This study provides a comprehensive overview of state efforts to use multimodal and intermodal transportation plans, programs, and projects to promote economic development or to respond to competitive market considerations. (Multimodal commonly refers to the integration of two or more modes of transportation in planning and related functions whereas intermodal refers to the actual integration of these transportation modes in a specific project or operation). Information for this report was obtained from a number of different sources: published material on state and local transportation plans, policies, programs, and projects; class seminars and lectures involving invited experts and specialists from different fields; long-distance telephone interviews; and field trips to a number of states.
STATE MULTIMODAL AND INTERMODAL TRANSPORTATION

by

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Foreword

The Lyndon B. Johnson School of Public Affairs has established interdisciplinary research on policy problems as the core of its educational program. A major part of this program is the nine-month policy research project, in the course of which two or three faculty members from different disciplines direct the research of ten to twenty graduate students of diverse backgrounds on a policy issue of concern to a government agency. This "client orientation" brings students face to face with administrators, legislators, and other officials active in the policy process, and demonstrates that research in a policy environment demands special talents. It also illuminates the occasional difficulties of relating research findings to the world of political realities.

This research project on state multimodal and intermodal transportation policies, plans, programs, and projects was conducted during the 1988-89 academic year under the direction of Professors Leigh B. Boske and C. Michael Walton. Funding for the project was provided by the U.S. Department of Transportation under the University Transportation Centers Program.

The curriculum of the LBJ School is intended not only to develop effective public servants but also to produce research that will enlighten and inform those already engaged in the policy process. The project that resulted in this report has helped accomplish the first task. It is our hope and expectation that the report itself will contribute to the second.

Finally, it should be noted that neither the LBJ School nor The University of Texas at Austin necessarily endorses the views or findings of this study.

Max Sherman
Dean
Acknowledgments

This report on state multimodal and intermodal transportation activities was made possible by a U.S. Department of Transportation contract under the University Transportation Centers Program.

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This list is far from being exhaustive. Hundreds of people, both in Texas and other states, were consulted and interviewed over the course of this research project. All are properly cited at the end of the relevant chapters and appendices of this report.

Finally, the project codirectors wish to express their indebtedness to Marilyn Duncan, Director, LBJ School Office of Publications, and to Jeanette Paxson and Maria de la Luz Martinez, Office of Publications, for copy editing and production of the manuscript.

Leigh B. Boske

C. Michael Walton
Chapter 1. Introduction

PURPOSE

The purpose of this study is to provide a comprehensive overview of state efforts to use multimodal and intermodal transportation plans, programs, and projects to promote economic development or to respond to competitive market considerations. (Multimodal commonly refers to the integration of two or more modes of transportation in planning and related functions whereas intermodal refers to the actual integration of these transportation modes in a specific project or operation). Information was obtained from a number of different sources: published material on state and local transportation plans, policies, programs, and projects; class seminars and lectures involving invited experts and specialists from different fields; long-distance telephone interviews; and field trips to a number of states. This report is composed of three chapters and four appendices.

Chapter 2 serves as a primer on public-sector involvement in transportation. It briefly delineates the traditional roles played by federal, state, and local governments in transportation planning, funding, and regulation. When possible, these activities are tied to intermodalism. Particular attention is devoted to describing the effects of transportation deregulation on both public-sector and private-sector actions. No attempt was made to provide an exhaustive review; rather, the intent of the chapter is to familiarize readers with the many ways in which intergovernmental cooperation, communication, and overlapping responsibilities govern much of what is accomplished in the transportation arena.

Chapter 3 presents a comprehensive overview of transportation activities within the state of Texas. It begins by providing background information on the state's economy, geography and topography, demography, and transportation infrastructure. The second section describes state economic development activities. The following section is devoted to examining the State Department of Highways and Public Transportation, the Railroad Commission of Texas, and the Texas Aeronautics Commission in terms of their organizational structures, programs and projects, sources of funding, and reports and plans. The final section performs a similar examination of transportation activities within the Dallas-Fort Worth, Houston, San Antonio, and Travis County metropolitan areas. The Port of Houston is included in the discussion because of its intermodal characteristics.
Chapter 4 summarizes the economic development and transportation plans, programs, and projects of thirteen states and their localities (especially metropolitan planning organizations--MPOs). Special emphasis is given to multimodal and intermodal transportation. The surveyed states were selected on the basis of extensive telephone interviews with transportation experts and a screening of the literature forwarded by about thirty states. Knowledgeable officials of states most frequently recommended for analysis were then contacted for additional information. This selection process culminated in a decision to conduct field trips to eight states--California, Florida, Illinois, Iowa, Maryland, New York, Pennsylvania, and Washington--that appeared to have formulated and implemented the most comprehensive set of economic development and transportation-related plans, programs, and projects. Moreover, state and local officials of another five states--Minnesota, New Jersey, Oregon, Virginia, and Wisconsin--were extensively interviewed by telephone because their states appeared to offer interesting, but less comprehensive plans, programs, and projects.

Appendix A contains the individual reports on the eight states visited, while Appendix B contains those of the five states contacted by telephone. Appendix C discusses the Port Authority of New York and New Jersey. The port authority is unique in terms of the scale and variety of its multimodal and intermodal operations. Finally, Appendix D contains a copy of the questionnaire that was developed to provide a formal structure for all interviews.

FINDINGS

Several key themes have emerged from the investigation of how states use transportation plans, programs, and projects to either promote economic growth or to respond to competitive market considerations. Transportation is used by state officials as a mechanism to achieve economic growth and development. Transportation planning is cited as a key component of economic development plans in eleven of the thirteen states surveyed. In Pennsylvania, New York, and Wisconsin, the governor's office gives top priority to programs linking transportation planning and economic development. Such political clout greatly increases the speed with which they implement their programs.

State economic development and transportation officials typically create incentive programs designed to attract and retain business. These programs finance infrastructure improvements or additions to capacity which benefit local companies and communities. The "Industrial Access Program" in New York and the "Build Illinois" program in Illinois are two examples. There are occasions when incentive programs are not
created based on the basis of economic development concerns. Such is the case in Florida. Transportation projects in Florida are the result of attempts to manage rapid population growth and a significant industrial increase.

Effective planning facilitates transportation system development and operations. There are several policy tools that can increase the probability of successful statewide transportation planning. These tools are as follows: one lead state planning agency; a comprehensive and unified state transportation plan; consistent communication among state administrators, department of transportation planning officials, and project implementors; a formal mechanism to ensure communication and coordination among modes; and a demonstrated respect among state officials for transportation planning.

The "Corridors of Opportunity" program created by the State of Illinois is an excellent example of a program designed to be a communication and planning mechanism. The program trains local economic development officials to increase their organizational and marketing skills in order to improve cooperation and resource allocation among the state's communities. New York Department of Transportation officials have created community task forces and ad hoc interagency and intraagency forums to facilitate discussions and project development. Department officials meet regularly as a formal group to discuss planning issues and redefine short- and long-term goals.

Multimodal planning encourages economic development, helps to reduce traffic congestion, and facilitates transportation planning. Multimodal planning is more prevalent in a stable financial environment. Not surprisingly, much of the multimodal planning activity is concentrated around freight movement, specifically ports. Often a state's commitment to multimodal planning goes no further than the state's transportation master plan. While states may declare their multimodal intentions, many are actually producing unimodal plans and are organized and function on a mode-by-mode basis. In 1990, Washington and New York will publish new state master transportation plans. In contrast to past plans, planning officials claim these will be "truly multimodal" documents.

Sufficient funding is essential to implement transportation goals, maintain transportation infrastructure, and develop new programs. Flexible funding mechanisms increase a state's ability to make periodic budget adjustments. The Transportation Trust Fund of Maryland is just such a mechanism. All dedicated transportation funds are centralized in one fund. Maryland Department of Transportation officials can access the fund after budget appropriations have been made in order to redirect the monies to needed areas. By design, the Unified Trust Fund of Wisconsin enables all revenues generated from transportation
sources to be combined into one fund. Budget appropriations are not limited to their original funding source. Ideally, this flexibility should increase transportation options. However, since the fund is set up by line item, appropriations are made very close to revenue percentages collected and are rarely changed once made.

Without sufficient funding, states find themselves in a contradictory situation: a deteriorating transportation infrastructure, a constrained planning environment, and implementation of shortsighted planning objectives. Quickly, states lose their ability to offer economic incentives to attract business, maintain adequate roads to move goods and people, and raise sufficient capital to design and construct infrastructure improvements. The state of New Jersey currently finds itself in such a situation. It is focusing all planning and financial resources on statewide transportation infrastructure rehabilitation.

Local involvement in the transportation process links the needs of the community with the goals of the state. To an extent, MPOs represent the voice of the community. Beyond the federally mandated requirements, MPOs do not appear to significantly affect states' actions. Research on the local transportation planning process was limited to an examination of twenty-six MPOs. MPO activity often reflects the geography and demographics of the region. Therefore, few generalizations can be drawn about the MPOs due to the individual characteristics of each region.

Local-level planning involves a significant number of participants with overlapping jurisdictional boundaries. Shear numbers diffuse the autonomy and therefore the effectiveness of any one agency. Although few localities have addressed this problem, the Chicago Area Transportation Study (CATS) program in Chicago is an example of one solution. Public transportation planners often do not encourage private-sector cooperation and interaction in the local planning process. MPOs focus on economic development issues to varying degrees. Economic development activities generally pertain to transportation planning as it affects the maintenance and expansion of the existing transportation infrastructure.

The word diverse best describes intermodal activity in the thirteen states surveyed. Sufficient funding or at least a stable financial situation is required for an intermodal project to occur. Few states have officially designated intermodal programs. Although states rarely claim that they have never heard the word intermodal, they often stumble over its definition. Overall, intermodal projects are neither encouraged nor discouraged. For many states, intermodal activity is not a priority. For example, in recent years, Florida transportation
officials have concentrated their efforts on addressing the immediate deficiencies of their statewide transportation system. Little time is available to consider intermodal alternatives. Moreover, many states consider an intermodal solution to a problem to be no more unique than any other; and in other states, intermodal freight projects are considered the domain of the private sector. The state of Washington is a prime example. Intermodal freight projects are almost entirely operated by the private sector.

No consistency exists among states regarding the level of local, county, or state involvement. Mass transit may be operated on the state level, while a freight project may be directed by a local agency, or vice versa. For many states, private-sector intermodal operations are so efficient that government sees no reason to intercede. In such cases, states generally support private-sector actions, but do not play an active role in the projects.
Chapter 2. Public Sector Involvement in Transportation

INTRODUCTION

The purpose of this chapter is to provide an overview of the roles played by federal, state, and local governments in transportation planning, funding, and regulation. Where possible, these activities are tied to intermodalism. This primer is intended to familiarize the reader with the many ways in which intergovernmental relations govern much of what is accomplished in the transportation arena.

THE NATIONAL TRANSPORTATION SYSTEM

The United State's transportation system consists of an interconnecting network of airlines, railroads, highways, trucks, water carriers, and local mass transit, as well as private and public infrastructure to support these operations. The salient characteristics of the nation's transportation system are described below.

Air Carriers

As of 1985, there were a total of 89 airline carriers in the United States. Thirteen major carriers offered international services, fourteen offered nationwide domestic services, while the remaining sixty-two offered primarily regional services. These carriers possess a total available air fleet of 3,100 aircraft for their international, national, and regional flights. Total domestic and international airline employment was 378,893 employees. Operating revenue for domestic services was $31.161 billion in 1985, while international revenue was $7.817 billion during the same year.¹

Railroads

Twenty-two class I railroads existed in 1985 in the United States, with a total line-haul mileage of 145,764 miles of track. The class I railroads employed 301,879 people, and had total operating revenue of $27.586 billion. Class I railroads also had 1,421,686 freight-carrying cars, 2,502 passenger-train cars, and 22,932 locomotives. The National Railroad Passenger Corporation (AMTRAK) employed 20,537 people and owned 1,818 passenger train cars and 382 locomotives in 1985. AMTRAK generated 4.8 billion revenue-passenger-miles, for a total operating revenue of $724 million.²
Highways

In the same year, the total number of rural and urban highway miles in the United States was 3,861,934. Total urban mileage was 690,947, with the state government maintaining 111,496 miles of roadway and local governments responsible for the remainder. States were responsible for 773,249 miles of rural highway, while counties and towns maintained the remaining 2,172,616 miles of rural roads. Total federally controlled mileage of highways was 226,157, with most of these roads located in federal parks, forests, and reservations that are not part of the state and local highway system. Total rural and urban vehicle miles of travel on these highways were 1.774 billion.\(^3\)

Trucks

As of 1985, the number of class I intercity trucking companies in the United States was 762, with an employment level of 490,461. Class I trucking revenue was $33.376 billion.

Local Transit

There were a total of 453 local-transit systems in the United States in 1985, with 174 single motor-bus properties, 12 rapid rail systems, 8 streetcar operations, and 16 commuter rail systems. The total number of vehicles for all properties was 70,835. Local-transit systems employed 208,857 people. The total operating revenue for all properties was $10.608 billion.\(^4\)

Water Transit

Finally, there were 277 class A and B water carriers conducting operations on inland and coastal waterways, and a total of six maritime carriers. The mileage of commercially navigable inland waterways is 25,543. There were also a total of 33,597 non-self-propelled vessels and 7,601 self-propelled vessels. Total operating revenue for all domestic freight was $7.698 billion, while international operating revenue amounted to $10.989 billion.\(^5\)

PUBLIC EXPENDITURES ON TRANSPORTATION

Funding for transportation projects is provided by all levels of government. About 70 percent of total funding comes from states and their localities. In 1970, $22.885 billion was spent on transportation projects, with state and local sources providing $16.079 billion, or 70.3 percent, of the total. In 1980, state and local sources provided 63 percent of the $54.881 billion of expenditures on transportation projects; and, in 1985, the state and local share had risen again to 69.9 percent of the $74.063 billion expended. The average yearly increase for total
spending, federal spending, and state/local spending has been roughly 8 percent.

However, there has been more variation from mode to mode in expenditures. On airways and airports, the federal government contributed 80 percent of funds for these projects in 1985. For urban transit, the federal share was 70 percent. Rivers and harbors received 50 percent of their funds from the federal government, while the highway share from the federal government was 37 percent.

Total spending on modes, though, shows a large portion of monies going towards highways, which received 73.3 percent of total expenditures, or $54.334 billion, in 1985. Transit received 12.8 percent, or $9.454 billion, while airports received 9.3 percent, or $6.869 billion. Rivers, harbors, and railroads combined received less than $3.400 billion.

FEDERAL ROLE IN TRANSPORTATION

General Responsibilities

The federal government, in addition to its responsibilities for maintaining the national transportation system, exerts a substantial influence upon state and local transportation activities. It contributes to the financing of the nation's airport, highway, and urban mass-transit systems, and funds much of the states' planning-related activities in these areas. The federal government often bases eligibility for the receipt of certain types of federal program funds on the establishment of particular local or state agencies, while federal environmental and energy regulations at times have motivated local governments to promote modes which pollute less or are more energy efficient. In addition, federal economic and safety regulatory agencies still regulate important aspects of the operating practices of most modes of transportation.

The federal government also develops or owns and operates most of the nation's airways and waterways, and some roads on federal lands. It also owns and operates two Washington, D.C., airports. On the other hand, state and local governments own and operate most highways and most major commercial airports. Railroads and pipelines own their rights-of-way.

The federal government is heavily involved in some rail matters. The National Railroad Passenger Corporation (AMTRAK) is directly subsidized by Congress and provides about 90 percent of the nation's intercity rail-passenger service. Moreover, the federal government initially organized and financially supported the private Consolidated Railroad Corporation (CONRAIL), which
operates most of the rail-freight service in the northeast region of the nation.

**United States Department of Transportation**

The United States Department of Transportation (U.S.DOT) is the primary federal transport agency. It administers a major portion of the federal government's transportation expenditures. Founded in 1967, the U.S.DOT is charged with conducting long-range planning on national transportation policy issues, performing research and development activities, ensuring the safety and reliability of all forms of transportation, and aiding states and localities in attaining their transportation goals.

The agency is headed by the secretary of transportation, and is composed of nine administrations. The Office of the Secretary is responsible for developing national transportation policy, preparing proposed legislation, and negotiating in international transportation agreements. A brief description of the responsibilities and programs of the more important U.S.DOT administrations is found below.

**Coast Guard.** The U.S. Coast Guard was founded in 1790, and performs varied tasks, including its original purpose of restricting illegal smuggling practices. The Coast Guard is an anomaly within the U.S.DOT in that it is one of the five branches of the United States Armed Forces. Its military duties include guarding the nation's ports and coastline. The Coast Guard also administers many water and boating safety programs. Navigational aids provided to ships and aircraft constitute another large program. Each year the Coast Guard executes 70,000 search and rescue operations. It also aids in cleaning oil spills, regulates the operation of the U.S. merchant fleet, and enforces maritime laws. The Coast Guard does not provide any funding to state or local governments but does have a Coast Guard Civilian Auxiliary, which provides training to civilians who assist the Coast Guard in some operations.7

**Federal Aviation Administration.** The Federal Aviation Administration (FAA) possesses a dual mission: promoting aviation safety and ensuring efficient use of U.S. airspace. Major safety activities include issuing and enforcing regulations, and certifying airports, aircraft machinery, and pilots. The FAA also performs safety-related research and manages and operates the U.S. airspace system. Major components of the airspace system include the operation of traffic-control centers, radar, and instrument-landing systems.

In 1970, Congress created the Airport and Airway Trust Fund. The Airport and Airway Trust Fund helps to finance airport planning and construction through grants to more than 3,000 airports nationwide. The trust fund is supported by excise
taxes, which generate annual revenues of nearly $2.7 billion. One billion dollars is reserved for the Airport Improvement Program, which supports airport capital improvements. The trust fund also supports capital spending on the air traffic control system and defrays a portion of the operating costs of the system.8

A major federal aviation planning document is required by law. Section 504(a) of the Airport and Airway Improvement Act of 1982 calls for a published plan to be developed by the U.S.DOT regarding development of public airports in the United States. The National Plan of Integrated Airport Systems accomplishes that requirement. The development plan includes only those projects eligible for federal aid under the Airport Improvement Program. Projects not eligible for federal aid include air cargo buildings, hangars, nonpublic use sections of terminals, roads, railroads, and other ground sections that go beyond the airport property line. FAA-sponsored intermodal studies include Airport Ground Transportation: Problems and Solutions and The Management and Regulation of Ground Transportation at U.S. Airports.9

Federal Highway Administration. The Federal Highway Administration (FHWA), is responsible for administering the federal-aid highway program by cooperating with the states in the planning and building of the nation's highway network. The FHWA is also responsible for regulating and enforcing federal regulations on interstate truck and bus safety matters. The field structure of the FHWA consists of nine regions, with an operating division in each state plus Puerto Rico and the District of Columbia.

The federal Highway Trust Fund is used to finance the federal-aid highway system. The trust fund is comprised of receipts from certain highway-user taxes (e.g., excise taxes on motor fuel, rubber, and oversized vehicles) and is reserved for highway construction and maintenance. Most of the excise taxes credited to the fund are not collected by the federal government directly from the consumer but instead are paid to the Internal Revenue Service by the producer or importer of the taxable product. The trust fund is a pay-as-you-go financing mechanism, created to make reimbursements for federal-aid projects. Even though the program has contract authority, the cash to reimburse states for the federal share of highway project costs still must be released from the trust fund by an appropriation act of Congress.10

Although no formal structure exists within the FHWA to specifically address intermodal issues, intermodal studies have been conducted periodically. In 1985 and 1986, for example, the FHWA responded to Congressional requests to investigate a highway-related intermodal issue. The Feasibility of a Nationwide Network for Longer Combination Vehicles, published in
1985, reported on the possibility of establishing a network across the nation to accommodate longer combination vehicles (LCVs). In 1986, a follow-up study focusing on the western states was issued.11

**Federal Railroad Administration.** The Federal Railroad Administration (FRA), founded in 1867, is charged with ensuring that the nation possesses a safe and efficient railroad network. Specifically, the FRA issues rail-safety standards and regulations and conducts safety research.

