of public toll road authorities with the ability to issue bonds for the construction of toll roads. The TCAs do not have taxing authority, however. The toll roads are financed and constructed by the TCAs but are owned and operated by the California Department of Transportation (Caltrans) and are part of the state system. The agreements between the TCAs and Caltrans include a sunset provision that stipulates that the toll roads will become free roads and will be transferred to Caltrans.

Three toll roads have been opened to traffic to date. These are the San Joaquin Hills Toll Road (SR 73), the Eastern Toll Road (SR 133, SR 241, and SR 261), and the Foothill Toll Road (SR 241). The Foothill South Toll Road (SR 241) is under construction.

The planning process for these toll roads followed federal and state environmental requirements. A number of environmental issues were addressed during the design and construction phases. A fossil mitigation program, including construction and operation of a fossil interpretive exhibit, was undertaken to address the dinosaur bones found in the area. Other measures included construction of wildlife crossings and wetland habitat mitigation programs.

A number of innovative public/private marketing programs, including bicycle rides and runs as part of opening ceremonies, have been undertaken to introduce the toll roads and to build use. A strategic alliance with businesses in the corridor helps promote the toll roads. A corporate partnership demonstration with the University of California, Irvine, provides a $0.50 discount for carpools composed of faculty, students, and staff. Consolidating the two TCAs into one agency is currently under consideration.

Route 91 Express Lanes

The Route 91 Express Lanes was one of four special toll facilities authorized by the California legislature in 1989. A franchise agreement, creating the California Private Transportation Company (CPTC), was signed in December 1990, and construction began in July 1993. The facility opened to traffic in December 1995.

The total cost of the project was approximately $126 million. Financing for the facility came from a number of different sources. These included a consortium of four banks, an insurance company, equity investments by the California Private Transportation Company, and coordinated debt from the Orange County Transportation Authority (OCTA).

The Route 91 facility includes two lanes in each direction of travel, located in the median of SR 91. The facility is 10 miles in length. State legislation authorizing the project required that three-person (3+) carpools and vanpools be allowed to use the facility for free initially and then at a reduced cost.

The Route 91 Express Lanes use a fully automated electronic toll collection system, with a variable pricing strategy. Currently, tolls vary by time of day based on a published schedule. All vehicles using the Express Lanes must have a toll tag located on the front windshield. The tags are read each time a vehicle enters the lane, and the toll charge is automatically subtracted from the prepaid account on the tag. Carpools using the facility must have a toll tag, but they are not charged a fee.

The agreement between the state, Riverside County, Orange County, and the CPTC included a non-compete clause. This clause prohibited Caltrans or other public agencies from making any transportation improvements within a 1.5-mile corridor on either side of Route 91. As congestion levels increased on Route 91 and other freeways and roadways in the area, this non-compete clause proved to be very problematic. In 2002, the OCTA purchased the Route 91 Express Lanes from the private company. This purchase was based on legislation passed in 2002 that eliminated the non-compete clause and permitted public operation of the lanes. Both OCTA and Caltrans are moving forward with improvements in the corridor.

CHAPTER THREE – TEXAS CASE STUDIES

This chapter presents the Texas case studies. The history of toll facilities in the state is described first. The toll projects in the Houston area, the Dallas-Fort Worth Metroplex, Laredo, and the Austin region are summarized. The RMA legislation and the establishment of the first RMA in the state are highlighted. The Transportation and Expressway Authority Membership of Texas organization is also described.

HISTORY OF TOLL ROADS IN TEXAS

Interest in toll roads in Texas goes back all the way to the 1840s when the Republic of Texas authorized the Houston and Austin Turnpike Company to build a toll road between the two communities. Legislation in 1913 authorized private toll road corporations with eminent domain powers. No toll road was built in the state until the 1950s, however.

The Texas Turnpike Act, approved by the legislature in 1953, created the TTA as a state agency with statewide jurisdiction. The TTA was authorized to plan, finance, build, and operate toll roads and bridges in the state, with specific direction to construct the Dallas-Fort Worth Turnpike as the authority's first project.

The legislation, which was passed prior to federal legislation establishing the Interstate system, provided for the construction and operation of modern superhighways based on bond sales and toll revenues, rather than taxes. The legislation noted that the establishment of TTA was not a negative reflection on THD, which recognized the need for freeways but was limited by available public funds. The construction of toll roads was intended to provide an alternative to free highways, not to take the place of existing or planned roadways. In addition, the act required that the Dallas-Fort Worth Turnpike be turned over to the THD upon retirement of the bonds for operation as a free highway.

TTA awarded the first turnpike construction contract in September 1955, and the 30-mile facility opened 23 months later on August 27, 1957. The project was financed by a $58.5 million revenue bond sale in 1955. The turnpike consisted of three lanes in each direction of travel, 57 bridges, 6 toll stations, and service centers.

The authority used a variety of methods to inform the public of the turnpike opening and the benefits of using the toll road. Brochures, press releases, newspaper advertisements,

presentations, and roadside signs represent typical methods used to introduce the new facility to motorists.

The turnpike used a manual toll collection system initially. Attendants issued drivers a punch card ticket as vehicles passed through a toll station upon entering the turnpike. The ticket was surrendered to an attendant at a toll station as a vehicle exited the turnpike and the proper fee was calculated and paid.

The 1958 opening of the Meadowbrook entry and exit ramps in Fort Worth introduced the use of an automatic coin collector. This new technology allowed motorists to directly deposit the $0.10 toll into the automatic coin collector.

Traffic volumes on the turnpike averaged approximately 13,500 vehicles per day during the first six months of operation. These volumes accounted for some $5500 in daily revenues. The 1957 annual report noted that "experience shows that new turnpikes typically open with a relatively modest volume of traffic. The volume subsequently increases steadily as people begin to appreciate its advantages and change their route habits." The 1958 annual report further noted that the delay in completing the connections in Dallas and Fort Worth had negatively influenced use levels. Both of these observations – providing a ramp-up period and ensuring connections to other roadways – continue to be critical elements of successful toll projects today.

Vehicle volumes increased steadily over the years, especially once the terminal connections in Fort Worth and Dallas were completed. As stipulated by legislation, the turnpike was turned over to the State Department of Highways and Public Transportation (SDHPT) in 1977 upon repayment of the bonds. Approximately 93,250 vehicles used the turnpike in 1977. The facility continues to operate today as I-30.

TTA developed five other toll facilities between the 1960s and the 1990s. Based on a request from the Cities of Dallas, Highland Park, and University Park, TTA conducted a feasibility study for a north-south toll road through the communities. The first segment of the Dallas North Tollway opened in 1968, with subsequent sections opening in 1987 and 1997. The development of the Dallas North Tollway and other projects were coordinated with SDHPT, and later TxDOT.

The Mountain Creek Lake Bridge is located in southwestern Dallas County. The project was considered by TTA at the request of the county and other groups. The facility includes the

bridge and approach roads, linking Spur 303 in Grand Prairie and Loop 12 in Dallas. The project, financed by bond sales, was opened in 1979.

TTA received permission from SDHPT to study the feasibility of a new toll bridge over the Houston Ship Channel in 1977. Construction of the 4.2 mile long bridge and approach roads started in 1978. A $102 million bond sale financed the project. Development of the bridge was coordinated with the Houston District. The bridge opened in 1982 and in 1994 the bridge was transferred from TTA to Harris County after all obligations of the authority were discharged.

