Final Report

A Comprehensive Assessment And Evaluation Of Public Transportation's Contribution To Transportation In Texas

Prepared For

Texas Department Of Transportation

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Executive Summary

Chapter 1

Executive Summary

This report presents the results of a four-month project to develop "a comprehensive assessment and evaluation of Public transportation's contribution to the total transportation network in Texas". The four-month project consisted of a number of tasks that focused on recent trends and projections of future transit activities in Texas, and the development of recommendations for the role of the State -- both Texas DOT and other State agencies -- in public transit in the prospective five and twenty year periods. A series of tasks also focused on the roles and experience of departments of transportation in other states in administering state and Federal transit programs.

The project was conducted under the direction of the staff of TxDOT's Assistant Executive Director for Multimodal Transportation. An Advisory Committee composed of representatives of the various public and private sectors of the industry in Texas, transit users, and staff members other offices of TxDOT assisted in the review of interim reports and discussions of technical and policy issues during the course of the project.

Summary of Public Transit In Texas

Public transportation is provided in Texas by a mosaic of local, regional, urban and rural, fixed route and demand responsive, public and private transit systems. The current complex of carriers services over 250,000,000 passengers a year. A summary of the characteristics of the four major sectors of public transit in the State is provided on Table 1-1.

The State's urban transit systems predominantly provide work trips in the peak hours between the suburbs and the central business districts of the urban areas and the employment centers of the suburban and rural areas. The value of these services to the State as a whole can largely be counted as an essential means of access to employment, and as an alternative to costly and intrusive highway expansions in the major urban travel corridors. Transit use also reduces energy consumption and helps to improve air quality.

The other major market segments served by these systems are users whose trip purposes are essential to their health or their ability to stay in their own homes and communities and still have access to shopping, medical and rehabilitative services, and a wide range of other essential services.

The major categories of Federally and State funded systems are:

- the "MTA's" that operate in the largest metropolitan areas in the State. These agencies are restricted to operating in their service areas and cannot operate charter service or service designed specifically for school trips. Many of the restrictions on these systems are a function of Federal law or regulations.
- the "Section 9" small urban area systems that operate in the urbanized areas over 50,000 in population. These systems operate generally under the same Federal guidelines on services as the MTA's. There are several areas that are eligible to create such operations that have not yet opted to do so.
- the "Section 18" rural transit systems that provide or sponsor demand responsive or fixed route services that are open to the general public. There are several different institutional arrangements for these services. There are currently 41 of these agencies in Texas that receive assistance from TxDOT. These agencies are restricted by Federal regulations to providing services to residents of rural areas.
- the "Section 16" paratransit systems that provide demand responsive or variable route services through a variety of institutional arrangements across the State. There are now over 200 of these systems in operation across the State. Some of the agencies that provide these services are single purpose transportation agencies, but many of them are multi-purpose agencies for which passenger transit supports the broader purposes of the agency. These systems have the most complex set of restrictions on the services they can provide and the markets they can serve. Most of these restrictions are imposed by the Federal agencies that provide funding for single purposes or single markets, such as service for the aging.

A summary of selected aspects of the characteristics of these sectors is provided in Table 1-1

Table 1-1
TxDOT Transit Study
Summary of Industry Sector Characteristics

Industry Sector	Major Federal Funding Section	Population of Areas Served	Primary Clientele	Local Funding Sources	State Funding Sources
Large Urban Areas	3,8,9	200,000+	All users	Sales Tax	None
Small Urban Area Fixed Route Systems	9	50-200,000	All users	General funds	PTF
Small Urban Area Demand Responsive	9	50,200,000	Client users	General Funds Client programs	PTF
Rural Transit Systems	18		All users Client users	General Funds Client programs	PTF
Client Service Carriers	16	Any area	Clients	General Funds Client programs	PTF

The MTA's have a sound financial foundation in their local sales tax yields. The financial capacity of these organizations is relatively sound, compared to the smaller agencies in the State.

The small urban and rural systems have less financial capacity and stability. They have no dedicated tax source, and tend to have lower fare box revenues as a percentage of total costs. About two-thirds of their total funding comes from a combination of State and Federal assistance, and about one-third comes from the general funds of local governments.

The future financial capacity of these smaller agencies is uncertain and is further threatened by likely reductions in Federal assistance. Their viability will depend on future changes in local and state assistance levels. It will also depend on the ability of these agencies to assure that their systems are being managed in an efficient and effective manner.

Table 1-2
TxDOT Transit Study
Summary of Performance Results
by Industry Sector

	1993 Results, and % change from 1989				
Industry Sector	**Riders (000,000's)**	**Riders Per Capita**	**Riders Per Vehicle Mile**	**Cost Per Vehicle Mile**	**Cost Per Rider**
MTA's					
1993 Results	229.2	31.74	1.51	$3.26	$2.15
Change, 1989-93	*16.0%*	*15.8%*	*-14.6%*	*-3.8%*	*12.7%*
Adjusted for Inflation				*-17.5%*	*-3.3%*
Small Urban Fixed Route Systems					
1993 Results	15.2	10.56	1.76	$2.54	$1.44
Change, 1989-93	*25.3%*	*19.5%*	*-12.3%*	*4.8%*	*19.5%*
Adjusted for inflation				*-10.1%*	*2.5%*
Small Urban Demand Response					
1993 Results	0.3	0.33	0.24	$1.60	$6.60
Change, 1989-93	*527.7%*	*124.1%*	*-17.3%*	*4.6%*	*26.5%*
Adjusted for inflation				*-10.2%*	*8.5%*
Rural Systems					
1993 Results	4.1	0.90	0.25	$1.38	$5.47
Change, 1989-93	*64.2%*	*28.8%*	*-2.5%*	*-2.2%*	*0.3%*
Adjusted for inflation				*-16.1%*	*-13.9%*
Totals					
1993 Results	248.8	17.68	1.40	$3.04	$2.17
Change, 1989-93	*17.2%*	*3.7%*	*-16.0%*	*-4.7%*	*13.4%*
Adjusted for inflation				*-16.2%*	*-2.7%*

Recent Transit Performance in Texas

Over the five-year period from 1989 through the end of 1993, the total ridership of the public transit systems in the State increased by 17%, and the rides per capita increased by 4%. At the same time,

the cost per rider and the cost per mile actually decreased when adjusted for inflation. A summary of the recent performance trends by sector is provided on Table 1-2.

Statewide transit performance over the past five years was generally positive, and displayed several positive trends:

- market share improved, with ridership and rides per capita increasing
- service was more efficient, as costs declined 4.7% relative to the amount of service provided
- cost effectiveness was roughly constant in real terms (cost per rider increased by 13.4%, versus inflation of about 14.8%).

These trends compare favorably to the national experience, which features loss of market share and declining efficiency.

Several general conclusions can be made from the review of the market shares of the major carriers and of the trends in the economic regions of the state:

- the rate of increase in market share has slowed in the more mature systems
- the rate of increase in ridership has increased most rapidly in the smaller, newer systems, where the latent demand was stronger and the historic levels of service and ridership were lower
- the number of trips per capita varies substantially from region to region, from a low of 0.5 trips per year per person in the upper east region to a high of 31.8 in the upper Rio Grande
- the effectiveness of the systems varies by region, from a low of 0.2 passengers per mile in the upper east to a high of 2.49 in the upper Rio Grande
- the effectiveness of the services in five of the ten regions is at or below 1 passenger per mile of service, a minimum threshold often applied in testing the economic feasibility of fixed route transit services.

While the trends over this period are generally favorable, the absolute values suggest a need for improvement in the effectiveness of the operations: all of the sectors averaged less than two passengers per mile.

TxDOT's Role in Transit in Texas

TxDOT has played an increasingly important role in public transportation in Texas over the past 20 years. The underlying foundation for TxDOT's role in public transportation has been the two-fold responsibility of administering a variety of Federal transit funding programs, and the State's Public Transportation Fund.

As an extension of these responsibilities, TxDOT has developed a number of technical and professional assistance programs for public transit providers, and has assisted local governments in their efforts to plan and develop public transit programs and to take advantage of available Federal funding.

Among these efforts has been:

- providing a "circuit rider" technical assistance program in which the State provides consultant help to local transit systems
- developing a "buddy" system in which larger transit systems are linked with smaller or new systems to assist them in various activities
- providing or supporting a variety of research and training programs.

Table 1-3
State Funding for Transit: 1975-1995
Amounts Appropriated for the
Public Transportation Fund

		Sources of State Transit Fund			3 Year	Percent
Year	PTF Total	General Fund	Highway Fund 6	Oil Over-Charge	Rolling Average	Change in Average
1975	$1,024	$1,024				
1976-77	15,000	15,000				
1978-79	15,000	15,000			10,341	
1980-81	25,000	25,000			18,333	177.3%
1981-83	-30,000	-30,000			3,333	18.2%
1984-85	21,500	21,500			5,500	165.0%
1986-87	0	0			-2,833	-51.5%
1988-89	0	0			7,167	-252.9%
1990-91	9,600		9,600		3,200	44.7%
1992-93	10,000		10,000		6,533	204.2%
1994-95	35,000	6,000	20,000	9,000	18,200	278.6%
1996-97	42,200				29,000	59.3%
Total	102,124	53,524	39,600	9,000		

Texas began to provide assistance to transit outside of the major urban areas in 1975. The pattern of assistance, summarized on Table 1-3, has varied significantly over these two decades. As the figures on the table show, The level of funding has varied from a negative $30 million in the early 1980's to a positive $42.2 million for the coming biennium.

In recent years, the Department has appointed Public Transportation Coordinators in each of the Department's 26 Districts across the State, and has delegated a significant amount of program administration and oversight responsibilities to these Coordinators as a part of the Division's efforts to build better relationships with the local operations.

Gaps and Linkages

The current rural, urban, and specialized transit systems in Texas reach about 14 million residents of the State. About 2.9 million residents of Texas, or about one in six residents of the State, have no local transit services, including:

- 1,000,000 people in unserved rural areas
- 860,000 people in small urban areas with no transit service
- 176,000 people who live in small urban areas but are outside of the service area of the local carrier
- 875,000 people who live in large urban areas but outside of the service area of the region's MTA.

In addition, there is limited coordination of services among transit operators in neighboring or complementary service areas. These systems often have minimal working relationships in planning and operating transit services. Territorial and regulatory limitations often create "seams" in the system that work against coordination of neighboring transit services.

Client Transportation Services

"Client transportation services" provide transportation for clients of health or social service agencies. These services are provided by a mosaic of public, private, and non-profit carriers. These agencies are typically initiated under the sponsorship of a health or social service agency to provide special purpose transportation for its clients.

The growth of client transportation services over the past two decades has resulted in the development of a wide range of transportation resources in virtually every community in the state, but which are typically restricted by Federal regulations to the clients of the sponsoring agency. The result is a vast set of services that tend to be uncoordinated with other transit services and that have substantial unused capacity.

The Office of Client Transportation Services was created in by the Legislature 1991 to deal with the rapidly growing number and variety of social service transportation services in the State, with a charge to reduce duplication and increase coordination among these services. OCTS, with the assistance of a number of agencies including TxDOT, prepared an extensive report on these issues in 1994.

The Office of Client Transportation Services has recommended a series of steps at the local, regional, and State levels to improve service coordination. At the State level, these recommendations include:

- developing and implementing policies that support the guiding principles of statewide coordinated transportation
- administering grant and technical assistance programs in a way that makes coordination a basic element of local operating practices.

Intercity Bus Services

Intercity bus services have historically been an important element of the transportation services network in Texas. The industry is totally privately owned, and has been in decline for a number of years. A declining rural population, more widespread automobile ownership, and low-cost airline service have been the chief contributors to the industry's decline. The Bus Regulatory Reform Act of 1982 did not reverse these market realities.

Until recently in Texas, an intercity carrier could provide charter services in a given market only if the company also provided fixed-route services. Revenues from charter services were used to subsidize losses on fixed-route services. Under new State regulations, a company can now provide charter services with no obligation to provide fixed-route services, thereby eliminating the cross subsidy of the fixed route service. This will likely lead to a further reduction of fixed-route intercity service.

Federal funds are available to support intercity bus services from the same allocation that funds rural transit services. Although no funds have been provided to private carriers to date, the State has reserved about $2.9 million from its Federal allocations for possible use to support intercity services.

The State must decide whether to use these funds to assist the intercity carriers, and if so, which aspects of these services should be eligible for assistance.

Estimates of Transit Growth: 1996-2015

A major question facing the State and its transit operators is the level of growth the industry will experience over the next several years, and how that growth will be provided for. It is likely that the nature and extent of transit services will grow as a function of population, but this growth is likely to be substantially less than what has been experienced over the past 20 years as public transit has expanded across the State.

The accuracy of projections of transit demand over a 20-year period are subject to a wide range of unknowns. Among these are the effects of changes in demographics, which affect the size of the potential travel markets, and changes in technology, which affect travel choice trip patterns.

A set of different growth scenarios for the non-MTA area transit systems in Texas was developed which assumed that service and ridership will grow as a function of population growth. The MTA's were excluded on the assumption that their financial capacity is generally adequate for the foreseeable future.

These assumptions produced scenarios that create unfunded annual financial requirements that start between $13.6 million and $28.7 million in 1996, and increase to between $28.2 million and $82.6 million in 2000. Over the 20-year period, the cumulative level of increased funding to support for these scenarios ranges from $1.1 billion to $2.8 billion. Projections of these unfunded balances is are summarized on Table 1-4.

Table 1-4
TxDOT Transit Study
Estimate of Unmet Funding Needs
Using Various Assumptions
(Millions of Dollars)

Scenario	1996	1997	1998	1999	2000	1996-2000	1996-2015
Federal Formula Funding is Lost							
Scenario 1	$24.6	$32.8	$41.2	$49.8	$58.5	$207.0	$1,784.8
Scenario 2	28.7	41.3	54.5	68.3	82.6	275.3	2,755.7
Scenario 3	18.1	26.0	34.2	42.4	50.8	171.5	1,515.0
Scenario 4	21.6	33.4	45.7	58.4	71.6	230.7	2,415.3
Federal Formula Funding is Replaced by State Funding							
Scenario 1A	20.1	23.8	27.7	31.7	35.9	139.2	1,378.2
Scenario 2A	24.1	32.3	41.0	50.2	60.0	207.6	2,349.1
Scenario 3A	13.6	17.0	20.6	24.3	28.2	103.7	1,108.4
Scenario 4A	17.1	24.4	32.1	40.3	49.1	162.9	2,008.7

All of these cases show the need for a combination of improved cost controls and increased revenues to support the projected growth of transit use and services.

Transit Programs in Other States

Most states participate in transit-related activities, either through direct state funding of transit or through state administration of federal transit program funds. In addition, several states own and operate transit systems, including California, Maryland, Connecticut, Delaware, and Rhode Island. A wide variety of relationships exist between the states and their constituent transit systems.

In many cases, these state funds are subject to appropriations and grant applications processes that are administered by State Departments of Transportation. Examples of this method include:

- operating subsidies provided in Wisconsin
- state aid to capital programs in New York

Some states collect a specific statewide tax for the benefit of transit, and allocate these funds to systems by formula or discretionary programs. An example of this method includes the use of the proceeds of the state lottery in Pennsylvania, which are "dedicated" to providing reimbursement for reduced fares for the elderly on all Pennsylvania transit systems. Another example is Massachusetts, which at one point dedicated a percentage of its cigarette tax for transit debt service.

In other cases, specific taxes are imposed by state statute for the benefit of transit agencies and are collected by the state, but are remitted directly to the qualifying transit agencies without grant applications and outside of the appropriations process. Examples of the latter include:

- in New York State, mortgage recording taxes are collected in transit districts by the state, and are remitted to the transit agency in the areas from which they are collected
- in Washington State, motor vehicle excise taxes are collected for vehicles registered in certain transit districts, and are remitted by the state to those districts.

A summary of the extent of funding by groups of states in the various regions in the country is illustrated on Table 1-5. The magnitude of state transit funding tends to follow the extent of urbanization within a state.

Table 1-5
Direct State Funding by Region
1993

Region	States	Direct State Aid per Capita	% Urban Population
Northeast	Connecticut, Delaware, Washington D.C., Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont	$45.36	72%
Pacific	Alaska, Hawaii, Washington, Oregon, California	11.61	79%
Great Lakes	Illinois, Indiana, Michigan, Ohio, Wisconsin	10.73	62%
South	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia	2.34	51%
Midwest	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	1.67	46%
Southwest	Arizona, New Mexico, Oklahoma, Texas	0.12	63%
Mountain	Colorado, Idaho, Montana, Nevada, Utah, Wyoming	0.04	61%

This distribution of average funds per capita implies three tiers of state transit funding:

- highly urbanized states in which transit funding is a high priority, either because of infrastructure preservation concerns in the older rail systems, or because of constraints on building additional highway capacity as in the Pacific states
- moderately urbanized regions, in which most residents live in smaller mid-sized cities, and transit needs are more modest and are met mainly by local funds (South, Midwest), but some large-city transit needs also exist (e.g., Florida, Virginia, Georgia)
- regions that are sparsely settled, and have widely-scattered principal cities (Southwest, Mountain).

A more detailed review of the state transit programs in Ohio, Michigan, Wisconsin, Pennsylvania, Florida, Virginia, Oregon, and Washington was conducted. Two general factors were observed to influence the organization and content of state transit programs:

- the initial date of public transit ownership and financing in a state, and the influence of the urban areas on general state policies including transit, have a major impact on the nature and extent of state transit programs
- the organization and regulations of the Federal transit assistance programs have a significant impact on the roles of the states in transit program administration, particularly among those states that are new to transit assistance programs over the past 20 years.

States in the former category tend to be more actively involved in transit policy and performance than the latter.

Texas is in the latter of the two categories. This category also includes states in the mountain, southwest, south, and midwest regions of the country. These states such as Texas rely on the dedicated local option transit taxes, or other sources of local funds, to develop and maintain the major urban transit programs. Consequently, direct state funding per capita in this category – about $1.04 on average – is much lower than the more heavily-urbanized states in other regions, which average about $22.56 per capita.

A Short Term Transit Strategy for TxDOT

The overall recommendations for TxDOT are founded in a three-part strategy to be accomplished over the next two years. This strategy forms the basis for recommendations to the next legislature for an expanded program of State assistance to transit:

- to reorient its internal program administration and continue to build a sense of common purpose with the carriers it supports
- to work with the industry to improve its overall performance

- to develop a solid master plan for transit that reflects a comprehensive but fiscally realistic assessment of the service and financial requirements of the State's transit systems

The largest single transit related financial challenge facing the Department in the next two years is how to deal with the increasing capital and operating costs of the small urban and rural systems and the Section 16 operators, combined with declining levels of Federal transit assistance.

The second major challenge is to reorient the mission and activities of the Public Transportation Division as the State's leader, and to deal simultaneously with:

- the expected major changes in Federal funding
- the need for more policy and management focus on transit as an essential part of the State's transportation network
- the need to promote and assure improvements in the coordination, effectiveness, and efficiency of the transit agencies that the Department assists
- the opportunity to change the focus of the Division from a primarily regulatory and administrative role to a role that focuses more on professional leadership and technical support.

A major element of the overall strategy outlined in the recommendations from this project is for the State and local operators to work together, between now and the next biennial legislature, to coalesce and establish a firm and common ground for expanded State assistance. The cased must be based in large part on tangible evidence of continued and increased levels of efficiency and effectiveness of the operating agencies.

The principal recommendations that make up this strategy are:

1. TxDOT Commission should assert a transit policy statement that supports the role of transit in the overall transportation network of the State, and outlines the role that TxDOT intends to play in assuring the continued strength of transit in the State.
2. The Public Transportation Division of TxDOT should simultaneously be the advocate for better support for and understanding of transit within TxDOT, and the advocate for better support for and performance by the state's transit providers.
3. The Division should change the focus of its internal organization from a program management oriented structure to a structure that supports regional service delivery.
4. TxDOT should revise its approach to the biennial master plan, and use it as the centerpiece for establishing future service levels and funding for transit in the State.

5. TxDOT and the local transit agencies should work together to create service delivery regions that are comprised of the public transit, private transit, and client services transit organizations in the region.

6. The public transit coordinators should develop a "client relationship" with the communities in their service delivery regions, and with the transit providers in those regions.

7. TxDOT and the providers in the service delivery regions should identify and evaluate the "gaps" in services in their regions, and should include proposals for meeting the needs of these unserved areas which merit service.

8. TxDOT should promote and assist in the development of "seamlessness" among existing transit and client transportation services.

9. TxDOT should work with other state agencies that administer other passenger transportation programs, especially the Office of Client Transit Services and the Texas Education Agency, to identify and eliminate any barriers to coordination of the various transportation services and facilities in local communities.

10. TxDOT should lead a program to improve the quality of operations, financial, and management planning at the local level.

11. TxDOT should undertake a program to assure that critical public transit links among the rural and urban areas of the State are defined and preserved.

12. TxDOT should administer its flexible funding capability under ISTEA in rural areas that mirrors the urban area decision-making methods, that assures an absence of modal bias in project selection, and that is based on and supported by local decision making.

Finally, the current institutional arrangements for public transit in Texas should remain as is, with the current division of responsibilities between the State and the local agencies unchanged, except as may be agreed to by the parties, for the purposes of improving coordination of service and overall performance:

- The MTA's should continue to have the primary responsibility for the governance, finance, management, and operation of transit in the major urban areas.
- The primary responsibility for governance, finance, management, and operation of transit systems in the urban areas between 50,000 and 200,000 population should remain with the local governments they serve.
- The primary responsibility for governance, finance, management, and operation of transit systems in the rural areas should rest with the local agencies.
- The primary responsibility for governance, finance, management, and operation of specialized transit systems should rest with local agencies.

Chapter 2

Recommendations for The State's Role in Public Transportation

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Recommendations for The State's Role in Public Transportation

Introduction

The recommendations presented in this chapter are based on the research and analysis conducted during the length of this project and described in more detail in the following chapters. Each recommendation is supported by a brief discussion of the rationale for the it, and more extensive foundations for the recommendations are contained in the relevant discussions in the subsequent chapters.

The current responsibilities for public transportation in the State of Texas - as in other states - are divided among a complex web of local, regional, State, and Federal agencies, and private providers.

The role of the United States Department of Transportation is largely to provide operating, capital, and planning funds to support transit services in states, through the Federal Transit Administration. This also carries with it the imposition of a wide range of regulations and requirements that govern many of the policies and actions of the state and local transit operating and funding agencies.

Other Federal agencies provide funds for transportation of the clients of a wide variety of social service agencies, many of which have specific regulations and restrictions that govern the ways that their grantees can use the funds.

The State's role in transit is carried out under the programs of a number of State agencies, including:

- pupil transportation provided by local school districts, which represents the single largest passenger transportation resource in the State
- a variety of social service agencies, which provide client service funds to local agencies, that more or less mirror the structure and content of the Federal client service programs
- the Railroad Commission, which is proposing to eliminate regulation of the intercity bus service in the State, except for assuring that carriers have adequate insurance. This function is being transferred to TxDOT
- the Office of Client Transportation Services in the Health and Human Services Commission, which manages a program to improve the coordination of local client service transportation services

- TxDOT, which administers a number of Federal transit funding programs, the State's Public Transportation Fund, and provides a variety of technical and professional assistance to the grantees and the communities they serve.

The grantees of these Federal and state programs are by and large regional and local agencies that deliver public and client passenger transportation services across the State, including:

- the metropolitan transit authorities that are the regional transit agencies that have their own local funding and are largely self-governing
- the urban transit agencies in smaller areas that are managed by local governments or social service agencies
- the rural transit operations that provide service to the general public in about 80% of the counties in Texas, many of which are managed by special-purpose agencies that established transit services as a means of serving some specific local group of users, but that also carry the general public
- a large number of "Section 16" small demand responsive, paratransit operations that serve only specialized transit users.