The FRA also has shown periodic interest in intermodal freight issues. A 1980 study, entitled *Intermodal Freight Program—Phase II, Demonstration Management, Final Report,* was prepared by the Association of American Railroads at the request of the FRA.12 The report's contents are broad in scope, including discussions on rail standardization, documentation, and technology, but focusing primarily on pricing issues.

**National Highway Traffic Safety Administration.** Responsible for reducing highway accidents, the National Highway Traffic Safety Administration (NHTSA), carries out its mission through two main activities. First, the NHTSA seeks to increase the safety of motor vehicles through a variety of in-house planning and research activities. Secondly, the NHTSA administers safety programs in cooperation with state and local governments. These state and local government programs are funded through the contract and grant programs of the Highway Safety Act of 1966. The section 403 program provides seed money for specific traffic safety programs, while the section 402 program is generally administered by the state involved. The section 408 program provides special grants for alcohol safety programs.13

**Urban Mass Transportation Administration.** The Urban Mass Transportation Administration (UMTA) provides planning and financial assistance to the nation's public transit systems. Public transit systems include buses, commuter trains, subways, trolleys, and ferry boats. UMTA grants also finance a variety of transportation-related research and educational programs.14

Congress passed the Urban Mass Transportation Act in 1964. The act assigned three major areas of responsibility to UMTA:

1. To assist in the development of improved mass transportation facilities, equipment, techniques, and methods, with the cooperation of both public and private mass transportation companies;

2. To encourage the planning and establishment of areawide urban mass transportation systems needed for economical and desired urban development; and,
3. To provide assistance to state and local governments and their instrumentalities in financing such systems, to be operated by public or private mass transportation companies, as determined by local needs.¹⁶

Through its program of federal/local matching grants, UMTA provides financial assistance to the nation's public transit systems. In general, state and local governments, or transit authorities, are recipients of UMTA funds, while capital and operating projects receiving funds must be included in a comprehensive state or regional planning program.

Currently, UMTA expends about $3 billion annually on transit systems. Since 1964, the federal government has contributed over $64 billion to financially support the operations of local transit systems. Formula grants, discretionary grants, and research and development grants represent the primary methods by which UMTA distributes funds.¹⁷

The section 3 discretionary grant program of the Urban Mass Transportation Act of 1964 is the principal source of capital investment in public transportation. Over $20 billion has been invested in large and small cities since the 1960s for modernization of old rail-transit, bus, and new fixed-guideway transit systems.

Sections 6, 10, and 11 permit UMTA to undertake research activities which improve transit systems, while section 8 establishes a program of planning-assistance grants intended to ensure that transit projects are developed in accordance with regional transportation plans and that alternatives are examined. Planning grants are awarded on a 80 percent federal/20 percent local matching-share ratio. The section 9 program makes federal resources available to urbanized areas for capital and operating assistance.¹⁸

Maritime Administration. The Maritime Administration (MARAD) became a separate administration of the U.S.DOT in 1981. The mission of MARAD is to develop and maintain a strong merchant-marine system. The strength of the merchant marine has both military and commercial-trade implications.

Major programs of the Maritime Administration include supporting the domestic shipping industry and U.S. port development, administering financial and technical programs to strengthen the maritime industry, promoting American-flag vessel operations, training ships' officers, participating in various military-preparedness programs, and negotiating bilateral maritime agreements.¹⁹ In carrying out its major mission of maintaining a U.S.-flag merchant marine, MARAD administers federal ship construction and operating subsidy programs to
enable the U.S. merchant marine to compete against low-cost foreign operators.  

STATE ROLE IN TRANSPORTATION

General Responsibilities

State governments formulate state transportation policies, undertake long and short-term planning and programming, fund and construct transportation projects, and regulate transportation for environmental, safety, and economic reasons. In recent years, some states also have begun to own or operate transit systems and rail lines. State transportation policies are developed by governors through state transportation agencies and by state legislatures, which also appropriate funds to carry out those policies. States tend to emphasize functions directly related to their perceived needs, but they also engage in projects based on the amount of available federal financial assistance.

To the extent that states engage in multimodal planning, it is generally undertaken on their own initiative. Yet, certain modal-specific plans (e.g., highway or airport plans) are produced in response to federal planning requirements so that states may qualify for federal assistance for airports, railroads, mass transit, and highways. Many federal entities, while frequently espousing the merits of multimodal transportation planning, allocate funds according to specific modal activities; hence, there are no actual financial assistance programs that would encourage states to implement multimodal plans.

One main state role is the funding of transportation projects, which requires considerable intergovernmental activity and cooperation. States may either fund entire projects, as in the case of state highways, or they may provide financial assistance to local governments, frequently on a matching-fund basis with federal funds. States may also engage in other transportation functions, such as owning short-line railroads, or the operation of mass transit systems. While states have been mostly responsible for constructing and maintaining highways, they have also participated to some extent in the activities of most modes. The level and type of involvement in the provision of transportation services varies with the extent of urbanization of the state, its geographic location, and a number of other considerations. Finally, regulation of various aspects of transportation activities is undertaken by a variety of state entities: environmental protection agencies, public utility or public service commissions, or a specific modal regulatory authority.
State Departments of Transportation

As of February 1988, 41 states, Puerto Rico, and the District of Columbia had established departments of transportation (see map 1). Mississippi has a highway department with a DOT under study, while eight other states just have a highway department. The structure of a DOT does not necessarily reflect the range of its activities. Table 1 shows the range of DOT functions, in terms of planning, technical assistance, and financial control or responsibility.

There are three basic organizational structures of state departments of transportation: modal, functional, and mixed. A modal organization consists of a chief executive officer and different divisions organized according the various modes. The divisions may be organized by highways, aviation, transit, railroads, and water. A functional organization has a chief executive officer, and is organized according to general responsibilities such as planning, development, construction, safety, and administration. A mixed organization is a combination of modal and functional organizations. This type of DOT may have divisions of highway, aviation, transit, administration, and planning.  

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Map 1. State Departments of Transportation

Source: American Association of State Highway and Transportation Professionals
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**Note:**
1. Capital improvements only
2. Funding for commuter lines only
3. Partial funding
4. Highway and airports only, exclusive of motor vehicles
5. From highway revenues, under Dept. of Public Safety

**P - Planning**
**T - Technical Assistance**
**X - Financial Control or Responsibility**

Source: American Association of State Highway and Transportation Officials

*Division of motor vehicle not part of Virginia Department of Highways and Transportation*
LOCAL ROLE IN TRANSPORTATION

A variety of local governmental entities also are responsible for the provision of transportation services. Cities generally provide multimodal transportation services, including parking, transit, and streets. Rural counties are involved primarily in highway projects. However, both cities and counties may operate airports, while city, county, and state authorities frequently administer public ports and are the primary developers of transfer facilities for handling general cargo.

Substate regional bodies are frequently involved in the transportation planning process. These regional bodies may be regional planning agencies, metropolitan planning organizations (MPOs), special transportation districts, and environmental planning bodies. Some regional bodies may have coordination or review powers over all multijurisdictional local-transportation plans, but such organizations rarely have the power to implement plans. The degree of coordination among transportation agencies and regional planning units responsible for air-pollution control, energy conservation, and land-use planning is usually small, but may vary greatly among metropolitan areas.

Cities

Cities provide many different transportation services and have financed them through general revenues and user fees. Publicly owned and operated transit systems became prevalent in the 1960s, and by 1975 such systems carried 90 percent of all revenue passengers.

Cities are also responsible for planning, a function promoted by section 134 of the Federal-Aid Highway Act of 1962 (as amended by the Federal-Aid Highway Act of 1973). Most local governments carry out planning activities through their community development departments, while some have their own DOT.

Counties

Both rural and urban counties are involved in highway construction projects, with special districts or cities providing other transportation services. The size and geography of a county will determine the type and extent of the transportation services it supplies. The more urbanized a county is, the more likely it is to plan and organize its own transportation system and possibly have its own DOT. Responsibility seems to be increasing at the county level for the planning, construction, and operations of rural transportation planning programs and facilities.
Regional Bodies

Substate regional organizations increasingly plan and implement metropolitan transport projects. Because they are quasi-governmental in nature, their interactions with local governments may appear confusing. They plan for and coordinate planning by local governments, but usually have no implementation power.

Three types of regional bodies affecting transportation are regional planning commissions or agencies (RPCs or RPAs); councils of government (COGs); and metropolitan planning organizations (MPOs). Both RPCs and COGs came about as a result of section 71C of the Housing Act of 1954, and both experienced an expansion in their activities in the late 1960s. They provide comprehensive regional planning services involving land use and transportation. On the other hand, MPOs resulted from the Federal-Aid Highway Act of 1962; their role was expanded by the Federal-Aid Highway Act of 1973, through which the U.S. DOT requested the governor of each state to appoint a single MPO to receive and coordinate federal funds and programs emanating from FHWA, UMTA, and the FAA.

The Federal-Aid Highway Act of 1962 specified that a "3C" (continuing, comprehensive, and cooperative) planning process be carried out by the states and urban areas with populations greater than 50,000. The Federal-Aid Highway Act of 1973 required states to appoint MPOs to oversee the "3C" planning process and to coordinate planning funds from different federal agencies. Transportation Improvement Programs (TIPs) are now developed by MPOs to augment the "3C" planning process. A TIP (as explained later) may contain a description and listing of both short-term and long-term projects. Encouragement is given to measures or projects intended to provide low-cost solutions to transportation problems. An example would be left-turn lanes. These measures are listed in the Transportation System Management (TSM) component of the TIP's annual element. 23

Circular A-95 from the federal Office of Management and Budget directs the governor of each state to designate agencies, one at the state level and one for each metropolitan and nonmetropolitan area, with areawide review and clearinghouse powers. The intent of this circular is to encourage state and local planning initiative, coordination, and consistency among the various levels of government and the use of established areawide bodies by federal agencies in administering programs that have regional objectives.

Special Districts

Special districts are another example of a substate body that can affect transportation. They are incorporated through
local initiative with state authorization to provide a particular service not being rendered by state or local government to a given area. Special districts usually have a single function, and are administered by a board of directors that is either appointed or elected. These districts may provide transit, sewer, or soil-conservation services. They may have taxing powers or may derive revenue from user charges to defray costs.

**Required Plans**

The MPO is responsible for preparing certain specific planning documents. The following is a synopsis of the various reports they have to submit under federal law:

1. Unified Planning Work Program (UPWP) -- The UPWP contains a description of all transportation planning-related activities that will be undertaken within a metropolitan area over a period of five years.

2. Transportation Plan -- This document outlines transportation policy which will be followed within a region. The plan serves as a guide for future transportation projects that will be undertaken, as well as the decisionmaking process that will be followed; and,

3. Transportation Improvement Program (TIP) -- The TIP specifies and describes the projects that will be candidates for implementation within the current annual period. The TIP also outlines those projects which will be ready for implementation over the next two-to-five-year period.

**Deregulation**

**History of Regulation in the United States**

Historically, the regulation of each mode of transportation occurred at different points in time. Federal regulation of transportation began with the nation's railroad industry in 1887, followed by steamship lines in the early 1900s, and then pipelines, motor carriers, and airlines during the 1930s. A separate statute applied to each mode without much consideration given to the need for intermodal coordination.

Separate independent regulatory commissions—the Interstate Commerce Commission (ICC), the Federal Maritime Commission (FMC), and the Civil Aeronautics Board (CAB)—were also established under the respective acts to regulate each mode. Each commission was charged with the promotion and welfare of that particular mode, which put even the commissions in competition with one
another, rather than working cooperatively so as to achieve an integrated intermodal system. There are some exceptions to this rule. For example, the Interstate Commerce Commission regulates inland waterways, trucklines, pipelines, and railroads, but it still has separate legislative authority and separate responsibilities for each.

Another aspect of the regulatory process which serves to put the modes at odds with one another is modal competition for roadway, airway, or waterway grants, for tax easements, or for permission to raise size and weight limitations for loads carried. The regulatory commissions have become involved on behalf of their respective modes during congressional deliberations on these issues since the size of the grants, for example, have had a major effect on the relative costs of providing modal services and on the incentives of different modes to cooperate intermodally.

Additionally there have been legislative prohibitions against ownership of carriers of one mode by carriers of another. For much of this century, railroads could not own water carriers, freight forwarders could not own direct carriers, and surface carriers could not own airlines. These prohibitions limited opportunities for developing intermodality through common ownership.

Transportation was the nation's first industry to be regulated by government, and a century later, the first to enjoy significant deregulation. Beginning in the late 1970s, perceived regulatory failure became the catalyst for deregulation. Various forms of de jure and de facto interstate deregulation resulted both from legislation passed by the Congress in the mid-1970s and early 1980s, and from the appointment by presidents Carter and Reagan of individuals to the federal regulatory commissions who were dedicated to deregulation. Specific federal statutes that partially deregulated various aspects of the transportation industry include the following:

The Railroad Revitalization and Regulatory Reform Act of 1976
The Air Cargo Act of 1977
The Airline Deregulation Act of 1978
The International Air Transportation Competition Act of 1979
The Motor Carrier Act of 1980
The Staggers Rail Act of 1980
The Household Goods Transportation Act of 1980
The Bus Regulatory Reform Act of 1982
The Shipping Act of 1984
The Civil Aeronautics Board Sunset Act of 1984
Congress has not passed a major deregulation bill in recent years, and is now considering various reregulation proposals for those modes which have experienced the most comprehensive deregulation—airlines and motor carriers. While a few states adopted intrastate trucking deregulation in the early 1980s, the momentum seems to have stopped. Today, the majority of states continue to regulate intrastate motor carriage.23

Deregulatory Movement

The creation of the U.S. DOT in 1967, encompassing all modes, was an initial sign of recognition that single-modal regulation and administration was inadequate and inefficient. The same law that established the U.S. DOT also provided that the secretary of transportation should develop a statement of national transportation policy. The 1975 Statement of National Transportation Policy served as the initial impetus for deregulation legislation that occurred later in the decade. It favored a healthy private-enterprise transportation system, with minimum financial support and little interference from the federal government. It recommended less regulation of rates, freer entry, more user fees, and more equitable administration of subsidies. It also favored the elimination of unreasonable barriers to intermodal cooperation.

In 1978, a National Transportation Policy Study Commission (NTPSC), authorized by Congress, formulated broad outlines and primary themes for improved national transportation policy. Some of the recommendations included multimodal systems planning, equal treatment among the modes, subjecting policies to economic analysis, and reducing governmental economic regulation. These recommendations served to advance the cause and need of intermodality.

Deregulation of many aspects of transportation was implemented in the late 1970s and early 1980s through acts of Congress, steps taken by the independent regulatory commissions, and with the support of both President Carter and President Reagan. The more important deregulation acts include the Airline Deregulation Act of 1978, the Motor Carrier Act of 1980, the Staggers Rail Act of 1980, and the Shipping Act of 1984.23

Airline Deregulation. The first manifestations of deregulation took place in the air transportation industry. Air/freight service was deregulated through formal legislation on November 9, 1977. Deregulation of air passenger service came later with the Airline Deregulation Act of 1978.

It is difficult to generalize what deregulation has accomplished since it has brought sharply disparate results in the operations, service scheduling, and financial performance of airlines. However, with freight movement, all air freight is
intermodal in the sense that freight moves to and from airports by means of other surface modes. In terms of intermodality, the effect of deregulation on air freight has been the same as with other modes. It gives shippers a wider range of choice among modes and carriers, combinations of modes and carriers, and combinations of joint rates.

Courier services, small commuter airlines, and trunk airlines have been quick to take advantage of deregulation, with the express-package delivery systems being the most visible example. Size limitations on such businesses were lifted, and with access to larger and more efficient aircraft, the express-package delivery operators developed rapidly.

It has been observed that deregulation of air passenger services has brought bargains in fares to part of the travelling public, but this positive outcome has been offset to some degree by very high fares prevailing in rural markets. It is quite possible that the airline industry is moving towards a solely hub-and-spoke system with a small number of major airlines capturing an increasingly large share of the market. Recent airline mergers continue to point towards this trend.90

Motor Carrier Deregulation. The Motor Carrier Act of 1980 represented the first substantial change in the federal regulatory system of ground transportation since the enactment of the Motor Carrier Act of 1935. The 1980 act relaxed motor carrier entry requirements; as a result, the number of new trucking applicants in the first year of deregulation more than quadrupled. Many restrictions on truck routes, types of cargo carried, and areas served were eliminated. A major objective of these liberalization policies was to promote intermodal transportation.

The Motor Carrier Act of 1980 (along with the Staggers Rail Act of 1980) also allowed carriers of one mode to own and operate carriers of another mode. This option was greeted more warmly by the railroads since their financial resources will enable them to more easily acquire trucking firms than it will allow trucking firms to acquire rail carriers.91

Rail Deregulation. While not as liberal as the Motor Carrier Act of 1980, the Staggers Rail Act of 1980 provides more flexibility for railroads to abandon unprofitable rail lines and for shippers and others to purchase lines proposed for abandonment. There is also a measure of ratemaking flexibility within the rail industry. As with the Motor Carrier Act, the Staggers Act gave shippers a wide range of choice among carriers, and enabled intermodal combinations of carriers. The railroads gained greater freedom to merge with each other, which provides another aspect of greater pricing flexibility, since single-line
rates are not subject to rate bureau considerations and may be set or changed on a day-to-day basis.

Under the umbrella of the Staggers Rail Act, the Interstate Commerce Commission made important rulemaking decisions to enhance intermodality through freeing rail-piggyback carriage from all Interstate Commerce Commission regulations. This action gives railroads greater flexibility to price piggyback services more competitively against truck hauls, and to route traffic on joint rail-piggyback hauls involving rail-owned trucklines.\textsuperscript{32}

**Maritime Deregulation.** The Shipping Act of 1984 makes it easier for water carriers and terminal operators to engage in collective ratemaking and other types of cooperative activities. The act also contains numerous clauses addressing intermodality, including allowing the Federal Maritime Commission to implement provisions applicable to the role of middlemen in promoting intermodal carriage.

Prior to 1984, conferences set rates jointly and divided routes and cargo subject to United States antitrust restrictions. U.S. lines complained that the restrictions had an adverse impact on their competitive position in ocean shipping. This was especially critical since these restrictions did not apply to ships of other nations.

The 1984 Shipping Act provides carriers the broadened antitrust immunity they have sought for years. Although the Federal Maritime Commission remains the primary regulatory agency, it may no longer disapprove rate and service agreements reached by the conferences. In addition, ocean carriers may agree on the inland portion of an intermodal rate. Carriers are also allowed to enter into confidential service contracts with shippers.

**Changes Due to Deregulation**

Deregulation of many aspects of transportation was implemented in the 1970s and early 1980s through acts of Congress, and in steps taken by the independent regulatory commissions to eliminate or liberalize rules and regulations that were considered unnecessary or unduly restrictive or burdensome.

Intermodality has become more feasible as a result of this revision of government policy, coupled with increasing trade with Pacific Rim countries over the last few years. These changes have led to significant new competition among carriers, ports, and modes. The demand for containerized freight in the United States has increased over 10 percent in recent years.

The Staggers Rail Act of 1980, the Shipping Act of 1984, and the Motor Carrier Act of 1980 have created a new climate for
increased competition by relaxing rate-setting policies and creating new entry possibilities.

In a 1988 Transportation Research Circular on "Research Needs Related to Intermodal Freight Transportation," possible future trends in intermodal transportation are discussed. One possibility is that with pressure to offer better and lower-cost service, and without the restraint of entry, the transportation industry's structure could well change in the direction of fewer, larger transportation companies, each possessing nearly full capability of providing end-to-end service. 

Although some companies have since gone bankrupt and the ICC has disapproved some mergers, the purchase of Sealand Corporation by CSX Transportation, Inc., moves that company closer to becoming a full-service intermodal company with the capability for end-to-end moves under one management.