In 1990, Dallas County, the town of Addison, and the Cities of Carrolton and Farmers Branch requested that TTA examine the feasibility of a toll tunnel under the Addison Airport to provide direct access from one side of the airport to the other. Developed as an extension and enlargement of the Dallas North Tollway, financing for the tunnel benefited from the strong assets of the Tollway. The tunnel was financed by a $26.8 million bond sale by TTA in 1994, $3 million in right-of-way contributed by Dallas County, and an agreement by the town of Addison guaranteeing debt service on $2.5 million of the project bonds. With design of the tunnel completed in 1996, construction started in 1997. The facility opened in 1999.

Legislation approved in 1997 changed the organization of the TTA and allowed for the creation of the North Texas Toll Authority (NTTA). The legislation moved TTA under the Texas Transportation Commission and transferred the toll projects in the Dallas-Fort Worth area to NTTA. Legislation passed in 2001 established the TTA as a division within TxDOT.

TxDOT Texas Turnpike Authority Division

TTA's mission is to *improve mobility and safety through the construction and operation of a safe, reliable, and cost-effective system of toll roads.* TTA's five goals are to:

- construct the first toll road system in Central Texas to help relieve traffic congestion,
- identify and develop other toll road projects,
- deliver highway improvements faster using innovative public/private partnerships and innovative financing options,
- develop a statewide electronic toll collection program for use on all toll roads across the state, and
- use state-of-the-art traffic management systems.

TTA is developing the Central Texas Turnpike Project (CTTP), which consists of four toll roads – SH 130, SH 45 North, Loop 1, and US 183-A. A fifth toll road, SH 45 Southeast, is also being developed by the TTA Division. Funding sources for the projects include revenue bonds, a loan through the Transportation Infrastructure Finance and Innovation Act (TIFIA), the Surface Transportation Program (STP), and right-of-way contributions.

The Loop 1 and the SH 45 North projects are using a traditional design-bid-build approach, whereas an exclusive development agreement (EDA) is being used on SH 130. The use of the EDA on SH 130 represents the first application of this technique in the state.

The TTA Division is the office of primary responsibility (OPR) to provide assistance and support to RMAs and to support the development of the TransTexas Corridor. The division is also conducting a review of projects included in the Unified Transportation Plan (UTP) to identify those that may be toll viable and is assisting districts in examining possible toll facilities.

HARRIS COUNTY TOLL ROAD AUTHORITY

Voters in Harris County approved a referendum in September 1983 establishing the HCTRA. The referendum, which passed by a 7 to 3 margin, allowed the Harris County Commissioners Court to issue up to $900 million in general obligation bonds for the purpose of constructing, maintaining, and operating toll roads in the county. The commissioners court created HCTRA as a division of the county's public infrastructure department.

During the 1980s and 1990s, HCTRA undertook an ambitious program, developing the Hardy Toll Road and the Sam Houston Toll Road. The development of these projects and the connections to the Interstate and state highway system were coordinated with the TxDOT Houston District. Memoranda of agreements (MOAs) were used on the various projects to identify the roles and responsibilities for financing, designing, constructing, and operating the interchange points and other connections.

A strong working relationship has developed between HCTRA and the TxDOT Houston District over the years. This working relationship includes both the formal agreements on projects and the ongoing interaction of staff in reviewing plans, coordinating construction activities, and addressing daily operating issues. More recently, the district and HCTRA have entered into new arrangements with the Katy Managed Lane project.

Planning for expanding the I-10 West (Katy) Freeway began in the late 1990s. A number of alternatives were examined in the EIS, including managed lanes in the center median of the

freeway. During the EIS process, the HCTRA raised the potential of tolling the managed lanes. This option was explored in more detail and emerged as the recommended alternative. Two multiagency agreements have been used to date to advance the toll managed lanes.

A memorandum of understanding (MOU) among TxDOT, the Metropolitan Transit Authority of Harris County (Houston METRO), and Harris County, acting for HCTRA, was signed in 2002. The MOU outlines the general roles of the three groups, specific provisions for transit, and the basic elements of the operating agreement. The HCTRA is responsible for enforcement, incident management, and maintenance of the lanes. The MOU identifies a level of service (LOS) C as the target for the managed lanes. It also identifies transit access points, provides an option for future light rail transit, and allows special signing for METRO. The MOU also identifies the following elements in operating the managed lane.

- METRO may operate 65 buses per hour, 24 hours a day/seven days a week (24/7) toll-free.
- METRO may operate METROLift service 24/7 toll-free.
- Carpools with three or more persons may travel toll-free from 6:00 a.m. to 11:00 a.m. and from 2:00 p.m. to 8:00 p.m.
- METRO support vehicles may travel toll-free 24/7.
- Single-occupant vehicles, 2+ carpools, and other vehicles pay the appropriate tolls.

The MOU outlines the options that will be considered if a LOS C is not maintained. The potential actions include adjusting the toll levels, changing the HOV occupancy level requirements, restricting METRO support vehicles, and expanding the facility to add transit-only lanes. METRO buses and METROLift vehicles are given top priority in using the lanes, followed by 3+ HOVs. Nonrevenue METRO vehicles are listed as the lowest priority.

TxDOT, FHWA, and Harris County signed a tri-party agreement in March 2003. This agreement outlines the roles and responsibilities for design, construction, and operation of the managed lanes. The county, through HCTRA, agreed to provide a $250 million contribution, approximately equal to the construction cost. TxDOT's responsibilities include securing federal funding and the remaining right-of-way. TxDOT also agreed to provide its best efforts to meet the project schedule, including the use of incentives and other techniques.

HCTRA is pursuing a number of other projects. The Westpark Toll Road is under construction, with opening targeted for early 2004. Managed toll lanes are being considered in

the US 290 corridor in cooperation with TxDOT, Harris County, and METRO. Other potential pooled projects include Grand Parkway, Sam Houston Eastern Extension, SH 35 South, SH 288 South, and Fairmont Parkway.

In 2002 and 2003 HCTRA and NTTA worked on an interoperable ETC system agreement, allowing toll tags issued by one authority to be used on the other. The agreement was approved by both authorities in 2003 and the systems became interoperable in October 2003.

FORT BEND COUNTY TOLL ROAD AUTHORITY

The FBCTRA was established in 1997 by voters in the county. The authority completed a $140 million bond issue in November 2000. FBCTRA's first two projects are the Fort Bend Parkway and the Fort Bend Westpark Toll Road. Other funding sources for the two projects include a loan from HCTRA and TxDOT participation.

The two projects will use different operating approaches. The Fort Bend Parkway will include both automated coin machines (ACM) and ETC lanes, while the Fort Bend Westpark Tollway will use open-road tolling. FBCTRA is contracting with HCTRA for operation of both facilities. FBCTRA is coordinating the development of the two facilities with the TxDOT Houston District, HCTRA, and other groups.

NORTH TEXAS TOLLWAY AUTHORITY

Based on the 1997 legislation, Collin, Dallas, Denton, and Tarrant counties established the NTTA. NTTA assumed responsibility from TTA for the Dallas North Tollway, the Mountain Creek Lake Bridge, and the Addison Tunnel. The authority also took over planning, design, and construction activities on the President George Bush Turnpike.