In addition, there are currently a number of private, intercity, bus operators whose services have historically been regulated by the Railroad Commission, and who provide transportation among a large combination of rural and urban areas in the State, as well as connections to other states. The intercity bus service is eligible for financial assistance under Federal transportation funding programs that are administered by TxDOT.

Amtrak operates two sets of intercity rail services to the State, three days a week, that connect to Chicago, Miami, and Los Angeles. Amtrak service is eligible for state assistance under Federal legislation, but no such funding is presently authorized by State legislation in Texas.

The recommendations in this chapter for the role of the Department of Transportation are built on three foundations:

- the research, interviews, and evaluations conducted by the project team over the Spring of 1995
- the policies and strategies that were developed in TxDOT's new statewide transportation plan
- the recommendations developed by the Office of Client Transportation Services and the participants in the report produced by that office in September, 1994

The Major Short Term Challenges for the State

The largest single challenge facing the Department in the next two years is how to deal with the increasing capital and operating costs of the small urban and rural systems and the Section 16 operators in the context of declining Federal assistance.

The second major challenge is to reorient the mission and activities of the Public Transportation Division as the State's leader to deal simultaneously with:

- the expected major changes in Federal funding
- the prospective need to promote and assure improvements in the coordination, effectiveness, and efficiency of the transit agencies that the Department funds
- the opportunity to change the focus of the Division from a primarily regulatory and administrative role to a role that focuses more on professional leadership and technical support.

A major element of the strategies in these recommendations is improve the ability of the transit industry as a whole, as well as the Department, to meet these challenges.

The projections of transit operating and capital costs, and "foreseeable" revenues, over the next several years suggest the likelihood that the State and local agencies will need to adjust to the impact of a combination of three factors that will increase the need for funding and improved performance:

- significant reductions in Federal assistance
- increased operating and capital costs of the operating agencies, and a recent reduction that some sectors of the industry in the State have experienced in the historic rapid rate of growth in ridership
- requests for new services in the areas where there are no services, for more services in the under-served areas, and for funds to preserve existing services.

The transit needs analysis prepared by TxDOT for the Texas Transportation Plan showed that small urban, rural, and client transit services for seniors and the disabled will require about $1.3 billion to meet projected needs for the two decades from 1995 to 2015. The projections that have been developed in this project suggest financial requirements in the same order or magnitude. Anticipated reductions in federal funding make it increasingly doubtful that the Federal contribution will continue at its current levels. These projected needs cannot be fully funded from existing local and state levels or sources of funding.

Without state and local revenues above current levels, continued growth and expansion of transit services will be difficult to fund, and existing transit service levels may have to be reduced. Current funding levels are not adequate to keep pace with the growth in levels of services and operating and capital costs.

The combined impact of these factors suggests the need for TxDOT to develop a new overall approach to transit program management. One objective of this new approach should be to assure that the current funds are being used in the most efficient and effective manner, so that requests for new State funding in the next biennial legislative session can be built on a sound foundation.

TxDOT can position itself to handle these challenges by "reengineering" the management and administration of its transit programs, and working with the industry to improve the ability of the current providers to deliver their services in the most cost effective manner. This will help reinforce the credibility of the agency as the manager of the state's transit funding at levels above the current program.

The Role of the Texas Transit Agencies in the Near Term

The recent history of local transit organizations in Texas is one of an increasing number of organizations providing expanding services for increasing ridership and at increased capital and operating expenses.

Over the five-year period from 1989 through the end of 1993, the total ridership of the systems increased by 17%, and the rides per capita increased by 4%. At the same time, the cost per rider increased by 13%, while the cost per mile actually decreased by 5%. The small urban and rural systems experienced a moderate rate of increase in costs per mile, which was about 20% of the rate of increase in inflation.

The MTA's, and Laredo, have a sound financial foundation in their local sales tax yields. The financial capacity of these organizations is relatively sound, compared to the smaller agencies in the State.

The small urban and rural systems have no dedicated tax source, tend to have lower fare box revenues as a percentage of total costs, and depend heavily on a combination of state and federal assistance. Substantial amounts of the financial support for these agencies comes from the general funds of local governments, or from Federal social service programs that are also under scrutiny at the Federal level and are likely to be reduced in the current budget reduction programs at the national level.

The future financial capacity of these smaller agencies is uncertain, and will depend on future changes in local and state assistance levels. It will also depend on the ability of these agencies to assure that their systems are being managed in an efficient and effective manner.

A major element of the overall strategy outlined in the recommendations from this project is for the State and local operators to work together between now and the next biennial legislature to coalesce and establish a firm and common ground for expanded State assistance based in part on tangible evidence of continued and increased levels of efficiency and effectiveness of the operating agencies.

Goals and Policies of The Texas Transportation Plan

This new statewide, multimodal, transportation plan recently completed by TxDOT provides a set of goals, strategies, and actions that are useful in identifying the future role for TxDOT in public transportation. The goals and policies have been adopted by the Commission, but the "actions" have not yet been adopted.

Seven policy goals that are guides to the future direction of TxDOT were articulated in the plan:

- A. To develop a multimodal transportation system that meets the mobility and accessibility needs of all Texans.
- B. To maximize the use of existing transportation facilities and services and ensure that investment decisions are based on efficient solutions.
- C. To maximize modal options available to individual and business transportation system users and to ensure that all modes are efficiently connected to provide for easy transfers and timeliness.
- D. To ensure that all modes of transportation and transfers between modes are safe for transportation users and providers.
- E. To provide a transportation system that is environmentally sound, energy efficient, and sensitive to community needs and impacts.
- F. To build a transportation system that maximizes opportunity for economic growth, international trade, and tourism.
- G. To take advantage of emerging and new technologies that increase the efficiency, safety, and attractiveness of the transportation system.

Each of these goals is expanded by a set of strategies and actions for the Department. Among the key strategies in the plan that imply a role for transit in the overall mix of transportation modes in Texas are:

- Strategy 1.1 Provide mobility and access throughout the urban and rural areas
- Strategy 2.1 Enhance public transit throughout the urban and rural areas of Texas
- Strategy 2.2 Implement transportation demand management strategies and promote ridesharing and carpooling
- Strategy 5.3 Enhance rural and intercity transit service
- Strategy 6.1 Encourage closer integration of transportation and land use
- Strategy 8.1 Implement market-based incentives and pricing mechanisms to promote more efficient travel behavior and mode choice decisions
- Strategy 12.1 Implement investments needed to maximize linkages between transportation modes
- Strategy 12.3 Increase public access to current, accurate information regarding intermodal transportation
- Strategy 19.2 Broaden advance planning to ensure multimodal collaboration in project planning, design, right of way designation, and acquisition
- Strategy 21.1 Enhance the capabilities of metropolitan planning organizations and other organizations to undertake transportation planning
- Strategy 24.1 Maximize revenues from existing funding sources
- Strategy 24.2 Identify and implement new and innovative funding sources
- Strategy 27.1 Use the flexibility provided by ISTEA
- Strategy 28.1 Address emerging needs and funding opportunities

The overall objectives of transit in the mix of transportation services and facilities in the State should be:

- to provide safe and convenient transit services in an efficient and effective manner
- to provide mobility to those people who do not have access to an automobile or who prefer not to use an automobile
- to support other public policies such as air quality improvement and energy conservation by increasing transit use and reducing single occupancy vehicle travel
- to increase vehicle occupancy in corridors where additional volume-to-capacity ratios are approaching unsatisfactory levels, and thereby increase the capacity of current highways and reduce the need for some additional highway investments.

Recommendations for TxDOT's Role in Public Transportation

The recommendations that are provided here are intended to complement the strategies and actions outlined in the plan, and to carry the Department forward over the near term to meet the increasing challenges of the program.

1. TxDOT Commission should assert a transit policy statement that supports the role of transit in the overall transportation network of the State, and outlines the role that TxDOT intends to play in assuring the continued strength of transit in the State.

Texas transit agencies provided 250,000,000 passenger trips in 1993. Many of these trips are in peak direction, in peak periods, and in travel corridors where highway investments are the most expensive. A high percentage of the trips were work trips, and trips for medical and other essential services. Many other trips were provided to passengers for whom there is no other means of travel available.

The TxDOT Commission and TxDOT management need to acknowledge the role of transit in the overall transportation network of the State, and to assure that the potential for transit to increase mobility and to reduce the need for highway investments, in some places, is fully considered in planning and project development activities in the Department.

The Texas Transportation Plan establishes goals and strategies to guide the planning, development, and preservation of a multimodal transportation system in Texas over the next 20 years. The new transportation plan is a foundation for a transit policy that recognizes the role that transit should play in the overall transportation network of the state.

The transit providers are not confident that the Department's commitment to transit is strong, in spite of the reorganization and reorientation of the new management team, and the policies of the statewide plan. Similarly, the public transit coordinators are not certain of the importance placed on transit by the Commission, senior management, and district management.

TxDOT could increase the credibility of its expanding good faith efforts in transit by making a strong policy statement, and then supporting with changes in way the programs are administered - and then with recommendations for a new funding program for the next biennial legislature.

2. The Public Transportation Division of TxDOT should simultaneously be the advocate for better support for and understanding of transit within TxDOT, and an advocate for better support for and performance by the state's transit providers.

The Public Transportation Division's advocacy role should have two complementary components. On the one hand, the Division should fairly represent the benefits and interests of transit in internal and external forums that affect transit policy making and the public understanding of the role of transit in the transportation network of the State.

At the same time, the Division's advocacy within the industry should be focused on promoting and assisting in the achievement of continued improvements in the operating and financial performance of the operators.

The Division staff should be the voice for transit in the financial planning and policy making sessions of the Department. The role of the Division should be:

- to complement and support the roles of the carriers in each of the industry sectors
- to facilitate coordination among the sectors and carriers
- to work with the carriers in each sector to improve their performance
- to lead the development of a rational network of transit services and facilities in Texas through planning, technical assistance, and selective application of discretionary funding
- to administer state and federal funding in a manner that supports the policies of TxDOT and the objectives of the local communities that operate the services
- to work with other state agencies to remove the barriers to integrate fully the various passenger transportation services available in the state
- to provide technical assistance designed to improve industry performance
- to provide local transit agencies with professional management, planning, and technical assistance and lead the development of efficient and effective transit services in urban and rural areas.

Dealing with reduced Federal assistance, and the potential of increased state assistance in the future, increases the need for TxDOT to assure that the state's investment in public transportation is being used wisely and well.

The grant administration and oversight function is an important element of the functions of the Division, and will continue to be so in the future. While the arms-length relationship with grantees in administering this program is essential to its integrity and should not be compromised, it is also important to remember the objectives of the program, and to help agencies achieve those objectives.

Improved performance of the participants in the program, and a more productive relationship with the industry, will require an increased sense of partnership and a reduction in the adversarial nature of the relationship that is often evident today. It will also help lay the groundwork for reasoned consideration of new transit aid programs.

3. The Division should change the focus of its internal organization from a program management oriented structure to a structure that supports regional service delivery.

The style and culture of the administration of the current DOT transit programs should be revised to reflect a dedication to improving transit services and performance, and their contribution to the overall transportation resources of the State.

The current organization of activities is oriented around the different funding programs and the different types of carriers that they serve. This tends to reinforce the differences among the programs, and the barriers that these differences create in the field.

Organizing the Division and District staffs into service delivery teams that have responsibility for working with the carriers in defined service delivery regions will tend to reduce the impact of regulatory constraints, focus the staff of service coordination, and increase teamwork between TxDOT and the operating agencies.

The TxDOT component of these teams should be led by the Austin-based staff and the public transit coordinators in the service delivery regions. The exact composition of the service delivery areas and the teams to support them should be worked out with Division and District managers, the transit coordinators, and the operating agencies.

A number of changes in the administration of the current program should be implemented as first steps in changing the nature of the Division's activities:

- organizing the Office into service delivery teams, without losing the individual technical roles of the current staff
- becoming the facilitator of improvements, as well as the regulator of the programs
- transferring grant and project audits to the TxDOT audit office in Austin and the districts, to reduce the occasion for adversarial issues at the local level
- transforming the biennial master plan from a statistical compendium to a true master plan that assesses the current state of transit in Texas, defines the level of service and ridership,

articulates the future needs of transit, and includes management, operating, financial, and capital plans for achieving the goals of the agencies within foreseeable resources

- reviewing the current agency goals and objectives submissions and developing a specific plan for using this information - perhaps as a means for focusing technical assistance to agencies with below-par results, but not for making funding decisions
- redefining the role of the public transportation coordinators in the Districts, setting professional standards for those jobs, expanding the training of these staff members to meet these standards, and enabling them to become TxDOT's local leaders in the service delivery teams
- expanding the technical assistance program to support improvements in system performance, in response to industry requests for assistance, or considering the performance of the systems versus its goals
- eliminating the current quarterly statistical reports for the MTA's and those Section 9 operators that submit section 15 reports, and substituting the annual Section 15 reports as a source for the same data.

4. TxDOT should revise its approach to the biennial master plan, and use it as the centerpiece for establishing future service levels and funding for transit in the State.

The most recent master plans have been a compilation of untested needs as presented by the agencies included in the plan. The challenge for TxDOT is to transform the biennial master plan from a statistical compendium to a true master plan that provides a comprehensive assessment of public transportation needs in Texas and includes a plan to meet those needs.

The Master plan for the next biennium should be built around the local plans developed by the agencies in the method outlined in the following Recommendation 5, and should be organized into service delivery regions.

5. TxDOT and the local transit agencies should work together to create service delivery regions that are comprised of the public transit, private transit, and client services transit organizations in the region.

The service delivery regions should be structured around collections of transit providers that have at least some level of opportunity and capacity for coordination of services and interagency cooperation. Each service delivery region should include an MTA or one municipal transit organization at its core, where possible. This will help assure the critical mass of some level of technical skills within the regions that could be brought to bear on the problems of the carriers in the region.

The participants in the service delivery teams should include the coordinators, the local transit providers and client service transit providers, and intercity bus operators, with support from local planning agencies and planners from the District offices.

The decision making for these service areas should be based on existing institutions, and carried out through interagency agreements, with the support and encouragement of TxDOT, which should use its funding programs both as a carrot and a stick to lead the teams to improve service coordination and performance.

The Coordinators should lead the development of regional service plans for each service delivery area, building on the strengths of each provider in the region, with the objectives of:

- reducing duplication of functions and services
- defining primary and secondary roles for each carrier in the region
- determining intercity links and required improvements to make them happen
- developing operating standards based on regional market conditions
- identifying local "experts" and best practices within the region
- determining means of transferring knowledge, skills, among participants
- develop a six-year plan for each service area, based on parameters of growth and funding constraints, as a foundation for the mandated transit master plan
- use all of the regional resources on an restricted and unrestricted basis
- develop means of completing annual plans for each agency
- develop unified capital plan for each group, subject to consensus of agencies
- develop discretionary funding program to encourage coordination
- extend coordination requirements to the other agencies supporting client services.

6. The public transit coordinators should develop a "client relationship" with the communities in their service delivery regions, and with the transit providers in those regions.

The primary role of the Coordinators should be to assist the carriers to develop and achieve improvements in performance and in their services. The Coordinators also represent the means through which the Division could continue to decentralize its activities to the Districts.

The establishment of the coordinator positions in the Districts was in part a function of the decentralization of TxDOT activities from Austin to the Districts. The activities of the coordinators have

evolved slowly. Their attention to their transit work has been hampered by a combination of factors, including:

- a general lack of technical training and knowledge of transit
- conflicts with their other responsibilities in the Districts
- limited guidance and direction from Austin, and limited involvement in Division decisions
- distrust and suspicion from the transit providers.

The district and area engineers should work with the coordinators and rely on them to assure that they are aware of and participate in planning and other activities that relate to improving transit services and facilities in their districts and areas.

The future successful deployment of the coordinators requires that they be technically competent to carry out a more constructive role in working with the local transit providers. The development of constructive teamwork in the regions between TxDOT and the providers will depend in part on the ability of the Department to remove the other three obstacles to the performance of the coordinators:

- mixed levels of skills and training of the individual coordinators
- conflicts with other duties and responsibilities in the District offices
- limited guidance from and teamwork with the Public Transportation Division staff.

7. The providers in the service delivery regions and TxDOT should identify and evaluate the "gaps" in services in their regions, and include proposals for meeting the needs of these unserved areas that merit service.

The plans should distinguish between areas in which there are "gaps" in service with no need for service, and areas in which needs can be clearly identified.

Some parts of the State lack sufficient population density or local interest in transit to establish a transit service. The current "gaps" in transit services should be evaluated on a case by case basis, and TxDOT's role in filling these "gaps" should be tailored to the local circumstance.

The nature of the category of gaps that currently exist, and the recommended strategy for dealing with each type, are:

Gap	Recommended Strategy
Rural counties with no Section 16 or 18 carrier	Evaluate local initiatives
Rural counties with no Section 18 carrier	Evaluate local initiatives
Small urban areas with no service	Evaluate through local MPO
Small urban areas with no fixed route service	Evaluate through local MPO

Areas approaching the 50,000 population level	Inform of program, evaluate local initiatives
Areas of 20,000 or more with no intercity bus	Evaluate on merits, or after local initiative
Segments of large urban areas with no service	Evaluate in response to local initiatives

The identification of the gaps and proposals for their elimination should be part of the objectives of the area and district engineers, who should support the coordinators in these efforts.

8. TxDOT should promote and assist in the development of "seamlessness" among existing transit and client transportation services.

A major objective of the service delivery regions should be to identify and eliminate barriers to service coordination and to reduce barriers to passenger movement among systems.

TxDOT should establish specific elements of "seamlessness" among existing carriers whose services or service areas abut or overlap, including public information, service and fare coordination, which are generally within the existing financial and technical reach of the carriers.

Specific targets for improving seamlessness should include:

- connections between rural carriers and intercity bus systems
- connections between rural and urban systems
- the use of specialized services in outlying areas of urban areas
- connections between urban specialized services and fixed-route services
- reducing the complexity of cross border day trips in the major urban centers at the border.

A prototype set of seamless services should be developed in one of the service delivery regions with the objective of identifying and solving the practical kinds of problems that are involved, and then creating a model for the other service delivery regions.

9. TxDOT should work with other state agencies that administer other passenger transportation programs to identify and eliminate any barriers to coordination of the various services at the local level.

TxDOT should be the leader in assuring coordination of all passenger transportation services in the state, and should work with other agencies to reduce the barriers to coordination and to improve the performance of the system as a whole.

TxDOT should actively support the objectives laid out in the plan recently published by the Office of Client Transportation Services, and should take responsibility for the appropriate sets of recommendations in the September 1994 report of the OCTS.

Increasing coordination of public and client transportation services has the potential of reducing the overall costs of the both the public transit system and the client transportation systems, as well as increasing the convenience for the general public and for the clients of the specialized transit agencies.

10. TxDOT should lead a program to improve the quality of operations, financial, and management planning at the local level.

The review of the financial and operating planning documents that was conducted as a part of this project reflected a very minimal level of the principles of planning, and of the technical quality of much of the planning that is being done.

Planning is not now a priority among the small urban and rural transit carriers. This appears to be due to a combination of a lack of interest and understanding of the need for planning, a lack of technical skills, and a lack of time and money.

The Department should develop a prototype transit management plan that can be completed by the agencies, with the assistance of some combination of the transit coordinators, regional planning staffs, the "circuit rider" consultants, or other consultants.

The plans should include:

- current and prospective service areas and service levels
- a five-year capital and operating plan
- projections of ridership and revenues
- a financial pro forma showing all expenses and revenues
- a management plan that lists planned changes in organization, staffing, governance, programs
- a performance pro forma that shows current and planned levels of performance in six key performance indicators at the beginning and end of the plan period.

A guide to completing these plans should be developed by TxDOT, and the Public Transportation Coordinators and the local carriers should be trained in developing these plans. The guide should

consist of ten to twelve pages of single-purpose forms for the agencies to complete, along with instructions on how to complete each of them.

The plans should be used as the basis for the legislatively mandated biennial transit master plan, and for working with the carriers to achieve the improvements proposed in the plan. The plans could also be used by TxDOT to develop its own assessment of the funding requirements for budgeting State funds.

11. TxDOT should undertake a program to assure that critical public transit links among the rural and urban areas of the State are defined and preserved.

The deregulation of bus services within the State has led to a new pattern of intercity bus economics in which the regular route services are no longer subsidized by the exclusive charter rights. New market entries are competing with lower rates, and the "historic" carriers are losing overall profitability. The intrastate deregulation of intercity fixed-route services and fares will lead to abandonments of some of these services.

One of the roles of the service delivery regions, and an important element of the next master plan, should be to identify those existing intercity bus service links that are critical to mobility within the State.

The State, the local planners, and service operators should work together to identify those services that are essential, and to develop programs to provide those services, from among such services as:

- joint services by fixed-route rural carriers
- joint services by rural and small urban carriers
- assisting existing private carriers
- purchased of service agreements with other carriers

TxDOT should recommend to the Governor that the existing intercity bus services are "adequate" for the purposes of the Federal funding program. This would leave TxDOT free to use the Section 18(i) funds for intercity services or for rural services.

TxDOT should then work with the local agencies and the carriers to identify and support the provision of intercity services with Section 18 funds when supported by local agreements.

Project selection should be supported by the service delivery regions.

TxDOT should consider funding the following types of efforts:

- programs that encourage and support coordination of rural and intercity service
- construction and operation of intermodal facilities, passenger amenities, ADA compliance needs, and signage, either directly or through loans
- a loan program for bus purchases, but no direct grants or purchase-leaseback arrangements for buses.

It is not recommended that TxDOT provide operating subsidies to private intercity carriers, because of the administrative and bureaucratic complications for these operators of participating in the Federal assistance program.

TxDOT should consider supporting a motor fuels tax exemption for intercity carriers, in keeping with the current federal fuel tax exemption for which these carriers are eligible.

12. TxDOT should administer its flexible funding capability under ISTEA in rural areas in a manner that mirrors the urban area decision-making methods, that assures an absence of modal bias in project selection, and that is based on and supported by local decision-making.

TxDOT, local governments, and local transit agencies need to acknowledge jointly that ISTEA does not increase federal funding levels, and that the combined funding needs of highways and transit in the State exceed the funding available by a wide margin.

Two other developments in Federal transportation programs are likely to occur this year. First, the overall level of funding is likely to be reduced, which will place an increased burden on the states and local governments to sustain currently planned projects. Second, there will in all likelihood be a reduction in the segmentation of transportation funding by mode and programs. This will increase the need for states to allocate new "block grant" transportation funds by mode and program, with little or no Federal guidance to support this allocation.

The combined impact of these two developments is that states will need to reprogram the reduced funding levels, and to make allocations to modes and programs with greater flexibility than is currently the case. This increased level of discretionary allocations will increase the difficulty of decision making at the State level, and will call for a new means of making such decisions.

The transportation investment decision making for urban areas is now founded, under federal requirements, in the local transportation and land use planning process in which TxDOT is a partner

with the local governments and other transportation agencies. A significant amount of intermodal funding has occurred in the State's urban areas under this program.

There is no means prescribed by the Federal requirements for intermodal funding transfers in the non-urban areas of states.

TxDOT should establish a policy relating to the use of ISTEA funds for transit projects in non-urban areas which supports local transportation decision making. The policy should be based on a set of underlying principles:

- transit projects proposed to be funded by transfers should have underlying merit, local government support, and a commitment of local matching funds or in-kind support
- funds for use in transit should be "transferred" from specific local highway projects in the same areas that the local governments are willing to sacrifice or postpone
- the eliminated or postponed project should not be a safety or capacity priority project
- the local governments should agree to the revised schedule for the highway project from which the funds would be transferred
- preference should be given to transit capital facilities or rolling stock, over operating expense projects.

TxDOT's area and district engineers, and the public transit coordinators, should work with local governments to assure that the development and selection of highway and transit projects are placed in the same multimodal planning and decision making context.

13. The MTA's should continue to have the primary responsibility for the governance, finance, management, and operation of transit in the major urban areas.