It is clear that one of the effects of deregulation in the air industry is the survival of a few sizeable airlines operating between major hubs. The new airline companies have resulted from both complex, friendly mergers and from less friendly buy-outs of often unprofitable lines.

Similar situations are occurring in the freight transportation system as major railroad companies have worked out mergers in order to extend their service areas and provide across-country service as a single rail company. Recent mergers open the possibility for a single management having complete control of intermodal moves.

Spurred by these changes, full-service carriers will emerge with the capability to handle origin-to-destination freight movements as a "single-firm-managed" service. These companies will become giant transportation companies with controlling interest in several modes of transportation and with special interests in certain geographical-connecting points like terminals and ports.

The effects of these possibilities are numerous. If the mergers and growth are successful, a few giants will emerge and will create a transport oligopoly. While competitive among themselves, the large companies will so dominate the industry that they will exert control over rates, costs, and service standards. They may become profitable enough to later attract mergers with large corporations in related fields.

The creation of super companies will also result in identifying potential locations for exclusive interchange and port operations. Communities could be leveraged by large companies to promise large economic development packages, including tax relief, land, and new infrastructure in order to
compete for the jobs and growth. The quest for new hub-and-spoke locations and other interchange operations may create economic development competition among cities and states similar to that seen among potential sites of new automobile assembly operations.

Some positive outcomes could emerge if these changes take place. If intermodality is to be successful, carriers must stress service. Fast, efficient movement of trains or vessels is a necessity, but this is not sufficient to guarantee success. A new awareness of caring for freight and its transfer will have to be developed.

The hub-and-spoke system also has the potential to improve service to smaller communities. Technological innovations for improved hub-center operations may create this favorable situation. However, as is the case with airlines today, it may be that outlying areas will experience much more expensive service in a hub-spoke system.

The government's use of intermodal transportation may be increased since it is the largest shipper in the world. However, the government's use may be limited as it is not clear what the peacetime role of intermodal transportation for the movement of defense and other government cargo should be.
Notes


3. Ibid., pp. 20-21.

4. Ibid., pp. 31-33.

5. Ibid., pp. 34-35.


21. This discussion is based upon the 14 state interviews that appear in Appendices A and B.

22. Ibid.


26. John H. Mahoney, Intermodal Freight Transportation, pp. 31-34.


28. Ibid.


Chapter 3. Transportation in Texas

BACKGROUND INFORMATION

Population

Texas is the third most populous state in the nation, with an estimated population of 16.8 million in 1988. The state has a population density of 61 persons per square mile, with 79.6 percent of the population concentrated in urban areas. State population increased by 1,760 people between 1970 and 1980. The major metropolitan areas are Houston, Dallas-Fort Worth, and San Antonio.

Geographic Area and Topography

The state ranks second in the nation in total area with 267,388 square miles. This land area is divided into four major regions: the Gulf coastal plain, entering from the south and southeast; the central lowlands, from the north; the Great Plains, from the northwest; and the southern extension of the Rocky Mountains, which crosses the Trans-Pecos region (the western part of the state).

Transportation Statistics

Texas's transportation infrastructure includes more than 273,981 centerline miles of maintained streets, roads, and highways and one million acres of right-of-way. These roads contain 30,000 bridges. In addition, there are 12,744 miles of railroad track in Texas. The state also operates ten ferries. Finally, there are 400 unrestricted public-use and 1,600 restricted-use airports, and 13 major deep-water ports in Texas.

Texas's transportation infrastructure is utilized by 14 million registered vehicles. This use translates into 292 million vehicle miles of travel daily. The Gulf Intracoastal Waterway handles more than 73 million tons of cargo annually. Finally, the airports in the state account for 40 million passenger enplanements and deplanements.

Economy

The principal industries of the Texas economy include agriculture, petroleum, manufacturing, and construction. The Texas economy employs over eight million persons.

Texas experienced a severe recession in 1986, losing more than 100,000 jobs, and the state unemployment rate exceeded 10 percent after oil prices dropped by almost one half. In 1987,
the state's economy had regained its upward momentum and accelerated its diversification. While overall growth will be slower than in the past, the state eventually will still outpace the nation as a whole, adding new jobs and gaining population at a faster rate than the average for the rest of the country.  

STATE ECONOMIC DEVELOPMENT

The Texas Department of Commerce (TDOC) was created in 1987 to serve as the state's lead economic development agency. Its purpose is to assist in creating jobs and to promote a diversified state economy. TDOC consists of seven divisions. The finance division offers financial and technical assistance to businesses and communities. As an example, it administers the Rural Industrial Loan Fund and provides financial assistance to businesses exporting products from Texas. The business development division concentrates its efforts on retaining and expanding the state's business and industrial base. The office of international business development promotes Texas internationally for business investments; companies can obtain assistance in promoting their products and services overseas by obtaining information on foreign markets or receiving financial help to conduct trade shows. The research and planning division compiles state population projections and provides demographic and marketing information and analyses to businesses, localities, and state agencies. Other divisions within TDOC deal with small business, tourism, and work force job-training programs.

The Texas Department of Commerce rarely addresses transportation needs directly. The agency has no specific transportation assistance program but has been known to testify before the state legislature and to prepare briefs on transportation matters relating to its primary mission. On the other hand, TDOC will refer companies to one of the state's transportation agencies--the State Department of Highways and Public Transportation, the Railroad Commission of Texas, or the Texas Aeronautics Commission--to resolve any specific transportation problems or needs they may be facing.

State economic development strategies are based on the 1989 report entitled A Strategic Economic Development Plan for Texas, submitted by the Strategic Economic Policy Commission to the 71st session of the Texas Legislature. The purpose of the plan is to provide overall direction for the state's economic development efforts. Four strategic objectives are delineated in the 1989 report: to develop a competitive business climate through a balanced set of fiscal, legal, and regulatory policies, including investments in public infrastructure; to provide a well-skilled, flexible, internationally competitive workforce; to encourage innovation and entrepreneurship; and to market the state aggressively. No particular direction or emphasis is given to
transformation-related activities, other than to note the need to formulate "forward looking" intrastate motor carrier regulatory policies, and to continue timely investments in the state's public infrastructure, including its highway system, airports, and ports.

STATE AGENCIES INVOLVED IN TRANSPORTATION

In Texas, the primary state agency involved in transportation activities is the State Department of Highways and Public Transportation (SDHPT). The SDHPT is directed by the three-member State Department of Highways and Public Transportation Commission, whose members are appointed by the governor. The Railroad Commission of Texas (RRC) has intrastate authority over railroad safety, truck lines, buses, and pipelines but is not involved in the planning aspects of these transportation modes. The Texas Aeronautics Commission (TAC) is responsible for the development of aeronautics in the state. Finally, the Texas Department of Public Safety (DPS) is responsible for driver licensing. All port-related planning is done by the respective port authorities and is not conducted by state agencies.

Texas State Department of Highways and Public Transportation

The Texas State Department of Highways and Public Transportation Commission is the policymaking body governing the SDHPT. It is composed of three members who are citizens of the state and are appointed by the governor for overlapping terms of six years. The governor designates one member to serve as chairman of the commission. An engineer-director is appointed by the commission as chief administrative officer of the SDHPT. The commission formulates the overall policy and plans in regard to the state's highway and public mass transportation systems.

The SDHPT maintains a large highway system that assists transportation mobility and supports economic development in the state. Both multimodal planning and intermodal projects exist, though overall funding remains highway, single-mode oriented. The SDHPT highway system promotes mobility, both for the general public and for economic interests such as oil, manufacturing, farming, and ranching. Maintenance is critical as the system's replacement value is estimated to be $100 billion. A new emphasis on urban mobility reflects the demographic structure of Texas.

According to Vernon's Annotated Civil Statutes, the major responsibilities of the agency are to plan, design, construct, and maintain a system of state highways, as well as to acquire the necessary right of way; to administer the provisions of the motor vehicle registration statutes and the Certificate of Title
Act; and to assist local governments in the development of public and mass transportation systems. In addition, the department has responsibilities in the areas of traffic-safety promotion, public travel and promotion services, Gulf Intracoastal Waterway improvements, outdoor advertising and junkyard control, and off-system railroad grade protection.\textsuperscript{12}

**Organization.** To carry out the duties associated with its mission, the department is organized under an engineer-director into four administrative units. Each unit is headed by a deputy director. These units include field operations, design and construction, support operations, and policy planning. There are 16 Austin headquarters divisions: finance, public transportation, equipment and procurement, motor vehicle, bridge, human resources, construction, right of way, planning and policy, travel and information, highway design, safety and maintenance, materials and tests, automation, transportation planning, and insurance.\textsuperscript{13}

These 16 divisions provide technical services and support for 24 district offices and two regional planning offices in the Houston and Dallas-Ft. Worth areas. Each district engineer is responsible for utilizing the available technical and support facilities of the department to ensure the achievement of the department's mission. In each division or district, the same organizational setup is maintained: head, section heads or supervisory personnel, and nonsupervisory personnel.\textsuperscript{14} With a 1988 fiscal-year budget of $2,641,452,632, the SDHPT employees 15,362 people.\textsuperscript{15}

**Programs and Projects.** The department is involved in several specific intermodal programs. The highway/ferry connections in Galveston and Port Aransas can be construed as an intermodal-type project. In addition, the department owns a railroad corridor running from Dallas to Fort Worth, which was purchased to be used as a mass transit corridor. The purchase of the corridor was for highway right-of-way acquisition and, therefore, does not qualify as an intermodal project per se, but does represent multimodal planning.

The complicated system of connections between state and local road systems is a good example of intergovernmental programs with state, county, federal, and municipal levels of government all interlocked in the operation and maintenance of the system. Within the maze of separate intergovernmental regulations, there are potential intermodal projects in public and mass transportation that go beyond high-occupancy-vehicle (HOV) lanes and conventional bus service. The possibility of rail, guided-bus, electric-trolley, and mass-pedestrian moving surfaces for downtown areas pose alternate modes of movement, especially in passenger service.
Funding. Primary funding for the SDHPT is through the dedicated motor fuel tax and motor vehicle registration fees. Approximately 85 percent of federal highway user fees collected in Texas are returned to the state through federal matching-fund formulas in various percentages. Dedicated highway funds are viewed as having more purchasing power than bond sales proceeds as a consequence of the fact that interest is earned, not paid. The department retains 75 percent of the motor fuel tax; the remaining 25 percent goes to public education.16

The Department of Public Safety (DPS), receives a portion of its budget from state highway funds. Interstate highways get a 90 percent/10 percent split for federal/state matching funds, while other highways and local farm-to-market roads get a 75 percent/25 percent split. Even with this assistance, about one-half of all highway projects are state funded without federal aid. All Urban Mass Transit Administration transportation funding is awarded on the basis of an 80 percent/20 percent federal/state split.

Reports and Plans. The strategic plan for the SDHPT was formulated in July 1988 and is entitled Responding to the Transportation Challenge 1988-2000...and Beyond. The plan is reassessed every two years as a guide to the Strategic Mobility Plan, which is the basis for the department's 20-year systems requirements document, operations or tactical plans, and the legislative appropriations request.

The strategic plan provides an overview of the department's mission, values, goals, and strategies, and integrated-planning module process. Within the plan, future demands are anticipated and funding sources examined. Under urban mobility, one goal is to develop multimodal transportation alternatives. These include HOV lanes, transportation alternatives, park-and-ride facilities, and ride-sharing programs. All are focused on the goal of decreasing urban congestion. Apart from the reference to mass transportation, the strategic plan is highway, unimodal oriented.

Utilizing an integrated planning approach, the department sets goals and develops strategies to reach those goals. Available resources are allocated to implement appropriate programs, projects, and actions in a tactical five-year operations plan, which serves as the basis for the biennial legislative appropriation.

The department is influenced in its development of public mass transportation by Vernon's Annotated Civil Statutes, Articles 6663b and c, (Revised), passed by the 64th Legislature. These articles direct the State Department of Highways and Public Transportation to coordinate highway development and public transportation improvement consistent with planning under the Urban Mass Transportation Act of 1964, as amended by the Federal-
Aid Highway Act of 1973. A Public Transportation Fund was set up with $15 million a year in revenue from the General Revenue Fund budgeted for use by the department for public transportation.\textsuperscript{17}

**Railroad Commission of Texas**

The Railroad Commission of Texas (RRC) has primarily intrastate regulatory responsibilities in the area of transportation. This focus on regulation absolves the commission of most planning functions. The most extensive planning effort is in the area of rail, but this planning is exclusively for light-density rail lines.

**Organization.** The RRC is a constitutional elected commission, originally created in 1891 to regulate "railroads, terminals, wharves, and express companies."\textsuperscript{18} This initial limitation to the regulation of railroads was expanded in 1917 to include the regulation of oil and gas. When the legislature declared the sale of natural gas to be a public utility in 1920, responsibility for regulatory control of natural gas utilities was attached to the commission. By 1929, the commission's jurisdiction had reached another part of the transportation industry through the designation of both trucks and buses as common carriers. In 1951, regulation of liquified petroleum (LP) gas was placed within the commission to ensure that LP-gas was stored and transported safely. The most recent expansion of commission authority occurred in 1975, with assignment of the regulation of surface mining to the commission.\textsuperscript{19}

The commission is composed of three commissioners who are elected by popular vote to serve overlapping six-year terms. Commission members must be Texas residents, qualified voters, and at least 25 years of age, while having no direct or indirect financial interest in any railroad or any railroad's securities or earnings. Agency administration is accomplished by means of three commissioners, a central administrative division, the automatic data processing division, and program management sections in each of the agency's divisions.\textsuperscript{20} These program divisions are discussed later.

**Programs and Projects.** The RRC's areas of responsibility encompass several major sectors of industrial activity associated with the production of energy-related natural resources and the provision of commercial ground transportation in Texas. These areas generally include

1. The regulation of oil and gas production and exploration to prevent waste of resources and to protect property rights and the environment;
2. The regulation of commercial intrastate ground transportation service to include trucks and buses;
3. The regulation of natural gas utilities and safety involving hazardous materials pipelines, natural gas pipelines, and distribution systems;

4. The regulation of transportation and storage of propane, butane, and liquified petroleum gas including its safety; and,

5. The regulation of surface mining for coal, uranium, and iron ore, including reclamation of the land following mining.²¹

The above areas are regulated through commission operations which perform licensing, compliance, enforcement, rate setting, and general assistance functions. Each of these areas of regulation is performed through a separate division within the agency. These divisions are Oil and Gas, Transportation, Gas Utilities, Liquified Petroleum Gas, and Surface Mining and Reclamation. Most recently, however, the Transportation Division and the Gas Utilities Division were merged into a single operation. Additionally, the commission consolidated the legal sections of the divisions into a new division headed by a general counsel.²²

**Transportation/Gas Utilities Division.** The regulation of intrastate ground transportation by the commission is the most pertinent for multimodal considerations. For this reason, we will concentrate our evaluation on the Transportation/Gas Utilities Division (hereafter referred to as the Transportation Division); and, specifically, its transportation operations.

Historically, the aim of transportation regulation has been to promote economic development, protect the interests of the shipping public, and to prevent discriminatory pricing for transportation services. In short, the regulation provided by the Transportation Division is designed to ensure that Texas citizens and industry have a sound, safe transportation system available at a reasonable price.²³

The scope of this regulation encompasses motor carriers, motor bus operators, railroads, and transportation brokers operating in the Texas intrastate market. In addition, certain safety and insurance requirements are imposed upon certified interstate motor carriers and exempt interstate motor carriers when they operate in Texas. Division responsibilities are carried out through the implementation of certification, rate setting, and enforcement operations. The issuance of certificates of public convenience and necessity are required to operate legally as a for-hire motor carrier in the state. Aside from the demonstration of public need for the service to receive a certificate as a truck or bus carrier, proof of insurance and registration of vehicles also are required. Once certified, a carrier must charge commission-approved rates, which are set
industrywide for the particular transportation service provided.  

In evaluating the operations of the transportation division, programs can be divided into six functional areas: licensing, compliance, enforcement, rate setting, technical assistance, and research and development.  

Licensing. A significant regulatory responsibility related to the RRC's regulation of energy-related natural resources and ground transportation is the licensing, permitting, and certification of various aspects of the industries involved. Certificates and permits issued by the transportation division are related to the authorization to operate as an intrastate carrier and the registration of all vehicles operated by trucking or bus companies in Texas. The division issues eight different certificates and registrations, which include various certificates of authority to operate as intrastate motor carriers for hire and the registration of for-hire trucks and buses operated in Texas.  

Certified carriers are required to annually register their companies, trucks, and buses with the transportation division's vehicle registration section. Although interstate carriers that have authority from the Interstate Commerce Commission or that haul federally exempt commodities are not required to be certificated in Texas, these carriers must obtain Railroad Commission registration for those vehicles that operate within Texas.  

Compliance. The commission performs monitoring activities which are designed to ensure that state statutes and commission rules are followed in each of the areas of the commission's regulatory responsibility. In the transportation division, compliance activities involve checking motor carriers' records to ensure that the companies are charging proper rates and providing adequate service.  

In addition, the transportation division is active in conducting on-site inspections and audits. These activities provide another mechanism to ensure compliance with statutes and commission rules. In the transportation division, the financial and operating records of motor carriers regulated by the commission are reviewed during on-site audits which are conducted to determine compliance with the rates and rules established by the commission. These audits are performed by division personnel located in nine cities across the state. Records audited include freight bills, drivers' logs, and weight tickets, along with accounting ledgers and journals.  

Enforcement. A major statutory responsibility related to the commission's regulation of ground transportation is the
enforcement of statutes and commission rules designed to control activity in this area. Enforcement activities in the Transportation Division generally are designed to enforce regulations relating to rates charged to customers, to the quality of service delivered, and to protecting the public from unsafe practices or conditions. This enforcement is generally achieved through the imposition of sanctions. The sanctions used by the transportation division include revocation and suspension of permits and licenses.  

Rate Setting. The transportation division sets rates for motor truck and bus carriers and has general oversight responsibilities for rates charged by railroads, which will be discussed later. The Railroad Commission's rate-setting authority for ground transportation is limited to intrastate traffic and includes both motor freight services and bus transportation. The commission sets rates for both the common carriers and specialized motor carriers. Contract carriers are not required to file tariffs with the commission and may determine their own rates as long as those rates are not less than the rates set for common carriers providing similar services. Rates are also set for motor bus companies.

Technical Assistance. Technical assistance in the transportation division is related only to rail planning activities and will be discussed in the evaluation of the rail safety and planning department which resides in the division.

Research and Development. The Railroad Commission does not perform any true research activities. The research that is conducted is related to oil and gas operations.

Rail Safety and Planning Department. As mentioned previously, the rail safety and planning department is contained in the transportation division. This department is important in the evaluation of transportation for two reasons. First, the regulation of rail, along with motor carriers, is the only area with regard to transportation regulated by the RRC. Second, and more importantly, the rail safety and planning department is the only area in the transportation division that engages in transportation planning.