The George Bush Turnpike in the Dallas-Fort Worth Metroplex provides an example of collaboration among TxDOT, FHWA, TTA, NTTA, and local jurisdictions. NTTA assumed the position of TTA in the project when it was established in 1997. These agencies used Section 1012 of the Intermodal Surface Transportation Efficiency Act (ISTEA) to help finance, construct, and operate the George Bush Turnpike northeast of Dallas. The seeds of the project go back to 1964, with the inclusion of the highway in the North Texas Metropolitan Area Highway Master Plan.

Several agreements were used to accomplish the project. A three-party agreement was executed by TxDOT, FHWA, and TTA. This agreement addressed the ISTEA loan authorized

under Section 1012. It outlined TTA's obligations, which included application of turnpike revenues, maintaining the turnpike, making records available, and meeting all appropriate federal regulations. A two-party agreement was signed between TxDOT and TTA. This agreement addressed the terms of the ISTEA loan, the transfer from TxDOT to TTA of certain project assets, the ongoing obligations of TTA, and TxDOT's support for construction and operation of the turnpike. NTTA assumed the responsibilities of TTA in 1997.

As part of the almost $1 billion project, TxDOT purchased some $88 million in right-of-way and invested approximately $215 million in service roads and interchange engineering and construction. TxDOT also agreed to complete the US 75 and IH-35E interchanges. FHWA provided the $135 million loan under provisions of the ISTEA. The seven cities and three counties in the corridor assisted by adopting ordinances protecting right-of-way and purchasing right-of-way. TTA issues bonds to finance the major portion of the project's cost.

NTTA continues to plan and develop toll projects to enhance mobility in the four county area. Current projects in different stages of planning, design, and construction include extensions to the Dallas North Tollway and the President George Bush Turnpike, the Trinity Parkway, the Lewisville Lake Toll Bridge, and SH 121. NTTA is working with the TxDOT Dallas and Fort Worth Districts and local communities on these projects.

CAMINO COLUMBIA TOLL ROAD

The Camino Columbia Toll Road is the only private toll facility in Texas. It is the only toll project constructed based on the 1913 legislation. The toll road is approximately 21 miles long, linking the Colombia-Solidarity International Bridge, which crosses the Rio Grande northwest of downtown Laredo, with I-35. The project included construction of a two-lane roadway, two interchanges, a toll plaza at the southern end of the road, and a truck transfer station for freight handling operations.

Camino Colombia Inc. (CCI), a private toll road corporation, was created in March 1991 to finance the development, construction, and operation of the toll road. CCI is one of eight groups formed prior to the repeal of the 1913 state law. Several families who owned land in the corridor joined together to form CCI. The concept of building a direct link between the Colombia-Solidarity International Bridge and I-35 had been considered for a number of years as a way to create economic development opportunities in the corridor and to help relieve traffic congestion at other border crossings in the area. CCI was structured as a limited partnership, and

the shareholders conveyed approximately 1200 acres of undeveloped land to CCI for the toll road right-of-way.

TxDOT and CCI signed an MOA outlining the roles and responsibilities of both parties, and the Texas Transportation Commission granted CCI's request for a final construction permit in February 1997. In addition to TxDOT, CCI worked with the U.S. Customs Service, the Texas Department of Public Safety, and the Webb County Sheriff's Department in the development of the toll road. Federal requirements were addressed during the planning and construction process, as if it was a regular TxDOT project. FHWA approved the design to connect to I-35. In addition to the donated right-of-way, development and construction costs were financed privately through bank loans secured by the shareholders of CCI and taxable project revenue bonds. TxDOT is responsible for maintaining the I-35 interchange, which was transferred to the state upon completion of construction.

A design-build contractor was used on the project, and construction started in June 1999. The project opened to traffic October 2000 with toll rates ranging between $12.00 and $20.00 for trucks, depending on their size, and $3.00 for passenger cars. Toll rates are not regulated by the commission. Use levels have been lower than projected due mainly to the fact that a planned roadway on the Mexican side of the border has not been constructed.

REGIONAL MOBILITY AUTHORITIES

Legislation passed in 2001 allows for the creation of RMAs for the purpose of constructing, maintaining, and operating toll facilities. The legislation required the Texas Transportation Commission, which must authorize establishment of an RMA, to develop and adopt rules for RMAs and for financing toll projects.

The commission approved the proposed rules in January 2002, which became codified as Texas Administrative Code (TAC) Title 43, Transportation, Part 1, Department of Transportation, Chapter 26, Regional Mobility Authorities. The commission's philosophy relating to the RMAs encourages maximizing local control for the development and operation of transportation facilities in a region, while ensuring safety and accountability.

One or more counties may petition the commission to create an RMA. There is no limit on the number of counties or the geographic composition of an RMA. A single county may form an RMA, and the same county may be part of a multicounty RMA. Petitions must include resolutions from the commissioner's court in each participating county approving creation of the

RMA and a description of how the RMA will improve mobility in the region. Each petition must contain a description of at least one toll road project the RMA will pursue and an explanation of how the project will be coordinated with the Texas Transportation Plan, MPO plans, and other appropriate state and local plans. A petition must also include a brief description of environmental, social, and cultural resource issues and a preliminary financing plan.

The commission must hold at least one public hearing on a proposed RMA. If the petition is approved, the commission issues an order designating each RMA and the initial project. The commission also must approve the RMA board, which is composed of representatives from the participating counties and the political subdivisions within each county.

TAC Chapter 26 also outlines the powers and administration of an RMA. In general, RMAs have the same powers as the TTA Division. The chapter details the process and requirements for designing, financing, constructing, and operating toll road projects. The rules provide specific requirements for coordinating with TxDOT and for obtaining approval from the department at various stages of a project. The rules require an RMA to meet all applicable federal and state environmental regulations and other laws.

The new procedures for financing toll projects are part of TAC Chapter 27. The chapter outlines the policies and procedures that will guide TxDOT's participation in the financing of toll facilities that are not under the jurisdiction of the department. A request for funding must include a description of the need for the project, its impact on traffic congestion and mobility, use of the requested funding, other funding sources, needed changes to the state highway system, and documentation of community support. A request must contain a binding commitment that the proposed project will comply with all applicable environmental requirements, as well as other supplemental information.

Article 2, House Bill (HB) 3588, passed during the 2003 legislative session, addresses RMAs. Article 2 represents a major revision to the previous RMA legislation and TAC Chapter 26 described previously. It creates a new Chapter 370 of the Transportation Code. The following new authority is provided to RMAs in HB 3588:

- expands scope to include turnpikes, roadways, systems of facilities, passenger and freight rail, ferries, airports, pedestrian and bicycle facilities, intermodal hubs, automated conveyors for freight movement, border crossing inspection stations, public utility facilities, and air-quality improvement initiatives;