TxDOT should work with the MTA's to encourage them to provide technical and professional assistance to the smaller operators in the service delivery regions in which they are located. The agencies that provide transit service at the local level are very often willing and interested in sharing their skills and knowledge with other transit managements.

TxDOT should work with other local private and public transit providers in these major urban areas to ensure maximum coordination among all carries in the region. TxDOT transit professionals should participate actively in the regional transportation planning process.

These large urban systems should become the core of the service delivery regions in the areas where they operate. They have the potential to be the leaders in at least some technical and professional areas, and could provide support and assistance to the other operators in the service area.

14. The primary responsibility for governance, finance, management, and operation of transit systems in the urban areas between 50,000 and 200,000 population should remain with the local governments they serve.

The primary role of TxDOT in the "Section 9" small urban areas should be to work with local agencies to improve their performance, and to help develop practical and efficient passenger transportation services and facilities.

Urban areas with active fixed-route transit systems and metropolitan planning organizations should continue to be the designated recipients of Federal "Section 9" funding. The direct relationship with the FTA reduces the steps for most transactions dealing with Federal assistance - including cash management.

TxDOT should make the decision relating to other areas that are eligible for Section 9 funds but are not now operating transit on a case-by-case basis, in conjunction with the regional FTA office.

These small urban systems should become the core of the service delivery regions in the areas where they operate. They would in most cases be the largest operator in the region, and they have the potential to be the leaders in at least some technical areas and could provide support and assistance to the other operators in the service area.

15. The primary responsibility for governance, finance, management, and operation of transit systems in the rural areas should rest with the local agencies.

Applications for new services or the creation of new agencies should be supported by a local institutional and financial commitment to support the services.

Requests for assistance to these agencies should be considered in the context of the overall transit assets in the area served by these agencies, and the extent to which their services are coordinated with the other carriers in the area and are available to people other than the clients of the applicant agency.

Like their larger urban counterparts, some of these rural carriers have the potential to be the core transit provider in their service areas. They could also coordinate their services with the small Section 16 carriers in the region, and provide links to intercity and neighboring rural and urban carriers.

16. The primary responsibility for governance, finance, management, and operation of specialized transit systems should rest with local agencies.

TxDOT should establish organizational and performance standards for the management and operation of these systems which will assure the presence of competent and responsible management, and levels of use that meet or exceed minimum standards. TxDOT should work with local agencies either to help meet these standards, or to determine whether there are alternatives available to the local communities.

These carriers should become a major part of the networks of the service delivery regions, and be available for use by the general public for service in their areas of operation - particularly in cases in which they are the only provider of service.

Chapter 3

Current Transit Market Shares in Texas

Chapter 3

Current Transit Market Shares in Texas

Introduction

Transit market share as used in this report refers to the number of person-trips made on a transit vehicle per-year, per-capita, in the service area of the various industry sectors.

Beyond this one measure of market share, others can also be used to describe the general contribution to transportation of the transit services in Texas. These include factors such as changes in ridership and population, changes in the amount and cost of transit service, and the interplay of these factors which define transit performance.

These factors can be more easily measured than can transit market share for different points in time, and can be more easily broken down by geographic areas within the state. These types of breakdowns are useful for understanding the market forces that are affecting changes in transit performance.

This section of the report presents an analysis of the transit market in Texas, focusing on performance trends between 1989 and 1993. A complete set of transit market statistics by property and industry sector is presented in Appendix 1A1 to this report. The data in this Appendix are the basis of the summary of the transit market shares in this chapter.

This analysis of performance trends summarizes performance and trends in market share, service effectiveness, service efficiency, and cost effectiveness:

- market share is measured in terms of transit passengers per capita
- service effectiveness is measured by passengers per vehicle mile of transit service
- service efficiency is measured as cost per vehicle mile of transit service
- cost effectiveness is measured as cost per passenger.

The data on the exhibits in this chapter show the 1993 results in these measures for various elements of the transit industry in Texas, as well as the rate of change from 1989 through 1993 - the most recent year for which complete data were available at the time of this analysis.

Between 1989 and 1993, statewide transit performance was generally positive and displayed several consistent trends statewide. Transit market share expanded slightly, given that the 17% increase in riders outpaced the 13% population growth.

Although there was a 16% decline in service effectiveness, attributed to a 40% increase in transit service, costs have been well-controlled. Service efficiency improved, as the nominal cost per mile fell by five percent. Cost effectiveness declined by 13%, however, reflecting the combined effect of the decline in service effectiveness and the improvement in service efficiency. Texas has experienced a better result in these performance indicators than the national industry as a whole, where there has been a decline in ridership per capita and an erosion in service efficiency.

The diversity of operating conditions in each area and industry sector within the state naturally results in a wide range of performance among individual operators. The remainder of this chapter summarizes transit operator performance, as aggregated by peer groups and by economic regions.

The Transit Industry Sectors

Most Texas public transit operators can be classified as belonging to one of five major industry sectors. A summary of the characteristics of these sectors is provided on Table 3-1.

Table 3-1
Summary of Industry Sector Characteristics

Industry Sector	Major Federal Funding Section	Population of Areas Served	Typical Riders Clientele	Local Funding Sources	State Funding Sources
Large Urban Areas	3,8,9	200,000+	All users	Sales Tax	None
Small Urban Area Fixed Route Systems	9	50-200,000	All users	General funds	PTF
Small Urban Area Demand Responsive Systems	9	50,200,000	Client users	General Funds Client programs	PTF
Rural Transit Systems	18		All users Client users	General Funds Client programs	PTF
Client Service Carriers	16	Any area	Clients	General Funds Client programs	PTF

The divisions of responsibility among these five sectors are:

- metropolitan transit authorities, or MTA's, provide transit services in urban areas over 200,000 population
- small urban fixed-route operators serve communities between 50,000 and 200,000 population, some of which also operate demand-responsive services

- small urban demand-responsive service operators in urban areas of 50,000 to 200,000 population, where no fixed route services are provided
- rural transit services that operate fixed-route and demand-responsive services in rural areas or smaller urban areas with populations under 50,000
- specialized transit carriers that provide paratransit service to specific groups of clients, usually under the aegis of a social or medical assistance program.

The first two groups operate traditional transit services in urban areas. One major difference between these two groups in Texas is that the MTA's are independent authorities funded from a dedicated local sales tax approved by public referenda, whereas the small urban area operators are typically municipally-owned and operate with no dedicated funding source.

The small urban area demand-response operators also tend to be municipally owned, and provide taxi-like services in relatively low-density urban areas where traditional fixed-route services would be ineffective or have not yet been established for one reason or another. A major difference between the fixed-route and demand-responsive systems is that the former are open to all users, while the latter are often restricted by practice or Federal requirement to use by the handicapped, the elderly, or the client groups of a particular social service agency.

Some of these small urban system operators serve population centers that are within the boundaries of the major urban areas that are served by the MTA's. This reflects a tendency for localities within the major urban areas but outside of the focus of the MTA's to seek a locally controlled service designed to meet local requirements.

MTA's and the small urban fixed-route operators account for the majority of transit ridership and service within Texas. The MTA's carry 93% of all of the public transit riders in the state and operate about 88% of the service. The small urban area fixed-route operators account for 6% of ridership and about 5% of transit service. This leaves about 1% of the market for the other carriers, who operate about 7% of the miles of service. The small urban area demand-responsive and the rural transit operators, though smaller, are growing at a faster rate than are the larger systems.

Market Shares

A summary of the 1993 performance of the five major public transit industry sectors in Texas is shown on Table 3-2. This table shows the 1993 results, the percent change from 1989-93 with and without adjustments for inflation at the annual rate of 3.9%.

The MTA's and the small urban fixed-route operators capture a substantially greater market share than do the other operators, as evidenced by their passengers per capita. Utilization of service is also higher, as indicated by the passengers per vehicle mile results. This reflects the higher urban densities of these areas and the greater supply of service that these operators provide.

Table 3-2
Summary Performance Results
by Industry Sector

	1993 Results, and % change from 1989				
Industry Sector	**Riders (000,000's)**	**Riders Per Capita**	**Riders Per Vehicle Mile**	**Cost Per Vehicle Mile**	**Cost Per Rider**
MTA's					
1993 Results	229.2	31.74	1.51	$3.26	$2.15
Change, 1989-93	*16.0%*	*15.8%*	*-14.6%*	*-3.8%*	*12.7%*
Adjusted for Inflation				*-17.5%*	*-3.3%*
Small Urban Fixed Route Systems					
1993 Results	15.2	10.56	1.76	$2.54	$1.44
Change, 1989-93	*25.3%*	*19.5%*	*-12.3%*	*4.8%*	*19.5%*
Adjusted for inflation				*-10.1%*	*2.5%*
Small Urban Demand Response					
1993 Results	0.3	0.33	0.24	$1.60	$6.60
Change, 1989-93	*527.7%*	*124.1%*	*-17.3%*	*4.6%*	*26.5%*
Adjusted for inflation				*-10.2%*	*8.5%*
Rural Systems					
1993 Results	4.1	0.90	0.25	$1.38	$5.47
Change, 1989-93	*64.2%*	*28.8%*	*-2.5%*	*-2.2%*	*0.3%*
Adjusted for inflation				*-16.1%*	*-13.9%*
Totals					
1993 Results	248.8	17.68	1.40	$3.04	$2.17
Change, 1989-93	*17.2%*	*3.7%*	*-16.0%*	*-4.7%*	*13.4%*
Adjusted for inflation				*-16.2%*	*-2.7%*

Costs are also higher for the MTA's and Section 9 fixed-route operators, however, as noted by the cost per vehicle mile. Among other factors, this reflects lower operating speeds associated with more frequent stops and more congested traffic conditions than experienced by the Section 9 demand response and Section 18 rural operators. Consequently, despite these operators' lower per-mile costs, their cost per passenger is higher than the MTA's and small urban fixed-route operators, because of the pronounced differential in ridership density.

Between 1989 and 1993, each group of operators tended to experience the same direction of change for each of the four performance indicators:

- all groups experienced an increase in ridership and in market share
- all groups expanded service at a rate greater than the increase in ridership, producing a decline in passengers per mile

- all groups experienced a decline in cost per mile, when adjusted for inflation, and two of the four reduced cost per mile in nominal dollars
- all groups experienced an increase in cost per passenger, even though their experience differed with respect to cost per vehicle mile
- three of the four experienced a reduction or a moderate increase in the cost per passenger, when costs are adjusted for inflation.

Two differences in performance among the operator groups are notable. The first notable difference is the relatively stronger growth in ridership in non-MTA areas. Collectively, the non-MTA operators experienced a 33% increase in ridership, while the more mature MTA sector experienced a 16% increase in ridership. Each of these other groups also achieved a greater rate of growth in market share than did the MTA's.

The second difference is the consistently positive performance of Section 18 operators as a group. These operators managed to maintain or improve their service effectiveness, service efficiency, and cost effectiveness, while increasing the miles of operations by 68%. These combination of achievements is very rare in the transit industry - particularly in rural areas.

Metropolitan Transportation Authorities

The metropolitan transportation authorities (MTA's) serve the seven largest urban areas within Texas. Listed in order of fleet size, these transit systems are:

- the Metropolitan Transit Authority of Harris County
- Dallas Area Rapid Transit Authority
- VIA Metropolitan Transit of San Antonio
- Capital Metropolitan Transit Authority of Austin
- Sun Metro of El Paso
- The "T" of Fort Worth
- the Regional Transit Authority of Corpus Christi.

The performance of individual MTA operators is summarized in Table 3-3. Between 1989 and 1993, performance changes among these operators were mixed.

Collectively, the MTA's achieved a 16% increase in ridership between 1989 and 1993, and a 15.8% increase in riders per capita. The gain in ridership was associated with a service increase of about 36% more vehicle miles in 1993 than in 1989. This translates to an aggregate service elasticity of

0.33 (i.e., a 0.33% increase in ridership for every 1% increase in service), which lies toward the low end of elasticities observed in the transit industry.

This relatively low ridership capture in the newer services is in part a function of the newness of such services, and in part a result of the fact that these new services tend to be provided in less dense suburban areas where demand is lower and population is less dense.

Because of this relatively weak response to the additional service, cost per passenger increased by about 13%, even though cost per vehicle mile had *declined* by almost 4% in nominal dollars, and by 17.5% when adjusted for inflation.

Table 3-3
Performance Of MTA Operators

	Performance in FY1993, and %-change from 1989				
Operator	Annual Riders	Riders per Capita	Riders per Vehicle Mile	Cost Per Vehicle Mile	Cost Per Rider
Houston Metro					
1993 Results	83.8M	35.1	1.63	$3.42	$2.09
Change, 1989-93	*6.2%*	*NA*	*-22.0%*	*-8.4%*	*17.4%*
Adjusted for inflation				*-21.4%*	*0.7%*
DART					
	45.8M	25.2	1.10	$3.39	$3.09
	5.1%	*NA*	*-23.5%*	*-9.1%*	*18.8%*
				-22.0%	*1.9%*
VIA					
	46.2M	39.8	1.71	$2.65	$1.55
	13.2%	*NA*	*-11.8%*	*13.2%*	*28.4%*
				-2.9%	*10.2%*
Capital Metro					
	26.4M	44.8	1.82	$3.70	$2.03
	75.7%	*NA*	*31.0%*	*6.8%*	*-18.5%*
				-8.4%	*-30.1%*
Sun Metro					
	16.4M	31.8	2.49	$3.73	$1.50
	50.4%	*NA*	*4.1%*	*14.6%*	*10.2%*
				-1.7%	*-5.4%*
Fort Worth "T"					
	6.0M	12.9	1.07	$3.21	$3.01
	17.5%	*NA*	*-12.3%*	*2.6%*	*16.9%*
				-12.0%	*0.3%*
Corpus Christi RTA					
	4.7M	16.1	1.04	$2.00	$1.91
	44.4%	*NA*	*-16.3%*	*-41.8%*	*-30.5%*
				-50.1%	*-40.4%*
Group totals					
	229.2M	31.7	1.51	$3.26	$2.15
	16.0%	*15.8%*	*-14.6%*	*-3.8%*	*12.7%*
				-17.5%	*-3.3%*

The most notable difference among the operators is the range in cost effectiveness. Sun Metro and VIA have the lowest costs per passenger, at $1.50 and $1.55, respectively. The "T" and DART are

at the opposite end of the scale, at $3.01 and $3.09 per passenger, respectively. The other systems fall about midway between these two sets of systems.

Small Urban Area Fixed-Route Systems

There are fifteen "Section 9" small urban area fixed-route operators in the state, serving cities with populations of 59,000 (Port Arthur) to 186,000 (Lubbock). The performance for these operators is listed in alphabetical order on Table 3-4.

Table 3-4
Performance Of Section 9 Fixed-Route Operators

	Performance in 1993 and %-change from 1989 (1)				
Operator	Riders (000's)	Rider/ Capita	Riders/ Mile	Cost/ Mile	Cost/ Rider
Abilene	411	3.9	0.73	$2.06	$2.83
Change, 1989-93	*3.2%*	*na*	*-22.1%*	*--18.4%*	*4.7%*
Amarillo	526	3.3	0.61	1.998	3.25
-	*10.3%*	*na*	*-21.6%*	*-11.8%*	*12.5%*
Beaumont	1,448	12.7	2.16	3.03	1.41
	19.7%	*na*	*6.0%*	*8.4%*	*2.2%*
Brownsville	1,796	18.2	2.95	3.90	1.32
	34.7%	*na*	*32.3%*	*24.8%*	*-5.7%*
Bryan-College Station	346	3.2	0.77	1.29	1.66
	826.0%	*na*	*107.8%*	*-70.8%*	*-85.9%*
Denton	154	2.3	0.33	1.10	3.33
			new since '89		
Galveston	1,099	18.6	2.16	2.78	1.29
	24.3%	*na*	*-2.3%*	*4.6%*	*7.1%*
Galveston Rail	111	na	4.00	9.82	2.46
	-45.1%	*na*	*-42.4%*	*-20.5%*	*38.1%*
Laredo	4,901	39.9	3.86	3.80	0.98
	36.8%	*na*	*-9.0%*	*7.2%*	*17.7%*
Lubbock	3,206	17.2	2.05	2.09	1.02
	32.1%	*na*	*-11.1%*	*-17.0%*	*-6.6%*
Port Arthur	399	6.8	0.94	2.84	3.03
	35.4%	*na*	*-8.1%*	*-2.1%*	*6.6%*
San Angelo	189	2.2	0.50	1.91	3.84
	16.2%	*na*	*-45.3%*	*-32.6%*	*23.4%*
Tyler	21	0.3	0.45	1.68	3.76
	-20.0%	*na*	*7.7%*	*92.6%*	*78.8%*
Waco	418	4.0	1.05	2.82	2.68
	42.4%	*na*	*-51.5%*	*-10.4%*	*84.9%*
Wichita Falls	161	1.7	0.40	1.57	3.89
	-14.6%	*na*	*-33.3%*	*--18.1%*	*22.7%*
Group totals	15,187	10.6	1.76	2.54	1.44
	25.3%	*19.5%*	*-12.3%*	*-10.1%*	*2.5%*

Collectively, these small urban area fixed-route operators experienced a 25% increase in ridership in conjunction with a 43% increase in vehicle miles of service, yielding an aggregate elasticity of 0.59. This is toward the upper end of transit industry experience, and indicates that a relatively strong market existed for this service expansion. One possible explanation for this relatively strong

performance is that these areas have been underserved in the past, and the latent demand for transit was relatively strong.

Market share, as measured by passengers per capita, increased by almost 20%. Cost per passenger increased by 2.5%, when corrected for inflation, while the cost per mile of service was reduced by 10.1% after allowing for inflation.

Nine of these systems registered a reduction in cost per mile, and three registered a reduction in cost per passenger, after allowance for inflation. Although most of these operators increased service between 1989 and 1993, the five largest operators accounted for almost all the ridership gain. Laredo, Lubbock, Brownsville, Beaumont, and Galveston accounted for only 44% of the total increase in transit vehicle miles, but accounted for 98% of the increase in ridership. These systems also register the most favorable average cost per passenger in this sector.

1989-1993 Performance by Region

Another way of viewing transit performance in the State is to group the transit operators by region. For the purposes of this assessment, the systems have been sorted into the economic regions defined by the State Comptroller.

Although the classification by economic region tends to obscure the performance differences attributed to different types of operations within each region, it is more effective for highlighting differences among the transit markets in different parts of the State. Unlike the consistent tendencies that emerged from the comparisons across industry sectors discussed above, substantial differences exist among transit operators in different regional markets. Performance by region is summarized in Table 3-5.

The transit market is expanding most rapidly outside of the regions that today carry the most riders. Three regions - Central, South, and Upper Rio Grande - accounted for 71% of the growth in ridership between 1989 and 1993, while accounting for only 34% of the service added during this period. These regions also have among the lowest cost per passenger.

The transit market in the Gulf Coast and Metroplex regions shows signs of diminishing returns. These two regions accounted for 24% of the increase in transit ridership between 1989 and 1993, but accounted for 59% of the service added during this period. Consequently, there was substantial erosion in service effectiveness – passengers per mile fell by 22% in the Gulf Coast and by 25% in the Metroplex.

The other regions of the state – High Plains, Northwest, Southeast, Upper East, and West – account for only about 3% of the statewide transit market, and had mixed performance for the period. Of these, the High Plains had the most positive performance. Ridership and passengers per capita increased by about 27%.

Table 3-5
Transit Operator Performance
Grouped By Economic Region

	performance in 1993 and %-change from 1989				
Region	**Riders (000,000's)**	**Rider/ Capita**	**Riders/ Mile**	**Cost/ Mile**	**Cost/ Rider**
Central	28.5	14.9	1.52	$3.30	$2.18
	69.3%	*57.1%*	*28.8%*	*-7.2%*	*-27.8%*
Gulf Coast	85.1	29.8	1.61	3.38	2.09
	6.2%	*6.2%*	*-22.3%*	*-21.6%*	*0.9%*
High Plains	4.1	5.4	0.93	1.78	1.92
	27.4%	*27.4%*	*-2.4%*	*-11.2%*	*-9.0%*
Metroplex	52.6	13.9	1.02	3.19	3.13
	7.5%	*-16.8%*	*-24.8%*	*--22.9%*	*2.4%*
Northwest	0.8	2.0	0.47	1.76	3.75
	11.2%	*11.2%*	*-21.5%*	*--18.1%*	*4.2%*
South	58.8	22.2	1.56	2.48	1.59
	18.3%	*17.0%*	*-13.2%*	*-10.3%*	*3.4%*
Southeast	1.9	6.2	1.35	2.60	1.92
	25.3%	*-28.2%*	*-20.4%*	*-8.3%*	*15.2%*
Upper East	0.3	0.5	0.2	0.80	4.06
	1133.8%	*352.0%*	*-52.7%*	*-8.6%*	*93.5%*
Upper Rio Grande	16.4	31.8	2.49	3.73	1.50
	50.4%	*50.4%*	*4.1%*	*-1.7%*	*-5.4%*
West	0.4	1.3	0.44	1.76	4.04
	9.3%	*-19.0%*	*-35.4%*	*--36.0%*	*-1.1%*
State totals	248.8	17.7	1.40	3.04	2.17
	17.2%	*3.7%*	*-16.0%*	*-18.2%*	*-2.7%*

The tendencies of the regions in cost effectiveness was generally similar, with cost per mile decreasing and costs per passenger increasing in a majority of the regions. All regions registered a reduction in the cost per passenger, ranging from 1.7% in the West to 22.9% in the Metroplex - after adjustments for inflation. Four of the ten regions registered a reduction in the cost per passenger.

Conclusions

Several general conclusions can be made from this review of the market shares of the major carrier and the trends in the economic regions of the state.

- the rate of increase in market share has slowed in the more mature systems
- the rate of increase in ridership has increased most rapidly in the smaller, newer systems, where the latent demand was stronger and the historic levels of service and ridership were lower

- the rate of capture of new services is poor in the major markets, and very good in the smaller markets
- the number of trips per capita varies substantially from region to region, from a low of 0.5 trips per year per person in the Upper East Region to a high of 31.8 in the Upper Rio Grande
- the effectiveness of the systems varies by region, from a low of 0.2 passengers per mile in the Upper East to a high of 2.49 in the Upper Rio Grande
- the effectiveness of the services in five of the ten regions is at or below one passenger per mile of service, a minimum threshold often applied in testing the economic feasibility of fixed-route transit services.

Chapter 4

"Seamlessness"

Chapter 4

"Seamless" Transit Services

Overview of Industry Sectors

Passenger transportation systems in Texas, as elsewhere, have typically been started and developed as specific modes serving specific markets. In recent years, as the public sector has gradually become the major funding source and the operator or sponsor of most passengers services, the inventory of service providers has become diverse institutionally, and more segmented operationally.

The result is a set of services that is designed for specific purposes, with limited interagency cooperation. The result of this is an overall collection of independent agencies and services that provide limited opportunity for potential riders to make a trip that involves more than one carrier with any degree of ease or convenience.

The various transit providers - even in neighboring or complementary service areas - often have no working relationships in planning, financing, and operating transit services. The nature of the various providers and the factors that impose limitations on their services create "seams" in the system that prevent or work against developing a seamless system.

Many of the existing "seams" in the system are a function of the institutional arrangements and the sources of funding. These systems can be divided into two broad categories: those that are funded through the Federal Transit Administration and TxDOT, and those that are not.

The major categories of FTA and TxDOT funded systems, and the nature of the barriers to increased seamlessness by these institutions, are:

- the MTA's that operate in the largest metropolitan areas in the State. These agencies are restricted to operating in their service areas, and cannot operate charter service or service designed specifically for school trips. Many of the restrictions on these systems are a function of Federal law or regulations.
- the Section 9 urban systems that operate in the urbanized areas over 50,000 in population - mostly in the small urban areas or in subregions in the larger urban areas in the State. There are several areas that are eligible to create such operations that have not yet opted to do so.

These systems operate generally under the same Federal guidelines on services as the MTA's.