Because of recent federal legislation preempting state authority regarding railroad regulation, the RRC no longer sets rates for railroad companies. The RRC now has only oversight responsibility for rates charged by railroads. Currently, railroad rates may be set by the company and are subject to RRC suspension only in extraordinary circumstances. Since 1980, shippers or competing railroads are allowed to file challenges to rates established by a railroad company. The RRC's power to review such a rate is determined by a complex set of federal guidelines.
Another function of the department is to monitor and analyze rail operations, specifically the financial performance of companies. The department regularly testifies before the Interstate Commerce Commission regarding mergers, acquisitions, abandonments, and bankruptcies of railroad companies doing business in Texas.32

The department also functions as a provider of information concerning rail matters to state and local governmental agencies. Finally, the department staffs inspectors who monitor track, equipment, and rail operations for safety.33

Funding. Agency operations were funded in the 1988-89 biennium by $61.0 million in appropriations from both general revenue and federal funds. Historically, funding for the operations of the Railroad Commission had been provided by the legislature through the use of a special operating fund. During the 67th Legislative Session, the RRC's funding mechanism was changed so that all revenues collected by the agency were placed in the general revenue fund, and all of the funds appropriated for the agency's operations were financed from the general revenue fund.34

Reports and Plans. As mentioned above, the only planning function of the RRC resides in the rail safety and planning department. The department periodically updates the state's light-density rail plan. This is done in an effort to identify sectors that may be eligible for federal rehabilitation assistance. It should be noted that this plan is unimodal. The department is in the process of compiling a railroad fact book for all classes of rail operations. The fact book will contain financial and safety data on all rail companies that do business in Texas. This will enable the department to provide better information concerning rail matters in the state to those who request it.35

The department receives an annual entitlement from the Federal Railroad Administration for planning. This was made available through the Local Rail Service Assistance Program (LRSAP). Discretionary funding for specific projects is obtained through competition with other states. The current funding for planning is enough to cover only 70 percent funding to support a two-person staff.36

Texas Aeronautics Commission

The Texas Aeronautics Commission (TAC) was created in 1945 by the Texas Legislature to achieve four general goals. These goals are 1) to encourage, foster, and assist in the development of aeronautics in Texas; 2) to cooperate with local, state, and federal officials in promoting, developing, maintaining, and
protecting a statewide system of modern and safe air facilities; 3) to promote, foster, and encourage an efficient intrastate, scheduled air carrier system; and 4) to promote, foster, and encourage safety and professionalism in all phases of aviation through special educational activities.  

Organization. The TAC is governed by a six-member citizen board. The governor appoints all the members to rotating six-year terms. The TAC executive director is appointed by the board and serves at its discretion. Eight divisions are under the executive director: Aeronautical Services and Facilities Development, Planning and Research, Engineering Services, Facilities Development, Assistance, Aeronautical Services and Information, Administration and Support, Other Administration, and Aircraft Operations. Over the last ten years, TAC staff size has decreased from over 30 to 10.

The executive director is the chief executive officer of the Texas Aeronautics Commission and is in charge of overseeing day-to-day activities, as well as administering the state aeronautics laws and implementing policies of the TAC board. Services and facilities development provides engineering, technical, professional, educational, and regulatory services to support aeronautical development and safety in Texas.

Planning and research is responsible for developing the long-range facilities development plan that local, state, and federal capital improvement programs utilize. Engineering services provides technical and financial assistance to publicly owned airports throughout the state. In addition, engineering services develops airport/heliport and navigation aids construction and improvement projects.

Facilities development assistance supervises grants appropriated by the Texas Legislature for airport assistance in the planning, development, construction, and repair of aeronautical facilities.

Aeronautical services and information provides training and other educational aids to individuals and groups involved in aviation. Certification of commuter air carriers is performed by this division. Also, aeronautical services and information investigates irregularities in carrier operations. Technical assistance for designing zoning ordinances also is provided.

Programs and Projects. The major functions of the TAC include a facilities' grant and loan program, technical assistance, regulatory activities, legal assistance, education activities, and publications. Currently, most resources are devoted to the technical-assistance function in the planning area.
Major programs and projects of the TAC include maintenance and improvements to smaller airports. Specific projects include runway extensions, repaving runways, and removing runway hazards. The TAC provides the state portion of monies for installation of guidance systems such as runway lighting. Assistance in meeting zoning needs for localities is also provided.

The TAC also conducts selected inspection of aircraft and airport facilities. The TAC consults with local authorities concerning technical needs, such as foul weather instrumentation.40

Funding. The vast majority of TAC funding is obtained through general revenue funds. Federal sources of funds amounted to 15 percent of overall funding in fiscal year 1987 and were used mostly for the preparation of a facilities plan. Less than one percent of funding comes from other sources. Funding for fiscal year 1987 totaled $1,078,000. Funding levels have decreased by 18 percent in real dollars over the past ten years. The fiscal year 1990 request is $8 million, and the fiscal year 1991 request is $12 million.41

Reports and Plans. The Texas Aeronautical Facilities Plan (TAPP) is the major planning document of the commission. The TAPP meets the requirements set forth by the Texas Legislature, requiring the TAC to adopt a long-term development plan on needs, locations, and funding requirements for airport planning in Texas. The plan estimates growth in Texas aviation needs and develops facilities plans to meet those needs. Forecasts of enplanement levels, number of aircraft, and number of pilots are included.

In the plan, the TAC has established six goals:

1. To maximize access by business aircraft to the Texas population, business activity, agricultural production value, and mineral production value;
2. To minimize duplication of general aviation facilities in the Texas airport system;
3. To identify airport development required to accommodate forecasted commercial passenger activity;
4. To identity airports required to provide general aviation capacity in metropolitan areas;
5. To serve as a guide for development of the Texas airport system with a reasonable level federal and state funding; and
6. To serve as the state's input to the National Plan of Integrated Airport Systems.42

The most recent plan, in 1984, provided conclusions about the airport needs of Texas through the year 2000. Commercial service needs were projected to require 31 airports, and business
service airport needs were projected to require 89 airports. The actual number of community service airports to support low-performance aircraft will total 124 by the year 2000, while basic service needs will require a total of 65 airports. Altogether, 309 airports will be needed statewide by the year 2000.\textsuperscript{43}

According to TAC Executive Director Clay Wilkins, the TAC is not involved in intermodal planning. Intermodal planning is performed at the MPO level without input from the TAC. None of the assistance that TAC provides to airports can be construed as possessing intermodal features. Assistance usually takes the form of construction grants, engineering, and zoning assistance.\textsuperscript{44}

Mr. Wilkins noted the attitude of the legislature and the major transportation agencies in Texas prevents coordinated planning. The state legislature provides very little funding for aeronautical development to the TAC ($2.5 million for construction grants in 1986, and no monies for 1988). Furthermore, the two dominant state transportation agencies, the State Department of Highways and Public Transportation and the Railroad Commission, show little interest in coordinating planning with the TAC on intermodal projects.\textsuperscript{45}

Legislators believe funding of medium and small airports will not improve the economy of Texas. Most legislators busy themselves almost exclusively with concerns of their district and are unwilling to provide funding to projects outside their district. In 1982, TAC requested funding for an economic impact study on the value of aeronautics to the Texas economy, but the legislature denied the request in 1982, 1984, and 1986. Such a study would provide a clearer picture of the net economic value of small airports throughout Texas.

Local governments desire state funds, but they do not want state control over use of those funds. This position reflects the independent attitude of local officials and airport users. This same attitude is reflected in the absence of state statutes allowing TAC to channel federal aviation funds to local governments.

\textbf{LOCAL AND METROPOLITAN PLANNING ORGANIZATIONS INVOLVED IN TRANSPORTATION}

\textbf{Dallas-Fort Worth}

\textbf{Introduction.} The Dallas-Fort Worth region has a combined population of over 1.3 million. The city of Dallas is the second largest city in Texas and the seventh largest city in the nation. The terrain is mostly flat with heavy sandy soils and sandy clay to the west. The leading industries in the area are banking,
insurance, transportation, manufacturing, data processing, and tourism. Additionally, the nation's largest airport is located in Dallas, which contributes to the city's status as a transportation hub.\(^4\)

**Economic Development.** The Dallas Department of Economic Development (DED) acts as the lead agency in addressing economic development issues within the area. This department focuses on retaining existing businesses, as well as attracting new industry to the city. It encourages public and private ventures in an effort to add to the economic health of the region. DED has the building inspection function for the city and is involved in coordinating development projects within the city. The department relies on general funds, as well as federal dollars, which come in the form of Small Business Administration grants and Neighborhood Business Loan Program funding, which is apportioned through HUD. This department does not have a formal economic development plan for long-range planning. Instead, it focuses on short-term goals that are designed to lure businesses and industry to this region.\(^5\)

The Fort Worth Department of Economic Development is housed within the city manager's office. This department is involved in many of the same activities as its Dallas counterpart. It is currently in the process of encouraging businesses to locate near the Alliance Airport, which is located to the north of Fort Worth. Alliance Airport is an industrial airport, which is currently under construction. Completion date for the construction of the airport is set for May 1990.\(^6\)

**Transportation Planning Agencies.** The status of the North Texas Council of Governments as the metropolitan planning organization (MPO) for the Dallas-Fort Worth area clearly makes this organization the lead transportation agency for the region. Other key local agencies involved in transportation are the City of Dallas Transportation Department, the Dallas Area Rapid Transit Authority, the City of Dallas Public Works Department, McKinney Avenue Public Transit, the Fort Worth Planning Department, Fort Worth Transportation Authority, the Fort Worth Transportation and Public Works Department, and the Dallas-Fort Worth International Airport Board. A brief description of the functions of each of these agencies is provided in the following sections.

As the metropolitan planning organization for the Dallas-Fort Worth area, the North Texas Council of Governments (NTCOG) is a voluntary organization of cities, counties, school districts, and special districts in the sixteen-county north Texas region. The NTCOG was established in 1966 and was charged with the responsibility of overseeing the region's "3C" planning process. It helps local bodies to recognize regional opportunities, resolve regional problems, eliminate superfluous
duplication, and make cooperative decisions concerning the region's transportation issues.

The transportation division of NTCOG has the task of coordinating the regional planning process for all modes of transportation. Additionally, it provides technical and staff assistance to the Regional Transportation Council and its technical committees, which comprise the MPO's policymaking structure. The Transportation Plan, Transportation Improvement Program, and the Unified Planning Work Program documents are prepared and submitted by this organization.

The City of Dallas Transportation Department conducts thoroughfare plans, coordinates traffic signals, regulates the cab industry, and generally plans and operates roadways within Dallas. Funding for the department comes strictly through the city budget. Currently, the department is reviewing the 1965 Thoroughfare Plan in an effort to revamp and update it.

Created in 1983, the Dallas Area Rapid Transit Authority (DART) is the metropolitan transit authority (MTA) for the city of Dallas. This authority is responsible for transit planning and operations of the 850 buses which service the region.

The DART service plan is composed of an immediate action program which addresses improvements to the present bus fleet, as well as enhancing transit access to the elderly and handicapped. DART also administers financial plans, governing policies, and the 2010 Horizon Plan, which serves as the rail program for the DART service area and which includes plans for the construction of 147 miles of rail lines to service the region. Additionally, DART has prepared a draft of its Transit System Plan, which is subject to review by the DART board of directors on June 27th. The plan calls for the provision of 56 miles of light-rail facilities and 37 miles of high-occupancy-vehicle facilities in its service area. A third portion of the proposal calls for approximately 11 miles of rail which would connect Dallas-Fort Worth International Airport (DFW) with the central business district. However, DART is awaiting the outcome of nine recall elections to be conducted by some of its member cities during the summer. The elections will determine whether any of these areas will pull out of DART completely. In that event, DART will have to limit the scope of its study as it will lose its taxation authority and farebox revenues in those areas that decide to pull out of the project.

DART relies on a one-cent sales tax, UMTA section 9 grants, as well as State Department of Highways and Public Transportation funds. DART has two assistance programs that are geared to involving transportation departments of its service area in improvement projects. The first is a technical assistance program with an annual budget of $1 million. Assistance is
provided to various local transportation departments. The second
is a local assistance program which is designed to encourage the
development of local projects, the improvement of intersections,
and provision of efficient lanes for buses.  

The City of Dallas Public Works Department handles the
design and construction of roadways, bridges, drainage
facilities, and public buildings. Most of the projects are
actually contracted out to private construction firms that are
supervised by the department. Capital improvement project money
provides the bulk of funding for this department. Additionally,
the department has the authority to levy special benefit
assessments for projects concerned with street paving.  

The McKinney Avenue Transit Authority is a nonprofit
organization which relies on private-sector funding for in-house
restoration of historic trolley cars which will service a 1.4-
mile stretch leading to the north edge of the Dallas central
business district. The trolleys will serve as a circulatory
transit system which will service downtown shoppers, workers, and
visitors. The authority has a $6 million budget with the
following breakdown: $2.5 million in UMTA funding, $3.3 million
in private-sector funding, and $200 thousand in funding from the
City of Dallas, which goes directly into track construction and
improvement and which will facilitate the trolley movement.  

The Fort Worth Department of Planning is responsible for the
maintenance of the Master Thoroughfare Plan, which outlines the
direction of planning activity within the city. The department
also has the task of monitoring neighborhood development and
addressing travel issues within these neighborhoods.
Additionally, the department conducts subarea studies and is
currently involved with establishing a travel model for the
TRANPLAN study. Funding for this department comes through a
general-fund stipend.  

The Fort Worth Transportation Authority (FWTA) serves as the
metropolitan transit authority for the city of Fort Worth. FWTA
operates the bus system in the region and aids in the provision
of park-and-ride facilities throughout Fort Worth. Funding for
FWTA is obtained through UMTA section 9 grants, which are
apportioned between Dallas and Fort Worth by the Council of
Governments. Of the $16.4 million which is earmarked for the
entire area, the Fort Worth Transportation Authority receives
approximately 24 percent. FWTA also qualifies for UMTA section 3
grants for specific projects, and has the authority to levy a
one-half-cent sales tax. Currently, the department is involved
with the RAILTRAN feasibility study.  

The Fort Worth Transportation and Public Works Department is
responsible for the construction and maintenance of roadways,
drainage systems, and public buildings within the Fort Worth
region. The structure of the department is somewhat complex and merits some detail. In terms of transit, the department serves as a liaison. FWTA purchases services from this department, while the Transportation and Public Works Department, in turn, purchases services from the "T". The "T" is a subsidiary of MacDonald Transit, a private entity which provides the employees (bus drivers). Funding for the department is generated through the 1986 capital improvement program and the city budget.66

The Dallas-Fort Worth International Airport Board (DFWIAB) is an autonomous agency comprised of eleven members, seven of whom are appointed by the city of Dallas and four of whom represent the interests of the city of Fort Worth. DFWIAB is a private entity under contract by the two cities to conduct planning and implementation of projects and programs that relate to the Dallas-Fort Worth Airport (DFW).

As the nation's largest airport, DFW has a land area of approximately 17,900 square feet. Forty airlines serve the airport, of which 22 carry 42 million passengers annually. The remainder of the airlines transport cargo. DFW has two dedicated cargo areas which are used by companies such as UPS, Airborne Express, Flying Tigers, Evergreen International, and Zantop.

Funding for capital investment comes from airport development bonds and the federal Airport Improvement Fund. Revenues generated through landing rights are used to fund operating expenses.67

Level of Interaction. Transportation planning within the Dallas-Fort Worth area is truly cooperative. Local agencies not only cooperate within each urbanized area, but contact is garnered and encouraged between agencies in Dallas and those in Fort Worth. This is perhaps due to the fact that the North Texas Council of Governments acts as the designated MPO for both Dallas and Fort Worth.

Contact and cooperation are generated through the exchange of technical expertise between transit authorities and city transportation agencies. Additionally, one agency may serve as a liaison between public and private organizations. For example, the Fort Worth Transportation and Public Works Department acts in that capacity by linking the FWTA, which handles the transit budget and owns the buses, with the "T", which provides the necessary manpower for FWTA operations in the form of employees.

Joint-venture projects, such as RAILTRAN, also necessitate the exchange of ideas and information, as well as goals among agencies such as the FWTA, DART, and the MPO.

The Development Management Group, whose membership is composed of the deputy city manager, the chair of the
transportation department, and the chair of the economic development department, as well as the chairs of other city agencies, meets weekly in order to exchange information and guarantee a cooperative approach to issues within the area.

Perhaps the geographic features, economic structure, and sheer size of a city such as Dallas requires cooperation between and among all the various agencies if transportation planning is to take place in a comprehensive and coordinated fashion that best suits the needs of the community.

**Intermodal Projects.** Both Dallas and Fort Worth participate in park-and-ride projects which are overseen and implemented by their respective MTA. DART is currently working on the construction of three transit centers for additional park-and-ride services.

RAILTRAN is a feasibility study designed to determine the need for providing rail facilities to a 32-mile, east-west corridor which would run through the central business districts of both cities and end four miles south of DFW airport. DART, FWTA, the DFW airport, UMTA, and several airlines are potential partners in this endeavor.

**Houston**

**Introduction.** With a population of 1,6 million Houston is the largest city in Texas and the fourth largest city in the nation. The city of Houston is located primarily within Harris County, Texas. The county covers 1,734 square miles, ranges in elevation from sea level to 310 feet, and has a population of 2,684,000, including Houston. Only forty miles from the Gulf of Mexico on Galveston Bay, the area is a low coastal plain. Many bayous and artificial drainage creeks protect Houston and Harris County from the persistent threat of flooding.

Situated in the Gulf Coast region of southeast Texas, the city is known for its petrochemical industry, medical and space centers, and numerous universities. Major industries include equipment manufacturing, petroleum refining, fertilizer, pesticide, agricultural chemicals production, oil and gas pipeline transmission, and construction. International interests are represented by 64 foreign bank branches and 54 consular offices. There are eight senior colleges within the city, including the University of Houston and Rice University. The Texas Medical Center, near downtown, is home to more than 30 hospitals and 6 medical schools.

**Economic Development.** The Greater Houston Partnership Economic Development Council serves as the lead agency in overseeing economic issues in Houston. The council is a public-private organization whose main focus is to attract business and
industry to the region. In terms of its linkages to transportation departments within the region, this agency serves as a liaison between private businesses and city and county offices. It facilitates and expedites infrastructural changes which either help to sustain growing businesses or attract new businesses to the area. Two-thirds of the funding for the council is donated by the private sector in annual fund-raisers, while the remainder is supplied by the city, county, and the port authority.60

The Economic Development Department of the Planning Department is also concerned with economic issues. This department focuses primarily on redevelopment programs concerned with revitalizing inner-city areas. In so doing, it relies on tax-abatement programs and small business grants. Approximately one-half of the department's funding comes through the general fund, while the other half is provided by federal dollars secured for Community Development Block grants.61

Transportation Planning Agencies. Transportation in Houston involves a maze of public, quasi-public, and private organizations. The Houston-Galveston Area Council acts as the primary transportation agency. Other local players include the Department of Traffic and Transportation, the Houston Metropolitan Transit Authority, the City of Houston Public Works Department, and the City of Houston Aviation Department. A brief outline of the various tasks of each agency is provided in the following section.

The Houston-Galveston Area Council is the designated metropolitan planning organization for Houston. HGAC serves a 13-county area including Houston, Pasadena, Texas City, and Galveston. It acts as both MPO and the staff and secretariat of the recently formed Gulf Coast Economic Development District. This new district was formed in an effort to coordinate and combine public and private economic development initiatives. HGAC is governed by a board of directors chosen from among locally elected officials. A separate board governs the new economic development district. Local projects within its service area will receive 87 percent of HGAC's 1988 funding.62

The Department of Traffic and Transportation is primarily concerned with the preparation of short-term (1-to-5-year) mobility plans, development of a Thoroughfare Plan, subdivision and plat reviews, conducting traffic studies, data collection, and automation. General funds from the city budget and federal funds apportioned by the MPO serve as the sources of funding for the operation of this department.63

The Houston Metropolitan Transit Authority (MTA) is a quasi-public entity which provides public transportation services. Its service area covers the western three-fourths of Harris County,
including the majority of Houston. As a quasi-public agency, MTA uses its taxing authority to levy a sales tax within its boundaries. Income generated by this tax is its primary source of revenue, although it receives federal funding directed through HGAC.

MTA facilities include high-occupancy-vehicle (HOV) lanes on three freeways, park-and-ride facilities, and city transit buses. It has played a major planning and funding role in the construction of the HOV lanes, as well as partially financing other projects in the area. The MTA is governed by an appointed board of directors.