- maintains the system financing tools, including conversion of non-toll roads to toll roads, following an approval process and approval by the governor, and use of toll revenues for other mobility improvements or tolls may be imposed on non-toll roads transferred to an RMA;
- provides bonding authority including issuance of interim bonds and maintaining a revolving fund; granting of condemnation authority, including quick take note; authority to borrow, apply for grants or loans, and seek other sources of funds, with exception that any funds from the state general revenue fund or the state highway fund may only be used on turnpike and road projects; authorization to enter into comprehensive development agreements, previously referred to as exclusive development agreements; and authorization to make participation payments for interest in real property;
- designates RMA-issued bonds as authorized investments for local governments under the Public Funds Investment Act and clarifies that RMA bonds are not debts of the state or counties in the RMA, unless there is a county agreement to back the RMA debt;
- requires RMAs to establish procedures for environmental review of projects, to establish disadvantaged business enterprise (DBE) goals and engage in DBE outreach efforts, and to implement a strategic planning process in conjunction with the member counties;
- addresses board procedure issues, including establishing six-year terms for board members, allowing board meetings by conference call, and establishing minimum qualifications and conflict of interest requirements;
- authorizes RMAs to advertise and promote the use of transportation projects;
- gives RMAs the ability to extend projects into adjacent counties with the consent of those counties, to construct, operate, and maintain – but not own – projects in another county;
- authorizes RMAs to install, construct, or contract for the construction of public utility facilities in a transportation project and to charge public utilities for locating new facilities in a transportation project;

- authorizes RMAs to conduct feasibility studies with funding from the RMAs, cities, counties, TxDOT, and private individuals or organizations;
- authorizes RMAs to lease, franchise, and rent RMA property for revenue enhancement provided the use benefits the users of the transportation project;
- authorizes the use of surplus revenue for transportation projects in RMA counties, including assisting with the development of projects of another governmental unit or construction projects and transferring them to local governments;
- authorizes certain border cities to establish RMAs under the same process and authority as counties and allows these RMAs to extend projects into adjacent states or Mexico;
- provides that if Harris County or North Texas chooses to establish an RMA, an alternate form of governance may be proposed in lieu of the statutory RMA requirements; and
- requires that an RMA must reach a written agreement in areas where Chapter 284 (HCTRA) or Chapter 366 (NTTA) operates prior to any toll or turnpike project, along with a similar requirement for any urban transit area.

In addition, Article 7 of HB 3588 allows the Transportation Commission to convey a non-tolled state highway or a segment under certain conditions to HCTRA. Article 6 allows TxDOT to enter into an agreement with a public or a private entity or toll authority that provides for the payment of pass-through tolls to the entity as reimbursement for the construction, maintenance, or operation of a toll or non-tolled facility on the state highway system by the entity. Article 6 also requires that TxDOT adopt rules to implement this section. Article 19 limits the amount TxDOT can spend on EDA projects to not more than $800 million a year.

Central Texas Regional Mobility Authority

Discussions related to establishing an RMA in Travis and Williamson counties started in 2001, soon after the passage of the authorizing legislation. Numerous meetings were held with different groups and in September 2002 the two counties filed a petition with the commission requesting authorization to form the CTRMA. Resolutions supporting the petition were submitted from the Capital Area Metropolitan Planning Organization; the Cities of Leander,

Cedar Park, Rollingwood, Jonestown, Lago Vista, Lakeway, West Lake Hills, Sunset Valley, and Pflugerville; and the villages of Point Venture, The Hills, and Bee Cave.

The Austin City Council passed a resolution endorsing the application of Travis and Williamson counties to form the CTRMA subject to the following four conditions:

1) that the governing documents include provisions that all decisions to build or fund transportation-related facilities in Austin's city limits or its extra-territorial jurisdiction (ETJ) be approved by the Austin City Council and comply with the 2025 Austin Metropolitan Area Transportation Plan (AMATP),
2) that all roads built by CTRMA in the city and the ETJ comply with all city ordinances and other regulations, particularly the *Save Our Springs* and other water quality ordinances,
3) that RMA members request that state RMA legislation be amended to allow RMAs to directly participate in the development of regional commuter rail, and
4) that the RMA be a partner in all air-quality initiatives already adopted and those under study.

The petition proposed a seven-member board of directors, with three members appointed by the Williamson County Commissioners Court, three members appointed by the Travis County Commissioners Court, and the presiding officer appointed by the governor. The petition also identified the US 183-A toll road as the first project the RMA would develop.

The commission held two public meetings in October 2002 on the CTRMA proposal. The commission approved a minute order at its October 2002 meeting approving the establishment of the CTRMA. The minute order includes approval of the proposed seven-member board and US 183-A as the first project to be developed by the CTRMA. The minute order requires final commission approval of the US 183-A project. The minute order further encourages the CTRMA to cooperate and partner with the City of Austin.

In November 2002, Travis County commissioners accepted the contents of the minute order as written with the understanding that SH 45 Southeast would be the next project built by the RMA, the TTA Division, or TxDOT. Travis County has contributed $90 million toward the purchase of right-of-way for SH 130, and SH 45 Southeast is essential for the success of SH 130 as a viable toll road because it provides a connection to I-35 south of Austin. If SH 45 is not the second RMA project, the commissioners requested that the replacement project be located within

Travis County. The Williamson County Commissioners Court also took action in November 2002, adopting the minute order authorizing the creation of the CTRMA.

Both county commissions appointed board members in December 2002, and the presiding officer was appointed by the governor. The first meeting of the CTRMA board of directors occurred in January 2003. Each county contributed $250,000 to help with the initial start-up of CTRMA. The CTRMA applied for and received a $12.7 million toll equity loan from TxDOT to start work on US 183-A. The loan can be used for project management, negotiation, preliminary engineering, investment grade analysis, legal counsel, and incidental and administrative expenses pertaining to US 183-A. With this funding, the CTRMA is pursuing the selection of services related to the development of US 183-A. An unsolicited proposal and one competing proposal were received, but the board voted to not select either proposal and to pursue a more traditional approach.

The board has also requested additional TxDOT funding to assist in start-up activities. The board has drafted a set of environmental review policies and is in the process of hiring an executive director.

Other Possible Regional Mobility Authorities

The commission received a petition in August 2003 from Bexar County for the second RMA in the state. The petition grew out of efforts by the San Antonio Mobility Coalition, Inc. (SAMCo), a nonprofit corporation established in December 2001. SAMCo succeeded an early group, the San Antonio Transportation Alliance, formed to explore potential solutions to the transportation issues in the area.

SAMCo's purpose is to identify and advocate transportation and mobility solutions for the San Antonio metropolitan area. Members include Bexar County, the City of San Antonio, VIA Metropolitan Transit Authority, and major businesses in the area. SAMCo assisted in exploring options for an RMA and examining possible projects.

The Bexar County RMA petition lists five possible projects, including US 281, Loop 1604, and toll-supported enhancements to I-35 from downtown to the Comal County line. At the meeting the Bexar County Commissioners approved submission of the RMA petition to TxDOT; they also approved a separate resolution strongly opposing charging tolls on existing roadways.

RMAs are being considered in other parts of the state, including the Tyler area, the Valley, and El Paso. Local officials and business leaders in Tyler have expressed an interest in

forming an RMA, with Loop 49 as the first project. Five counties – Nueces, San Patricio, Jim Wells, Duval, and Webb – in the corridor from Corpus Christi to Laredo are examining a possible truck toll road.

TRANSPORTATION AND EXPRESSWAY AUTHORITY MEMBERSHIP OF TEXAS

The Transportation and Expressway Authority Membership of Texas (TeamTX) is a private nonprofit cooperation initiated in 2002. The organization provides a forum for agencies and groups involved in planning, financing, constructing, and operating toll roads, toll bridges, and limited-access expressways for sharing information and discussing issues. TeamTX also provides educational services such as preparing white papers, conducting meetings and conferences, drafting intergovernmental agreements, and maintaining an Internet site. It may also develop policy positions on topics relating to toll facilities.