- the Section 16 systems that provide demand responsive or variable route services through a variety of institutional arrangements across the State. There are now over 200 of these systems in operation across the state. Some of the agencies that provide these services are single purpose transportation agencies, but many of them are multi-purpose agencies for which passenger transit is a program that supports the broader purposes of the agency. These systems have the most complex set of restrictions on the services they can provide and the markets they can serve. Most of these restrictions are imposed by the agencies that provide funding for single purposes or single markets, such as service for the aging.
- the Section 18 rural transit systems that provide or sponsor demand responsive or fixed-route services that are open to the general public. There are currently 41 of these agencies that receive assistance from TxDOT. These agencies are generally restricted by Federal regulations to operating in the rural areas, although they may provide "closed-door" services connecting urban and rural areas..

The services not now funded by the FTA or TxDOT in Texas include:

- intercity private bus companies
- Amtrak
- school bus operators.

Both intercity operators and Amtrak are eligible for the assistance programs in which TxDOT has a role. Intercity carriers and service providers are eligible for support under Section 18(i) of the federal program. Amtrak services can be supported by states under Section 403(b), although Texas has no program to fund local costs of such subsidies.

There is an extensive intercity bus network in operation in Texas, virtually all of which is operating without public subsidies. In some cities, local initiatives have developed intermodal transfer points to facilitate connections between local transit services and intercity bus operations.

Amtrak provides service on two routes across the State. One connects Miami and Los Angeles through Houston, San Antonio, and El Paso. The other connects Chicago and Los Angeles through Dallas, Austin, San Antonio, and El Paso. A number of local transit agencies provide access to Amtrak on fixed-route or paratransit services.

School bus services in Texas are provided by local school districts, either directly or through private contractors. Under Texas statutes, school districts are not required to provide service, and no minimum standards are specified for which students must be carried. The school bus services are the most extensive of any passenger transportation services in the State.

What is "Seamlessness"?

A seamless transit network is one in which a rider is able to move from one mode to another, and from one system to another, in an efficient manner regardless of the number of transportation agencies involved in providing the trip. The ultimate goal of a seamless network is for the user to be able to complete a trip without being aware of any change in the name of the agency providing the service on different legs of the trip.

A fully seamless system would have the characteristics of a well-coordinated urban transit agency, including:

- full coordination among routes and modes
- a unified fare structure and fare collection system
- a common source for route and schedule information
- passenger facilities that make transfers among carriers convenient and comfortable
- management cooperation among the operating agencies that reinforces the overall concept of seamlessness.

Service Coordination - The first and basic element of seamless service is the planning and provision of services. By definition, the services of the agencies must connect at some physical location, and their schedules should be coordinated in a way that minimizes waiting time but also assures a positive transfer from one service to the other.

There are several elements of service coordination that should occur in a seamless transit network, including:

- where local bus service feeds intercity bus or rail, the local bus service should be timed to arrive at the terminal or transfer point to satisfy passenger needs and to guarantee connections. For example, in the morning peak period work trip, the local service should arrive five to ten minutes before the intercity bus or rail departure time. In the evening, the local service should be scheduled to leave the terminal or transfer point five minutes after the intercity service arrives. The evening departure for the local service should be a guaranteed connection in normal circumstances, with some option provided if the planned connection is not made.

- where rural transit or specialized transit systems feed an urban system or intercity carrier, the rural or specialized service should be timed to meet the urban system. The originating service should be scheduled to arrive five minutes before the urban bus. For transfers in the other direction, the rural or specialized service should be scheduled to arrive five minutes before the urban bus service, and not to leave before it arrives.
- when a local bus service feeds another local bus service, the service should be designed so that the originating vehicle arrives before the departing vehicle is schedule to leave. In most cases, this connection should be "guaranteed". Vehicle drivers and dispatchers should be connected by radio or cellular phones to ensure the connections are made.
- Section 16 client service agencies should permit a passenger to complete a trip outside their service territory. While outside the service area, the vehicle should be permitted to perform local service or to handle a trip from the outlying area back into the jurisdiction of the operator. There should be no jurisdictional boundaries for completing a Section 16 trip.

Fare Structure - Most transit carriers govern their own fare structures, and collect their own fares. Very few have fare sharing arrangements with other carriers. This can result in confusion as to the total price of a trip and the need to pay fares at each transfer point, which also can mean the need to carry a pocket full of change for exact fare payments. In some cases, the different and independent fares may also mean that some riders are not eligible for fare subsidies or reduced fares on each leg of the trip.

These multiple fare payments represent seams in the system, and create barriers to convenient travel. In a seamless statewide transit network, fare information should be readily available, and the fare structure and fare collection system should consist of the payment of a unified fare for the entire trip, regardless of the number of modes and different operators that provide the trip.

Accomplishment of a seamless fare structure requires a high degree of cooperation among the participating carriers. They must be accomplished in stages over time:

- The first stage should be for all systems within an area to apply the existing fare structure with "fare sharing" among the providing agencies simply and consistently.
- Stage two should be the development a regional fare structure and transfer coordination policy among all operators.
- Stage three should be the implementation of a truly seamless fare structure that utilizes the latest available technology to collect fares across some network of services. This might include fare sharing with intercity carriers, as well as local services at both ends of an intercity trip.

This third stage requires a financially and technically sound basis through which to collect fares and distribute the revenue appropriately to each carrier. A "smart card" system is being developed and is in use on some systems. A debit card can be purchased for various face values, and the appropriate fare for each trip is deducted from the card by on-board automatic card readers.

These cards can be purchased by anyone, including the individual rider, an employer, retailers, or a public agency that is the sponsor of a given client group.

Eventually, a seamless fare structure might require an on-board card reader system that deducts the total fare and allocates the revenue from the total trip to the appropriate operators. The fare collection system might also be upgraded to one using a cash card or even a credit card to pay for the trip. The key consideration is to minimize the number and complexity of the kinds of fares that a rider must pay on a trip that involves more than one carrier.

Public Information - A seamless transit network requires transit public information materials that contain all the necessary information for a customer to make any kind of trip utilizing public transit services, or that there be a generally known means of attaining such information. The elements of public information at the local level that are needed to help establish seamlessness include:

- a regional transit telephone information system
- single ride, multiple carrier, trip tickets
- regional system maps
- local service maps
- public timetables

A potential passenger should be able to call a transit telephone information system to attain available transportation service information about any service offered in the region or to or from the region to other regions. The customer should be able to describe the locations of the origin and destination parts of the trip. With the aid of a computer, the information operator would describe the services that are available for making the trip, along with travel times and fare information.

For advanced scheduled intercity trips, a trip ticket could be forwarded to the customer with the appropriate trip information. If the customer desired more detailed information about a service or system - such as scheduling a paratransit trip on a segment of the trip - the call would be transferred to the appropriate agency that would provide the service on that segment.

For each metropolitan area, a regional system map would show the route alignments for all fixed-route services as well as the description of all paratransit services, including service area (possibly shown as a shaded area on map), service type, telephone number, and the eligibility requirements. Eligibility for use of any limited purpose service should be transferable to all similar services.

Other information that could be included on the system map are:

- the location of all points of connection between carriers
- the fare structure information for all services and trips
- a central telephone information number, and the telephone number for all systems
- the major activity centers located throughout the area
- a listing of services that extend outside the area and destination locations
- other information to help the customers use the services.

Local system maps and other information in the form of posters or signs posted at all terminal and major transfer locations throughout the area are useful aids to riders not familiar with the services. The system map should contain the alignments for all fixed-routes services, as well as shaded areas on the map describing service areas for paratransit service. The other information described in the system map should be included in the posters or display signs.

Public timetables for individual routes should contain information on all connecting routes both within and outside its system. The connection information should include route name and number, name of the providers, connection times, whether there are "positive meets" provided between the two services, fare information regarding the connecting services, and the passenger amenities available at the connection location.

A statewide system map, or maps of smaller regions within the state, showing all intercity bus and rail services, the telephone number for information on each service, and the major points of connection with local transit services could be produced.

Intermodal and Interagency Terminals - A major consideration in the seamlessness of a transit trip is the comfort and convenience of the physical transfer from one carrier to another. The nature of the facilities at which transfers typically take place range from curbside bus stops with no amenities to substantial intermodal transfer facilities that accommodate large numbers of people transferring among a wide variety of carriers and modes.

The types of facilities that are provided depend on such variables as the typical time between services, the number of people transferring, the number and types of carriers that serve the transfer point, and the land use at the site of the transfer.

Multi-modal or multi-carrier transfer centers can be provided at several types of facilities from the most rudimentary to the most sophisticated. Local transfer points between small urban and rural carriers can be as simple as a small bus shelter placed at a convenient location.

Intercity bus or rail terminals should contain information on all local bus and paratransit services that serve the area. There should be posters or display signs containing the transportation system map with other appropriate public information.

There should be signs throughout the terminal that indicate how to connect with intercity buses and rail service as well as with local bus routes. Larger terminals should be designed with provisions for off-street parking berths for intercity buses, local buses, and paratransit services, with route designations for each berth. Provisions should also be made for auto and taxicab interfaces.

Management Cooperation - A seamless statewide transit network requires extensive cooperation among transit and paratransit managers to create seamlessness. Joint management efforts are needed to plan and implement the kinds of changes in services, fares, and facilities that are the hallmark of seamlessness. In many cases, the skills and resources of the managements of the cooperating agencies will be very different, with the result that the onus for developing and management of the change may fall more on one partner than another.

A Case Study of Seamlessness

There are a number of ongoing activities currently in place in Texas in which neighboring carriers have developed working relationships that are designed to provide seamless service to their users. A case study of the working relationships among three carriers in the metropolitan Austin area was conducted to illustrate the kinds of cooperation that can be achieved within current statutory and operational constraints.

As a means of testing the concepts of seamlessness, a case study of three transit systems that serve adjoining or overlapping service areas was conducted. The agencies are:

- Capital Metro, an MTA that serves metropolitan Austin through several modes, including directly operated and contractor-operated fixed-route services, and directly operated and contractor-operated demand-responsive services

- Capital Area Rural Transportation System (CARTS), a rural transit system that provides or contracts for fixed-route and demand-responsive services in the rural areas around metropolitan Austin
- Hill Country Transit, another rural transit operator that serves the rural area to the northwest of CARTS service area.

The areas are also served by Amtrak and intercity bus operators

The primary focus of this case study was on the established cooperation among Capital Metro, CARTS, and Hill Country Transit.

Existing Service Coordination - There are a number of places in the service areas of these three agencies where the opportunity for service coordination presents itself:

- Capital Metro and CARTS meet at the Cedar Park and Ride lot and at the CARTS terminal on 6th Street in Austin. Service scheduling is coordinated so that the wait times are minimal.
- Capital Metro provides bus service near the Austin Amtrak Rail Terminal at 250 North Lamar
- Capital Metro provides service near the Greyhound intercity bus terminal at the Highland Mall
- Demand-responsive services between CARTS and Hill Country Transit are arranged on a case-by-case basis.

Capital Metro's bus services are not convenient to the Greyhound or Amtrak terminals. Bus service to both terminals require a walk of several blocks from the bus stops. The scheduled times of the services are not coordinated with Greyhound or Amtrak, but for different reasons. Amtrak service operates only three times a week, while the Capital Metro service to the Greyhound station is frequent enough not to require a positive schedule coordination.

The interface between CARTS and Hill Country Transit is designed to suit the specific trip being made, and it is typically based on a prearranged convenient time and location for transfer. Because there are so few trips between these Section 18 systems, and the trips that do occur are so varied, there is no need for a formal coordination process. The system managers work out the details so that each trip is as convenient to the passenger as it can be.

There is a strong interface between CARTS and intercity bus carriers that serve the area. CARTS is part of the Rural Connection Program and provides service to all intercity bus depots in their area. CARTS also operates two intercity bus transfer points for Greyhound and Kerrville Bus. There is a keen interest to maintain intercity bus services in rural community.

Fare Structure - There are currently no joint fare arrangements for travel between any of the case study systems. The primary reason for lack of fare coordination is that only a limited amount of system to system transfer activity occurs. Even though this transfer activity is small, a system to system fare transfer program should be developed. In the longer term, the originating operator should collect the fare for the entire trip and reimburse the other involved systems for their portion.

Public Information - There is no overall public information scheme that promotes coordinated use of the systems. Capital Metro describes the CARTS operation and provides the CARTS telephone number within its schedule brochure. However, information about CARTS, intercity rail, or intercity bus is not available through Capital Metro's telephone information service operators.

CARTS provides information on its schedules about intercity bus services. No information on services outside its area is available through Hill Country Transit.

A seamless transit network requires that the transit public information material in each area contain all the necessary information for a customer to make any kind of trip utilizing public transit services. This only occurs to a limited degree. At a minimum, there should be a local clearinghouse in each urban area that is equipped to provide information on all transportation services that are available. This could be the local TxDOT District or the urban bus operator. Urban, rural, and intercity bus services and intercity rail service information should be available.

Terminals - The Austin intercity bus and Amtrak rail terminals do not contain information on local bus services that serve the area. There are no provisions for off-street berthing for local buses or paratransit vans. Provisions are made for rural service vans at the intercity terminals in rural areas. Much greater importance is given by the rural operator to intercity bus service coordination.

Management Cooperation - There is a significant level of cooperation among the case study systems to ensure that the needs of the rider traveling between systems are met. Most of the interfaces are informal. There is a need to institutionalize the cooperation between an urban carrier and its rural operators. This formalization will eventually lead to a barrier-free regional system.

Chapter 5

Evaluation Of Transit Service Gaps

Chapter 5

Evaluation Of Transit Service Gaps

Introduction

The collective services provided by the various types of transit carriers in Texas are within reach of five out of six residents of the State. The work in this Chapter focuses on the physical "gaps" in services - those areas of the State in which no transit service is available. This analysis builds on the detailed service information presented in Appendix 5-1 provided under separate cover.

As used in this assessment, a transit "gap" is defined as the absence of service by an established provider of passenger transit services which are typically eligible for support by state and federal programs.

The gaps that are evaluated in this assessment are largely in unserved areas. There are other "gaps" that have not been included in this assessment. These other "gaps" are largely the result of decisions by local transit agencies not to provide service to specific markets as specific times of day or days of the week. Among these other kinds of "gaps" in service provided by existing agencies are:

- late night service
- weekend service
- areas served by infrequent schedules
- limited access paratransit systems
- service provided by rural transit carriers to "clients" of social service agencies in preference over the general public
- unmet needs in areas with existing services.

These kinds of gaps are the result of local decisions relating to service standards, service priorities, and resource allocation. Because they are under the jurisdiction of local decision makers, and because of the vast amount of detail required to assess the nature and extent of these gaps, they have not been included in this assessment of "gaps".

Appendix 1 to this Chapter lists, for each county in the State, the square miles and populations of the areas currently served and unserved, as well as the industry sectors that provide service in the county in whole or in part.

There is an unserved population of 2,911,274 persons, divided among the following categories:

- unserved rural areas, 999,456
- urbanized area eligible for Section 9 but currently without service, 859,909
- urbanized area outside the current service area of a fixed-route Section 9 operator, 129,198
- urbanized area outside the current service area of a demand-responsive only Section 9 operator, 45,756
- urbanized area outside the current service area of an MTA, 876,955.

Unserved Urbanized Areas In the Urban Fringe of MTA Service Areas

The unserved small cities or "census designated places" with a population in excess of 25,000 which are in the urban fringe of areas currently served by a MTA are listed on Table 5-1. The list also includes any clusters of smaller towns adjacent to an MTA urbanized area with a combined population that may warrant addition to the urbanized area in the near future.

Table 5-1
Population Projections for Significant Unserved Areas in Urban Fringes

Small Cities (25,000+) In MTA Suburban Fringes	County	Urban Area	1995	2015
Baytown	Harris/Chambers	Houston	67,617	77,360
Channelview CDP	Harris	Houston	27,072	30,973
Deer Park	Harris	Houston	29,283	33,503
DeSoto	Dallas	Dallas-Ft. Worth	32,163	35,985
Duncanville	Dallas	Dallas-Ft. Worth	37,643	42,116
La Porte	Harris	Houston	29,557	33,815
League City	Galveston/Harris	Houston/Texas City	31,305	34,218
Pasadena	Harris	Houston	126,405	144,619
Round Rock	Williamson	Austin	32,376	35,516
Subtotal			413,422	468,104
Potential Urbanized Areas in Urban Fringe				
Beaumont-Port Arthur	Jefferson	Beaumont/Port Arthur	62,243	65,091
Duncanville-Cedar Hill-DeSoto	Dallas/Ellis	Dallas-Ft. Worth	116,264	130,081
League City-Friendswood	Galveston/Harris	Houston/Texas City	69,958	76,467
McKinney-Allen-Fairview	Collin	Dallas-Ft. Worth	43,327	47,679
Round Rock-Jollyville	Williamson/Travis	Austin	64,317	70,553
Socorro	El Paso	El Paso	34,815	44,237
Sugarland	Harris/Ft. Bend	Houston	93,083	106,398
Waco Fringe	McLennan	Waco	41,557	45,026
Subtotal			525,563	585,532
Grant Total			938,985	1,053,636

Because all of these communities are either wholly or partly in an urbanized area, they are not eligible for Section 18 rural transit funds. In the absence of service in these areas, no Section 9 funds have been allocated to these areas for fixed-route or demand-responsive service.

The characteristics of this group demonstrates the "gap" created by the institutional structure of Federal funding programs which prevents Section 18 rural operators from serving populations that are now considered urban.

This problem was recently encountered in Galveston County, where a Section 18 operator had been serving the Texas City-La Marque area. When the Texas City-La Marque area was designated as an urban area by the Census Bureau, these residents were no longer eligible for Section 18 funded services, but no Section 9 operator was available to provide the service. The situation was remedied by providing Section 9 funds to the Section 18 operator to pay for continued service to the urban area.

The communities on the top half of Table 5-1 are current urbanized areas that lack service. Most of the communities in this category are too small for the creation of separate systems funded by Section 9 to be feasible. Organizing groups of these cities together to create a new agency requires the agreement of the local municipalities that are involved on the services to be provided, on the means of governing, and on the financing for the services.

Almost all of the communities on this list are in the Houston and Dallas urbanized areas, and are cities that have opted not to join Houston METRO or DART. The largest city on the list is Pasadena, which alone represents over 100,000 unserved people in a fairly dense urban setting.

The areas listed on the bottom half of the table - areas that could become urbanized in the future - do not necessarily represent gaps today. Some are currently served by a Section 18 operator. But as they grow and become urbanized, they risk falling into the "no man's land" in which they will become ineligible for Section 18 funds yet unserved by a Section 9 operator.

Unserved Urbanized Areas
In Small City Urban Fringes

There are 129,000 persons outside of the current service area of a small city fixed-route operator, composed primarily of people in the Beaumont, Port Arthur, and Waco urban fringes. The cities of Port Arthur, Beaumont, and Waco also operate transit services, but provide service only within their city.

Because these unserved people live in the urbanized area, they are not eligible to use the rural transit services provided by the South East Regional Planning Commission in the Beaumont and Port Arthur area, and by the Heart of Texas Council of Governments in the Waco area. The Metropolitan Planning Organization for the Waco Transportation Study recently issued a request for proposal to examine

transit needs in the Waco urban fringe, and to propose the institutional arrangements necessary for the City of Waco to provide service outside its city limits.

Unserved Cities Currently Eligible For Section 9

Table 5-2 lists the unserved urbanized areas eligible for Section 9 funds that currently provide no transit service. The status of transit planning in those communities and the likelihood that transit service may be established in the future vary by city.

Harlingen - No transit services are currently being contemplated by the City of Harlingen. While no service is seen to be needed today, the population projections for the city show rapid growth over the next two decades, indicating the possibility of future need for transit services.

Table 5-2
Population Projections for Unserved Urbanized Areas Eligible for Section 9 Funding

Place	County	1995	2015
Harlingen	Cameron	86,209	114,902
Killeen	Bell/Corryell/Lampassas	146,562	175,947
Longview	Gregg/Harrison	78,493	85,463
McAllen-Edinburg-Mission	Hidalgo	291,354	401,478
Midland	Midland	96,967	114,203
Odessa	Ector/Midland	120,720	146,023
Texarkana	Bowie/Miller (Arkansas)	68,145	72,540
Victoria	Victoria	57,327	64,583
Total		945,776	1,175,137

Killeen - TxDOT recently conducted a transit feasibility study for the City of Killeen in 1994. While the study indicated a potential need for transit in the community, the City of Killeen is not currently planning to subsidize any services. TxDOT does not anticipate a request for funding from Killeen any sooner than FY1997. A private intercity operator is considering running a route from Fort Hood to a local mall, a service the study indicated was needed.

Longview - The City of Longview has been awarded a Section 9 grant in 1995 to implement demand-responsive transit services. The service recently began operation.

McAllen-Edinburg-Mission - With a fast-growing population already in excess of 250,000 people, this region is the largest urban area in Texas without public transportation services. The population densities are high and median household incomes are low, which is a combination of factors that usually indicate the potential for successful transit operations.

Valley Transit provides intercity service among the communities and provides fixed-route transportation to the region. The community college in McAllen and the university in Edinburg are currently examining the need for public transportation services to their campuses. The cities of McAllen, Edinburg, and San Juan are each separately considering transit services.

Midland/Odessa - The Permian Basin Regional Planning Commission has recently awarded a consulting contract for a transit feasibility study for the Midland-Odessa area. With a combined population of over 200,000, some level of transit services are likely needed in the urban area.

Texarkana - Texarkana is not currently considering transit service.

Victoria - The City of Victoria has requested funding from TxDOT for a transit feasibility study in FY1996.

Potential Change In Systems Eligible For "Governor's Apportionment" Funds

Urbanized areas greater than 200,000 population receive Section 9 grants directly from the Federal Transit Administration.

Urbanized areas with population between 50,000 and 200,000 receive federal funding through the FTA's Section 9 "Governor's Apportionment" funds. TxDOT works with the Federal government and the operating agencies in the distribution of these Governor's Apportionment allocations.

Table 5-3 lists all currently urbanized areas in Texas with their projected populations. Between now and 2015, Lubbock is the only current recipient from the Governor's Apportionment Program projected to exceed 200,000 in population and move to the next higher category for funding. With a slightly higher population growth rate than projected, Amarillo and Laredo could exceed 200,00 as well.

Table 5-4 lists those towns or clusters of towns with population greater than 25,000 but under 50,000 and not adjacent to a current urbanized area. These population centers may qualify for Section 9 Governor's Apportionment funding by 2015. While it is difficult to predict the areas that will achieve the necessary population and density to become a designated urbanized area, this analysis indicates that the Clute-Lake Jackson (Brazosport) area in southern Brazoria County is likely to become an urbanized area during this period.

Table 5-3
Projected Growth for Urbanized Areas
1995-2015

Urbanized Area	County	1995	2015
Abilene	Jones, Taylor	113,314	125,428
Amarillo	Potter, Randall	164,641	181,142
Austin	Travis, Williamson	594,515	698,568
Beaumont	Hardin, Jefferson	127,250	133,465
Brownsville	Cameron	127,926	170,462
Bryan-College Station	Brazos	113,593	149,574
Corpus Christi	Kleberg, Nueces, San Patricio	287,532	353,961
Dallas-Ft. Worth	8 counties	3,368,878	3,756,862
Denton	Denton	71,254	85,833
El Paso	El Paso, Dona Ana (NM)	621,584	789,851
Galveston	Galveston	60,459	66,062
Harlingen	Cameron	86,217	114,885
Houston	7 counties	3,075,101	3,518,700
Killeen	Bell, Coryell, Lampasas	146,572	176,915
Laredo	Webb	137,588	191,662
Lewisville	Dallas, Denton, Tarrant	85,172	102,547
Longview	Gregg, Harrison	78,431	85,257
Lubbock	Lubbock	195,730	228,076
McAllen-Edinburg-Mission	Hidalgo	291,233	401,594
Midland	Martin, Midland	96,998	114,204
Odessa	Ector, Midland	120,682	145,933
Port Arthur	Jefferson	113,565	118,811
San Angelo	Tom Green	88,631	100,963
San Antonio	Bexar, Comal, Guadalupe	1,197,961	1,400,217
Sherman-Denison	Grayson	56,320	58,772
Temple	Bell	62,430	75,025
Texarkana	Bowie, Miller (AR)	68,149	72,500
Texas City	Galveston, Harris	133,046	145,383
Tyler	Smith	81,057	85,758
Victoria	Victoria	57,337	64,619
Waco	McLennan	147,138	159,531
Wichita Falls	Archer, Wichita	101,873	112,208

The Houston-Galveston Area Council is currently examining the feasibility of expanded Section 18 demand-response transit services in Brazoria County. If a portion of the county becomes urbanized, any services funded by Section 18 today may need to be replaced with Section 9 funding in the future.