The long-range Comprehensive Mobility Plan was adopted in 1988. The MTA has produced a Rail System Connector Plan in an effort to secure federal funding for the provision of a 20-mile rail system. The mobility plan also includes a 95.5-mile transitway system (HOV) which will service six freeway corridors, a general mobility program which concentrates on rehabilitating and improving roadways, and enhancement of the present bus system.64

The City of Houston Public Works Department is responsible for the construction and maintenance of roadways, utility operations, and water/wastewater facilities within the city. It also is involved with the permit process and inspection of facilities under construction. General-fund monies are utilized for the maintenance portion; for other purposes, the department relies on capital improvement program funds.65

The City of Houston Aviation Department owns and operates the Houston Intercontinental Airport, Hobby Airport, and Ellington Air Force Base. Houston Intercontinental is the most modern and largest of all the airports in the area. Hobby is located six miles southeast of downtown Houston and serves as a secondary passenger facility. The Ellington airport serves cargo rather than passengers.

The majority of equipment used at the airports is privately owned. Though many freight forwarders operate in city-owned buildings on the airport grounds, the actual sorting equipment is their own. The city is charged with the responsibility of maintaining the runways and terminals. The private firms have various levels of maintenance responsibility with respect to their leased spaces.

The primary sources of funding include lease receipts from airlines using the facilities, parking receipts, hotel/motel taxes, and surcharges to taxi fares.66

**Level of Interaction.** Transportation agencies within Houston tend to interact in a limited fashion. Interaction
exists between some city agencies and the State Department of Highways and Public Transportation, as they have to cooperate in bringing about certain infrastructural changes (i.e., creation of HOV lanes on state-owned highways).

All of Houston's transportation agencies must cooperate and interact with the MPO in order to carry out the "3C" planning process. As such, the public works department also works in close contact with the planning department and the transportation department which, in turn, work in concert with the MPO.

Intermodal Projects. Several intermodal projects in the Houston area merit closer attention. While the high-occupancy-vehicle lanes and park-and-ride programs that are in operation within the area are prime examples of intermodality, this domain is somewhat dominated by the Houston airports. Intermodal passenger connections to airports include multiple taxi companies, direct routes provided by the Houston Metropolitan Transit Authority buses, and private helicopter service(s) from several locations around the city. Additionally, remote airport check-in facilities are provided by private contractors at the Galleria Mall and downtown.

Helicopter services operate on a charter basis between Houston Intercontinental Airport, Hobby Airport, downtown, Greenway Plaza, and the Galleria. They also serve as a primary carrier of mail from downtown to the U.S. Mail terminal at Intercontinental Airport.

Intermodal freight operations at the city's airports are of two types. The first is characterized by a city-owned warehouse or hangar leased to a private operator on the airport grounds. This is particularly common at Hobby and Houston Intercontinental. The second type of intermodal freight transfer takes place at Ellington Air Force Base. There, the city owns the airport, but the majority of its traffic is generated by a single operator, UPS. UPS operates its own plane and truck fleets from Ellington and distributes its cargo to several local distribution sites around Houston. Much like the freight forwarders operating at the other airports, UPS completes all its intermodal transfers within its own facilities and with its own equipment.67

The Rail System Connector Plan which is under consideration at the present time also serves as an example of an intermodal project, as it calls for a rail system to service the area. However, this program is presently under consideration and no functional steps have, as yet, been taken to promote this plan.68
San Antonio

Introduction. San Antonio has 842,779 people and is the county seat of Bexar County. It is ringed by two dozen smaller suburbs, which house many of the remaining 250,000 inhabitants of Bexar County. The topography is very hilly and laden with spring-fed streams. The city's economy depends on tourism, distribution, biotechnology, and a large federal payroll. Specifically, the Alamo, Spanish Missions, Riverwalk, and Sea World draw vacationers, while five U.S. Air Force bases and two Army bases secure defense-related spending.

Economic Development. The Department of Economic and Employment Development (DEED) handles planning for and assessment of economic development programs within the region. The primary role of this department is to ensure a sound economic base for the city through attracting new and sustaining existing businesses. In transportation matters, the department acts as a liaison between private interests (business and industry) and the area's transportation agencies in facilitating and expediting infrastructure improvements that accommodate the needs of expanding and new businesses.

DEED often works in conjunction with the Economic Development Foundation, a private-sector agency which relies on membership dues from various businesses throughout San Antonio. The Department of Economic and Employment Development is eligible to receive general funds obtained through taxes and permit fees. Approximately one-half of the department's operating budget comes from Job Training Partnership Act monies apportioned by the federal government. Additionally, the U.S. Department of Defense provides funding for a Procurement Outreach Program, which provides private businesses with information concerning the bidding process for defense contracts.

Currently, DEED is involved in the proposal process of developing a Strategic Economic Development Plan. Target 90 is an update of the 1980 plan and seeks to outline the direction that San Antonio's economic development should take in the next decade.

Transportation Planning Agencies. There are five main agencies which conduct transportation planning in San Antonio: the San Antonio-Bexar County Metropolitan Planning Organization, which serves as the city's lead agency, the City of San Antonio, the Alamo Area Council of Governments, Via, and Bexar County.

The San Antonio-Bexar County Metropolitan Planning Organization consists of two full-time staff, a ten-person Technical Advisory Committee (TAC), and a fifteen-member Transportation Steering Committee. The former committee contains experts periodically borrowed from the above constituent agencies
and a private transportation provider representative. The latter is composed of the San Antonio City Council and representatives from the three other aforementioned groups plus a military envoy. Only the Alamo Area Council of Governments is not included, although it is represented on the TAC. This structure was created in 1974 and designated the MPO in perpetuity last year by Governor Bill Clements.71

One-half of the MPO's $500,000 planning budget comes from the FHWA, while the remainder comes from UMTA. Every year the MPO issues a Self-Certification Statement, Unified Planning Work Program (UPWP), and an Annual Element (AE) to the three-year Transportation Improvement Program (TIP). The MPO also drafts the long-range Transportation Plan; the 1981 plan is currently in effect. The following provides a synopsis of the particular features of San Antonio's MPO documents.72

The 1989-1991 TIP is divided into a highway and street section and a transit section. Since construction projects are typically funded on an 80 percent/20 percent matching-share ratio between federal and nonfederal money, the TIP/AE also includes the status of state and local bond financing for each project.73

The Transportation Improvement Program outlines the long-range elements of transportation planning within the region. The 1981 plan currently serves this purpose. Issues such as right-of-way acquisition and improvement of roadway standards are addressed in this plan.74

The 1987-88 Unified Planning Work Program requested funding for undertaking three continuing, one two-year, and sixteen one-year studies. Every "programmed study" has a designated lead agency—usually the initial requestor—and possibly several participatory agencies.

Two especially innovative studies were cited in the 1987-88 UPWP. First, the City of San Antonio and the Alamo Area Council of Governments (AACOG) requested $63,830 to develop home-to-work travel zones consistent with the 1990 census. This is the specific proposal behind AACOG's interest in geographical information systems. Second, the MPO staff petitioned for $35,500 to improve government invitations for bids in order to apprise private transportation providers of bidding requests.76

The City of San Antonio plans for roadway expansion and right-of-way acquisition concomitant with the city's expected growth. San Antonio's transportation plans also consider the municipality's five-mile extraterritorial jurisdiction (ETJ). Approximately two-thirds of the city's planning funds come from the Federal Highway Administration (FHWA). This money is disbursed through the State Department of Highways and Public Transportation (SDHPT). The other one-third of San Antonio's
planning funds come from the city's general revenue. Although the planning process is fluid, the city amends its 1978 Major Thoroughfare Plan annually. This plan is the specific component of the general 1978 Transportation Plan. The latter is itself in accord with San Antonio's Master Plan.76

The Alamo Area Council of Governments' (AACOG) transportation planning function is to provide assistance and technical expertise to constituent governments upon request. The AACOG is funded primarily through the U.S. departments of Education, Labor, Health and Human Services, and through congressional appropriations under the Older Americans Act. However, none of these grants is transportation specific. Currently, the AACOG defers most transportation issues to the MPO. However, the AACOG was involved in planning for hazardous materials transportation several years ago. Moreover, the AACOG is currently discussing a renewed role with the MPO's board of directors. Specifically, it is interested in implementing a geographical information system for the area.77

Via is San Antonio's metropolitan transit authority (MTA). It operates buses and park-and-ride programs. Via's planning department has three functions. First, its short-range plan establishes specific routes for buses. Next, its mid-range plans suggest areas for locating future facilities. Currently, Via is planning for a new satellite garage. Finally, the authority's long-range plans rely on computer models to predict urban growth in twenty year increments.

Via's planning money comes from its own tax revenue and grants from the Urban Mass Transportation Administration (UMTA). The planning department is not required to issue regular reports. However, it made a staff decision to annually update its long-range service plan. The mere existence of a long-range plan is a prerequisite for UMTA money.

Bexar County's transportation planning focuses on yearly traffic counts, tracking new electrical connections with city public services, and counting new residential lots with developers. These activities allow the county to predict future growth areas. However, the expanse of San Antonio and its ETJ within Bexar County relegates the county to finishing or connecting roads begun in the city. County taxes make up 95 percent of Bexar County's planning revenue. The remainder is supplemented by variegated federal sources. The county issues no regular reports and relies heavily on other members of the MPO for transportation direction.78

Level of Interaction. As the designated metropolitan planning organization, the San Antonio-Bexar County MPO is in frequent contact with the other local transportation agencies in an effort to ensure that the agencies meet requirements for
federal funding. As such, several departments can work together as lead agencies in order to obtain federal funding for various projects. As was stated earlier, the AACOG and the MPO are considering plans for establishing a geographical information system. Moreover, the other local agencies rely on each other by sharing technical expertise and data in order to facilitate the cooperative process of planning for San Antonio's transportation infrastructure.

Cooperation is also enhanced through the economic development agency, as it interacts with city transportation entities in order to strengthen San Antonio's economic base. An example would perhaps better illustrate this point. In its efforts to attract Sea World to the area, the economic development department contacted Via in order to ensure the provision of specific bus routes and encouraged city departments to improve roadway accessibility to Sea World.

**Intermodal Projects.** With the exception of Via's existing park-and-ride program, no intermodal projects have been planned for the San Antonio area. However, a study concerned with the creation of a reversible bus lane on Interstate 10, from northwest San Antonio to downtown, may be undertaken if growth in the area warrants.

**Travis County**

**Introduction.** The 1985 population of Travis County was estimated to be 533,200. The county's population per square mile is 939 people. The Colorado River runs through the county and its topography is marked by rolling hills. The county's economy is based on research and development, education, and state government. 79

**Economic Development.** The Austin Department of Economic Development and International Trade acts as the lead agency for economic development activities within the Austin area. The department concentrates on tasks such as job training, site-plan regulation, and providing financial assistance to existing businesses. In terms of transportation, this department serves as a liaison between businesses and the city entities responsible for transportation-related improvements. If a business is interested in upgrading traffic signals, improving roadways, or enhancing access to its complex, it contacts this department which subsequently informs the appropriate transportation agency of the necessary changes. 80 In some cases, the Chamber of Commerce will also act as a liaison.

The planning department is responsible for AustinPlan which, if adopted, will serve as the comprehensive plan for the city. 81 The draft of AustinPlan contains an economic development element. The economic development portion refers to transportation issues.
in encouraging harmony between municipal infrastructure expansion and economic trends.  

Funding for capital improvement projects was made available through the 1984 bond program. Both the city and county rely on bond money for administering capital improvement projects, which range from road improvements to the provision of sidewalks and walkways on bridges.

**Transportation Planning Agencies.** The lead agency concerned with transportation issues is the Austin Transportation Study Policy Advisory Committee. Other agencies directly involved in transportation are the Planning Department, Capitol Area Planning Council, Capitol Area Rural Transit, Capital Metro, Transportation and Public Services Department, the Travis County Transportation and Public Improvements Department, and the Aviation Department. Many of these local actors perform complementary roles in ensuring a comprehensive and cohesive approach to transportation planning within the region. The following presents a synopsis of the functions performed by each of these local entities.

The Austin Transportation Study Policy Advisory Committee (ATSPSC) serves as the metropolitan planning organization for the region. It is made up of 17 members, the majority of whom are elected officials; other members are appointed by local agencies. ATSPSC has the responsibility of coordinating and overseeing all transportation planning activities that take place within the metropolitan area. The Austin Transportation Study is responsible for ensuring that the "3C" planning process is carried out within Austin. Approximately 80 percent of the funding for this agency is provided by federal agencies (FHWA and UMTA), while the remainder is allocated by the State of Texas.

This agency is responsible for preparing the following planning documents: the Transportation Improvement Program and Annual Element, the Transportation Plan, and the Unified Planning Work Program.

The Transportation Improvement Program and Annual Element is the document which receives funding from federal and state sources. It outlines a five-year transportation improvement agenda (1988-1993, adopted August 9, 1988). The TIP provides a listing of all types of transportation-related improvements, ranging from construction of highways, roadways, and bridges to the provision of special transit services and park-and-ride facilities, a brief account of implementing agencies (state, city, county, and Capital Metro), and both the source and amount of funding which will be provided by the various agencies. The Annual Element highlights those projects that will be undertaken over the 1988-1989 period.
The Transportation Plan is primarily concerned with long-range policies and serves as a general guideline for outlining the ultimate goals that will be set for the region in terms of capital improvements. Local, regional, and state agencies must adhere to the general mandates and chronological stages of this document. The Austin Transportation Plan encourages acquisition of rights of way for future use in a manner that is environmentally and socially sensitive to the needs of the community. Moreover, the plan demonstrates a strong commitment to planning in a timely, financially responsible, and coordinated (multimodal) fashion.

The Unified Planning Work Program highlights a general description of long-range, short-range, and transportation improvement programs that will be undertaken within the region. It specifies previous work performed on the various projects and establishes a breakdown of the agency responsible for planning in that area and the budgetary responsibilities of each agency.

The recent reorganization of the Office of Land Development Services and the Planning and Growth Management Department has led to the consolidation of the two departments under the heading of Planning Department. This department is involved with both the short-range and long-range aspects of planning for the City of Austin. The short-range portion concentrates on site-plan reviews and traffic impact analysis. The long-range planning section of the department is currently involved with the transportation portion of AustinPlan. As such, it is responsible for conducting arterial roadway analysis and travel-demand forecasting in an effort to ensure that it plans for sufficient roadways to meet the current and increasing demands of residents. As can be discerned, this department is responsible for the technical aspects of transportation planning by emphasizing the development of suitable models for forecasting. Moreover, in order to estimate demand, the transportation portions of the planning department rely heavily on the land-use, economic, demographic, and environmental studies which are conducted within the department.

The primary funding for this department comes from three specific sources. For the long-range planning portion, the department relies on Federal Highway Administration grants. A portion of the budget as set aside by the city council serves as a second source of funding. A third source of funding is generated through fees which applicants must pay in order to submit their projects for review.

The Planning Department has been involved with the final preparation of AustinPlan, which will serve as the city's comprehensive plan. The transportation element of the draft of the AustinPlan encourages a multimodal approach to transportation planning within the region. Additionally, the department must
submit annual reports that aid the city council in apportioning its budget.

The Capital Area Planning Council (CAPCO) is a voluntary association of member governments for a ten-county region which includes Travis, Hays, Williamson, Bastrop, Fayette, Caldwell, Lee, Llano, Blanco, and Burnet counties. This agency's role in transportation comes through its designation as the Area Agency on Aging. CAPCO helps finance the CART program insofar as the program provides services to the elderly. The Capital Area Rural Transit (CART) is a para-transit agency which operates both fixed and demand-responsive routes and services the ten-county region. It also provides door-to-door medical services within the city.

Funding for CAPCO is provided through Title 3 (amended) of the Older Americans Act of 1965. Such funds are allocated from the Texas Department on Aging to regional Area Administrations on Aging. A portion of the Title 3 funds are then awarded by CAPCO to CART. Title 3 funds account for approximately 5 percent of CART's total funds, while UMTA section 18 grants account for 60 percent of the agency's total budget. Title 19 funds and local government matching funds obtained from county and city governments comprise the remainder of CART's budget.

As the Metropolitan Transit Agency, Capital Metro has to provide an efficient and appropriate transit system for the region. The primary mode of transit currently provided by the agency is its bus system. However, Capital Metro also has a Dillo system which is a downtown circulatory bus system that services Austin's central business district. This agency also contracts with the Greater Austin Transportation Company (American Cabs) in order to deliver transit--via vans--to six routes having poor ridership which Capital Metro does not desire to discontinue at the present time.

Capital Metro is currently involved with the Transit-Way Corridor Area Plan. The first phase of this project involved the selection of corridors in which transit options would be enhanced. The north-central and northwest corridors were ultimately chosen. Capital Metro personnel are currently working on the second phase of this project, which is concerned with determining what mode of delivery should be undertaken. The following are the five alternatives that Capital Metro is considering at the present time:

1. keep bus system as it is;
2. increase bus service and construct bus-only lanes to speed up bus operations;
3. construct a bus way, complete with a barrier, that would serve to isolate buses from other traffic;
4. provide a light-rail system for the designated corridors; and,
5. provide a light-rail system that would utilize the railroad right of way which is located in the downtown and east Austin area.01

As Capital Metro has the authority to tax, it relies on one cent of every dollar of sales tax revenues. Fare boxes on buses account for 13 percent of the organization's operating costs. A third major source of funding for Capital Metro is provided through Urban Mass Transportation Administration (UMTA) grants. Capital Metro is currently receiving sections 8, 9, 10, and 15 grants from UMTA.

The Transportation and Public Services Department (TPSD) has the task of constructing, maintaining, and repairing Austin's roadways. While the planning department is responsible for assessing the adequacy of roadways in the city, TPSD is responsible for implementing projects. Most of the actual construction and repair of roadways is done through contracts with private construction firms. However, TPSD oversees the construction process in order to ensure that contractors meet the designated specifications of projects.

The repair of streets is primarily funded through property tax dollars, while construction is financed through general obligation bonds which require voter and council approval. TPSD also occasionally receives federal dollars through cooperation with the State Department of Highways and Public Transportation.02

The Travis County Transportation and Public Improvements Agency serves as the county counterpart to the Transportation and Public Services Department. It is responsible for the maintenance, construction, and repair of county roadways and bridges, as well as the acquisition of rights of way for the county and the State Department of Highways and Public Transportation. It is also responsible for maintaining road and bridge systems in unincorporated areas. Funding for this agency is provided through the 1984 bond issue, which was earmarked for capital improvement projects.38

The Austin Aviation Department is a financially self-sustaining city agency whose responsibility is to plan for the development and maintenance of the city's airport(s). This department is currently involved with initiating the planning phase for the proposed new airport, to be located in Manor. However, before beginning the planning process, a project manager for the new airport must be selected by the city council. The aviation department generally contracts out for major projects, such as terminal expansion and runway construction. The major source of funding for this agency is provided through the Airport
Improvement Program of the Federal Aviation Administration. Other revenues are generated through fees paid by airlines for renting space within the airport and for parking. Excess revenues of this agency are put back into the capital improvement funds. Moreover, the aviation department is required to submit a six-year Capital Improvements Plan to the city council in order to qualify for funding for its projects. 94

Level of Interaction. As can be discerned, local agencies must interact and cooperate not only in order to adhere to the "3C" planning process, but also because their functions often are complementary. The most organized and visible form of interaction is seen among all of the local entities and the Austin Transportation Study (ATS). The nature of the tasks performed by ATS necessitates close contact and coordination among all the agencies that ATS oversees. Interaction among city agencies is also common as one agency may be responsible for the planning of projects, while another has the task of implementing them. In other instances, one agency provides technical assistance to others. This is true of the Transportation and Public Services Department, which periodically provides the aviation department with much-needed manpower. As the agency responsible for monitoring capital improvement projects, TSPD is also in close contact with the city planning department and the aviation department.

Cooperation can also be generated through financial mechanisms. The Transportation and Public Services Department has an agreement with Capital Metro that requires Capital Metro to pay for the repair of roadways which are damaged by Capital Metro buses. CARTS and CAPCO have to cooperate as the latter provides the former with financial assistance for its operations.