The first meeting of TeamTX was held in January 2002 in Houston. Subsequent meetings in 2002 occurred in Austin, Dallas, and San Antonio. The same cycle and location is being followed in 2003. TeamTX is in the process of finalizing articles of incorporation and bylaws.

CHAPTER FOUR – GUIDELINES FOR TXDOT – REGIONAL TOLL AUTHORITY COOPERATION AND COORDINATION

COMMON THEMES – NATIONAL AND TEXAS CASE STUDIES

A number of common themes emerge from the national and Texas case studies. As summarized in this section, these themes focus on the state legislation needed to provide for toll opportunities, the creation of new authorities to develop and operate toll facilities, the use of electronic toll collection and interoperability among toll facilities, and the use of innovative financing techniques along with bonding and federal, state, and local funding sources. The case studies illustrate different institutional relationships between toll authorities and state transportation agencies related to ownership and operation of toll roads. The case studies also highlight the significance of non-compete clauses. Finally, the case studies reinforce the importance of linking toll facilities to other roadways and promoting use during the ramp-up period.

- **State Legislation**. In all of the case studies, state legislation established the various toll entities. For example, state legislation in 1913 allowed for the creation of private toll roads in Texas. During the 1950s, many states, including Texas, passed legislation creating turnpike authorities and authorizing the construction and operation of toll roads, tunnels, and bridges. More recently, legislation in Texas, Colorado, and California allows for the establishment of special county or multicounty authorities with the power to finance, construct, and operate toll facilities. The enabling legislation outlines the authority of the toll entities and the available financing methods. It also identifies if voter approval is needed to create an authority or to establish specific funding methods, such as the use of a sales tax or a vehicle registration fee.
- **New Authorities**. Based on state legislation, new authorities have been established in many areas to design, build, and operate toll facilities. The turnpike authorities created by legislation in the 1950s, including the Texas Turnpike Authority, tended to be statewide in nature and focus. Recent legislation in many states allows for the establishment of toll authorities by a county or by multiple counties acting together. Examples of this approach include the RMAs in Texas, the public highway

authorities in Colorado, and the transportation corridor agencies in California. These organizations appear to be part of a growing trend in many states to give local jurisdictions a larger role in dealing with transportation problems and voters in these areas the ability to tax themselves to fund new highways and toll roads.

- **Electronic Toll Collection and Interoperability.** The national and state case studies highlight the movement toward electronic toll collection and interoperability. Electronic toll collection provides benefits to users and toll authorities. Travelers benefit from faster travel through toll plazas. Toll authorities benefit from the reduced costs associated with toll transactions and the prepayment of toll tag accounts. The movement toward interoperability is especially evident in the northeastern part of the country, where the E-Z Pass system is in use on most toll facilities. Toll authorities in Texas are moving toward an interoperable system.
- **Bonds and Innovative Financing**. The ability to finance the construction of a toll facility through the issuance of bonds continues to be the major attractive feature of toll authorities. While bonds, which are paid back through toll revenues, remain the main source of financing for toll projects, other funding methods are also being used. The legislation in Colorado, which allows public highway authorities to levy $10 vehicle registration fee upon voter approval, provides one example of a self-imposed local source of funding for toll projects. The use of an ISTEA loan on the President George Bush Turnpike in the Dallas-Fort Worth Metroplex and a TIFIA loan on the Central Texas Turnpike Project provide examples of toll authorities and TxDOT's TTA Division utilizing new federal programs. As discussed in more detail in the next section, the mix of bonding, toll revenues, and various federal, state, and local programs is becoming more common on toll projects.
- **Institutional Arrangements for Construction and Operation.** The case studies illustrate a variety of institutional arrangements for constructing and operating toll facilities. Numerous case studies use a more traditional approach, with a toll authority responsible for all aspects of planning, funding, constructing, and operating a toll project. There are also examples of toll authorities and state transportation agencies sharing these responsibilities. The transportation corridor agencies in Orange County provide an example of the toll organization funding and

constructing toll roads, which are owned and operated by Caltrans. The Katy Managed Lanes project in Houston provides an example of a toll authority participating in funding an improvement on an Interstate freeway and operation of the completed facility.

- **Non-Compete Clauses.** The Route 91 Express Lanes in Southern California highlight the importance of the non-compete clause in a MOA between a state transportation agency and a toll authority. Most of the MOAs used on toll projects in Texas have non-compete clauses, but they are not as onerous as the one on Route 91. The case study points out the need to carefully review the wording of non-compete clauses.
- **Links to the Transportation System and Ramp-Up Period.** The case studies illustrate the importance of the connections between a toll facility and other parts of the transportation system. The early experience on the Dallas-Fort Worth Turnpike and the existing situation on the Camino Columbia Toll Road highlight the significance of these connections. Ensuring that planned connections are open at the same time as a toll road comes on line is critical to the viability of a toll project. The case studies also point out the need for marketing and public outreach to promote use of a toll facility during the ramp-up period.

TXDOT AND REGIONAL TOLL AUTHORITIES – DIFFERENCES AND SIMILARITIES

The national and state case studies illustrate the differences and similarities between state transportation agencies and toll authorities. In general, the two types of organizations have different business philosophies, use different funding sources, and follow different project development approaches. There are both differences and similarities in the environmental review processes used by TxDOT and toll authorities on projects. TxDOT and toll authorities tend to use the same plans, specifications, and estimates (PS&E) process, the same pretested materials, and have a similar focus on safety. Recognizing these differences and similarities is important, as they will influence potential approaches to cooperation and coordination.

- **Business Philosophy.** TxDOT and regional toll authorities have different business philosophies. TxDOT serves the whole state and is responsible to tax payers. Regional toll authorities, on the other hand, service a specific geographical area,

typically a county or multiple counties. Toll authorities serve their customers, who are willing to pay for the benefits offered by toll facilities. A toll authority's success is based on recouping revenue through tolls to pay off bonds. As a result, time is of great value to toll authorities in developing projects. TxDOT's TTA Division more closely resembles a toll authority than a traditional state agency.

- **Funding.** Traditionally, TxDOT and toll authorities have used very different sources of funding. The line between the two is becoming blurred, however. TxDOT relies primarily on federal, state, and local funds. Regional toll authorities use bonds to finance projects, which are paid off by toll revenues. TxDOT is now issuing bonds for projects developed by the TTA Division, and toll authorities are using ISTEA loans, TIFIA loans, and other nontraditional funds.
- **Project Development.** There are significant differences in the project development approaches used by TxDOT and toll authorities. TxDOT uses a low-bid process and tends to focus on saving the public's money. Since time is valuable, toll authorities do not use a low-bid process and may pay more to expedite projects to generate revenue sooner.
- **Environmental Review.** There are both similarities and differences in the environmental review and public involvement process used by TxDOT and regional toll authorities. TxDOT follows the appropriate federal and state environmental review and public involvement requirements on all projects. Toll authorities may or may not follow all of these requirements. For example, if there are no public funds associated with a toll project, the environmental review may focus on the interchange points with the state system, although other federal and state environmental elements, such as wetland mitigation, would have to be addressed. The guidelines provide more detail on the environmental review requirements associated with different types of toll projects.
- **Plans, Specifications, and Estimates.** TxDOT and toll authorities use the same PS&E process. In other words, a set of plans for a toll project will look the same as those for a TxDOT project.
- **Pretested Materials.** TxDOT uses materials that have been pretested and approved for application. Toll authorities in the state also use the TxDOT pretested

materials list. TxDOT also uses material test facilities. In some cases, toll authorities have also made use of TxDOT's material tests facilities on projects.