Table 5-4
Population Projections for Unserved Cities with Population 25,000+ in Rural Areas

Place	County	1995	2015
Brazosport	Brazoria	69,790	80,081
Conroe	Montgomery	28,797	32,252
Del Rio	Val Verde	33,254	42,416
Huntsville	Walker	30,801	36,016
Kingsville	Kleberg	28,410	40,494
Lufkin	Angelina	31,384	34,743
Nacogdoches	Nacogdoches	31,026	35,189
New Braunfels	Comal	27,662	28,332
Orange-W. Orange-Bridge City	Orange	35,278	37,847
Richmond-Rosenburg	Ft. Bend	42,526	48,610
San Marcos	Hays	31,790	44,118
The Woodlands CDP	Montgomery	30,461	34,115

Other communities that could reach the 50,000-person threshold by 2015, depending on the actual growth rate and exact geographic boundaries used for the urbanized area, are Del Rio, Kingsville, Richmond-Rosenburg, and San Marcos.

Del Rio, Kingsville, and San Marcos are currently served by Section 18 operators, and therefore do not represent current gaps in service. These cities are identified to note where a loss in Section 18 eligibility will need to be replaced with Section 9.

The Richmond-Rosenburg area has no Section 18 operator and represents a gap in service.

Unserved Rural Areas

The 1990 demographic data for the 33 counties that currently have no Section 18, Section 9, or MTA service anywhere in the county are provided in Appendix 2 to this Chapter.

Table 5-5 further distinguishes among the counties with no Section 18, Section 9, or MTA service by splitting them into those counties with a Section 16 operator only and those counties without a Section 16 operator.

Thirty-three counties have no Section 18, Section 9, or MTA transit operator providing service anywhere in the county. The counties with no transit service have a lower population density, lower

median household income, lower percentage minority population, and greater percentage of population over 65 years old than counties with transit service.

Table 5-5
Counties with Section 16 Operator Only or No Transit Service

Counties With Sec. 16 Only	City Base of Operator	1995 Population	Counties With No Operator	1995 Population
Brewster	Alpine	9,426	Archer	8,027
Cherokee	Rusk	42,212	Chambers	20,088
Clay	Petrolia	9,905	Culberson	3,658
Ector	Odessa	118,934	Henderson	58,452
Erath	Stephenville	28,890	Hudspeth	3,120
Fisher	Roby	4,814	Jasper	31,978
Houston	Crockett	21,362	Jeff Davis	1,990
Jack	Jacksboro	7,005	Marion	9,904
Midland	Midland	106,611	Matagorda	38,545
Mitchell	Colorado City	9,961	Newton	13,792
Montague	Nocona, Bowie	17,056	Polk	32,707
Nacogdoches	Nacogdoches	55,013	Presidio	7,011
Panola	Carthage	22,116	Rains	6,744
San Jacinto	Coldspring	16,514	Shackleford	3,309
Trinity	Groveton	11,348	Stephens	9,523
Tyler	Woodville	17,595		248,848
Wise	Decatur	36,078		
Young	Graham, Olney	18,270		
		553,110		
Grand total				801,958

The two groups of counties differ little in the percentage of households without an automobile, percentage of population living below the poverty line, and percentage of persons with a work disability, as defined in the census data.

To analyze whether there is adequate demand for transit in these unserved counties to warrant Section 18 service, the demographic characteristics of the populations of the service areas of Section 18 operators providing service in exclusively rural counties were correlated to those systems' ridership. Predicting Section 18 ridership based on exogenous factors is difficult, because the amount of service offered, and thus ridership, is often financially constrained.

However, a few conclusions from the analysis can be drawn from this evaluation:

- The percentage of the population composed of minorities, elderly, those living below the poverty line, those with no automobile, and the disabled are not good predictors of Section 18 ridership.

- Population density and median household income are both significantly negatively related to ridership, i.e. the higher the population density or the higher the median household income, the lower the ridership.
- Population density and median household income are very strongly positively correlated. Using either one of these variables in an equation to forecast ridership will achieve approximately the same predictive power.
- Not surprisingly, service area population is significantly positively related to ridership. Holding density constant, a higher population yields a higher proportional ridership.
- Probably because of the constraints on service offered (which means that observed ridership may not be the same as ridership demand), the best regression equation can account for only about half of the variability in ridership (i.e. R-square of less than 50%).
- No existing Section 18 operator serves an area whose aggregate density is less than 2.9 persons per square mile.

Another way to identify rural areas where demand may exist that have no transit service is to look at areas that are either investigating the feasibility of transit service or have recently requested funding for Section 18 expansion. Those areas investigating transit feasibility or requesting funds to expand are likely responding to demand for service in the areas.

Midland and Ector Counties - Midland and Ector counties currently have no public transit service. The recently commissioned study by the Permian Basin Regional Planning Commission for a transit feasibility study for the Midland-Odessa area will include an examination of the need for services in the rural portions of the county as well.

Nacogdoches County - Nacogdoches County has no general-access public transit, but is served by a Section 16 provider whose service is restricted to certain client groups. The City of Nacogdoches is currently investigating the possibility of starting some type of public transit service. Potential demand for services may be generated in the city and county by elderly, disabled, or low-income residents, and by students of Stephen F. Austin State University.

Archer, Young, Clay, and Montague Counties - These four counties are south and east of Wichita Falls in North Texas. Young, Clay, and Montague counties are served by at least one Section 16 provider, while Archer County has no public transportation services at all. While Wichita County is not listed as a completely unserved county, since the city of Wichita Falls is served by a Section 9 operator, the remainder of the county is unserved.

A rural public transit feasibility study was recently completed for the Texoma Area Paratransit System and the Rolling Plains Management Corporation (the Section 18 operators in closest proximity to these counties) to examine the demand for transit in these counties. While demand exists in all five counties (including rural Wichita County), the demand is light in Archer County because of low population and high median household income.

Table 5-6
Pending Rural System Expansion Requests

Section 18 Operator	FY96 Request	Expansion Area
Brazos Transit System	$2,680,000	Fixed route services in the cities of Rusk, Jacksonville, Kountze, Silsbee, Crockett, Jasper, Livingston, San Augustine, Center, Mt. Pleasant, Woodville, and The Woodlands Demand responsive service in Cherokee, Houston, San Jacinto, Trinity, Tyler, Jasper, Newton, and Polk counties
Central Texas Oppor.	$164,784	Shackelford and Stephens Counties
Colorado Valley Transit	$1,971,500	Expand services within current area
East Texas COG	$56,700	Marion and Panola Counties
People for Progress	$104,212	Mitchell County
Rolling Plains Mgmt. Corp.	$230,000	Archer, Young, and Wichita Counties
Texoma Area Paratransit	$374,000	Montague, Clay, and Wise Counties
West Texas Opportunities	$165,926	Expanded services within current service area

The list on Table 5-6 identifies those Section 18 operators that have requested funds for FY 1996 for expansion, along with the funding level requested and the new areas they propose to serve. Requests have been made to extend service to 18 of the 33 counties that currently have no service, and to add service to rural Wichita County.

For TxDOT to approve an expansion of Section 18 service in a new city or county, the operator must include letter of support from the relevant local officials.

Local feasibility initiatives are underway in three of the 33 counties, and requests for service have been submitted for 18 of the 33 counties. Pending the results of these studies and the need to demonstrate local support for the service requests, it may be found that some of these 21 counties do not need service. The assessment that relates demographics to transit demand shows that a reasonable level of transit demand can be expected in 20 of these 21 counties, with the exception being Archer County.

The remaining twelve counties where no action is currently being undertaken are Henderson, Chambers, Matagorda, Rains, Erath, Jack, Fisher, Presidio, Brewster, Culberson, Jeff Davis, and Hudspeth.

Erath, Jack, Fisher, and Brewster counties have at least one Section 16 operator in service in those counties. Six of the twelve unserved counties lack service, but they also are unlikely to generate sufficient demand to warrant service and therefore should not be considered gaps.

Unserved Counties with Low Transit Potential

Six counties have demographic and other characteristics that suggest very low feasibility for transit: Presidio, Brewster, Culberson, Jeff Davis, and Hudspeth Counties. The densities in these counties are far below any served areas in Texas. The combined density of these five counties is only around one person per square mile, with a combined population only about 24,000 people. The only sizable town in the region is the City of Alpine, which is already served by a Section 16 operator.

Chambers County - Chambers County has a population of only 20,000 persons, and its residents have a median household income of nearly $32,000 per year. These factors indicate that there is little demand for transit services in the county. The county is not served by a Section 16 provider.

The remaining six counties - Henderson, Matagorda, Rains, Erath, Jack, and Fisher - should be considered gaps at this time. These unserved counties have populations with significantly lower median household incomes than the remainder of the State. The lack of funds for a local match may have more to do with the current lack of service than a lack of need for basic transportation services.

One final category of potential gap should be mentioned. The counties of Val Verde, Maverick, and Johnson are not included in the list of completely unserved counties because the cities of Del Rio (Val Verde County), Eagle Pass (Maverick County), and Cleburne (Johnson County) have Section 18 operators that provide service within those cities only because of restrictions on the use of funds by the sponsoring city. The remainders of the counties are unserved:

- The rural portion of Maverick County contains about 15,000 people with a very low median household income and should be considered a gap.
- While the rural portion of Johnson County has a population of over 70,000, its very high median household income, and the lack of interest in service expansion to the remainder of the county indicate that this should not be considered a gap except for possible expansion of service to Cleburne.

- The rural portion of Val Verde County, containing about 8,000 people with fairly low median household incomes, does not achieve the minimum density of about 3 persons per square mile to warrant service. This county should not be considered a gap.

Conclusions

The most significant service gaps are located in urbanized areas. The gaps are generally the result of:

- the lack of availability of Section 18 funded service to those urbanized small towns or unincorporated areas that are adjacent to Section 9 properties or MTAs
- the institutional difficulties of operating and funding a transit operation under joint agreement of the multiple small cities involved
- the lack of interest or motivation for local governments to create and help finance such services.

Examples of the first problem include the newly urbanized communities in the Houston and Dallas areas, and the urban fringes in the Waco and Beaumont areas.

Examples of the second problem include the McAllen-Edinburg-San Juan area, where each of these contiguous cities is considering an independently operated service when one system might more effectively serve the travel needs of the area. Another example is the situation in eastern Harris County. By not joining the MTA, the cities of eastern Harris County are left trying to evaluate and meet their transit needs independently.

The unserved urban fringe areas have a population of almost 1,000,000. While TxDOT has not traditionally been deeply involved in transit planning or coordination in urbanized areas, closing the gaps in services in these areas may require TxDOT initiatives, in coordination or cooperation with the regional MPO's.

Significant effort by both TxDOT and the Section 18 operators is quickly eliminating the gaps in rural transportation service. If all of the counties that are considering the addition of transit services are eventually served, and the unserved counties with low need are eliminated, the remaining gap in rural public transportation is reduced to about 160,000 persons.

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

				Population of Served Area				Unserved					
County	Square miles	1990 population	Pop./ Sq. Mile	Served by MTA	Served by Section 9	Served by Section 18	Unserved	Rural	Section 9 urban w/ no Operator	Urbanized outside Section 9 or MTA	Urbanized outside Section 9 (Fixed)	Urbanized outside Section 9 (DR)	Urbanized outside MTA
State Total	**261,914.2**	**16,986,510**	**64.9**	**7,222,585**	**2,325,788**	**4,526,863**	**2,911,274**	**999,456**	**859,909**	**1,051,909**	**129,198**	**45,756**	**876,955**
Anderson	1,070.9	48,024	44.8	0	0	48,024	0	0	0	0			
Andrews	1,500.7	14,338	9.6	0	0	14,338	0	0	0	0			
Angelina	801.6	69,884	87.2	0	0	69,884	0	0	0	0			
Aransas	252.0	17,892	71.0	0	0	17,692	0	0	0	0			
Archer	909.8	7,973	8.8	0	0	0	7,973	7,108	0	865	865		
Wichita Falls (urban)													
Armstrong	913.7	2,021	2.2	0	0	2,021	0	0	0	0			
Atascosa	1,232.2	30,533	24.8	0	0	30,533	0	0	0	0			
Austin	652.7	19,832	30.4	0	0	19,832	0	0	0	0			
Bailey	826.7	7,064	8.5	0	0	7,064	0	0	0	0			
Bandera	791.8	10,562	13.3	0	0	10,562	0	0	0	0			
Bastrop	888.5	38,263	43.1	0	0	38,263	0	0	0	0			
Baylor	870.8	4,385	5.0	0	0	4,385	0	0	0	0			
Bee	880.2	25,135	28.6	0	0	25,135	0	0	0	0			
Bell	1,059.0	191,088	180.4	0	46,109	37,140	107,839	0	95,238	12,601		12,601	
Temple (9)													
Temple (urban)													
Killeen (urban)													
Bexar	1,246.9	1,185,394	950.7	1,149,273	0	0	36,121	0	0	36,121			36,121
Incorporated VIA													
Unincorporated VIA													
San Antonio (urban)													
Blanco	711.3	5,972	8.4	0	0	5,972	0	0	0	0			
Borden	898.9	799	0.9	0	0	799	0	0	0	0			
Bosque	989.3	15,125	15.3	0	0	15,125	0	0	0	0			
Bowie	887.9	81,665	92.0	0	0	39,355	42,310	0	42,310	0			
Texarkana (urban)													
Brazoria	1,386.9	191,707	138.2	0	0	165,541	26,166	0	0	26,166			26,166
Houston (urban)													
Brazos	585.8	121,862	208.0	0	107,458	14,263	141	0	0	141	141		
Brazos Transit													
Bryan-College Station (urban)													
Brewster	6,193.0	8,681	1.4	0	0	0	8,681	8,681	0	0			
Briscoe	900.3	1,971	2.2	0	0	1,971	0	0	0	0			
Brooks	943.3	8,204	8.7	0	0	8,204	0	0	0	0			
Brown	944.0	34,371	36.4	0	0	34,371	0	0	0	0			
Burleson	665.6	13,625	20.5	0	0	13,625	0	0	0	0			
Burnet	995.3	22,677	22.8	0	0	22,677	0	0	0	0			
Caldwell	545.8	26,392	48.4	0	0	26,392	0	0	0	0			

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

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State Total	261,914.2	16,986,510	64.9	7,222,585	2,325,788	4,526,863	2,911,274	999,456	859,909	1,051,909	129,198	45,756	876,955
Calhoun	512.4	19,053	37.2	0	0	19,053	0	0	0	0			
Callahan	898.7	11,859	13.2	0	0	11,859	0	0	0	0			
Cameron	905.6	260,120	287.2	0	98,962	63,135	98,023	0	79,309	18,714	18,714		
Brownsville (9)													
Brownsville (urban)													
Harlingen (urban)													
S. Padre Island (18)													
Camp	197.5	9,904	50.1	0	0	9,904	0	0	0	0			
Carson	923.2	6,576	7.1	0	0	6,576	0	0	0	0			
Cass	937.5	29,982	32.0	0	0	29,982	0	0	0	0			
Castro	898.4	9,070	10.1	0	0	9,070	0	0	0	0			
Chambers	599.4	20,088	33.5	0	0	0	20,088	17,364	0	2,724			2,724
Houston (urban)													
Cherokee	1,052.3	41,049	39.0	0	0	0	41,049	41,049	0	0			
Childress	710.4	5,953	8.4	0	0	5,953	0	0	0	0			
Clay	1,097.9	10,024	9.1	0	0	0	10,024	10,024	0	0			
Cochran	775.2	4,377	5.6	0	0	4,377	0	0	0	0			
Coke	898.9	3,424	3.8	0	0	3,424	0	0	0	0			
Coleman	1,272.9	9,710	7.6	0	0	9,710	0	0	0	0			
Collin	847.7	264,036	311.5	165,032	0	80,481	18,523	0	0	18,523			18,523
Plano (DART)													
Dallas (DART)													
Richardson (DART)													
Garland (DART)													
Dallas-Ft Worth (urban)													
Collingsworth	918.8	3,573	3.9	0	0	3,573	0	0	0	0			
Colorado	963.0	18,383	19.1	0	0	18,383	0	0	0	0			
Comal	561.5	51,832	92.3	129	0	51,688	15	0	0	15			15
VIA													
San Antonio (urban)													
Comanche	937.8	13,381	14.3	0	0	13,381	0	0	0	0			
Concho	991.5	3,044	3.1	0	0	3,044	0	0	0	0			
Cooke	873.8	30,777	35.2	0	0	30,777	0	0	0	0			
Coryell	1,051.9	84,213	61.0	0	0	21,575	42,638	0	42,638	0			
Killeen (urban)													
Cottle	901.2	2,247	2.5	0	0	2,247	0	0	0	0			
Crane	785.6	4,652	5.9	0	0	4,652	0	0	0	0			
Crockett	2,807.6	4,078	1.5	0	0	4,078	0	0	0	0			

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State Total	261,914.2	16,986,510	64.9	7,222,585	2,325,788	4,526,863	2,911,274	999,456	859,909	1,051,909	129,198	45,756	876,955
Crosby	899.6	7,304	8.1	0	0	7,304	0	0	0	0			
Culberson	3,812.7	3,407	0.9	0	0	0	3,407	3,407	0	0			
Dallam	1,504.8	5,461	3.6	0	0	5,461	0	0	0	0			
Dallas	879.5	1,852,810	2,106.7	1,586,900	183,569	0	82,341	27,345	0	54,996			54,996
DART (all in Dallas County)													
DART (Partially in Dallas County)													
DART (unincorporated)													
Grand Prarie (9)													
Grapevine (9)													
Lewisville (9)													
Mesquite (9)													
Dallas-Ft. Worth (urban)													
Lewisville (urban)													
Dawson	902.1	14,349	15.9	0	0	14,349	0	0	0	0			
Deaf Smith	1,497.4	19,153	12.8	0	0	19,153	0	0	0	0			
Delta	277.2	4,857	17.5	0	0	4,857	0	0	0	0			
Denton	888.5	273,525	307.9	56,523	112,558	15,156	89,288	0	0	89,288	175	32,912	56,201
DART (Denton County)													
Denton (9)													
Lewisville (9)													
NETS (9) (Denton County)													
Denton (urban)													
Lewisville (urban)													
Dallas-Ft. Worth (urban)													
DeWitt	909.3	18,840	20.7	0	0	18,840	0	0	0	0			
Dickens	904.3	2,571	2.8	0	0	2,571	0	0	0	0			
Dimmet	1,331.0	10,433	7.8	0	0	10,433	0	0	0	0			
Donley	929.8	3,696	4.0	0	0	3,696	0	0	0	0			
Duval	1,792.9	12,918	7.2	0	0	12,918	0	0	0	0			
Eastland	926.1	18,488	20.0	0	0	18,488	0	0	0	0			
Ector	901.1	118,934	132.0	0	0	0	118,934	6,229	112,705	0			
Odessa (urban)													
Edwards	2,119.9	2,266	1.1	0	0	2,266	0	0	0	0			
Ellis	940.0	85,167	90.6	796	3	84,318	50	0	0	50			50
DART													
Grand Prarie (9)													
Dallas-Ft. Worth (urban)													

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

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El Paso	1,013.1	591,610	584.0	515,342	0	0	76,268	28,772	0	47,496			47,496
SUN Metro													
El Paso (urban)													
Erath	1,086.4	27,991	25.8	0	0	0	27,991	27,991	0	0			
Falls	769.1	17,712	23.0	0	0	17,712	0	0	0	0			
Fannin	891.6	24,804	27.8	0	0	24,804	0	0	0	0			
Fayette	950.1	20,095	21.2	0	0	20,095	0	0	0	0			
Fisher	901.2	4,842	5.4	0	0	0	4,842	4,842	0	0			
Floyd	992.3	8,497	8.6	0	0	8,497	0	0	0	0			
Foard	706.7	1,794	2.5	0	0	1,794	0	0	0	0			
Fort Bend	875.0	225,421	257.6	63,203	0	0	162,218	77,063	0	85,155			85,155
METRO													
Houston (urban)													
Franklin	285.7	7,802	27.3	0	0	7,802	0	0	0	0			
Freestone	885.3	15,818	17.9	0	0	15,818	0	0	0	0			
Frio	1,133.1	13,472	11.9	0	0	13,472	0	0	0	0			
Gaines	1,502.4	14,123	9.4	0	0	14,123	0	0	0	0			
Galveston	398.7	217,399	545.3	0	59,070	144,062	14,267	0	0	14,267			14,267
Galveston (9)													
Texas City-LaMarque (18)													
Galveston (urban)													
Texas City (urban)													
Houston (urban)													
Garza	895.6	5,143	5.7	0	0	5,143	0	0	0	0			
Gillespie	1,061.2	17,204	16.2	0	0	17,204	0	0	0	0			
Glasscock	900.8	1,447	1.6	0	0	1,447	0	0	0	0			
Goliad	853.6	5,980	7.0	0	0	5,980	0	0	0	0			
Gonzales	1,067.9	17,205	16.1	0	0	17,205	0	0	0	0			
Gray	928.3	23,967	25.8	0	0	23,967	0	0	0	0			
Grayson	933.7	95,021	101.8	0	55,279	39,499	243	0	0	243		243	
Texoma Council of Governments (9)													
Sherman-Dennison (urban)													
Gregg	274.1	104,948	382.9	0	0	30,175	74,773	0	74,773	0			
Longview (urban)													
Grimes	793.8	18,828	23.7	0	0	18,828	0	0	0	0			
Guadalupe	711.2	64,873	91.2	11,769	0	51,833	1,271	0	0	1,271			1,271
VIA													
San Antonio (urban)													
Hale	1,004.7	34,671	34.5	0	0	34,671	0	0	0	0			

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

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State Total	261,914.2	16,986,510	64.9	7,222,585	2,325,788	4,526,863	2,911,274	999,456	859,909	1,051,909	129,198	45,756	876,955
Hall	903.1	3,905	4.3	0	0	3,905	0	0	0	0			
Hamilton	835.8	7,733	9.3	0	0	7,733	0	0	0	0			
Hansford	919.9	5,848	6.4	0	0	5,848	0	0	0	0			
Hardeman	695.4	5,283	7.6	0	0	5,283	0	0	0	0			
Hardin	894.4	41,320	46.2	0	0	32,878	6,442	0	0	8,442	8,442		
Beaumont (urban)													
Harris	1,729.0	2,818,199	1,630.0	2,324,557	0	0	493,642	109,429	0	384,213			384,213
METRO (incorporated)													
METRO (unincorporated)													
Houston (urban)													
Texas City (urban)													
Harrison	898.8	57,483	64.0	0	0	55,827	1,656	0	1,656	0			
Longview (urban)													
Hartley	1,462.4	3,634	2.5	0	0	3,634	0	0	0	0			
Haskell	903.0	6,820	7.6	0	0	6,820	0	0	0	0			
Hays	677.9	65,614	96.8	0	0	65,614	0	0	0	0			
Hemphill	909.7	3,720	4.1	0	0	3,720	0	0	0	0			
Henderson	874.4	58,543	67.0	0	0	0	58,543	58,543	0	0			
Hidalgo	1,569.1	383,545	244.4	0	0	120,353	263,192	0	263,192	0			
McAllen-Edinburgh-Mission (urban)													
Hill	982.4	27,146	28.2	0	0	27,146	0	0	0	0			
Hockley	908.3	24,199	26.6	0	0	24,199	0	0	0	0			
Hood	421.6	28,981	68.7	0	0	28,981	0	0	0	0			
Hopkins	784.8	28,833	36.7	0	0	28,833	0	0	0	0			
Houston	1,231.0	21,375	17.4	0	0	0	21,375	21,375	0	0			
Howard	902.9	32,343	35.8	0	0	32,343	0	0	0	0			
Hudspeth	4,571.3	2,915	0.6	0	0	0	2,915	2,915	0	0			
Hunt	841.2	64,343	76.5	0	0	64,343	0	0	0	0			
Hutchison	887.4	25,689	28.9	0	0	25,689	0	0	0	0			
Irion	1,051.6	1,629	1.5	0	0	1,629	0	0	0	0			
Jack	917.4	6,981	7.6	0	0	0	6,981	6,981	0	0			
Jackson	829.5	13,039	15.7	0	0	13,039	0	0	0	0			
Jasper	937.5	31,102	33.2	0	0	0	31,102	31,102	0	0			
Jeff Davis	2,264.8	1,946	0.9	0	0	0	1,946	1,946	0	0			