Another impetus for interaction is the exchange of technical information. While Capital Metro and the city's planning department both perform their own forecasts and modeling, they sometimes share such information. Finally, communication and cooperation can be garnered in order to provide for one of the basic goals of transportation planning: to facilitate the provision of safe, efficient, and desirable connectivity in an effort to service the community. In this respect, the planning department strives to provide sidewalks beside the routes of Capital Metro buses. As can be discerned, at the local level, the various responsibilities of agencies necessitate contact and exchange.

Intermodal Projects. The number of intermodal projects currently in effect in Austin is somewhat limited. However, in this section, an effort will be made to outline existing intermodal projects, as well as those that are still in the planning stages.
Park-and-Ride. There are five park-and-ride lots in operation in Austin. Capital Metro owns all of these facilities, except for the Municipal Auditorium's parking lot, which is owned by the Transportation and Public Services Department. Some of the park-and-ride facilities in residential areas also provide shuttles within residential areas which transport people from specific neighborhoods to the nearest park-and-ride facility. The Leander, east-north, and Pflugerville routes are under contract with the Kerville Bus company.

Both Capital Metro (bus) and CART (van) provide fixed-route services from specific stops to the airport. Capital Metro provides this route within the city, while the CART van originates in Wimberley. 96

Capital Metro and the city are also involved in a land-banking venture. The Llano to Giddings right of way, officially owned by the city of Austin, is currently being used by the Austin Railroad Company for freight transfer. However, a 65-mile public transit easement of the right of way is owned by Capital Metro. In order to resolve questions of ownership and management, an investigation of possible alternatives and recommendations was undertaken. A report outlining these alternatives and recommendations has been submitted to both entities by the Center for Transportation Research at The University of Texas at Austin. The final decisions concerning these issues have not been made as of this time. Once the decisions concerning the project and the right of way itself have been made, the right of way may serve as a possible site for a light-rail operation. 96

CART and Capital Metro are currently involved in negotiating the construction of a terminal transfer facility. While Capital Metro will provide no financial assistance for the construction and maintenance of the site, both agencies are interested in participating in a program in which a Capital Metro bus and a CART van will be able to cooperate in transferring passengers within the area. 97

The Port of Houston

Introduction. The Port of Houston, the third largest port in the United States in terms of total tonnage, is a general-purpose, deep-water cargo port. It is located on the east side of the city of Houston. Its facilities line the 25-mile-long Houston Ship Channel, which connects Houston to Galveston Bay and the Gulf of Mexico. The port leads the nation in handling wheat, iron, and steel products.

The public facilities of the port are owned and operated by the Port of Houston Authority, which is an autonomous political subdivision of the state; it conducts its own planning and
budgeting operations. Both publicly and privately owned facilities within the port's "corporation limits" are governed primarily by the Port Authority, and not by the surrounding cities. A seven-member appointed commission administers the port; its members include land developers, labor union officials, oil industry leaders, and an attorney. Other organizations are involved in the various activities of the port. The following section presents a brief overview of the functions performed by these agencies.98

The Port Development Corporation is a nonprofit organization that is involved with promoting industrial and manufacturing endeavors within the port. It acts on behalf of the Port Authority in issuing industrial revenue bonds that facilitate and encourage increased participation by private-sector users.99

The Houston Port Bureau is a transportation and logistics service organization that acts as a lobbyist, fact finder, and consultant to its 150 members, which include the port authority, maritime businesses, shippers, customs brokers, banks, and other agencies involved in various aspects of domestic and international commerce. The bureau provides its members with technical assistance and logistics information, as well as monitoring distribution costs and service factors that affect competitive flow within the port. As such, the bureau maintains computerized tariff and cost-formula data bases for rail, motor, and ocean carriers, and for ports and terminals. Additionally, the bureau represents the port authority on logistical matters before state and federal regulatory bodies.100

The Consular Corps is an organization comprised of representatives from 57 nations which have consulates in the Houston area. The main task of each representative is to promote trade and represent the trade-related interests of his/her country.101

Transportation. Transportation connections to the ship channel are numerous. The Southern Pacific Railroad has direct lines into the port. Additionally, the Port Terminal Railroad Association provides service throughout the ship channel area. The association's lines also connect the port to the Southern Pacific, Santa Fe, Union Pacific, Missouri-Kansas-Texas, and Burlington Northern rail heads around Houston. Highway connections include Interstates 10, 610, and 45, as well as state highways 225 and 146. Hobby Airport is 6 miles south of the ship channel, while Houston's Intercontinental Airport is 20 miles north. Deep-water, ocean-going vessels are served along the entire ship channel.102

Terminals. Public facilities of the Port of Houston are divided into terminals. The Turning Basin Terminal is the traditional port facility responsible for handling bulk cargoes,
steel, grain, and automobiles. In 1987, this terminal alone handled almost 8 million tons of cargo.

The Turning Basin Terminal is a complex of wharves, transit sheds, warehouses, and a 6-million-bushel grain elevator, which stretches for approximately 3 miles along the ship channel. Each of its 37 wharves is served by the aforementioned rail companies. In terms of storage facilities, the terminal has 2.3 and 2.4 million square feet of covered and open storage, respectively. The terminal expedites the transfer of cargo between trucks and vessels as well as railcars.103

Barbour's Cut Terminal is the port's major container facility. It uses 11 yard and 8 container cranes to achieve average ship turnaround times of less than 12 hours. The dock has four 1000-foot container berths, a roll-on/roll-off platform and a LASH facility. Two more container berths are planned for the near future. The depth of the channel at Barbour's Cut is 40 feet, which enables mother ships to accompany their barges to the terminal. A computerized container information system is used to track containers in order to ascertain their whereabouts, as well as their various destinations. Barbour's Cut is served by direct railroad ramps and is currently undergoing an $80 million expansion. Five privately owned container facilities operate along the ship channel as well.104

Bulk materials shippers are serviced by the port's Bulk Material Handling Plant at Green's Bayou. Materials, ranging from eight-inch lumps down to granules, can be accommodated by the facility.

The Bayport Turning Basin terminal is a liquid-bulk specialty complex. It is jointly operated by the port and Friendswood Development Company, a division of Exxon, to service 54 chemical companies in the complex. Additionally, the terminals are served by the Southern Pacific Railroad Company and numerous major truck carriers.105

SUMMARY

In examining the state agencies involved in transportation, it can be seen that little multimodal planning exists, due in large part to a lack of formal cooperative mechanisms and funding. Given this situation, few intermodal facilities exist in the state. The exception to this rule is in the private sector.

The State Department of Highways and Public Transportation recognizes the need for multimodal transportation in its strategic plan, but initiatives in this area are limited to urban mass transportation. With respect to the Railroad Commission of
Texas (RRC), substantive planning occurs only within the transportation division, and there is no multimodal planning in the RRC per se. The primary function of the division, like the commission, is that of regulation. Finally, the Texas Aeronautics Commission (TAC) is an example of the lack of multimodal coordination. The TAC has neither the resources nor the commitment from the other state agencies to actively participate in multimodal activities.

In conclusion, the structure of state transportation agencies discourages coordinated intermodal planning. The absence of a unified state department of transportation creates major planning problems when multimodal projects are involved. Modal agencies, such as the TAC, lack political and resource commitment to multimodal projects and planning. Most intermodal activities are left to the localities, as in the case of public mass transportation, or to the private sector, as in the case of freight.
Notes


3. Ibid.


5. Ibid.

6. Ibid., p. 412.


8. Texas Department of Commerce, Programs and Services (Austin, Texas), pp. 1-8.


12. Vernon's Annotated Civil Statutes, articles 6663b and c (revised) 1987 (relating to Mass Transportation and the Public Transportation Fund), and 4477-9a, 5415e-2, 663 through 6701c-4, and 6701j-1.


14. Ibid.


18. Texas Constitution, article X, section 2; article XVI, section 30; acts 1891, p. 55 (Vernon's Annotated Civil Statutes, articles 6444-6519; articles 911a, b, c; articles 6004-6006; and articles 7621d, et seq).


24. Ibid.
25. Ibid., p. 25.
27. Ibid., p. 32.
29. Ibid., p. 40.
30. Ibid., p. 54-5.
31. Ibid., p. 56.
32. Interview with Mike Calhoun, December 2, 1988.
33. Interview with Mike Calhoun, December 2, 1988.
34. Lyndon B. Johnson School of Public Affairs, Guide to Texas State Agencies, p. 51.
35. Interview with Mike Calhoun, December 2, 1988.
36. Interview with Mike Calhoun, December 2, 1988.
37. Texas Aeronautics Act, article 46c-1, et seq.

39. Interview by Monty Headley and Larkin Jennings with Clay Wilkins, Executive Director, Texas Aeronautics Commission, Austin, October 27, 1988.


43. Ibid.

44. Interview with Clay Wilkins, October 27, 1988.

45. Interview with Clay Wilkins, October 27, 1988.


47. Telephone interview by Shahrzad Amiri with Mike Norwood, Director, Department of Economic Development, Dallas, Texas, March 11, 1989.


49. Telephone interview by Sanjay Modur with Gordon Shunk, Senior Transportation Planner, NTCOG, Dallas, Texas, October 14, 1988.

50. Telephone interview by Shahrzad Amiri with John Brunk, Manager of Transportation Planning, Dallas Transportation Department, Dallas, Texas, March 11, 1989.

51. Telephone interview by Shahrzad Amiri with Ron Whittington, Media Relations Manager, Dallas Area Rapid Transit, Dallas, Texas, April 7, 1989.

52. Telephone interview by Shahrzad Amiri with Don Cranford, Manager of Project Coordination and Planning, Public Works Department, City of Dallas, April 8, 1989.
53. Telephone interview by Shahrzad Amiri with Harry Nicholls, Executive Director, McKinney Avenue Transit Authority, Dallas, Texas, April 7, 1989.

54. Telephone interview by Shahrzad Amiri with Charlotte Marks, Associate Transportation Planner, Fort Worth Planning Department, Fort Worth, Texas, April 11, 1989.

55. Telephone interview by Shahrzad Amiri with Thurman Schweitzer, Transportation Planner, Fort Worth Transit Authority, Fort Worth, Texas, April 15, 1989.

56. Telephone interview by Shahrzad Amiri with Nancy Amos, FWTA Administrator, Department of Transportation and Public Works, City of Fort Worth, Texas, April 12, 1989.

57. Telephone interview by Shahrzad Amiri with Dana Ryan, Senior Planner, Dallas-Fort Worth International Airport Board, Dallas, Texas, March 25, 1989.

58. Dallas Area Rapid Transit Authority, Transit System Plan, Draft (Dallas, Texas: April 4, 1989).


60. Telephone interview by Shahrzad Amiri with Ray Viator, Vice President of Communications, Greater Houston Partnership Economic Development Council, Houston, Texas, March 27, 1989.


62. Telephone interview by Scott Carter with Alan Clarke, Planner, Transportation Department, Houston-Galveston Area Council, Houston, Texas, October 4, 1988.

63. Telephone interview by Shahrzad Amiri with Robert Jilla, Assistant Director, Traffic and Transportation Department, City of Houston, Texas, March 27, 1989.

64. Telephone interview by Shahrzad Amiri with Doug Wentworth, Director of Planning Analysis, Houston Metro, Houston, Texas, March 24, 1989.

65. Telephone interview by Shahrzad Amiri with Mark Kosmoski, Assistant Director of Public Works, Department of Public Works, City of Houston, Texas, March 24, 1989.
66. Telephone interview by Scott Carter with Brian Reed, Airport Systems Planner, Aviation Department, City of Houston, Texas, October 5, 1988.

67. Ibid.

68. Metropolitan Transit Authority of Harris County, Rail System Connector Plan and Funding Program (Houston, Texas: March 1989).


73. San Antonio-Bexar County MPO, Transportation Improvement Program and 1988-89 Annual Element (San Antonio, Texas: July 1988).


76. Telephone interview by Thomas A. Pippin with Jesus Garza, Planning Administrator, Department of Planning, City of San Antonio, Texas, November 22, 1988.


80. Telephone interview by Shahrzad Amiri with Dave Krider, Assistant Director, Department of Economic Development and International Trade, City of Austin, Texas, March 20, 1989.

69
81. City of Austin Planning Department, AustinPlan Update (Austin, Texas: 1989).

82. Telephone interview by Shahrzad Amiri with Chuck Terry, Supervising Planner, Planning Department, City of Austin, Texas, March 20, 1989.

83. Telephone interview by Shahrzad Amiri with Joe Gieseman, MPO Representative, Austin Transportation Study Policy Advisory Committee, Austin, Texas, October 17, 1988.

84. Austin Transportation Study, 1988-93 Transportation Improvement Program and Annual Element (Austin, Texas: August 9, 1988).

85. CRS Sirrine, Inc. and Cambridge Systematic, Inc., Transportation Plan for the Austin Metropolitan Area (April, 1986).


87. Telephone interview by Shahrzad Amiri with Carl McClendon, Supervising Planner, Planning Department, City of Austin, Texas, October 24, 1988.


89. Telephone interview by Shahrzad Amiri with Dave Marsh, Executive Director, CARTS Program, Austin, Texas, October 12, 1988.


92. Telephone interview by Shahrzad Amiri with Celeste Cromack, Supervisor of Public Relations, Transportation Public Services Department, Austin, Texas, October 12, 1988.

93. Telephone interview by Shahrzad Amiri with Jim Berry, Engineer, Travis County Transportation and Public Improvements, Austin, Texas, October 11, 1988.

94. Telephone interview by Shahrzad Amiri with Barbara Miles, Administrative Assistant to the Director, Aviation Department, City of Austin, Texas, October 12, 1988.

96. Telephone interview by Shahrzad Amiri with Mark Euritt, Research Scientist Associate, Center for Transportation Research, Austin, Texas, November 7, 1988.


99. Ibid.

100. Ibid., p. 28.

101. Ibid., p. 28.

102. Telephone interview by Scott Carter with Steven Jaeger, Director of Marketing, Port of Houston, Houston, Texas, October 17, 1988.


104. Ibid., p. 15.

105. Ibid., p. 27.
Chapter 4. Transportation in Other States

INTRODUCTION

This chapter provides an overview of the transportation plans, programs, and policies adopted by 13 states and their localities to spur economic growth and to meet their transportation needs. Special emphasis is given to intermodal programs. The chapter is divided into four sections: state economic development activities; state agencies involved in transportation; localities and metropolitan planning organizations involved in transportation; and intermodal plans, programs, and projects.

Information was obtained by field visits to eight states—California, Florida, Illinois, Iowa, Maryland, New York, Pennsylvania, and Washington—and by conducting telephone interviews in five other states—Minnesota, New Jersey, Oregon, Virginia, and Wisconsin. The individual reports on these two groups of states appear in appendices A and B. A questionnaire, appearing in appendix D, was developed to provide a formal structure for all interviews.

The surveyed states were chosen on the basis of extensive telephone interviews with transportation experts and after an examination of literature forwarded by about 30 states. Knowledgeable officials of states most frequently recommended for analysis were then interviewed by telephone. This selection process culminated in a decision to conduct field trips to eight states that appeared to have formulated and implemented the most comprehensive set of economic development and transportation-related activities; and also to conduct telephone interviews with state and local officials in five other states that appeared to offer interesting, but less comprehensive programs, projects, or policies.

STATE ECONOMIC DEVELOPMENT AGENCIES AND ACTIVITIES

The 13 surveyed states vary greatly in their economic development activities. Some states give top priority to efforts to spur economic growth, while others focus on growth-management issues such as land-use controls and environmental concerns. Some states have produced economic development plans and have formulated economic development strategies and programs, while others see no specific need to engage in these kinds of activities (especially the need to maintain and upgrade a state’s transportation infrastructure), while others do not. For purposes of providing a summary, the following discussion will group states according to similar activities.
The states of Illinois, New York, Pennsylvania, and Wisconsin give explicit recognition to the importance of transportation in promoting economic growth. These states consider transportation issues in their economic development planning activities, employ transportation professionals in their economic development agencies, provide some type of transportation project funding, and communicate regularly with state and local transportation agencies, as well as with the private sector. The Illinois Department of Commerce and Community Affairs (DCCA), for example, includes transportation-access information in its database of potential building sites, and transportation-system information in its community profiles. Both sources of information are available to potential businesses to aid them in site location.

Moreover, the "Build Illinois Public Infrastructure Loan and Grant Program" has been used to finance transportation-access improvements when such projects are considered vital in a community's effort to attract new industry or retain existing firms. Although the program is designed to increase the state's attractiveness and competitive position, the state is not able to provide free transportation-access improvements to every prospective firm. In some cases, the state will require that the firm pay some or all of the improvement costs. If improvements are needed, DCCA will contact the Illinois Department of Transportation to conduct an evaluation of the site and determine the cost of access improvements. State and local officials agree that "Build Illinois" has been a valuable tool in the state's economic development effort; however, it is uncertain whether the state can maintain the current level of funding, given the state's debt position and the political difficulties associated with tax increases.

Another important innovation, spearheaded by DCCA and aimed at local economic development planning, is the "Corridors of Opportunity" program. The "Corridors" program embodies the philosophy that communities should play a more active role in marketing themselves to prospective firms. Another purpose is to decrease competition among communities in a corridor to encourage cooperative joint-marketing efforts that will benefit the corridor as a whole.

The "Corridors" title is derived from the fact that the state has been divided for purposes of this program into regions called transportation corridors. This classification is based on the traditional interstate transportation corridors located throughout the state. To date, 20 such corridors have been defined by DCCA.

DCCA's primary role in this program is assisting local officials to organize corridor committees which are responsible
for marketing the corridors. DCCA provides marketing training for corridor officials, as well as funding to enable economic analyses and advertising. DCCA so far has channeled $2.2 million in state funds to corridor committees. Another major training effort is to make corridor officials more aware of any unique attributes or resources to be found within their corridors so that they can be used as the basis of marketing efforts.

In New York, transportation is considered an integral element of economic development. The economic development subcabinet includes a representative from the New York Department of Transportation (NYSDOT). It is common for the Office of Economic Development (OED) to refer transportation-related projects to the NYSDOT for implementation. Economic development officials recognize that state infrastructure assistance can be a very attractive enticement to retaining an existing company or attracting a new company. The state development plan specifically identifies the maintenance and improvement of transportation infrastructure as one of its goals. Several programs have been devised to help reach this goal. The Industrial Access Program provides grants and loans for road projects that encourage and/or are vital for industrial development. The Roadway Improvement Committee relies upon Rebuild New York Bond Act monies to improve highway and bridge infrastructure. Finally, the state, along with the Port Authority of New York and New Jersey, is currently undertaking major capital improvements in the New York City metropolitan area.

Economic development has become a major priority in Pennsylvania with transportation as a key component. The Pennsylvania Department of Commerce/Economic Development Partnership's planning document stresses the improvement of public infrastructure as necessary to support long-term growth. In achieving the goal, the state is seeking first to improve infrastructure links and hubs essential to economic growth. The Pennsylvania Department of Transportation (PennDOT) is currently trying to improve both its industrial/commercial and agricultural access networks. The plan also recommends that infrastructure financing be more attentive to special regional needs and priorities. This is being achieved on a macro-level by the state separating funds for each region to be used to help finance the highest priority infrastructure needs. On the micro-level, the Governor's Response Team works on specific regional projects such as financing and infrastructure construction to improve economic development. The desired result of these and other initiatives by the Partnership and PennDOT is that by rebuilding and expanding the state's highway, rail, air, and water facilities, lower transportation costs will create comparative advantages to spur economic development. Several programs have been developed to improve the state's core transportation system.
The Wisconsin Department of Development offers numerous financing options to localities for the purpose of attracting new industries to the state. Since the state's primary heavy industry is the manufacture of durable goods which depend on access to large metropolitan markets, transportation is seen as an integral part of the state's marketing strategy. The actual economic development programs related to transportation, however, are ultimately administered by the Wisconsin Department of Transportation.

The most notable planning document is "Corridors 2020," a long-range highway/economic development plan designed to improve the state's access to other markets by connecting the state's highway system to the national highway network. The plan is a direct product of the realization that a strong tie exists between economic growth and quality transportation systems.