- **Focus on Safe Operation**. Both TxDOT and toll authorities share a common focus on operating a safe transportation system.

GUIDELINES FOR TXDOT – REGIONAL TOLL AUTHORITY COOPERATION AND COORDINATION

TxDOT's mission is to provide for the safe, effective, and efficient movement of people and goods. The guidelines for TxDOT, RMA, and regional mobility authority cooperation and coordination help the department realize this mission. The guidelines also address two elements of TxDOT's vision:

1) providing a comfortable, safe, durable, cost-effective, environmentally sensitive, and aesthetically appealing transportation system that works together; and
2) promoting a higher quality of life through partnerships with the citizens of Texas and all branches of government by being receptive, responsive, and cooperative.

The guidelines outlined here provide direction to TxDOT staff on enhancing coordination and cooperation with regional toll authorities and RMAs. They provide guidance for TxDOT staff, rather than mandating a specific approach. The guidelines are flexible to meet the unique characteristics and needs of different areas, while providing a common direction.

The guidelines are appropriate for use with the wide range of toll-related projects that may be under consideration in an area or in various stages of planning, design, construction, and operation. Examples of toll options include building new toll roads, toll bridges, and toll tunnels; converting existing freeways and roadways into toll facilities; incorporating tolling into new or existing managed lanes; and constructing new toll facilities for trucks and commercial vehicles.

A variety of TxDOT districts and divisions and toll entities may be involved in these types of projects. The following toll entities and existing toll authorities are currently involved in toll projects in the state:

- regional tollway authorities (North Texas Tollway Authority),
- county toll authorities (Harris County Toll Road Authority and Fort Bend County Toll Road Authority),
- the state toll authority (TxDOT's Texas Turnpike Authority Division),
- private toll road companies (Camino Columbia, Inc.),

- regional mobility authorities (Central Texas Regional Mobility Authority and other regional mobility authorities that may form in the future), and
- the Transportation and Expressway Authority Membership of Texas (TeamTX), which provides a forum for the discussion of issues and the exchange of information, ideas, and experiences.

The guidelines are divided into the following eight sections.

- Guiding Principles for Cooperation and Coordination
- Planning
- Environmental Review
- Funding and Financing
- Design
- Construction
- Monitoring and Evaluation
- Management and Operation

Guiding Principles for Cooperation and Coordination

The following principles provide overall guidance for TxDOT cooperation and coordination with toll authorities and RMAs. The guiding principles, which support TxDOT's mission and vision, establish the basis for ongoing cooperation and coordination with these authorities.

- Guiding Principle 1 – TxDOT, toll authority, and RMA cooperation and coordination will support and promote a safe, efficient, and effective transportation system in the state for the movement of people and goods.
- Guiding Principle 2 – TxDOT recognizes and acknowledges the differences in business philosophies, roles, and responsibilities among the department, toll authorities, and RMAs. Cooperation and coordination will build on the strengths and unique features of TxDOT, toll authorities, and RMAs.
- Guiding Principle 3 – TxDOT, toll authority, and RMA cooperation and coordination will seek to maximize and leverage financial and staff resources, including the use of federal funds.

- Guiding Principle 4 – TxDOT recognizes and acknowledges the need for different approaches to address the issues and opportunities in various parts of the state. The guidelines provide flexibility in cooperation and coordination among TxDOT, toll authorities, and RMAs, as well as working with transit authorities, MPOs, and local jurisdictions.

Planning

The following guidelines provide direction in considering toll facilities during the transportation planning process. The guidelines are appropriate for use in regional, metropolitan, corridor, area, and project planning processes. The guidelines support existing federal, state, and local planning requirements and studies. The lead agency will depend on the nature and scope of the planning process or project. In addition to TxDOT, toll authorities, RMAs, MPOs, and metropolitan transit agencies may have the lead role or a supporting role in a planning study.

- Match the planning process to the purpose, need, and scope of the project or study. Toll facilities may be considered in a variety of state, metropolitan, and local planning studies. These studies may include federally required state and metropolitan long-range transportation plans, corridor or area plans, and project plans. The analysis techniques and the level of detail will vary with the type of planning study. More detailed assessments are usually done at the corridor, area, and project level. In addition, there is a difference between these types of planning studies and the traffic and revenue studies conducted by toll authorities and RMAs. The traffic and revenue studies serve a different purpose and audience. The level of detail and the scope of toll-related traffic and revenue studies range from preliminary toll viability studies to detailed comprehensive finance grade or investment grade traffic and revenue studies. The audiences for these studies are the bond market and other financing entities. As a result, the planning assumptions, input values, and time horizons may vary between traditional planning studies and traffic and revenue studies.
- The planning process should consider the characteristics associated with best candidate toll projects. These characteristics include projects that:
  - serve an identified public need;

  - are toll viable in terms of generating sufficient revenues to meet project objectives (e.g., paying off bonds for construction, supporting operations and maintenance);
  - have right-of-way dedicated, donated, or available;
  - have public support;
  - have political support;
  - are part of a system;
  - have received federal and state environmental clearance or are free of major environmental issues; and
  - are included in state, regional, or local plans.
- Give consideration to including a toll option as one of the alternatives in planning studies. Most planning studies include a "no action" alternative. It is suggested that a toll option be included in planning studies as standard practice. Typically, the cross section and the general operation for toll and non-toll facilities are relatively similar. There are issues that are unique to toll alternatives, however. Examining these potential issues during the planning process saves time later if a toll option is added as an alternative or selected as the preferred alternative. The following issues are typically considered with toll options.
  - environmental justice and social issues associated with travelers' abilities to pay tolls;
  - light and noise associated with toll plazas or toll payment facilities;
  - additional right-of-way for toll plazas or toll payment facilities;
  - air quality, especially in air quality non-attainment areas;
  - changes in access;
  - traffic diversion due to tolls;
  - public/political support or opposition; and
  - duration of construction.
- The development of appropriate MOAs is critical to coordination and should be initiated during the planning process if it appears that a toll option is a viable alternative. These documents identify the roles and responsibilities of TxDOT, toll

authorities or counties, RMAs, FHWA, transit authorities, and other agencies. Multiple MOAs may be used to address planning, funding, designing, constructing, and operating a project or all of these elements may be included in one document. An MOA typically includes the following sections.

  - Witnesseth – describes the legislative and statutory responsibilities of the agencies and authorities, the project, and the intent of the agreement.
  - Agreement
    - funding responsibilities,
    - design responsibilities,
    - operation and maintenance responsibilities,
    - environmental commitments to address identified issues,
    - non-compete clause, and
    - dispute resolution.
  - Signatures.
  - Attachments or exhibits – may include project maps, project descriptions, schedules, reimbursement plans, and other information.