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State Total	**261,914.2**	**16,986,510**	**64.9**	**7,222,585**	**2,325,788**	**4,526,863**	**2,911,274**	**999,456**	**859,909**	**1,051,909**	**129,198**	**45,756**	**876,955**
Jefferson	903.6	239,397	264.9	0	173,047	15,438	50,912	0	0	50,912	50,912		
Beaumont (9)													
Pt. Arthur (9)													
Beaumont (urban)													
Pt. Arthur (urban)													
Jim Hogg	1,136.2	5,109	4.5	0	0	5,109	0	0	0	0			
Jim Wells	864.7	37,679	43.6	0	0	37,679	0	0	0	0			
Johnson	729.4	97,165	133.2	0	0	22,205	74,960	74,960	0	0			
Cleburne													
Dallas-Ft. Worth (urban)													
Jones	931.1	16,490	17.7	0	797	15,693	0	0	0	0			
Abilene (9)													
Abilene (urban)													
Karnes	750.3	12,455	16.6	0	0	12,455	0	0	0	0			
Kaufman	786.1	52,220	66.4	7	0	52,213	0	0	0	0			
DART													
Dallas-Ft. Worth (urban)													
Kendall	662.5	14,589	22.0	0	0	14,589	0	0	0	0			
Kenedy	1,456.9	460	0.3	0	0	460	0	0	0	0			
Kent	902.4	1,010	1.1	0	0	1,010	0	0	0	0			
Kerr	1,106.3	36,304	32.8	0	0	36,304	0	0	0	0			
Kimble	1,250.8	4,122	3.3	0	0	4,122	0	0	0	0			
King	912.3	354	0.4	0	0	354	0	0	0	0			
Kinney	1,363.5	3,119	2.3	0	0	3,119	0	0	0	0			
Kleberg	871.1	30,274	34.8	0	0	30,274	0	0	0	0			
Corpus Christi RTA													
Corpus Christi (urban)													
Knox	854.2	4,837	5.7	0	0	4,837	0	0	0	0			
Lamar	917.1	43,949	47.9	0	0	43,949	0	0	0	0			
Lamb	1,016.3	15,072	14.8	0	0	15,072	0	0	0	0			
Lampasas	712.1	13,521	19.0	0	0	13,521	0	0	0	0			
Killeen (urban)													
La Salle	1,489.0	5,254	3.5	0	0	5,254	0	0	0	0			
Lavaca	970.0	18,690	19.3	0	0	18,690	0	0	0	0			
Lee	628.6	12,854	20.4	0	0	12,854	0	0	0	0			
Leon	1,072.1	12,665	11.8	0	0	12,665	0	0	0	0			
Liberty	1,159.8	52,726	45.5	0	0	52,726	0	0	0	0			
Limestone	908.9	20,946	23.0	0	0	20,946	0	0	0	0			
Lipscomb	932.2	3,143	3.4	0	0	3,143	0	0	0	0			

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Live Oak	1,036.4	9,556	9.2	0	0	9,556	0	0	0	0			
Llano	934.9	11,631	12.4	0	0	11,631	0	0	0	0			
Loving	673.1	107	0.2	0	0	107	0	0	0	0			
Lubbock	899.6	222,636	247.5	0	186,206	34,730	1,700	0	0	1,700	1,700		
Lubbock (9)													
Lubbock (urban)													
Lynn	891.9	6,758	7.6	0	0	6,758	0	0	0	0			
McCulloch	1,089.4	8,778	8.2	0	0	8,778	0	0	0	0			
McLennan	1,041.9	189,123	181.5	0	103,590	44,751	40,782	0	0	40,782	40,782		
Waco (9)													
Waco (urban)													
McMullen	1,131.1	817	0.7	0	0	817	0	0	0	0			
Madison	469.7	10,931	23.3	0	0	10,931	0	0	0	0			
Marion	381.2	9,984	26.2	0	0	0	9,984	9,984	0	0			
Martin	914.9	4,958	5.4	0	0	4,958	0	0	0	0			
Midland													
Mason	932.1	3,423	3.7	0	0	3,423	0	0	0	0			
Matagorda	1,114.5	36,928	33.1	0	0	0	36,928	36,928	0	0			
Maverick	1,280.2	36,378	28.4	0	0	20,651	15,727	15,727	0	0			
Eagle Pass													
Medina	1,327.9	27,312	20.6	0	0	27,312	0	0	0	0			
Menard	902.0	2,252	2.5	0	0	2,252	0	0	0	0			
Midland	900.3	106,611	118.4	0	0	0	106,611	13,645	92,966	0			
Midland (urban)													
Odessa (urban)													
Milam	1,016.8	22,948	22.6	0	0	22,946	0	0	0	0			
Mills	748.2	4,531	6.1	0	0	4,531	0	0	0	0			
Mitchell	910.1	8,016	8.8	0	0	0	8,016	8,016	0	0			
Montague	930.7	17,274	18.6	0	0	0	17,274	17,274	0	0			
Montgomery	1,044.3	182,201	174.5	2	0	182,152	47	0	0	47			47
METRO													
Houston (urban)													
Moore	899.7	17,865	19.9	0	0	17,865	0	0	0	0			
Morris	254.5	13,200	51.9	0	0	13,200	0	0	0	0			
Motley	989.4	1,532	1.5	0	0	1,532	0	0	0	0			
Nacogdoches	946.8	54,753	57.8	0	0	0	54,753	54,753	0	0			
Navarro	1,071.2	39,926	37.3	0	0	39,926	0	0	0	0			
Newton	932.8	13,569	14.5	0	0	0	13,569	13,569	0	0			

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Nolan	912.1	16,594	18.2	0	0	16,594	0	0	0	0			
Nueces	835.9	291,145	348.3	290,990	0	155	0	0	0	0			
Corpus Christi RTA (incorporated)													
Corpus Christi RTA (unincorporated)													
Corpus Christi (urban)													
Ochiltree	917.6	9,128	9.9	0	0	9,128	0	0	0	0			
Oldham	1,500.7	2,278	1.5	0	0	2,278	0	0	0	0			
Orange	356.4	80,509	225.9	0	0	80,509	0	0	0	0			
Palo Pinto	953.0	25,055	26.3	0	0	25,055	0	0	0	0			
Panola	801.0	22,035	27.5	0	0	0	22,035	22,035	0	0			
Parker	903.6	64,785	71.7	0	0	63,582	1,203	0	0	1,203			1,203
Dallas-Ft Worth (urban)													
Parmer	881.7	9,863	11.2	0	0	9,863	0	0	0	0			
Pecos	4,784.0	14,675	3.1	0	0	14,675	0	0	0	0			
Polk	1,057.4	30,687	29.0	0	0	0	30,687	30,687	0	0			
Potter	909.4	97,874	107.6	0	91,502	6,218	154	0	0	154	154		
Amarillo (9)													
Amarillo (urban)													
Presidio	3,855.8	6,637	1.7	0	0	0	6,637	6,637	0	0			
Rains	232.1	6,715	28.9	0	0	0	6,715	6,715	0	0			
Randall	914.5	89,673	98.1	0	66,113	23,395	165	0	0	165	165		
Amarillo (9)													
Amarillo (urban)													
Reagan	1,175.4	4,514	3.8	0	0	4,514	0	0	0	0			
Real	700.0	2,412	3.4	0	0	2,412	0	0	0	0			
Red River	1,050.2	14,317	13.6	0	0	14,317	0	0	0	0			
Reeves	2,636.1	15,852	6.0	0	0	15,852	0	0	0	0			
Refugio	770.3	7,976	10.4	0	0	7,976	0	0	0	0			
Roberts	924.1	1,025	1.1	0	0	1,025	0	0	0	0			
Robertson	854.6	15,511	18.2	0	0	15,511	0	0	0	0			
Rockwall	128.8	25,604	198.8	3,392	0	11,041	11,171	0	0	11,171			11,171
DART													
Dallas-Ft Worth (urban)													
Runnels	1,054.5	11,294	10.7	0	0	11,294	0	0	0	0			
Rusk	923.6	43,735	47.4	0	0	43,735	0	0	0	0			
Sabine	490.3	9,586	19.6	0	0	9,586	0	0	0	0			
San Augustine	527.9	7,999	15.2	0	0	7,999	0	0	0	0			
San Jacinto	570.7	16,372	28.7	0	0	0	16,372	16,372	0	0			

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

				Population of Served Area				Unserved					
County	Square miles	1990 population	Pop./ Sq. Mile	Served by MTA	Served by Section 9	Served by Section 18	Unserved	Rural	Section 9 urban w/ no Operator	Urbanized outside Section 9 or MTA	Urbanized outside Section 9 (Fixed)	Urbanized outside Section 9 (DR)	Urbanized outside MTA
State Total	**261,914.2**	**16,986,510**	**64.9**	**7,222,585**	**2,325,788**	**4,526,863**	**2,911,274**	**999,456**	**859,909**	**1,051,909**	**129,198**	**45,756**	**876,955**
San Patricio	891.8	58,749	84.9	2,827	0	46,435	9,487	0	0	9,487			9,487
Corpus Christi RTA													
Corpus Christi (urban)													
San Saba	1,134.5	5,401	4.8	0	0	5,401	0	0	0	0			
Schleicher	1,310.7	2,990	2.3	0	0	2,990	0	0	0	0			
Scurry	902.8	18,634	20.6	0	0	18,634	0	0	0	0			
Shackelford	914.0	3,316	3.6	0	0	0	3,316	3,316	0	0			
Shelby	794.2	22,034	27.7	0	0	22,034	0	0	0	0			
Sherman	923.1	2,858	3.1	0	0	2,858	0	0	0	0			
Smith	928.5	151,309	163.0	0	75,450	71,606	4,253	0	0	4,253	4,253		
Tyler (9)													
Tyler (urban)													
Somervell	187.2	5,360	28.6	0	0	5,360	0	0	0	0			
Starr	1,223.1	40,518	33.1	0	0	40,518	0	0	0	0			
Stephens	894.7	9,010	10.1	0	0	0	9,010	9,010	0	0			
Sterling	923.4	1,438	1.6	0	0	1,438	0	0	0	0			
Stonewall	918.7	2,013	2.2	0	0	2,013	0	0	0	0			
Sutton	1,453.9	4,135	2.8	0	0	4,135	0	0	0	0			
Swisher	900.5	8,133	9.0	0	0	8,133	0	0	0	0			
Tarrant	863.5	1,170,103	1,355.1	462,321	556,586	0	151,196	52,658	0	98,538			98,538
The T													
Arlington-Handitran (9)													
Grand Prarie (9)													
NETS (9)													
Dallas-Ft. Worth (urban)													
Lewisville (urban)													
Taylor	915.7	119,655	130.7	0	105,857	12,616	1,182	0	0	1,182	1,182		
Abilene (9)													
Abilene (urban)													
Terrell	2,357.9	1,410	0.6	0	0	1,410	0	0	0	0			
Terry	889.9	13,218	14.9	0	0	13,218	0	0	0	0			
Throckmorton	912.4	1,880	2.1	0	0	1,880	0	0	0	0			
Titus	410.6	24,009	58.5	0	0	24,009	0	0	0	0			
Tom Green	1,522.2	98,458	64.7	0	84,474	13,050	934	0	0	934	934		
San Angelo (9)													
San Angelo (urban)													
Travis	989.4	576,407	582.6	576,407	0	0	0	0	0	0			
Capital Metro (incorporated)													
Capital Metro (unincorporated)													
Austin (urban)													

Unserved Populations, Sorted by County

1990 CENSUS DATA FOR TEXAS, BY COUNTY

				Population of Served Area				Unserved					
County	Square miles	1990 population	Pop./ Sq. Mile	Served by MTA	Served by Section 9	Served by Section 18	Unserved	Rural	Section 9 urban w/ no Operator	Urbanized outside Section 9 or MTA	Urbanized outside Section 9 (Fixed)	Urbanized outside Section 9 (DR)	Urbanized outside MTA
State Total	261,914.2	16,986,510	64.9	7,222,585	2,325,788	4,526,863	2,911,274	999,456	859,909	1,051,909	129,198	45,756	876,955
Trinity	692.9	11,445	16.5	0	0	0	11,445	11,445	0	0			
Tyler	923.0	16,646	18.0	0	0	0	16,646	16,646	0	0			
Upshur	587.7	31,370	53.4	0	0	31,370	0	0	0	0			
Upton	1,241.8	4,447	3.6	0	0	4,447	0	0	0	0			
Uvalde	1,556.6	23,340	15.0	0	0	23,340	0	0	0	0			
Val Verde	3,170.7	38,721	12.2	0	0	30,705	8,016	8,016	0	0			
Del Rio													
Van Zandt	848.8	37,944	44.7	0	0	37,944	0	0	0	0			
Victoria	882.6	74,361	84.3	0	0	19,239	55,122	0	55,122	0			
Victoria (urban)													
Walker	787.5	50,917	64.7	0	0	50,917	0	0	0	0			
Waller	513.6	23,390	45.5	0	0	22,547	843	0	0	843			843
Houston (urban)													
Ward	835.8	13,115	15.7	0	0	13,115	0	0	0	0			
Washington	609.3	26,154	42.9	0	0	26,154	0	0	0	0			
Webb	3,357.0	133,239	39.7	0	122,899	9,588	752	0	0	752	752		
Laredo (9)													
Laredo (urban)													
				0	0	0	0	0	0	0			
Wharton	1,090.2	39,955	36.6	0	0	39,955	0	0	0	0			
Wheeler	914.3	5,879	6.4	0	0	5,879	0	0	0	0			
Wichita	627.7	122,378	195.0	0	96,259	0	26,119	26,092	0	27	27		
Wichita Falls (9)													
Wichita Falls (urban)													
Wilbarger	971.1	15,121	15.8	0	0	15,121	0	0	0	0			
Willacy	596.7	17,705	29.7	0	0	17,705	0	0	0	0			
Williamson	1,124.4	139,551	124.1	13,115	0	97,968	28,468	0	0	28,468			28,468
Capital Metro													
Austin (urban)													
Wilson	807.2	22,650	28.1	0	0	22,650	0	0	0	0			
Winkler	841.1	8,626	10.3	0	0	8,626	0	0	0	0			
Wise	904.7	34,679	38.3	0	0	0	34,679	34,679	0	0			
Wood	650.3	29,380	45.2	0	0	29,380	0	0	0	0			
Yoakum	799.8	8,766	11.0	0	0	8,786	0	0	0	0			
Young	922.4	18,126	19.7	0	0	0	18,126	18,126	0	0			
Zapata	996.8	9,279	9.3	0	0	9,279	0	0	0	0			
Zavala	1,298.6	12,162	9.4	0	0	12,162	0	0	0	0			

Appendix 2. Chapter 5

1990 Demographic Data for Counties with No Transit Operators

Comptroller's Economic Region	County	Square miles	1990 population	Pop./ sq. mile	ETHNIC BREAKDOWN					
					White	Black	American Indian, Eskimo or Aleut	Asian or Pacific Islander	Other	Hispanic origin (of any race)
State Total		**45,235.1**	**788,654**	**17.4**	**595,984**	**75,918**	**3,103**	**3,578**	**692**	**109,379**
Northwest	Archer	909.8	7,973	8.8	7,733	11	36	4	0	189
Upper RG	Brewster	6,193.0	8,681	1.4	4,833	77	17	48	4	3,702
Gulf Coast	Chambers	599.4	20,088	33.5	16,170	2,540	49	113	21	1,195
Upper East	Cherokee	1,052.3	41,049	39.0	31,201	6,858	97	180	16	2,697
Northwest	Clay	1,097.9	10,024	9.1	9,642	33	84	23	0	242
Upper RG	Culberson	3,812.7	3,407	0.9	950	2	11	25	0	2,419
West	Ector	901.1	118,934	132.0	74,822	5,391	542	598	266	37,315
Metroplex	Erath	1,086.4	27,991	25.8	25,123	192	90	109	19	2,458
Northwest	Fisher	901.2	4,842	5.4	3,652	186	6	0	1	997
Upper East	Henderson	874.4	58,543	67.0	51,135	4,727	169	129	15	2,368
Southeast	Houston	1,231.0	21,375	17.4	14,042	6,272	26	47	23	965
Upper RG	Hudspeth	4,571.3	2,915	0.6	956	9	8	2	5	1,935
Northwest	Jack	917.4	6,981	7.6	6,668	51	18	10	2	232
Southeast	Jasper	937.5	31,102	33.2	24,529	5,852	74	36	17	594
Upper RG	Jeff Davis	2,264.6	1,946	0.9	1,154	6	12	4	0	770
Upper East	Marion	381.2	9,984	26.2	6,696	3,093	40	7	1	147
Gulf Coast	Matagorda	1,114.5	36,928	33.1	21,878	5,030	74	798	60	9,088
West	Midland	900.3	106,611	118.4	74,499	8,016	347	837	132	22,780
Northwest	Mitchell	910.1	8,016	8.8	5,241	362	13	5	6	2,389
Northwest	Montague	930.7	17,274	18.6	16,632	4	71	13	6	548
Southeast	Nacogdoches	946.8	54,753	57.8	42,575	8,948	125	283	34	2,788
Southeast	Newton	932.8	13,569	14.5	10,329	3,027	43	11	6	153
Upper East	Panola	801.0	22,035	27.5	17,429	4,042	57	23	7	477
Southeast	Polk	1,057.4	30,687	29.0	24,531	3,848	635	55	8	1,610
Upper RG	Presidio	3,855.8	6,637	1.7	1,197	2	11	10	0	5,417
Upper East	Rains	232.1	6,715	28.9	6,234	284	28	8	3	158
Southeast	San Jacinto	570.7	16,372	28.7	13,319	2,534	71	14	3	431
Northwest	Shackelford	914.0	3,316	3.6	3,016	12	9	2	5	272
Northwest	Stephens	894.7	9,010	10.1	7,950	234	29	28	2	767
Southeast	Trinity	692.9	11,445	16.5	9,485	1,642	24	21	1	272
Southeast	Tyler	923.0	16,646	18.0	14,426	1,986	45	12	0	177
Metroplex	Wise	904.7	34,679	38.3	31,340	387	189	79	21	2,663
Northwest	Young	922.4	18,126	19.7	16,597	260	53	44	8	1,164

Appendix 3, Chapter 5

1990 Demographic Data for Counties with No Transit Operators

County	Persons under 16 years old	16 years and over	Persons 65 years and over	VEHICLES AVAILABLE/HOUSEHOLD				Median household income	Persons below poverty level	Persons with work disability
				Households	None	1	2 or more			
State Total	**196,378**	**416,527**	**112,155**	**292,368**	**21,761**	**102,133**	**168,474**	**22,649**	**153,374**	**47,337**
Archer	1,994	5,979	1,114	2,957	73	802	2,082	25,131	917	436
Brewster	1,815	6,866	1,217	3,350	273	1,330	1,747	17,586	2,249	354
Chambers	5,263		1,903	6,930	414	2,061	4,455	31,671	2,470	1,052
Cherokee	9,568	31,481	7,172	14,981	1,434	5,434	8,113	19,296	8,408	2,782
Clay	2,321	7,703	1,706	3,808	154	1,123	2,531	23,721	1,108	609
Culberson	1,044	2,363	297	1,076	100	443	533	16,559	1,016	142
Ector	34,117		11,048	42,322	2,360	16,129	23,833	23,801	24,092	6,868
Erath	6,040	21,951	4,378	10,877	616	3,797	6,464	19,881	5,547	1,365
Fisher	1,095	3,747	1,038	1,892	124	602	1,166	19,368	1,253	190
Henderson	12,534	46,009	11,245	22,947	1,448	7,812	13,687	20,747	10,410	4,292
Houston	4,715	16,660	4,106	7,792	1,011	2,607	4,174	18,138	5,011	1,236
Hudspeth	815	2,100	292	946	95	395	456	15,401	1,089	88
Jack	1,679	5,302	1,312	2,725	156	775	1,794	21,627	1,250	384
Jasper	7,766	23,336	5,037	11,427	1,113	4,142	6,172	20,451	6,204	2,191
Jeff Davis	443	1,503	369	779	74	271	434	18,995	374	91
Marion	2,170	7,814	1,961	4,048	607	1,392	2,049	15,288	3,024	986
Matagorda	10,518	26,410	4,272	13,164	1,406	4,791	6,967	25,368	7,597	1,673
Midland	30,504		9,529	38,920	2,034	13,553	23,333	31,164	15,277	4,820
Mitchell	1,960	6,056	1,679	3,054	257	1,110	1,687	17,600	1,825	405
Montague	3,733	13,541	3,793	6,858	456	2,258	4,144	19,054	3,116	1,068
Nacogdoches	11,331	43,422	6,470	20,124	1,653	7,374	11,097	19,340	12,631	2,908
Newton	3,545	10,024	1,828	4,910	656	1,687	2,567	16,656	3,559	1,139
Panola	5,514	16,521	3,483	8,241	691	2,554	4,996	21,027	4,487	1,385
Polk	6,701	23,986	6,281	11,855	1,137	4,289	6,429	18,968	6,496	2,895
Presidio	1,856	4,781	920	2,255	413	959	883	13,016	3,172	372
Rains	1,499	5,216	1,214	2,609	123	786	1,700	21,741	994	484
San Jacinto	3,768	12,604	2,561	6,247	648	2,149	3,450	19,867	3,845	1,458
Shackelford	789	2,527	680	1,336	71	464	801	18,773	578	158
Stephens	2,218	6,792	1,732	3,556	312	1,237	2,007	19,203	1,922	509
Trinity	2,376	9,069	2,501	4,647	468	1,769	2,410	16,963	2,863	1,030
Tyler	3,667	12,979	3,363	6,459	567	2,221	3,671	20,647	3,000	1,147
Wise	8,699	25,980	4,339	12,175	445	3,482	8,248	25,885	4,714	1,976
Young	4,321	13,805	3,315	7,101	372	2,335	4,394	21,710	2,876	844

Chapter 6

Coordination Strategies For Client Transportation Services

Chapter 6

Coordination Strategies For Client Transportation Services

Introduction

Client transportation services are provided in urban and rural areas across the State by a mosaic of independently operated public, private, and non-profit carriers sponsored by agencies whose underlying purpose is often to provide a particular health or social service to its "client" group. Some of these services are provided by traditional transit agencies, but much of these kinds of services are typically operated under the sponsorship of a health or social service agency to provide special purpose transportation for the clients of the agency.

The services are usually separate from and in addition to two other major sets of local public transportation services: school transportation operations, and transit services for the general public provided by regional MTA's and the local urban and rural transit programs.