The plan consists of two elements: the "backbone" and the "connector" highway systems. While commercial access will be stressed in the backbone system, the connector system will link the backbone system to other significant economic centers within the state. Routing for Corridors 2020 was delineated through the application of criteria such as capacity needs, efficient capacity, service to trade centers, truck volume, and service to manufacturing centers. It is hoped that the plan will promote economic development through improved transportation routes.

The second phase of the plan, Metro 2020, concentrates on economic and transportation development problems unique to large-scale metropolitan areas. It focuses on how goods and people move within urban areas, with an emphasis on the movement of people. Under both plans, the backbone system will provide access through and into the state for raw materials and finished goods, while the connector system will provide access to the urban, tourist, and service areas within the state. Taken together, these systems form a total transportation and economic-growth package.

Another transportation-related program in Wisconsin is the Transportation Economic Assistance (TEA) program. TEA is intended to help secure new business development, create new jobs, and increase state revenues by providing transportation improvement funds to municipalities. If an applicant is approved for the program, the state will provide up to 50 percent of the required transportation funding to implement needed projects. TEA funds are open to all modes.

While a number of transportation-related activities are found in the states of Iowa, Maryland, Virginia, and Washington (primarily housed within state transportation agencies), state economic development agencies are only incidentally involved in transportation issues.
Iowa economic development strategies consider how state government can best contribute to the goal of increased income and production through new industry and increased productivity in existing industries. With respect to transportation, strategies seek to increase the value of public services, including infrastructure services, relative to taxes for mobile resources. Iowa sees transportation as one of the basic-support facilities that government provides to foster economic activity. Although the Iowa Department of Commerce interacts regularly with the Iowa Department of Transportation, short of recognizing the role of transportation in its mission, the department does not take an active role with respect to transportation. However, the "Revitalize Iowa's Sound Economy" (RISE) program was created by the state legislature in 1985 to promote economic development through transportation improvements. The program, funded by a two-cent increase in the motor fuel tax, is intended to emphasize local initiatives and involvement, maximize economic benefits, and address transportation and other problems requiring immediate attention.

Transportation is viewed as an important part of the state's economic development in Maryland. The focus in Maryland is to increase communication between state agencies and between the public and private sector. Toward this end, the governor has created an interdepartmental division and several special task forces that study issues such as transportation. The Maryland International Division is composed of three departments, of which the Maryland Department of Transportation is one.

The Virginia Industrial Development Department (VIDD) works with other agencies in the state on matters affecting economic development. It is this function that involves the agency with transportation. Although the industrial development program that helps build roadways to facilitate business start-up and expansion is handled primarily by the Virginia Department of Transportation (VDOT), VIDD works with the VDOT in deciding which projects should be approved and the relative importance of the projects.

Two governmental organizations are primarily concerned with statewide economic development in Washington State: the Department of Trade and Economic Development (DTED) and the Washington State Economic Development Board (WEDB). The DTED is only incidentally involved in transportation issues. It sees the need for infrastructure improvements, such as developing light-rail to ease urban congestion, but it limits its involvement to minor road extensions or repaving. This limited role is more a function of scarce funding than any other factor. The WEDB seeks to promote programs that maintain and improve the state's basic infrastructure, but the agency did not initially create a transportation task force, as it did task forces to study a
myriad of other topics. The agency has since created an ad hoc transportation task force; the task force has made recommendations that include the creation of a $30-50 million dedicated transportation fund (to be matched by private money) for distressed areas.

The third group of states—Florida, New Jersey, and Oregon—tend to stress growth-management issues (land-use, environment, or traffic congestion problems), rather than economic development strategies. Florida employs no transportation professionals in its Department of Commerce. The department does work with the Florida Department of Transportation in the administration of the Economic Development Transportation Fund, but this program makes funds available for transportation accessibility to potential firms for only small-scale road improvements. Due to legislative initiatives aimed at managing the enormous growth that Florida has experienced, transportation is regarded as a tool for growth management, rather than as a stimulus for economic development. Given this view, state goals and policies are designed to obtain a proper balance among environmental, physical, social, economic, and land-use considerations; this balance hopefully will be accomplished by controlling the timing, nature, and location of growth, and by fostering preferred development patterns.

In New Jersey, recent growth and the numerous problems that have accompanied it have forced the state's Planning Commission into the lead role of planning for economic development. One major focus of the commission is the management of growth in suburban areas so that environmental damage and traffic congestion can be minimized.

Oregon's statewide planning program concentrates on land-use planning in economic development. Concerns over conservation of farm and forest lands and natural and coastal resources are balanced with concerns over the proper development of housing, transportation, public facilities, and services. The Oregon Economic Development Department (OEDD) helps coordinate planning and research regarding federal, state, and local economic policies and initiatives. OEDD often cooperates with other state agencies, including the Oregon Department of Transportation (ODOT), in this capacity. An example is a cooperative OEDD/ODOT study of the extent to which land-side transportation improvements could influence economic development on the Oregon coast.

The final two states—California and Minnesota—generally ignore using transportation programs to spur economic growth. In California, no special state efforts have been required to achieve rapid economic growth. Most transportation improvements simply take place to accommodate present and future economic growth. On the other hand, in Minnesota, the state's existing
transportation infrastructure is considered adequate and efficient.

STATE DEPARTMENTS OF TRANSPORTATION

State Departments of Transportation (DOTs) are the primary statewide transportation actors in all 13 of the states studied. These DOTs administer a variety of transportation plans, programs, and projects.

Organization. The title "department of transportation" implies that the agency automatically enjoys cabinet status. However, this implication is slightly misleading. Four of thirteen state DOTs do not enjoy cabinet status. Rather, the California, Oregon, Virginia, and Washington DOTs report to multi-member transportation commissions, appointed by the governor. The commission approach may have advantages over the executive department form of governance. For example, Washington state chose the former route to depoliticize transportation and to ensure continuity and certainty in expenditures on large capital improvement projects.

The California Transportation Commission stands out among the other three commissions for the breadth of its mission. The commission identifies future key policy issues for the governor and state legislature, develops guidelines for private-sector infrastructure contributions, and approves the DOT's budget and the State Transportation Improvement Program.

No matter what their form of state departmental governance, the thirteen DOTs display three types of organizational structure: functional, modal, and geographical. The first of these types suggests organization primarily by functional category such as planning, operations, and construction. The California, Florida, New Jersey, New York, and Wisconsin DOTs follow this model. The second organizational type suggests organization primarily by transportation mode such as highways, railroads, and aeronautics. The Iowa, Maryland, Minnesota, Oregon, and Washington DOTs follow this model.

"Primarily" is an important caveat to the above discussion. For example, the largely functional New York and Wisconsin DOTs include an office of public transportation and division of highway and transportation services, respectively. Additionally, the largely functional California and Florida DOTs house modal units within their organizational structures. On the other hand, all of the largely modal DOTs contain at least one functional unit such as Iowa's general services unit or Oregon's central services unit. In fact, the eclecticism of DOT organizational structures is so widespread that the Illinois and Pennsylvania DOTs cannot be characterized as either primarily functional or
modal. They have "truly mixed" organizational structures. In short, none of the thirteen state DOTs employs a pure organizational structure.

This point is compounded when one considers the third type of organization—geographical. Only the Virginia DOT is organized primarily by geographical districts. However, the California, Florida, Illinois, Minnesota, New Jersey, New York, and Washington DOTs all contain geographical units as well. California's 12 regional offices, New York's 11 regional offices, and Minnesota's 13 regional development commissions are unique among the group since they plan regionally.

Programs and Projects. It will be helpful to examine the state DOTs' variegated programs and plans in a systematic manner. Consequently, this section will first address intermodal programs and projects, and then highway, public transit, rail, air, and water modal programs and projects. Aside from seemingly ubiquitous park-and-ride facilities, five state DOTs—California, Illinois, Iowa, Maryland, and Washington—have explicit intermodal programs or operate intermodal projects. Washington's DOT operates the Washington State Ferry system, which is the largest passenger commuter ferry system in the country. The ferry system evolved incrementally to meet the unique geography of Puget Sound. It is not linked to any statewide intermodal network. Similarly, the Illinois DOT built a new container port in Chicago as a result of ad hoc planning. The DOT believed that improved facilities would make the Port of Chicago more attractive to commodity export industries. Again, there is no link between the new port and any statewide intermodal initiative. The Maryland Department of Transportation coordinates statewide intermodal port activity through its Maryland Port Administration.

Both the Iowa and California DOTs administer intermodal funding programs. The former's Intermodal Pilot Project Program funds marginally profitable commercial projects to benefit Iowa's economy. Both new and dilapidated facilities are eligible for funding. The program is in its first year and was created by a line-item appropriation in the state legislature. California's Intermodal Facilities Program focuses on mass transit. The governor disburses money from the state's Petroleum Violation Escrow Account to assist local governments and the private sector in promoting public transportation systems. Since 1978, approximately 60 projects have received $60 million. The forthcoming Intermodal Plans, Programs, and Projects section of this chapter will detail some similar efforts.

All 13 state DOTs are responsible for highway maintenance and construction. This is not surprising since most state DOTs began as highway departments; only later did they acquire the moniker of "Department of Transportation." In fact, Minnesota,
New Jersey, Wisconsin, and Virginia DOTs still devote a disproportionate amount of their overall attention to highway projects. Three state DOTs stand out for their unique highway programs; as previously discussed, all three programs are linked to economic development. First, Iowa's Revitalize Iowa's Sound Economy (RISE) program uses a two-cent increase in the state's motor fuels tax to fund city and county road improvements which contribute to economic development. Second, New York's Industrial Access Program provides up to $1 million for highway and bridge improvements that create or retain jobs. Finally, Pennsylvania's proposed Twelve Year Transportation Program (discussed later) would raise the state's gasoline tax by 6.5 cents per gallon and dedicate the funds to the economically critical core highway system.

Among the 13 states, only the New Jersey DOT does not deal with public transportation. However, the activities of the Port Authority of New York and New Jersey and the New Jersey Transit Corporation (which operates commuter bus and rail services) make the state very active in transit. New Jersey is more active, in fact, than most of the 12 other states whose DOTs are responsible for transit. The reason is because the state DOT activities are limited mainly to financial and technical assistance. Mass transportation is still primarily a local function. However, two state transit programs are particularly noteworthy. First, New York's Office of Public Transportation holds monthly meetings to resolve in-house conflicts and refocus participants on master goals. This practice may be worthy of widespread emulation, since many transportation professionals in the 13 states commented about vague priorities and overlapping authority. Second, Maryland's Statewide Special Assistance Program ensures transit access to the elderly and the handicapped. This issue is usually addressed on the local or MPO level by the federally mandated Area Administration on Aging.

Without exception, the 13 state DOTs consider railway issues. Many are still coping with the aftermath of federal rail deregulation. Specifically, the Railroad Revitalization and Regulatory Reform Act of 1976 and the Staggers Rail Act of 1980 allowed private rail carriers to abandon unprofitable lines. Washington State's road system was especially hard hit when Burlington Northern and Union Pacific reduced by over one-half their truck-rail transfer centers. However, a paucity of state funds and the discontinuation of the federal Local Rail Service Assistance Program (LRSAF) has stymied Washington State's preservation plans.

Nevertheless, three other state DOTs administer more active rail preservation programs. Iowa's Rail Assistance Program targets the private sector with loans and grants to encourage the rehabilitation of branch lines intended for abandonment. Pennsylvania's Emergency Rail Freight Assistance program funds up
to 80 percent of maintenance and rehabilitation of myriad lines abandoned after CONRAIL's privatization. Wisconsin's Rail Facilities Acquisition and Rehabilitation (RFAR) program combines features of the Iowa and Pennsylvania approaches. Wisconsin's DOT has expended $50 million on RFAR since 1980 and will now provide access grants to businesses needing spur lines. Florida's DOT faces a different challenge—growth in passenger service demand. A planned high-speed rail system between Miami, Ft. Lauderdale, Orlando, and Tampa will address this need.

Among the 13 state DOTs, only the Virginia DOT does not deal with aviation. However, the other DOTs have roles largely limited to providing technical and financial airport assistance. Technical assistance typically includes routine maintenance (such as resurfacing runways), while financial assistance is intended to augment Federal Aviation Administration funds. Similar to public transportation, municipalities usually run their own facilities.

New York's DOT, however, offers an innovative exception. Since 1984, it has successfully improved the transportation and utility infrastructure and developed a business park around Stewart Airport in the Hudson River Valley. The Washington State DOT also operates airports—albeit 18 emergency landing strips. More importantly, it conducts market feasibility studies to lure commuter air service to unserved areas.

Water transportation is the final modal category of DOT programs and projects. There is a great diversity among state programs and projects in this category. Due to the prevalence of separate port authorities, the California, Florida, New Jersey, New York, and Virginia DOTs either largely or totally ignore water issues. Maryland's DOT represents the other extreme: its Maryland Port Administration unit conducts strategic planning for the Port of Baltimore and handles most of the state's containerized commerce.

The remaining seven state DOTs appear to confine their activities to examining water commerce and port integration, licensing port construction, and granting funds for port maintenance. Wisconsin's Harbor Assistance Program stands out from the others for its scale. Wisconsin's DOT will provide up to 80 percent of harbor maintenance or improvement funds, and has spent $6.6 million since 1980.

Funding. The federal government provides much of overall state DOT funding for highways, public mass transportation, and airports. Railroad aid appears to be drying up. The 13 state DOTs receive the rest of their funds from two primary sources: user-fees taxes and bonds. User-fee taxes are ubiquitous. Most states rely on some form of gasoline/jet fuel tax, drivers/pilot
license fees, motor vehicle registration fees, landing fees, and truck weight fees.

The use of general obligation bonds is less common. Only the Illinois, New Jersey, and New York DOTs derive a large part of their revenues from bonds. Except in New York, user-fee revenue and bond proceeds flow into a dedicated transportation fund, or are earmarked for transportation. Yet, dedicated funding is a double-edged sword. It can be very restrictive. For example, Minnesota's DOT is constitutionally prohibited from using motor fuel tax and motor vehicle registration funds for any purpose other than highways. Texas passed a similar constitutional amendment in November 1988. On the other hand, New Jersey created a dedicated transportation fund in 1984 to help ensure revenue continuity. Previously, the New Jersey DOT had to rely on the state's budgetary process for funding. The Wisconsin and Maryland DOTs have the most flexible funding situation. Their dedicated transportation funds are "unified"; all modes or intermodal projects have equal access to all of the money therein. This arrangement may be more conducive to intermodalism than mode-specific dedicated funding, which leaves no money for nontraditional endeavors such as intermodalism.

Only two states show evidence of funding shortages. Florida's DOT is not receiving adequate revenue from its primarily gas tax trust fund to meet anticipated needs. The DOT is attempting to secure some private-sector financing, and is considering alternate ways to fund projects. One unlikely suggestion is the implementation of a statewide income tax. This is a key issue for the 1989 state legislature. A state income tax, partly intended to help finance transportation, is also being hotly debated in the Washington state legislature. Additionally, legislators are considering a hike in the motor fuels tax to address the state's anticipated $3 billion transportation deficit over the next decade.

Plans and Reports. All 13 states still rely heavily on unimodal plans, such as Oregon's 1984 Highway Plan or Minnesota's State Rail Plan, for program and project implementation. None of the states has produced a comprehensive transportation plan that integrates all modes into a systematic, multimodal transportation network for purposes of planning. Oregon's Statewide Plan encourages multimodal plans that have not appeared, while Minnesota has not revised its "comprehensive" plan since 1978. Illinois and Virginia operate solely on the basis of unimodal plans.

It is worth noting, however, that nine states have published documents or have instituted processes that provide overall policy direction to transportation planning. The New Jersey Transportation Plan, Iowa's Transportation Improvement Plan, Maryland's State Report on Transportation, and Wisconsin's
Transportation Policy Agenda cover a variety of topics such as the identification of departmental objectives, adequacy of funding, transportation needs, policies that govern future decisionmaking, and other major issues. Pennsylvania's DOT has produced as internal Action Agenda that outlines overall policy objectives and twenty-three goal statements to determine departmental priorities through the year 1990.

The 12 regional headquarters of California's DOT jointly publish a Systems Plan which addresses transportation goals and objectives to be achieved over the next twenty years, and provides general direction to the highway and rail State Transportation Improvement Program. Washington and New York also are switching to this kind of bi-level planning approach. Moreover, both states intend to produce what promises to be "true" multimodal transportation plans in the updates of their current state transportation plans. Finally, the Florida Transportation Plan is inextricably linked to the state's growth management activities, otherwise called the State Comprehensive Plan. The transportation plan details specific policies and guidelines that were developed in coordination with other state agencies, metropolitan planning organizations, and regional planning councils.

OTHER STATE AGENCIES

The 13 states also contain variegated non-DOT agencies involved in transportation. This multiplicity defies easy summarization. However, three states contain especially noteworthy non-DOT transportation agencies. New York deserves mention because it houses about 30 public authorities which operate over 40 percent of the state's intrastate highway system and many bridges. None of the other states has such an expansive non-DOT road network.

Next, the Virginia Port Authority (VPA) owns and operates the five general cargo Ports of Virginia. VPA tries to operate on a for-profit basis and has wide powers to purchase additional facilities and regulate water traffic. Only the Port Authority of New York and New Jersey exceeds this degree of unification. Finally, Washington State's Transportation Improvement Board (TIB) is a 15-member panel with $20 million to disperse for multi-jurisdictional, economic development, infrastructure improvements. TIB expects, however, private firms to contribute financially to these improvements. This spending flexibility may deserve wide emulation in states plagued with over-dedicated funding.
METROPOLITAN PLANNING ORGANIZATIONS AND LOCALITIES

Metropolitan planning organizations (MPOs) exist primarily as a result of a federally mandated planning process which requires municipalities to plan comprehensively within a region in order to receive federal funding for projects. Beyond this requirement, generalizations are difficult. The activities of 26 MPOs (two in each state) were investigated to ascertain their involvement in economic development and transportation planning, as well as the scope of their authority.

Economic Development and Transportation Planning

The 26 MPOs are varied in their levels of involvement and commitment to economic development and transportation planning issues. Some MPOs are heavily committed to both. An example is the Thurston County Regional Planning Council in Washington State which specifically addresses the link between economic development and transportation planning in the formulation of its plans. And, in Pennsylvania, the Southwestern Pennsylvania Regional Planning Commission (SPRPC) is involved in the planning of several projects to enhance economic development. A new airport, Midfield Terminal, for the southwestern portion of the state is planned in SPPRC's area. SPPRC is attempting to improve multimodal access to this site, but is primarily concerned with roadway access. SPPRC also has proposed a tollway to help the economically depressed Mon Valley, and is formulating plans to better integrate rail, truck, and barge intermodal operations at the Port of Pittsburgh. Another example of direct involvement includes the Chicago Area Transportation Study (CATS). CATS is currently engaged in the land banking of transportation corridors for a third major airport to be located in south Chicago; this project is intended to stimulate economic growth in this economically depressed region in the same manner as O'Hare International Airport did for northwest Chicago.

On the other hand, the Southern California Association of Governments (SCAG) specifically discourages economic growth in the form of new business coming into the area; instead it devotes much of its effort to solving the severe traffic congestion problems that already exist. SCAG's approach is oriented to growth management. A similar philosophy can be witnessed in Florida.

Most MPOs consider maintenance and expansion of existing public infrastructures to be the primary link between economic development and transportation planning. This is a more indirect route as seen in Minnesota, where the maintenance of farm-to-market road and truck access are considered vital to the agricultural community. This is also demonstrated by the Tallahassee MPO in Florida. The MPO spends most of its effort on
It is clear that the geography and demographics of a region dictate the scope of an MPO's activity.