- TxDOT districts or divisions may wish to consider identifying or creating a staff position for an engineer or planner with toll-related expertise. This approach would develop and maintain toll expertise in the district or division, provide a common link among toll projects, and establish an ongoing point of contact with toll authorities and RMAs. These individuals would act as liaisons with toll authorities, RMAs, and other TxDOT districts and divisions. The general types of skills for these positions include an understanding of toll finance and operation, the environmental requirements and project development process, and other related topics.
- Coordinate the planning process with appropriate agencies, governmental units, and groups. Depending on the area, these organizations may include the MPO, cities and counties, transit agencies, and other governmental units. Close coordination with the MPO is critical to ensure that possible projects are considered and included in the required transportation improvement program (TIP) and other

metropolitan plans. Toll projects also need to be coordinated with TxDOT and the Statewide Transportation Improvement Program (STIP).

- Give consideration to the roles and responsibilities for operation and enforcement of a toll project during the planning process. For example, having a toll authority operate a project and provide the "back room" services may be the most cost-effective approach. Give consideration to the toll payment methods and ensuring interoperability with other toll facilities in the region and state.
- TxDOT districts and the TTA Division should coordinate on interaction with existing and emerging RMAs. The TTA Division is the responsible office for providing technical assistance and support to RMAs. Districts also have a role to play in coordinating with RMA projects. The interaction among a district, TTA, and an RMA may depend on a number of factors including the need and scope of possible projects and staff availability. Staff from the TTA Division and districts should develop appropriate working relationships based on these factors and promote ongoing communication and coordination.
- Give consideration to establishing a TxDOT toll-related coordination group or committee. This group would be composed of representatives from districts with active or potential toll projects and divisions with a role in toll projects. This group would meet two to four times a year to discuss issues of mutual concern, changes in legislation or policies, and other related topics. The group would also help coordinate TxDOT efforts with toll authorities, RMAs, and TeamTX.

Environmental Review

Confusion may arise in determining the environmental requirements and the appropriate environmental review process for toll projects. The requirements for environmental review and public participation typically will depend on two factors – the source of project funds and when tolling is considered in the project development process. The appropriate federal and state legislation should be followed in the environmental review process. Some toll entities, such as the Central Texas Regional Mobility Authority, have taken formal action to follow federal and state environmental requirements regardless of the source of funds.

The U.S. Department of Transportation/Federal Highway Administration regulation 23 CFR, Chapter 1, Subchapter 11, Part 771, *Environmental Impact and Related Procedures*, prescribes the policies and procedures of FHWA and the Federal Transit Administration (FTA) for implementing the National Environmental Policy Act (NEPA) of 1969 as amended and the regulation of the Council on Environmental Quality (CEQ), 40 CFR, parts 1500 through 1508. The public involvement requirements set forth by TxDOT must also be followed. The requirements contained in the TAC, Title 43, Part 1, Chapter 2, *Environmental Policy*, must be followed for projects receiving state highway funds and/or that will become part of the state system. This chapter includes TxDOT's memorandum of understanding with the Texas natural resource agencies related to project reviews. TxDOT's *Environmental Manual* provides further direction on the process and the activities to be completed.

The following guidelines help provide direction on the environmental review processes and requirements associated with different types of toll projects and outline approaches to help coordinate and streamline the environmental process. The Environmental Affairs Division can provide more detailed direction on specific projects.

- **Source of Funds.** The following guidelines provide direction on the appropriate environmental review and public involvement process based on the source of funds for a project.
  - **Toll projects involving state and/or federal funds.** These projects must follow the applicable state and federal environmental review, approval, and permitting requirements, and the public involvement process.
  - **Toll projects with no federal and state funds and with no connection to a state roadway.** Although a project meeting on these criteria is unlikely, it would theoretically not have to follow the NEPA process unless the authority or private developer elects to. These projects would have to address other federal and state environmental requirements, however, such as those dealing with wetlands.
  - **Toll projects with no federal and state funds but with connection to an Interstate highway or the state highway system.** FHWA regulation 23 CFR; TAC Title 43, Part 1, Chapter 2; and other federal and state environmental and public involvement requirements must be followed for the

connection or interchange points. FHWA and TxDOT define the scope of this area to be the "touchdown" points of the connection.

- **When Tolling Is Considered.** The environmental review and public participation requirements may also be influenced by when tolling is considered in the project development process. The long-range transportation plan (LRTP), TIP, and STIP must match the project resulting from an environmental review and public involvement for FHWA and TxDOT approval. If the recommended project does not match, these documents will need to be updated and a new conformity determination in air quality non-attainment areas would need to be made. The following examples provide more guidance on possible procedures based on when tolling is considered in the project development process.
  - **Known Toll Road.** If it is predetermined that a facility will be tolled, the project purpose and need can be structured to address only toll alternatives. The environmental review and public involvement process are conducted based on the project being a toll road.
  - **Non-Toll or Toll Road Possible.** When it is not known if a facility will be a non-toll road or a toll road, both options should be studied in the environmental review. The purpose and need is structured to support both types of facilities and both free and toll alternatives are considered. The environmental review and public involvement process examines both types of facilities and evaluates the benefits and the limitations of the alternatives. If the approval is based on one scenario and it is subsequently determined to implement the other scenario, then an amended approval could more easily be provided since the environmental review included both options. However, the LRTP, TIP, and STIP will need to be revised before the amended approval could be issued.
  - **Change from Non-Toll to a Toll Road after Environmental Approval, but Prior to Construction.** In this situation, additional environmental review and public involvement would be needed, with appropriate revisions to the LRTP, TIP, and STIP, including a new conformity determination, as applicable, before the environmental approval.

  - **Change from Non-Toll to Toll Road during Construction.** Additional environmental review and public involvement would be needed along with related revisions to the LRTP, TIP, and STIP. These activities and related approvals would need to be finalized prior to completing construction of the toll road.
  - **Change from Operating Non-Toll Road to Toll Road**. Environmental studies and public involvement should be part of a process for considering changing an operating free road to a toll road. Environmental approvals may be needed.
- Consider identifying the environmental review requirements and process in a multiagency MOA. The roles and responsibilities of the various agencies and authorities should be identified, including which group will carry out any necessary environmental permit commitments.
- Coordinate the environmental process to balance the need to ensure a comprehensive assessment of possible environmental issues with the desire to meet project schedules. Concurrent reviews of environmental documents by TxDOT districts and division, the state resource agencies, and FHWA can help streamline the review process.

Funding and Financing

Traditionally, toll authorities finance projects by issuing bonds, which are paid back through toll revenues. While bonds remain the primary source of funding for toll facilities, other financing methods are being used, including federal and state funds or loans. The mixing of bonds, toll revenues, and various federal, state, and local programs is becoming more common in financing toll projects. The following elements provide guidance in coordination and cooperation among TxDOT, toll authorities, and RMAs on funding toll projects.

- **Identify Best Funding Sources.** Determine the best funding approach based on the project characteristics, available funding options, available resources, and the project objectives. The optimum funding approach will depend on the roles, responsibilities, and legislative authority of TxDOT and toll entities involved in a project. In general, toll entities will use bonding and toll revenues as their main

funding mechanisms, supported by other sources. TxDOT relies primarily on federal, state, and local funds. The focus for a specific project should be on matching the best mix of these sources, along with the use of exclusive or comprehensive development agreements and other innovative approaches to meet the objectives of the projects.

- **Leverage Federal Funds**. Give consideration to leveraging federal funds for toll projects. Leveraging may include the use of innovative federal loan programs and other innovative approaches.
- **Identify Best Approach for Obtaining Right-of-Way.** Give consideration to the best approach for obtaining needed project right-of-way. TxDOT, toll authorities, and RMAs have different authority and different policies related to obtaining right-of-way based on state legislation. Give consideration to the entity with the ability to obtain the needed right-of-way in the most effective and efficient manner.
- **Identify Funding in MOA.** Consider using an MOA on toll projects involving public and private funding to identify the sources of financing, the roles and responsibilities of the participating agencies and authorities, billing or payment schedules, and other related elements. The MOA can serve as a guide for the financing aspects of a project.