The growth of client transportation services over the past two decades has resulted in the development of a wide range of transportation resources in virtually every community in the State, but which are typically open only to the clients of the sponsoring agency. The result is a vast set of transportation resources that tend not to be coordinated with the other transportation services in the area, and each of which tends to have underutilized capacity.

These services are operated under a variety of different modes, including:

- direct operation by the sponsoring agency, sometimes with volunteer drivers
- contract operation by local private companies
- user side subsidies provided to public transit agencies
- contract operation by local public transit agencies.

The Office of Client Transportation Services

The Office of Client Transportation Services (OCTS) was created in 1991 with the specific purpose of collecting data on existing Texas client transportation services and the transportation needs of human service agencies, and creating a comprehensive coordination plan for client transportation services in Texas.

Exhibit 6-1
Summary of Agencies Sponsoring Client Transportation Services in Texas

Sponsoring Agency	Program	Target Client Population	Type of Service
U.S.Administration on Children and Families	Head Start	Low income children (ages 3-5) and their families	Purchased or direct
Federal Transit Administration	Metropolitan Transit Authorities	Residents of cities over 200,000 pop.	Purchased
Texas Commission on Alcohol and Drug Abuse	Community-Based Services	Individuals with alcohol and drug abuse problems; often remanded by courts to treatment program	Purchased
	Criminal Justice Treatment Initiative	Convicted offenders with alcohol or drug dependency problems	Purchased
Texas Commission for the Blind	Transportation components of several programs.	Blind and visually impaired persons residing in Texas	Reimbursed
Texas Department of Health	Chronically Ill and Disabled Children	Chronically ill or disabled children (under 21)	Reimbursed
	Hansens' Disease	Individuals suffering from Hansen's disease (leprosy)	Reimbursed or purchased
	Indigent Cancer Patients	Medically indigent cancer patients residing in Webb, Zapata, Starr, Jim Hogg, Hidalgo, Cameron, and Willacy counties	Reimbursed
	Kidney Health Care	Low-income or underinsured individuals with end-stage renal disease	Reimbursed
	Maternal and Child Health	Low-income, high-risk mothers and children	Reimbursed or purchased
	Medical Transportation Program	Medicaid-eligible individuals	Purchased or reimbursed
	Neonatal	Low-income, high-risk mothers and children	Reimbursed or purchased
Texas Department of Housing and Community Affairs	Community Services Block Grant	Poor and poverty-stricken individuals residing in Texas	Third-party funding
	Emergency Homeless Grant Program	Homeless persons	Third-party funding
Texas Department of Human Services	Day Activity and Health Services	Elderly or disabled, Medicaid-eligible individuals	Purchased
	Food Stamp Employment and Training	Food stamp recipients residing in the 56 counties served	Reimbursed

Texas Department of Human Services (continued)	JOBS	AFDC recipients	Reimbursed or purchased
	Residential Care Program	Elderly or disabled individuals meeting eligibility requirements	Purchased
Texas Department of Mental Health and Mental Retardation	Institutional Transportation	Mentally ill and mentally retarded individuals who are institutionalized	Direct
	Community-Based Transportation	Mentally ill and mentally retarded individuals who meet priority population definitions and who can operate in a community setting	Purchased or reimbursed
Texas Department on Aging	Title III Transportation	Elderly (60+) persons	Purchased
Texas Department of Commerce	JTPA	Economically disadvantaged youths and adults; also dislocated workers	Third party funding
Texas Education Agency	Special Needs School Transportation	Public school pupils with special needs or disabilities	Direct
	Regular School Transportation	Public school pupils	Direct
	Vocational School Transportation	Public school pupils	Direct
Texas Employment Commission	Job Corps	Economically disadvantaged youths (ages 16 to 25)	Purchased or direct
	Project RIO	Ex-offenders willing to pursue employment in the private sector	Purchased
Texas Rehabilitation Commission	Vocational Rehabilitation and other Rehabilitation Programs	Physically and/or mentally disabled Texas residents (ages 16 to 70+) who can benefit from vocational rehabilitation and other rehabilitation services	Purchased or reimbursed
Texas Department of Transportation	Municipal Transit Systems (Section 9)	Residents of municipalities between 50,000 and 200,000 pop.	Purchased
	Section 16	Elderly and disabled individuals	Purchased
	Section 18	Residents of rural/non-urban areas	Purchased
Texas Youth Commission	Statewide Reception Center Transportation Unit	Youth offenders (up to 21) who are in the juvenile detention system	Direct or purchased

The work of the OCTS was supported by the participation of providers who participate in the transportation programs supported by more than 15 state and federal agencies. A summary of these agencies and the programs they support is provided on Exhibit 6-1. The range of the kinds of agencies and the programs they administer suggests the extent of the different kinds of client transportation services that are in operation in the field.

The OCTS published a report in September of 1994 that provides in-depth reviews of Texas client transportation programs and makes recommendations pertaining to the coordination of these services. The OCTS report urges that the participants in these programs strive for approaches to coordination which:

- Provide accessible, affordable transportation which meets the needs of the most vulnerable Texas residents as a means to promote health, independence, and self sufficiency
- Are open to ideas and viewpoints of the customers and stakeholders of our current systems
- Recognize that the diversity of the State will require the development of options which allow for and complement the vastly different communities across Texas
- Stress cooperation and efficiency, assuring that the result is improved service
- Continue to develop and encourage public-private partnerships
- Continue to build on Texas's existing public transportation system, which is the backbone of the State's client transportation system, serving the general public which by definition includes clients of the State of Texas; and
- Respond to and anticipate legislation and other mandates such as the Americans with Disabilities Act, emerging health care legislation, and clean air and water requirements.

The strategies in this chapter rely heavily on the OCTS research and use the recommendations of the OCTS as a foundation to build additional client transportation coordination recommendations. A summary of the major recommendations from that study are listed in Appendix A to this chapter.

Background of Client Transportation Services

Client transportation services have generally been developed in an atmosphere of expanding client needs, and of expanding public financial support for them. More recent general fiscal constraints at every level of government, and efforts to improve the delivery of public services, have produced an increased emphasis on making these systems more efficient.

The need to coordinate these services and increase their efficiency is likely to increase in the near future in light of the focus of Federal budget reductions of social service programs.

These services have typically developed through one of several origins:

- as a service funded by a federal agency for the benefit of the clients of that agency
- as a service provided by a local chapters of such organizations as the Red Cross or the United Fund, as a means of providing access to the programs sponsored by those agencies
- as an adjunct of a community action agency, an economic development agency, or some similar special-purpose agency or civic organization.

The interests of the sponsoring agencies, and of the funding agencies, have often created statutory, regulatory, or administrative restrictions on the use of these transportation services that have the intended effect of making certain that these resources benefit only their clients. The unintended result of this is often the establishment of independent and duplicative operations whose use is restricted to the client groups.

Impacts of The Americans With Disabilities Act

The Americans with Disabilities Act has added to the need to coordinate the resources of the client transportation systems and the public transit systems, inasmuch as it requires public transit operators to make their systems accessible to the disabled.

The addition of wheelchair lifts and other aids for the disabled to fixed-route buses and paratransit vans operated by transit agencies in response to the requirements of the Americans with Disabilities Act (ADA) has improved the accessibility by disabled citizens to public transit services. ADA also requires transit agencies to provide complementary paratransit services with the same hours and coverage as the fixed-route services.

Among the side effects of this Act are the migration of some users from some client service systems to accessible public transit systems, and the increased expectation by some of the social service agencies that the public transit systems will provide services to their clients at no expense to the agencies.

User Side Problems in the System

The trul ..iverse transportation needs of the users of client transit services requires vastly different types and levels of service. The frequency of trips taken by individuals varies from daily to a few times a year. The length of ›s varies from very short to intercity. Trip purposes range from daily work trips

to regular medical visits to occasional personal business or social trips. Some clients are ambulatory, and some are not. Some clients need attendants to accompany them.

The specific needs of some client groups require specially trained drivers, while some services are driven by volunteers. Much of the service is demand responsive, advanced scheduled, which limits the flexibility of the system to meet some needs. Much of the service carries one person for one vehicle trip with door-to-door or curb-to-curb service.

The starting point for most client service transportation programs is that an agency has a client who has a transportation requirement. The agency then proceeds to arrange to provide that transportation, either directly or indirectly. Nevertheless, individuals needing client transportation services in Texas face several problems.

Lack Of Knowledge About The Services - Many individuals do not know about the myriad client transportation services in Texas. This lack of knowledge can be attributed in part to the individual, the client agency, and in part to the transportation provider. The public has not utilized the available information sources, and the providers have not made information available.

Lack Of Flexibility In Operations - The means of providing client service transit is usually through advanced reservations for a specific trip or set of trips between specific origins and destinations at specific times. If the needs of a client change during the trip, it is often difficult to reschedule the return trip or to arrange for additional stops or diversions. For example, a client who arranges for a trip to the doctor's office can encounter a number of potential changes and complications that the service may not be able to accommodate, such as:

- the time of the return trip could be changed by problems in the doctor's office
- the doctor's visit might generate the need for an additional stop during the return, such as a visit to a laboratory or a pharmacist
- the patient might need to visit a second specialist, or be taken to a relative's home rather than their own
- a caregiver who is not eligible to use the system might be required to give assistance on the return trip
- the timing of the return trip might mean that it would be best provided by a different carrier, who might be restricted from providing the service because of the rules of its sponsoring agency

Lack Of Flexibility In Serving Sectors - The eligibility requirements for some of these services are specific and often rigidly enforced. For example, the minimum age criteria for persons carried on vehicles provided by aging programs is typically 65 years of age. If three generations of disabled people from one household want to make the same trip at the same time from home to school, they might generally be required to use three vehicles:

- the handicapped grandchild and student would be carried by a vehicle provided by the school system
- the disabled mother and teacher would have to be carried by an accessible public transit carrier
- the grand mother and school nurse, could be carried by a vehicle supported by an aging program.

While there are means of avoiding some of these kinds of absurdities, there are altogether too many cases in which the institutional arrangements for services do create barriers that are dysfunctional and costly.

Diverse Means Of Paying For The Trip - An individual may need to utilize several different transit providers to complete a trip or set of trips in a day. The current state of client transportation in Texas would usually require the individual to pay for each separate trip directly to the provider, unless there is some arrangement in place between the transportation provider and the social service agency that serves the client.

Additional problems that are often encountered include the lack of capacity in the current systems, which results in trips not being made, and the limited hours of the day and days of the week in which service is provided. In El Paso, difficulty by clients with the telephone answering system in making reservations was found to be a major barrier to the use of that system.

Barriers To Improved Coordination

The ability of the client transportation industry as a whole to meet this wide variety of needs is made difficult and expensive by the limited flexibility of the programs and the limited coordination among the agencies and the providers.

The are no real positive incentives to ensure coordination among the providers, and there are a number of institutional disincentives to better coordination. The barriers to coordination of services in client transportation often arise from the mission of the sponsoring social service agency. The focus of the sponsoring agencies on the needs of their specific clientele creates a disincentive to the transportation providers to coordinate service, and also inhibits the public's use of transportation

services. In addition, some carriers are often paid by the vehicle-trip rather than the passenger-trip. This creates a disincentive to carry more than one person per vehicle trip.

Among the barriers to improved coordination among the services are:

- restrictions placed on providers by funding agencies that create arbitrary segmentation of the market and restrict the use of some services to specific client groups
- the absence of agencies which are willing to lead the coordination effort
- the unwillingness of some agencies to coordinate services with their perceived "competitors"
- there has been little pressure or support for coordination from the participating State agencies, and in fact there has been some disinterest and resistance.

In addition, the individual administrative and reporting requirements of the various funding programs place a burden on those transportation agencies that do business with and serve the clients of various social service agencies and also participate in public transit funding programs. The diverse and demanding paperwork requirements of each program become major administrative burdens for carriers who do attempt to serve diverse client and general public markets. To make matters worse, they are often then criticized by the individual funding agencies for their high administrative expenses.

In spite of these barriers, there are a number of circumstances in the State in which interagency coordination has been achieved through the ingenuity and entrepreneurial actions of local agencies. These successes suggest that another barrier to greater coordination is the inertia or lack of attention by program managers.

TxDOT's Role in Coordinating Client Transportation

TxDOT has played a number of roles in coordinating client transportation services. TxDOT was a participant in the recent OCTS program that produced the September client services report. This report proposed a continuing role for an unnamed State agency that might well be taken on by the department.

TxDOT and the OCTS executed a memorandum of understanding in 1994 that established the Agency Transportation Coordinating Council (ATCC) and promotes greater interaction between OCTS and TxDOT in improving the coordination of client services in Texas. The specific purpose of the ATCC was to initiate coordination efforts among state agencies that provide or purchase client transportation. The ATCC is comprised of representatives from ten state agencies that support

transportation services to their clients or to the general public, including the TxDOT and the Departments of Health, Mental Health and Mental Retardation, Aging, and Human Services.

TxDOT currently administers both Section 18 and Section 16 federal program funds. Many of the Section 18 agencies in the State are agencies that entered the transportation business as a means of providing transportation for their clients. Although the primary mission of many of them is to meet the needs of their clients alone, the participation by these agencies in TxDOT and FTA funding programs requires them to provide service to the general public as well as to their clients.

The multi-purpose character of these services provide an example of how client services and services for the general public can be coordinated. To some extent, these agencies are in the inverse position to the public transit agencies. Some of the Section 18 carriers that were started as client-oriented services are now required to provide access to the general public, but many do not yet see that role as a major part of their business. The MTA's and small urban systems, on the other hand, are still heavily oriented to serving the general public, and some still see the requirement to provide access to the disabled as a secondary - and not necessarily welcome - role.

TxDOT's provides assistance to the single purpose client transit systems under Section 16, through grants for the purchase of vehicles for use in client transportation.

There are no specific requirements in the current TxDOT programs which are designed to foster service coordination among grantees. For example, Section 16 applicants are not required to demonstrate that there is no other means available to provide the service to be operated by vehicles purchased under that program, or that the vehicle will be made available to other agencies if needed when not in use by the applicant agency. The methods of enforcement of the restrictive Federal provisions of the Section 16 and 18 programs have, in some cases, reduced the ability of local carriers to coordinate services.

OCTS Findings And Recommendations

The report issued by the OCTS in September 1994 makes the following recommendations for the required elements of an infrastructure for transportation coordination:

- Clearly identified transportation coordination responsibility and accountability from the State to the local level
- Maximum possible uniformity in applicable agency transportation rules, reports, requirements, and policies

- Coordinated transportation service regions that use counties as building units for such regions
- A comprehensive formal structure for statewide community-based transportation planning
- Financial and other incentives for transportation coordination and innovation.

The OCTS report defined the roles of the state, regional, and local agencies in client transportation coordination as follows:

- The role of the State will include developing and implementing agency rules and policies that support the stated policy and guiding principals for statewide coordinated transportation. The State's responsibility includes the provision of technical assistance to stakeholders and the oversight of funding and planning functions toward development of statewide coordinated transportation.
- The regional role will focus on regional planning and integration of local systems. Regional administrators for state agencies will share responsibility for ensuring that agency policies and procedures are consistent with the state policy and guiding principals for transportation coordination.
- The local role will include assessment of need, priority setting, service planning (as input to the statewide planning), and identification of the model that best meets local coordination needs. Responsibility for service delivery will rest at the local level.

The specific state, regional, and local entities that would assume the mentioned responsibilities are not addressed in the OCTS report. Currently, many actions to be taken at the state level are being pursued by the OCTS.

The ATCC has made efforts to coordinate the following aspects of client transportation:

- transportation education and training/conferences
- transportation contractor reporting
- transportation rule making and rates

Client Transportation Coordination Strategies

The strategies proposed here for coordinating client transportation services in Texas are divided into three areas:

- Local and regional
- State
- Federal

The basic role of the local agencies should be to ensure that the maximum level of coordination is provided. The basic role of the state and federal agencies should be to ensure that the requirements of their programs do not create barriers to coordination.

The strategies are intended to build upon one another, beginning at the local level and working up to federal initiatives.

Local - Coordination must begin at the local level where the customers are. The necessary first step in coordinating client transportation services is the clear definition of the services, the area of service of each provider, the resources of each provider, the availability of under-committed resources, and the terms and conditions under which those resources can be made available for the use of other programs.

Local coordination could begin with the formation of a coordination committee for each area where multiple providers operate. These committees could be brought together by the TxDOT District Public Transportation Coordinators, by the initiatives of the local providers, or by local transportation planning agencies.

The coordination committee could consist of one representative from TxDOT, the transportation provider and human service agencies in the area, and the school system transportation managers.

The committee would be charged with the responsibility to coordinate all transportation services provided within the transportation district. Specifically, the committee would evaluate the transportation needs that exist within the district, and design a "Transportation Package" that meets these needs. In designing the "Transportation Package", the duties of the committee would be:

- to plan the coordination of all transportation services to provide the best access to the public with the most cost-effective modes
- to eliminate duplication of service
- to create one information source for public use concerning services and fares
- to design performance reporting standards for the providers
- to ensure ADA compliance of each provider.

The committee would not initiate any changes to the funding sources of each provider. The providers would enter into the committee's plan "as-is" concerning their funding sources. If the State instituted any coordination efforts that affected the funding allocation between the transportation districts, the coordination committee could then act as the local level funding allocation agency.

The creation of coordination committees could address many of the existing problems in the client transportation. They could provide a source of information for the public and provide a forum for achieving consensus on coordination measures.

Beside the leadership role of the Coordinators in each area, the Coordinators could also be the link in providing coordination between the different sets of services within the TxDOT districts.

State - Several steps toward improved service coordination have been made at the state level. The ATCC has initiated the use of the OCTS as a state-wide information source on agency education programs and service provided, and has initiated consistent reporting procedures, service restrictions, and rate components.

Coordination efforts that are still needed at the state level include leadership of a program to encourage and support coordination among the local providers. This could begin with providing technical assistance to facilitate coordination, and grow into making coordination of services a condition of State assistance.

State program managers could also take on the responsibility for negotiating waivers and changes in the Federal program requirements that impose restrictions on the local agencies that represent a major portion of the barriers to coordination.

The first rule for TxDOT should be not to make coordination harder through overly stringent application of rules and regulations of their funding program. The second should be to help make coordination happen where locals are seeking to achieve it. The third and long-term rule should be to administer the grant and technical assistance programs in a way that makes coordination a basic element of local operating practices.

Federal - The entire federal transportation program is undergoing revisions that are likely to change both the level of federal funding available for public transportation and the method by which these funds are allocated to the states and then to the providers. This is true for both the public transit and the social service agency programs.

The pending actions in Washington have the likely potential both to reduce the funding for client transportation and public transit, and to reduce at least some of the program restrictions through the means of block grants from which the states will be required to allocate funds as the states determine.

This could result in both less money and fewer program restrictions on the use of the money. The lower level of funding could help to create the incentive for improving coordination of a scarcer resource. The block grants and reduction in programming requirements could result in the reduction in the barriers to coordination that are created by the current restrictions in the various federal health and welfare related transportation programs.

Strategies for Client Transportation Services

APPENDIX 6A

Excerpts from "The Report to the Commissioner of Health and Human Services: Findings and Recommendations of the Office of Client Transportation Services"

September 1, 1994

Proposed Statewide Action Plan

GOAL

To improve the delivery of client transportation services in Texas.

RECOMMENDED STRATEGIES

- Develop an efficient transportation service delivery infrastructure which will be responsive to client needs.
- Continue to build on the public transportation system and to develop public-private partnerships to meet all client needs.
- Evaluate strategies for allocation of state-administered client transportation funds to optimize available funding and maximize service delivery.
- Ensure continuous improvement of state planning and management, including vigorous stakeholder participation.
- Ensure local control and flexibility, especially for regional variations.

Summary Of Recommendations

Form public/client transportation service regions.

Establish a consolidated planning process for public and client transportation funding and service delivery.

Continue the planned work of OCTS and the ATCC.

Recommended Actions FY 95

- Implement ATCC action plans.
- Use the knowledge gained during implementation of the ATCC regional meetings to develop plans for regional service boundaries and councils/leaders.
- OCTS and the ATCC should investigate the transportation planning mechanisms and funding available through TxDOT to formulate a process for community needs assessment and priority setting to create a consolidated statewide planning process.
- Ensure participation of all relevant agencies in the ATCC.

- Work to develop generally accepted regional boundaries for the joint use of all public and client transportation programs in service planning and delivery.
- Develop and adopt generally accepted client transportation evaluation criteria.
- Inform and solicit assistance of Federal and Regional DHHS/DOT Coordinating Councils as needed.
- Research non-general revenue funding sources for OCTS and other public/client transportation initiatives.

Recommended Actions FY 96-97

- Adopt generally accepted regional service boundaries for the joint use of all public and client transportation programs in service planning and delivery.
- Establish councils of regional providers and/or lead regional providers in each region; empower regional councils/leaders with regional planning and coordination duties.
- Working with regional councils/leads, OCTS, the ATCC, and TxDOT should implement the statewide needs assessment and priority setting formulated in FY 95 and create a consolidated statewide plan.
- Investigate provision of additional state funds, insurance savings, and other incentives for regional coordination.
- Complete implementation of ATCC action plans.
- Establish interagency agreements to formalize the ATCC.
- Evaluate client transportation statewide using criteria adopted in FY 95; use this information in the biennial update to the statewide plan.
- Inform and request assistance of federal and regional DHHS/DOT coordinating councils as needed.
- Institute non-general revenue funding sources for OCTS and other public/client transportation initiatives.

Recommended Actions FY 98-99

- Establish incentives and performance measures for regional councils/leaders; ensure the participation of all local governing bodies and stakeholders.
- In accordance with the consolidated planning process for public and client transportation funding and service delivery, all applicable public and client transportation programs should be driven by the statewide/regional plan.
- Redefine current funding and taxing mechanisms to support the regional structure.
- Inform and request assistance of Federal and Regional DHHS/DOT Coordinating Councils as needed.

- Evaluate client transportation statewide using criteria adopted in FY 95; use this information in the biennial update to the Statewide Plan.

Recommended Actions FY 2000-01

- Prepare a complete assessment of the state of client transportation, including progress made, outstanding needs, and plans for the future. Include an evaluation of the viability of consolidation of State transportation funds and programs.

SUMMARY OF ATCC RECOMMENDATIONS

Use the Office of Client Transportation Services as the statewide clearinghouse for information on transportation conferences and training events.

Development of a clearinghouse approach should benefit all agencies and programs, whether they are predominantly providers or predominantly consumers of transportation training and conferences, without changing those roles. The development of a clearinghouse would be staged, and would eventually require the joint use of resources to be fully beneficial, but should be cost neutral.

Evaluate current transportation monitoring requirements in order to develop simple, uniform monitoring instruments that would meet the needs of all agencies which require monitoring of purchased transportation.

This work should include the development of survey teams and schedules which would minimize actual monitoring and maximize information sharing among relevant funding agencies.

Investigate and remove the barriers to development of a common agency operational report for programs which purchase transportation services.

This issue is not new; this approach is. By working first to develop common operational definitions; reviewing the necessity of the data collected; working to develop support for coordinated reporting; and addressing other barriers, the chances of successfully developing a common report would be greatly improved.

Simplify existing agency transportation rules by using references to the most fundamental and widely applicable rules published.

The Texas Department on Aging is currently modifying their transportation rules to do just this. Expanding this effort would ensure that all State rules barriers to coordination are eliminated - any barriers remaining would likely result from federal mandates.

Negotiate for waivers or exceptions to federal transportation rules if necessary to improve transportation coordination.

In 1986 the federal Department of Health and Human Services and Department of Transportation, agreeing that there was a need for a systematic and coordinated effort to ensure that federal requirements and policies promote the most cost-efficient and effective use of transportation funding, established a joint council to meet those goals. A similar council was established in Region VI. That Regional Council has already committed its support to work with Texas as we pursue these efforts.

Develop a forum for voluntary interagency preliminary review of proposed transportation related rules.

While rule making would remain the purview of each agency, the purpose of the forum would be to avoid unintentional conflicts and barriers to transportation coordination, and to assist agencies in obtaining desired input on proposed rules.