In the area of planning, most MPOs serve as a forum for discussion within the community. MPOs also are required to engage in long-range planning to the extent that it must produce several documents to qualify for federal financial assistance. These documents include a Transportation Plan that outlines transportation policy to be followed within a region, a five-year Transportation Improvement Program with an annual element, and a Unified Planning Work Program. Most MPOs receive a mixture of federal UMTA and FHWA program funds, and state/local matching funds. This mixture of funds varies greatly as does the extent to which MPOs engage in long-range planning beyond federal requirements. In Florida, all MPOs are required to submit a comprehensive plan to the state which assures that the local plans mesh with the state development plans. Most other areas simply rely on the federal planning requirements to serve as their long-range guide to transportation policy.

Scope and Jurisdiction

The size, composition, and jurisdiction of MPOs is yet another source of great variation. The Chicago Area Transportation Study's jurisdiction is composed of 250 municipalities, as well as numerous transportation carriers and authorities representing rail, transit, rapid transit, and other state and regional transportation-related offices. The policy committee of CATS provides a forum for debate. Plans are prepared by staff and voted on by the council. Each council member has one vote. This method prevents one locality or neighborhood from blocking a proposal beneficial to the whole region. Each interest represented on the policy committee is responsible for presenting proposals for its area that may be incorporated into the comprehensive plan. If the proposal is included in the comprehensive plan, then the locality or agency is responsible for implementing the plan. In effect, CATS serves as a clearinghouse for projects and proposals.

The planning process in other MPOs is of a similar nature in the sense that it often involves numerous transportation-related participants. However, this is where the similarity stops. The Delaware Valley Regional Planning Commission, which spans two states (Delaware and Pennsylvania), is often hamstrung by the weak system of county government in Pennsylvania that is hapless in the face of determined opposition from a constituent municipality. In this case, the MPO appears to exist to fulfill the federal requirements for funding. There is little, if any, local autonomy.

The MPO for the city of New York and its surrounding area appears to have been a necessary afterthought. MPOs in the state
of New York are not legally constituted governmental agencies. They rely on "host" agencies to act as a legal agent and are limited to planning only. The New York Metropolitan Transportation Council (NYMTC) is responsible for planning and coordination of transportation policy between state and local officials. It also performs statistical surveys that are provided to area transportation agencies. In contrast, the city of New York Department of Ports and Trade is more involved in the development of intermodal facilities and economic development. Its jurisdiction spans general aviation, rail, ports, wholesale and retail food markets, as well as the promotion of international trade. The Metropolitan Transit Authority (MTA) operates mass transit in the New York City region. Clearly, the NYMTC is not a major actor in the resolution of transportation issues for the New York City area.

The enormous diversity of participants and overlapping jurisdictional boundaries can exacerbate the problem of intergovernmental cooperation and interaction with the private sector. As mentioned above, in the Delaware Valley Regional Planning Commission, localities can disrupt the planning process. This problem can and does result in turf battles in the absence of a lead planning agency. This problem has been solved in the Chicago Area through CATS's policy committee. Most MPOs include representatives from all levels of government who serve in some capacity. For example, representatives of UMTA and other federal agencies often will participate in the planning process or are considered nonvoting members of the policy committee.

Public-Private Sector Cooperation

Cooperation and interaction with the private sector is traditionally limited. Most public transportation planners feel that individual private interests are better served when left to their own devices. The interests of individual private concerns are generally considered to be too narrow to merit incorporation in a broad, long-range transportation plan. Even so, the private sector is not entirely ignored. There exists a nonvoting Freight Advisory Board within CATS that serves to hear complaints and proposals from freight carriers in the Chicago region.

The unique demographic and economic characteristics of regional communities and municipalities dictate the wide range of diversity among MPOs. Some MPOs are weak or exist in name only, such as NYMTC. Others are powerful and effective like CATS. In some cases, a strong MPO is not necessary in an area of slow growth and few transportation problems. Other areas require a strong central planning organization, whether an MPO or some other agency. It is difficult to see how MPOs could be standardized on a national or state level, beyond the measures taken by the federal government to ensure a comprehensive approach to planning.
INTERMODAL PLANS, PROGRAMS, AND PROJECTS

This section highlights some of the intermodal activities being undertaken in the 13 states. California and Iowa are the only states to have established officially designated intermodal programs. California's state legislature and transportation commission acknowledged the importance of intermodal passenger facilities to the state's transportation network by establishing the Intermodal Facilities Program in 1978. This program, financed through the Petroleum Violation Escrow Account, continues to present opportunities to the state to work cooperatively with local governments and the private sector to promote the use of public transportation, while simultaneously stimulating economic growth. Approximately $60 million so far has been expended on projects such as the Santa Ana Regional Transportation Center and the El Cajon Transit Center.

The Intermodal Pilot Project of the Iowa Department of Transportation represents another innovative method of funding intermodal projects. The pilot project is a commitment by the Iowa Legislature to examine further the value of intermodal freight facilities to the state's commerce. Funding is provided by a line-item appropriation; the state assists in the implementation of a project through the provision of low-interest loans and grants.

To be eligible for state financial assistance, a proposed project must meet specific conditions. It must have a detailed plan for either a new intermodal facility, or for the improvement, restoration, or expansion of an existing intermodal facility. The project must consist of a site, structure, or equipment that accomplishes or aids in the transfer of freight from one mode to another, including (but not limited to) ports, terminals, freight distribution centers, intermodal rolling stock, bulk-break facilities, and loading facilities. Moreover, the project must be located within Iowa. It is premature to evaluate the merits of the pilot project; it has been in existence for only one year and so far funding has consisted of a $750,000 loan to a project entailing the transportation of grain.

The New York State Department of Transportation instituted the Full Freight Access Program of New York City and Long Island (FFAP) for several reasons: no modern intermodal rail terminal existed in New York City or in the metropolitan area east of the Hudson River; the area's rail system was not able to physically accommodate modern rail freight equipment due to low overhead bridge clearances; and conflicts with New York City commuter rail operations greatly limited freight movements within the city. Funding for the FFAP was provided by voter approval of the 1979 Rail Preservation Bond Act, the 1979 energy conservation bond
issues, the 1983 transportation bond issues, and by the Port
Authority of New York and New Jersey. The following improvements
have been driven, in part, by the motive of economic
competitiveness with other urban areas.

The Oak Point Link project will provide a dedicated, single
three-mile freight track through the South Bronx. This line will
bypass low bridges, overhead clearance problems, and commuter
trains. It will connect the Harbridge, Harlem River, and Oak
Point yards, and will accommodate up to 40 trains daily. Project
development has temporarily ceased due to construction problems.
Total project cost is estimated to be $70 million.

When completed, the Harlem River Yard will be the first
regional intermodal terminal. Located at the south end of Oak
Point Link, the site consists of 85 acres, with excellent rail
and highway access. The yard has direct rail connection to the
Harbridge Yard. An estimated $100 million will be needed to
complete the project. The New York State Department of
Transportation is considering privatizing the yard.

The Harbridge Yard, completed in 1982 at a cost of $400,000,
is noted for its Road Railer System, which enables the direct
mounting to special truck trailers on rails. This yard is
located at the north end of Oak Point Link.

The Queens-Brooklyn Rail Line Rehabilitation project calls
for the removal of clearance restrictions on the 23 bridges, and
the rehabilitation of rail lines in Queens and Brooklyn.
Improvements will enable modern freight service between the Oak
Point Yard and the Brooklyn waterfront. The East New York Tunnel
will be removed. Project cost is estimated at 9.1 million.

Finally, the Long Island Rail Line Bridge Modifications
project will improve clearances by modifying bridges and lowering
tracks. Total cost is estimated to be $5 million.

Although Pennsylvania has placed a great deal of emphasis on
commodity transfers to promote economic development, the brunt of
its attention has been devoted to improving access to the state's
core transportation facilities. However, several intermodal
public transportation facilities have been developed in
Philadelphia. The city's objective has been to create intermodal
interchanges to help solve a variety of inner-city ills. First
and foremost, new intermodal terminals serving various transit
modes are intended to rejuvenate blighted areas by increasing
property values and commercial development. In this respect,
inner-city intermodal terminals are looked upon as similar to
major commercial redevelopment projects. Another objective is to
increase public transit ridership. It is believed that by making
transit transfers easier and more attractive, increased transit
ridership will aid in the reduction of traffic congestion and automobile pollution.

A major intermodal project created to accomplish these objectives is the Center City Commuter Connection. Located in the center of the central business district, the project connects the two major commuter rail lines with a subway station. The rail lines are linked by an underground tunnel. In 1980, the city received a $9.5-million grant from UMTA to build the facility. The dual objectives reflected in the city's proposal to UMTA were to increase ridership on Philadelphia's rail system and to improve commercial activity in the downtown central business district. The Center City Commuter Connection now boasts a shopping mall where commuters and others may shop. Ridership has also increased.

An extremely large-scale intermodal project now under construction is the Midfield Air Terminal extension. Comprising more than just an upgrading of an airport terminal, the Midfield project is designed to be a complete transportation and development package for the Pittsburgh area. The airport will become a hub for US Air. When completed in 1992, airport traffic is expected to rise from eighteenth to eighth busiest in the nation, and the airport's land area will be the second largest in the nation.

The Airport Area Development Advisory Commission was formed in 1989 to foster and promote orderly, stable, and qualitative growth around the airport area. The commission consists of six task forces or committees: Inter-County Cooperation, Marketing, Finance, Environmental Systems, Land-Use, and Transportation. The transportation task force is further divided into a Roads Division and a Mass Transit Division. Over $1 billion will be spent on projects associated with the construction of the terminal, including a $90-million extension of the Southern Expressway. Mass transit is being considered in all phases of planning.

Because the airport will be a major hub, public officials believe that Midfield will serve as an excellent drawing card for industries interested in access to both national and international markets. Indeed, all of southwestern Pennsylvania is expected to benefit. Economic impact forecasts for the next 20 years estimate the stimulation of $9.5 billion in new business. The airport is forecast to create more than 17,000 jobs over the next ten years and to generate $20 million in annual tax revenues by 1999.

The involvement of the states of Florida, Illinois, Oregon, Maryland, Virginia, and Wisconsin in intermodalism primarily is restricted to various degrees of participation in the intermodal aspects of port operations. The state of Illinois recently
contributed $5 million to construct a container facility at the
Port of Chicago, with the intention that such a facility would
enhance the growth prospects of the port. Before building the
facility, the Illinois Department of Transportation estimated
that it would handle 30 to 40 thousand containers per year and
would make the port more attractive to export shippers.

Since the facility was constructed, however, only
approximately 2,000 containers per year have passed through the
port. The department has discovered that most shippers have
preferred to move containers by rail to East and West Coast
ports, and then load the containers on ocean-going vessels.
Competitive pricing from rail lines made the port a less
attractive alternative than at first believed.

Illinois also conducted a feasibility study for a proposed
Quad Cities intermodal facility along the Mississippi River. The
project never reached the construction stage because the Illinois
Department of Transportation and its consultant concluded that
such a facility could not guarantee economic development for the
area. Even though local officials contend that the project would
attract industry to the area, the department was unable to
identify any substantial industries that would locate in the area
because of the facility. Hence, insufficient justification
existed for the expenditure of state funds.

The emergence of the state of Florida as a major competitor
in international trade has created the need for efficient port
operations. Due to the perceived success of the private sector
on these operations, the Florida Department of Transportation
essentially has stayed out of direct involvement in promoting
intermodalism. However, the department's interest in assuring
adequate multimodal access to and from all the state's ports has
allowed the ports to focus their attention on improving their own
intermodal facilities to maintain competitiveness. Multi-million
dollar improvements are either currently underway or were
recently completed at many of these maritime ports.

The Virginia Port Authority's involvement in the
construction of the Virginia Inland Port also merits recognition.
The inland port is located at Front Royal, 220 miles northeast of
the Ports of Virginia. The rationale for the construction
project is a belief that shippers can realize cost savings by
trucking containerized goods to Front Royal, rather than taking
additional time and incurring additional expense in moving their
goods to Baltimore or Philadelphia. Operations at the Virginia
Inland Port are scheduled to begin in 1989. The land on which
the port is located cost the Virginia Port Authority $41 million.
And up to $30 million in additional funding may be expended on
facility construction.

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Maryland's involvement in intermodal aspects of port operations derives from the fact that the Port of Baltimore comes under the jurisdiction of the Maryland Port Administration (MPA) of the Maryland Department of Transportation. The Port of Baltimore is one of the major cargo handling centers of the world. And the MPA is the primary provider of the largest general cargo facilities in the state. MPA is also responsible for managing the World Trade Center in Baltimore, which serves as a center for maritime activities in the Baltimore/Washington, D.C. area.

In recent years, the Port of Baltimore has lost significant rail traffic, in part, because of the lack of intermodal container transfer facilities. Currently, the MPA is spending more than $1 million in subsidy annually to offset the port's resulting cost disadvantage. To address this problem, the MPA has initiated development of a new intermodal container transfer facility in conjunction with the construction of the Seagirt Marine Terminal.

A future intermodal consideration for the state involves the proximity of the Port of Baltimore to the Baltimore-Washington International Airport. The connection of these two facilities by rapid transit and other modes of transportation has the potential to make them into a single, unified intermodal transport system.

In Oregon, while state monetary assistance is limited in scope, there is a willingness to coordinate statewide central policy formulation with local planning and implementation through cooperative efforts with the state's semi-autonomous public ports. These ports are largely owned by private steamship and railroad companies. Each of the state's 23 port districts is somewhat like a municipality in its legal rights and prerogatives, such as zoning and land-use planning.

Most of Oregon's intermodal activities are port related. A prime example is Astoria which, because of its river location and potential main line rail terminal, has the capability to become a load center for containerized cargoes and a terminal for rail and riverborne bulk cargoes. Plans call for future improvements in the area's land-side roadway and rail transportation infrastructure. Rail rehabilitation projects alone will cost in excess of $30 million.

In a similar fashion, Wisconsin's intermodal activities are largely confined to the Port of Milwaukee. The transformation of the port into a transportation distribution center was caused by market considerations. Petroleum distributors, bulk transfer companies, and steel importers are examples of firms recently attracted to the port.
New Jersey, Minnesota, and Washington have given no special attention to intermodalism. The state of Washington does operate the Washington State Ferry System and is considering a Multi-Corridor Project across Puget Sound; but all intermodal freight projects have been undertaken by private-sector firms, especially by rail carriers serving the state. Minnesota's intermodal projects are related to the provision of skywalks in Minneapolis and St. Paul and high-occupancy-vehicle lanes. A light-rail project, intended to link the region composed of Ramsey, Hennepin, and Anoka counties, is currently in the preliminary design phase of planning. Nevertheless, the project is in jeopardy as the state legislature has yet to decide which agency has the responsibility of oversight for the project.

Finally, the transportation system in New Jersey suffered from severe funding shortages prior to the institution to the state Transportation Fund in 1984. Since that time, most efforts have been directed at rebuilding the state's basic transportation infrastructure. Intermodal planning has been given a low priority. Another reason is that much of the state's current intermodal freight facilities are constructed and operated by the Port Authority of New York and New Jersey.

SUMMARY

Several key themes have emerged from the investigation of how states use transportation plans, programs, and projects to either promote economic growth or to respond to competitive market considerations. Transportation is used by state officials as a mechanism to achieve economic growth and development. Transportation planning is cited as a key component of economic development plans in 11 of the 13 states surveyed. In Pennsylvania, New York, and Wisconsin, the governor's office gives top priority to programs linking transportation planning and economic development. Such political clout greatly increases the speed with which they implement their programs.

State economic development and transportation officials typically create incentive programs designed to attract and retain business. These programs finance infrastructure improvements or additions which benefit local companies and communities. New York's "Industrial Access Program" and Illinois' "Build Illinois" programs are two examples. There are occasions when incentive programs are not created based upon economic development concerns. Such is the case in Florida. Transportation projects in Florida are the result of attempts to manage rapid population growth and a significant industrial increase.

Effective planning facilitates transportation system development and operations. There are several policy tools that
can increase the probability of successful statewide transportation planning. These tools are as follows: one lead state planning agency, a comprehensive and unified state transportation plan, consistent communication among state administrators, DOT planning officials, and project implementors, a formal mechanism to ensure communication and coordination among modes, and a demonstrated respect among state officials for transportation planning.

The "Corridors of Opportunity" program created by the state of Illinois is an excellent example of a program designed to be a communication and planning mechanism. The program trains local economic development officials to increase their organizational and marketing skills in order to improve cooperation and resource allocation within state communities. New York State DOT officials create community task forces and ad hoc inter-agency and intra-agency forums to facilitate discussions and project development. New York DOT transportation officials meet regularly as a formal group to discuss planning issues and redefine short and long-term goals.

Multimodal planning encourages economic development, helps to reduce traffic congestion, and facilitates transportation planning. Multimodal planning is more prevalent in a stable financial environment. Not surprisingly, much of multimodal planning activity is concentrated around freight movement, specifically ports. Often a state's commitment to multimodal planning goes no further than the state's transportation master plan. While states may declare their multimodal intentions, many are actually producing unimodal plans and are organized and function on a mode-by-mode basis. In 1990, Washington and New York will publish new state master transportation plans. In contrast to past plans, planning officials claim these will be "truly multimodal" documents.

Sufficient funding is essential to implement transportation goals, maintain infrastructure, and develop new programs. Flexible funding mechanisms increase a state's ability to make periodic budget adjustments. The Transportation Trust Fund of Maryland is such a mechanism. All dedicated transportation funds are centralized in one fund. DOT officials can access the fund after budget appropriations have been made in order to redirect the monies to needed areas. By design, the Unified Trust Fund of Wisconsin enables all revenues generated from transportation sources to be combined into one fund. Budget appropriations are not limited to their original funding source. Ideally, this flexibility should increase transportation options. However, since the fund is set up by line item, appropriations are made very close to revenue percentages collected and are rarely changed once made.
Without sufficient funding, states find themselves in a contradictory situation: a deteriorating transportation infrastructure, constrained planning environment, and implementing shortsighted planning objectives. Quickly, states lose their ability to offer economic incentives to attract business, provide adequate roads to move goods and people, or to raise sufficient capital to design and construct infrastructure improvements. The state of New Jersey currently finds itself in such a situation. It is focusing all planning and financial resources on statewide transportation infrastructure rehabilitation.

Local involvement in the transportation process links the needs of the community with the goals of the state. To an extent, metropolitan planning organizations represent the voice of the community. Beyond the federally mandated requirements, MPOs do not appear to significantly affect states' actions. Research on the local transportation planning process was limited to an examination of 26 metropolitan planning organizations. MPO activity often reflects the geography and demographics of the region. Therefore, few generalizations can be drawn about the MPOs due to the individual characteristics of each region.

Local-level planning involves a significant number of participants with overlapping jurisdictional boundaries. Shear numbers diffuse the autonomy and therefore the effectiveness of any one agency. Although few localities have addressed this problem, the CATS's program in Chicago is an example of one solution. Public transportation planners often do not encourage private-sector cooperation and interaction in the local planning process. MPOs focus on economic development issues to varying degrees. Economic development activities generally pertain to transportation planning as it affects the maintenance and expansion of the existing infrastructure.

The word "diverse" best describes intermodal activity in the 13 states surveyed. Sufficient funding or at least a stable financial situation is required for an intermodal project to occur. Few states have officially designated intermodal programs. Although states rarely claim that they have never heard the word "intermodal", they often stumble over its definition. Overall, intermodal projects are not encouraged nor discouraged. For many states, intermodal activity is not a priority. For example, in recent years, Florida transportation officials have concentrated their efforts on addressing the immediate deficiencies of their statewide transportation system. Little time is available to consider intermodal alternatives. Officials in Florida, as well as in other states, consider an intermodal solution to a problem no more unique than any other.

In many states, intermodal projects are primarily the domain of the private sector. The state of Washington is a prime
example. Intermodal freight projects are almost entirely operated by the private sector. Mass transit and freight projects dominate the intermodal arena.

No consistency exists among states regarding the level of local, county, or state involvement. For example, mass transit may be operated on the state level, while a freight project may be directed by a local-level agency, or vice versa. For many states, private-sector intermodal operations are so efficient that government sees no reason to intercede. In such cases, states generally support private-sector actions, but do not play an active role in the projects.