Design

In general, TxDOT and toll authorities tend to use similar design standards, based on the TxDOT *Design Manual*, and PS&E processes. Legislation approved in 2003 gives TTA and RMAs expanded authority in the use of exclusive or comprehensive development agreements, which may complicate the coordination of design and construction. The following elements provide guidance in coordinating the design of toll projects.

- The TxDOT *Design Manual* and the *Manual on Uniform Traffic Control Devices (MUTCD)* should be used as the basis for design of toll facilities. The *Design Manual* does not include guidance on the design of toll plazas or other toll payment infrastructure elements, however. TTA is developing prototype designs for different types of toll payment and infrastructure elements that will provide guidance for districts and RMAs. Possible areas of special concern for

coordination among TxDOT and toll entities include the geometry of connecting roads and interchanges, the use of minimum or desirable design standards, and signing. All groups should try to identify possible issue areas early, so that adequate time is available for review and resolution.

- Coordinate the design review process to balance the need to provide adequate time for review, while expediting the review process. Consider concurrent reviews by TxDOT and FHWA.
- Consider using an MOA to outline the roles, responsibilities, and review process for design of a toll facility and the design of connections to state and local roadways.

Construction

Cooperation and coordination among TxDOT, toll authorities, and RMAs are critical during construction of a toll project. Ensuring a high-quality facility, as well as the safety of construction workers and the traveling public are important. Construction activities should be phased to coordinate with other projects to minimize possible negative impacts on traffic. The following elements provide guidance for coordinating construction activities on toll projects.

- Coordinate the preparation of bid documents with toll authorities and RMAs as appropriate on a project. For example, contract incentive/disincentive amounts may need to account for time-sensitive aspects of bond funding, such as capitalized interest and lost revenues due to construction delays. Consider the potential need for conflict resolution to keep construction underway on a project at this time.
- Toll authorities currently purchase TxDOT-approved materials. This approach provides benefits to the toll entities, helps ensure the use of approved materials, and provides common elements to the traveling public. Purchasing TxDOT-approved materials should continue to be supported and encouraged.
- In some instances, toll authorities have used TxDOT materials testing facilities. This approach provides benefits to toll authorities, helps ensure that materials meet specifications, and provides common elements to the traveling public. Encourage toll authorities to use TxDOT testing facilities on toll projects.

- Coordinate construction activities among TxDOT, toll authorities, RMAs, local jurisdictions, and transit authorities to minimize the possible negative impacts on the traveling public and to ensure the safety of construction workers and motorists. Coordinating public information is an important element of this process. Individuals to include in coordinating construction activities include the TxDOT area engineer, project manager, and public information officer, as well as their counterparts at the toll authority, RMA, and local jurisdiction.

Monitoring and Evaluation

Cooperation and coordination among TxDOT, toll authorities, and RMAs continue to be important once a toll project is in operation. The focus of this coordination changes to monitoring, managing, operating, and maintaining the toll facility over the life of the project, however. The following element provides guidance in coordinating monitoring and evaluation programs.

- Consider coordinating data collection activities among TxDOT, toll authorities, MPOs, and RMAs. Ongoing monitoring programs are important to help determine if project objectives are being met. The focus of the monitoring efforts may be slightly different among agencies and authorities, however. Toll authorities, which depend on toll revenues generated by users to repay bonds, tend to focus on toll payments. TxDOT and MPO monitoring programs focus primarily on vehicle volumes. Both of these approaches provide useful information on the use of facilities. In addition, information on crashes and citations is important to ensure the safe operation of a facility. It is suggested that TxDOT, toll authorities, MPOs, and RMAs establish and maintain coordinated monitoring programs and that the information generated for these programs be shared and evaluated on a regular basis.

Management and Operation

Cooperation and coordination among TxDOT, toll authorities, and RMAs are critical to the ongoing management and operation of a toll project. The following elements provide guidance in management and operation of toll facilities and the connections with state roadways.

- Consider the policies TxDOT, toll authorities, and RMAs will use to allow access on different types of facilities. Access policies and treatments will influence the operation of the toll facility and adjacent and connecting state roadways.
- Consider maintenance agreements on toll projects and coordinating maintenance activities among TxDOT, toll authorities, and RMAs. Toll authorities may benefit from contracting with TxDOT for maintenance.
- Outline the roles, responsibilities, and funding for management, operations, enforcement, and maintenance activities in an MOA or other document.
- Consider including toll agency and RMA personnel in transportation management centers (TMCs) and other operations centers. TxDOT, toll authorities, and RMAs can all benefit from the co-location of personnel in centers and from the closer coordination of daily operations and emergency response that can result from the location of personnel from all agencies in a TMC. This coordination is especially critical if toll facilities are part of an emergency evacuation route system.

SUMMARY

Use of these guidelines by TxDOT staff and personnel at regional toll authorities, RMAs, and other groups will help ensure that toll facilities, the Interstate system, and the state highway system provide safe, efficient, and effective movement of people and goods. Enhanced cooperation and coordination among all groups will help address traffic congestion, mobility, and accessibility concerns throughout Texas.

The use of these guidelines will provide numerous benefits. The guidelines enhance a common approach, while providing flexibility to meet the needs and the unique characteristics of different parts of the state. Use of the guidelines will also help groups avoid "reinventing the wheel" as they move forward with toll projects. Ultimately, the guidelines will assist all groups in maximizing resources and expediting projects to address congestion, accessibility, and mobility concerns throughout the state.

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North Texas Tollway Authority

http://www.ntta.org/pub/servlet/pubfrontpage

Camino Columbia Toll Road

Telephone Interviews
Luis Ramirez, TxDOT, Laredo District (956) 712-7405 10/29/02
Carlos Benavides, CCI (956) 723 6779 11/11/02

Regional Mobility Authorities

House Bill 3588

http://www.samobilitycoalition.org

Transportation and Expressway Authority Membership of Texas (TeamTX)

http://www.team-tx.org/

APPENDIX A – WORKSHOP PARTICIPANTS

Austin Workshop Participants – July 31, 2003

Judy Friesenhahn, TxDOT San Antonio
Julia Brown, TxDOT San Antonio
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Bubba Needham, TxDOT Austin
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Reggie Richardson, TxDOT Waco
Bill Garbade, TxDOT Austin
Scott Erickson, San Antonio MPO
John Mack, FHWA
Andrew Griffith, TxDOT, Research & Technology Implementation
Max Proctor, TxDOT, Transportation Planning & Programming
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Karen Dunlap, TxDOT Public Transportation
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Houston Workshop Participants – August 6, 2003

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Scott Cooper, Harris County Toll Road Authority
Pat Henry, TxDOT Houston
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Mike Alford, TxDOT Houston
Charles Gaston, TxDOT Area Office
Mike Battles, TxDOT Tyler
James Koch, TxDOT Houston
Stuart Cordor, TxDOT Houston
Captain Huerta, Houston METRO
John Gaynor, TxDOT – TranStar
Ashby Johnson, Houston-Galveston Area Council
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