Identify the components of contracted transportation rates and investigate the possibility of adoption of uniform rate components (not uniform rates) by agencies which contract transportation.

This information could be used to develop materials to assist transportation purchasers and providers of contracted transportation in using common transportation terminology to negotiate reasonable rates. The information may also be useful in conjunction with required Council on Competitive Government cost comparisons.

Monitor and evaluate the Texas Department of Transportation's (TxDOT) regionalization of the Section 16 grant program for capital expenditures for elderly and disabled transportation.

TxDOT is currently completing the development of rules which would allocate these funds to allow for local project selection. To the maximum extent possible, TxDOT intends to involve local transportation providers in establishing area coordination strategies and to work toward consensus-building among the provider community to support those funding decisions.

Convene at least four meetings of local transportation stakeholders to share, evaluate, and develop models of regional transportation coordination.

It is envisioned that these meetings would include representatives from state and local government transportation programs, transportation providers, and consumer representatives. The models developed would be linked in some manner to the Regional Interagency Councils.

The locations chosen would include a small rural and a large rural area, an urban area, and a border area.

Chapter 7

The Impact of Bus Deregulation on Intercity Bus Service In Texas

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The Impact of Bus Deregulation on Intercity Bus Service In Texas

Introduction

Intercity bus services are an important element in the overall network of transportation services in Texas. This assessment of intercity bus issues focuses on the impact of Federal and State deregulation of the intercity bus business, and also reviews options for TxDOT for dealing with the intercity bus funding element of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA).

In 1993, the Texas Transportation Institute (TTI) completed a study of the intercity bus industry in Texas titled "Intercity Bus Industry in Texas". The TTI report provided an extensive assessment of the coverage and condition of the intercity bus industry today, as well as of the impact of the 1982 Bus Deregulation Act . The analysis of intercity bus operations in this project draws heavily from the facts and analysis presented in the TTI report. Much of the background discussion presented in this chapter was developed in the TTI report.

Intercity bus service is experiencing a historic low since its peak during World War II across the country. Declining rural population, increasing costs, and greater competition from other modes of travel have greatly reduced the industry's customer base and profitability. Regulatory reform and increasing subsidies from state government have not been able to reverse the trend.

The steep declines in service coverage and profitability of intercity bus service throughout the 1970s led to the passage of the Bus Regulatory Reform Act (BRRA) of 1982. The act did not stop the problems it intended to solve because it did not address the root causes of the industry's decline: shrinking rural populations, and increased competition from other modes of travel. The continued decline of intercity bus service has led to increased interest in government involvement in the industry.

Intercity Service In The United States

Intercity bus service began in the United States in 1913 when miners were shuttled between the cities of Alice and Hibbing in Minnesota by a small local company that eventually became Greyhound Lines. The number of intercity bus companies peaked in 1926 at 4,000, and began to fall in the

1930's. Revenue passengers rose and fell in a range between 200 and 400 million per year from 1925 until the start of World War II.

Intercity service experienced a resurgence and a ridership peak in World War II, rising to 950 million riders in 1944, and then fell to a relatively constant level from 1955 to 1975 of between 375 and 400 million riders. The years during and immediately after World War II were boom times for the intercity carriers, mostly because of the large numbers of military personnel moving across the county.

Since the end of that war, a number of factors have combined to cause a decrease in ridership on the intercity bus services. Automobile ownership has greatly increased since the 1940's. In 1947 there were 0.2 cars per person in the United States. By 1970 that number had doubled to 0.4 cars per person , and rose to 0.6 cars per person in 1990. The country also became more urbanized, reducing the number of trips from the country to the city that are a mainstay of intercity bus transit.

Since 1975, intercity bus ridership has fallen further, and the number of localities served and company profits have fallen precipitously. Decreasing ridership, combined with higher operating costs, severely squeezed intercity service providers. The industry began to cut service to sparsely populated areas.

Freed by the Bus Regulatory Reform Act of 1982 from regulatory requirements that they serve low ridership routes to maintain their licenses on higher ridership routes, intercity bus providers further cut service throughout the 1980s and early 1990s. Nationally, the number of locations served has dropped from 16,800 in 1968 to 11,820 in 1982 to 5,690 in 1991, while ridership has fallen from approximately 375 million riders in 1982 to 325 million riders in 1990.

In Texas, as in other states, this deregulation was followed by similar State action that freed carriers from providing intercity, intrastate, service as a prerequisite for the rights to operate charter service in a particular market. This has the effect of undermining the cross-subsidies between profitable charter services and unprofitable fixed route services.

Intercity Service Regulation

Around 1925, state regulatory bodies adopted a regulated monopoly approach to intercity carriers that allowed a single company to serve a specific intercity route using government-controlled certificates and tariffs. A 1925 Supreme Court decision stated that state commissions had no control over carriers that operated an interstate route. This led to a campaign for greater federal involvement

in intercity transit since a carrier could avoid government regulation by operating a single route over state lines.

By 1930, all states except Delaware had state regulations governing intercity bus carriers in place. Most of these regulations allowed states to grant certificates to companies meeting "public convenience and necessity" on each intercity route.

Federal regulation of intercity carriers began with the 1935 Motor Carrier Act, which established the Interstate Commerce Commission as the regulator of interstate bus travel. The ICC pursued two different policies depending upon the strength and size of the market. On profitable, long haul routes, the ICC promoted competition by certifying multiple bus carriers as well as granting certificates to rail service competing along the same general route.

In smaller and less profitable markets, the ICC granted exclusive operating rights to existing bus carriers. These exclusive operating rights were granted when "substantial public benefit would result". Government regulation of intercity bus carriers remained significantly unchanged from the passage of the Motor Carriers Act until the early 1980s.

The Bus Regulatory Reform Act of 1982

The Bus Regulatory Reform Act was passed in 1982 to ameliorate, through regulatory reform, some of the problems experienced by intercity bus companies throughout 1970s and early 1980s. The act allowed companies easier entry to and exit from routes, and ended the ICC's power over fares unless a fare was determined to be predatory or discriminatory.

Regulatory reform has not brought the intercity carriers back to profitability or slowed the decrease in service. Deregulation failed to address the root causes of the problems facing intercity bus carriers: falling air fares from airline deregulation, heavily subsidized Amtrak service, and further increases in automobile ownership and urbanization.

Further exacerbating the decrease in profitability is the loss of historically profitable auxiliary services once operated by large intercity providers: express package and charter service. Package express service is no longer a significant revenue generator because of the rise of package delivery firms like UPS and Federal Express.

The act also removed the requirement that charter bus service could only be provided by a company offering fixed-route service as well. This has resulted in the loss to smaller competitors of profitable charter service by large intercity carriers.

The new charter bus companies are generally more flexible, are better able to serve niche markets by tailoring prices to the individual market, and have more readily available bus fleets. Since the passage of the act in 1982, the number of bus companies in the U.S. has increased to nearly 4000, almost to the record levels seen in the late 1920's. Most of the growth is a result of entries in the charter sector of the industry.

The Intercity Bus Service Assistance Elements of The Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 addresses the decline in intercity service by allowing the use of Federal transit assistance to support intercity bus services and facilities. Since 1979, Federal funding has been available for rural public transportation under Section 18 of the Urban Mass Transit Act.

ISTEA expanded the concept of intercity bus service as a form of rural public transportation by requiring that not less than 5% of state's Section 18 funds be spent on supporting intercity bus service in 1992, not less than 10% in 1993, and not less than 15% in 1994, unless the governor of the state certifies that intercity service in the state is adequate.

FTA program guidance allows Section 18 funds to be used to support intercity bus service to the extent that it provides transportation to rural areas. The Section 18(i) program is intended to achieve three national objectives:

- support the connection between nonurbanized areas and the larger regional or national system of intercity bus service
- support services that meet the intercity travel needs of residents in nonurbanized areas
- support the infrastructure of the intercity bus network through planning and marketing assistance and capital investment in facilities.

Allowable uses for Section 18(i) money are ". . .planning and marketing for intercity bus transportation, capital grants for intercity bus shelters, joint-use stops and depots, operating grants through purchase-of-service agreements, user-side subsidies and demonstration projects, and coordination of rural connections between small transit operators and intercity bus carriers". The federal match for intercity projects is the same as for the Section 18 program as a whole: 50% for operating costs and 80% for capital and project administrative expenses.

Intercity Bus Service In Texas

The rise and decline of intercity bus service in Texas has mirrored the experience of intercity bus service throughout the country, according to the TTI report. In 1970, 1,106 locations in Texas were served by intercity bus carriers. That number fell to 1,050 in 1979, 908 in 1982, and 596 by 1992.

Operating ratios (the ratio of expenses to revenues) illustrate the declining profitability of intercity bus service in Texas. Expenses averaged 86.3% of revenues during the period 1974 to 1980, while during the 1987 to 1991 period, expenses rose to an average of 94.3% of revenues. This suggests that profit margins were cut by more than half over this period.

Texas state regulation of intercity carriers began in 1927 with the Beck Bus Law. The Beck Bus law established authority over intercity bus service in Texas with the Texas Railroad Commission (RRC). The law gave the RRC authority to regulate fares, schedules, and routes, as well as required bus companies to provide insurance covering passengers, passenger property, and employees.

Current Intercity Bus Service Coverage in Texas

The TTI study identified the level of coverage of intercity bus services in Texas:

- almost all Texans living in areas of 5,000 people or larger are within ten miles of an intercity bus carrier stop
- 21 cities of 5,000 or greater population are ten or more miles away from an intercity line
- of these 21, eight are not within the service area of a public transportation provider that connects with an intercity stop.

Table 7-1
Over 5,000 Residents
Unserved by Intercity Transit

City	County	1990 Population	Miles to Nearest Service
De Soto	Dallas	30,544	12
Lancaster	Dallas	22,117	13
Cedar Hill	Dallas-Ellis	19,976	23
Rockwall	Rockwall	10,486	13
Graham	Young	8,986	34
Azle	Tarrant-Parker	8,868	16
Frisco	Collin-Denton	6,141	11
Iowa Park	Wichita	5,238	12

All of these cities, eight are in northeast Texas, and most are within the greater metropolitan area of Dallas-Fort Worth. Table 7-1 lists those cities and their population, county, and the distance to nearest service intercity service.

Although the TTI study indicates that most Texans living in medium-sized towns are served by intercity transit, it does not differentiate between frequent service and occasional flag stops, nor does it cover anyone living in a town of less than 5,000 residents.

About 20% of the Texas population lives in unincorporated areas or in towns with less than 5,000 people that are not included in the TTI analysis.

Intercity - Rural Service Connections

One major focus of the Section 18(i) program is to increase the coordination of intercity and rural transit services.

An additional 169,000 people would be considered "unserved" under the methodology of the TTI study were it not for Section 18 service in their county. Unfortunately, it is difficult to determine the exact number of riders using Section 18 service to get to intercity stops.

Of the respondents to the TTI Intercity Bus Rider Survey, 12% said they arrived at the station by public transit, but most of those likely accessed the station with urban-fixed route services rather than demand- response Section 18 service. Since many demand-response systems require reservations for trips, these services are not able to serve passengers arriving at an intercity bus station spontaneously.

The Rural Connection program of the late 1980s sponsored by the Urban Mass Transportation Administration, the predecessor of the FTA, specifically attempted to tie Greyhound intercity service to Section 18 service with little success. Over a period of two years, only 2,700 passengers transferred to the Greyhound service from a Section 18 carrier.

Government Role In Other States

Prior to the passage of ISTEA in 1991, a number of states had established programs of various kinds to assist private intercity carriers to maintain existing bus services, improve their equipment and facilities, and increase coordination with local carriers.

With the passage of ISTEA in 1991, the resources available to state governments to encourage intercity bus travel through funding under Section 18(i) of the act. In 1994, 28 states had obligated Section 18(i) moneys for supporting intercity transit in some manner. In the three years since the

program inception, nearly $16 million in funds have been obligated for capital, operating, administrative, and planning projects in support of intercity service.

Capital projects, totaling about $4.3 million dollars, have included projects such as purchase of vans for service expansion, purchase of replacement buses for existing service, and signage and passenger amenities at stations. Operating funds totaling $9.6 million have been used to subsidize new and existing services as well as operate intermodal terminals. Miscellaneous other projects have included planning and marketing grants.

Operating Subsidies - There were fourteen states offering operating subsidies in 1993. The most extensive and expensive of these programs are in Massachusetts, New York, and Pennsylvania, which have created state financial support for intercity transit that predates ISTEA.

These states spend between $1.3 and $6 million a year on intercity operating support. Although the exact mechanism to determine who qualifies for operating assistance varies among states, these large and well financed programs have maintained route networks that are much more extensive than those of states with smaller programs or those with none at all.

Other states offering some type of operating assistance in 1994 include New Mexico, Oklahoma, Iowa, Kansas, Arizona, Nevada, South Dakota, North Dakota, Alaska, Idaho, Washington, Maine, New Hampshire, Delaware, Kentucky, Mississippi, Indiana, and Wisconsin.

None of the operating assistance programs have resulted in restoring the carriers to profitability - partly because the services that are subsidized were those that were poor performing services that were subject to abandonment and served very remote and sparsely populated rural areas.

Vehicle Purchase Programs - State programs are typically designed to lease buses or vans to intercity providers at a reduced or nominal cost to reduce the expenses of the carrier. Six states had such vehicle assistance programs in 1993.

The experience of Michigan is representative of vehicle assistance programs throughout the country. Michigan began its vehicle assistance program for intercity carriers in 1976, and currently leases eight vehicles to private carriers for a dollar a year. Michigan sells these buses on the open market at the end of the lease period. Ridership has increased on routes that use the new buses, although it is difficult to determine if the increase is related to the new buses.

Vehicle assistance programs help intercity carriers to maintain service on routes that otherwise would be eliminated. The reduction in capital costs effectively acts as operating assistance, and increases the safety and comfort of intercity travel.

Vehicle assistance programs need to be carefully implemented, since they frequently attract small, inexperienced carriers who are using the program to obtain the vehicle for charter programs as well. Another problem is that large interstate carriers that participate in the program sometimes operate their fleets in a way that would result in a leased bus not being dedicated to service in the state providing the service. Other states with vehicle assistance programs in 1994 include New Hampshire, Kentucky, Indiana, Kansas, and Nebraska.

Intermodal Terminal Programs - Five states had programs to assist in remodeling bus terminals in 1993. Examples of states funding intermodal terminal improvements with Section 18(i) funds include Kentucky in 1993 and Florida in 1994. These terminal assistance programs typically involve creation or improvement of intermodal terminals, and are often joint efforts between state and local governments, local transit systems, local taxi companies, and private carriers.

The advantages of these terminals include the creation of a safer and cleaner atmosphere for passengers, increased ease and convenience of transfer between transit modes, and reduced monopoly power of the largest intercity carriers which typically own the bus terminals in each city and may charge rents as they see fit to the smaller carriers.

Particularly in small urban or more rural settings, joint facilities can provide a much higher level of amenities for both intercity bus riders and public transportation users than would be feasible with independent facilities. They can also often support the development of other general purpose activity centers.

The primary disadvantage of using Section 18(i) funds for intermodal terminal construction is cost. The facilities terminals can be capital intensive and require a long-term financial commitment to be completed and operated properly.

Another difficulty in the development of an intermodal terminal is in deciding on the location. An urban transit operator is generally interested in a passenger terminal near the center of commercial and employment activity, while the optimal location for the intercity operator is on or close to the major highways on which their routes operate.

Deviations into the downtowns of multiple cities on a route can significantly increase travel times for an intercity carrier, costing the operator money and passengers. On the other hand, few urban operators would be willing to participate in a facility that serves just one or a few of their routes, as would be likely at a highway location. In addition, local interest in these facilities is often tied to a program to revitalize town centers that are not near freeways.

For example, a downtown intermodal facility is currently being constructed in Waco. The downtown location is good for the urban bus operator, but the reaction of the intercity operators is unenthusiastic. They would prefer a location on the nearby interstate highway. Rural operators and intercity carriers may have an easier time finding mutually agreeable location in smaller towns.

Other Intercity Assistance - Ten states offered other forms of assistance to intercity carriers in 1993. These other efforts include marketing, signage, passenger shelters, tax relief, technical assistance, and service coordination.

Options for Intercity Travel

Intercity bus services provide important links in the overall public transportation network in the State. These carriers generally fall into three types:

- national carriers that provide long-haul service for passengers needing to go longer distances between rural and urban areas, between urban centers, and to locations outside of the State
- regional carriers that carry passengers on journeys from a small city to a large city within a state or region, sometimes to connect with airlines or another bus for the continuation of the journey
- "country carriers" that transport people between rural towns and small towns, mostly within the State, where they may connect with a regional or national intercity bus carrier or a local transit system.

Any given company may play one or more of these roles in a particular service area.

The role of the regional carrier as a connector between smaller cities and larger cities has grown in importance, as airline deregulation has resulted in the discontinuance of commercial air service to many smaller cities. Since these trips are intercity and usually intercounty, they are not trips that can be met by existing urban or rural public transportation providers.

The role of the country carrier has become important to the mobility of the State's rural populations. As these rural populations are aging and declining in numbers, the options open to these people to travel to population centers or even among small towns in an area have diminished.

Intercity bus service may provide the only means of access to such services as specialized health care that is available only in large cities. Rural public transportation providers can help feed regional carriers if the appropriate links between the two modes can be made, such as through convenient transfer points and integrated scheduling.

The mid-length regional trip and shorter length rural bus trips play a role in the overall transportation network of Texas that is not met by other modes - airlines, city public transit systems, or even rural public transportation providers. The length of many of these trips, which often cross several counties, puts them out of the range of rural public transportation providers, but are too short or too expensive for airline travel.

Table 7-2
Intermodal Trip Comparisons

	Daily Frequency	Trip Length (Hours)	Fare
Houston-Dallas			
Greyhound	9	4.5	$24
Amtrak	3/week	7.45	33
Southwest Airlines	35	1	79
Austin-Dallas			
Greyhound	12	4	19
Amtrak	3/week	6	36
Southwest Airlines	13	.75	79
Houston-El Paso			
Greyhound	5	15	99
Amtrak	3/week	15.5	142
Southwest Airlines	4	2	182

The long travel distances between the major urban centers in Texas, and the availability of abundant, fast, and relatively inexpensive air travel, makes it difficult for intercity bus carriers to compete for travel between large urban centers in Texas.

The data on Table 7-2 illustrates the differences in frequency, time of travel, and fares among airline, rail, and bus between three pairs of cities in Texas.

For example, the 220 mile trip from Dallas to Houston can be made on Southwest Airlines for $79 one way, with over 35 departures per day with a scheduled air travel time of only 45 minutes. By contrast, Greyhound operates nine trips a day at a fare of $24 one way, and with a scheduled travel time of 4.5 hours. While the bus trip can still save a passenger money, the savings come at a substantial time penalty.

State Regulation of Intercity Bus Services

The condition of the intercity scheduled bus services in Texas has also been materially altered by changes in the regulation of operations within the State by the Railroad Commission. The regulation of intercity bus services in the State is the responsibility of the Railroad Commission. The Commission has gradually relaxed the economic regulation of intercity bus services, in line with the national deregulation trends.

The most notable change that has been made is the elimination of the requirement that ties the rights to charter operations in a given market to the provision of fixed-route services in that market. This historic requirement supported a pattern in which the carriers' charter profits were used to cross-subsidize the losing, fixed-route, services that were the foundation of the right to operate charters.

Under the new regulations, any company that can prove its capability to provide charter services can enter the market, with no obligation to provide fixed-route services.

A major economic impact of this change is that the companies that provide fixed-route services are losing charter business to new entrants into their charter markets who are not required to provide fixed-route services in those markets. The established fixed-route carriers are losing charter market share, and consequently losing their ability to subsidize their fixed route-services with charter service profits.

Relaxations in the economic regulatory environment also allowed privately owned, fixed-route intercity bus companies to increase fares, or reduce or abandon fixed route service, without Commission approval, and with little or no notice to local communities. The Railroad Commission cannot permanently block an abandonment under current regulations.

The result of the combination of these two changes has been a significant change in the nature and extent of services provided within the State. The significance of these changes can be gauged by the fact that the Railroad Commission has proposed legislation to eliminate most of its remaining role in regulating bus systems except for assuring proper insurance is in place for the carriers. This role is to be transferred to TxDOT.

The New Federal Assistance Program

An opening for greater State government involvement presented itself with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) bill in 1991, which allows states to allocate Federal assistance to intercity bus operations.

ISTEA provides for either a permissive or a prescriptive approach for states in administering federal aid to intercity carriers. Governors are required to make a determination as to whether the existing intercity services are "adequate". If the services are found by the Governor to be adequate, states may use their Section 18 funds to assist any combination of intercity carriers or rural transit systems. If the services are found to be inadequate, then the states must allocate a minimum of 15% of the Section 18 funds to intercity projects as of current legislated levels.

In the latter case, the allocation of 15% of the funds has the impact of reducing the amount of Federal funds available to rural carriers by 15%.

Texas has reserved Section 18 funds in the minimum amounts required to be allocated to the intercity system in 1992, 1993, and 1994. This reserve now amounts to about $2.9 million. This money will revert to the general Section 18 fund for use in aiding rural transit systems if the Governor certifies that the intercity service is adequate in the state. The Section 18(i) fund will continue to grow by 15% of the state's Section 18 allocation for 1995 and 1996, the remaining years of ISTEA's authorization, by which time it could approach $6 million.

The decision of whether to declare the intercity services "adequate" is the assigned to the Governor by Federal legislation. Presumably, TxDOT should play a role in advising the Governor on this decision. Before the decision is made as to whether the Governor should certify intercity bus service in Texas as adequate, a number of considerations should be dealt with:

- what role should intercity bus service play in the transportation network of Texas
- is the current intercity bus service "adequate" to accomplish its defined role
- should TxDOT financially support intercity bus service in Texas, and if so, in what way
- would the use of 18(i) funds for the intercity bus system be a better use of these funds than allocating them to the rural transit systems.

TxDOT has not used any Section 18(i) funds for intercity projects to date. TxDOT has provided assistance to rural intercity bus service outside of ISTEA, through the regular Section 18 program. This support has generally been in the form of capital dollars for the construction of intermodal terminals in small towns. The facilities are provided for the joint use of intercity bus passengers and

rural public transportation providers in hopes of making the connection between the modes easier. Examples of the type of facilities supported by TxDOT are in Bastrop and Smithville in central Texas.

Passage of ISTEA has given TxDOT the potential for greater support of intercity service in Texas, if it chooses to use Section 18(i) moneys for that purpose.

TxDOT circulated a "concept paper" for comments from the industry. This paper was a draft request for proposals from intercity carriers and rural public transportation providers for projects that TxDOT should consider funding. The concept paper deals with requests for proposals for two types of projects:

- the construction, rehabilitation, or purchase of multimodal terminals
- the incremental costs of modifications of over the road coached to provide access to persons with disabilities.

Specific requirements for these projects included:

- providing access to any terminal to all intercity carriers, plus at least one rail service, urban or rural transit carrier, or common carrier air carrier
- the proposed service must already be in place
- TxDOT financial support was limited to 80% of most projects, but up to 100% of the cost of "mobility aid modifications" as a part of the modification of new coaches, not to exceed 20% of the total cost of the new bus.

TxDOT indicated in its conceptual request for proposals that it would give preference to projects that contained one or more of the following characteristics:

- community-owned terminals
- proposals with local contributions above the minimum 20%
- proposals with higher numbers of carriers using terminals.

The Department has now solicited proposals from potential applicants for projects of this nature.

Section 18 Options
Open to TxDOT

The State has two basic options with respect to the allocation of "18(i)" funds to intercity bus services.

Under one option, the Governor could find that the intercity bus services are "adequate". All Section 18 moneys would then be available to TxDOT for allocation either to the rural systems or to intercity carriers, at the discretion of TxDOT.

Under the second option, the Governor could make no determination concerning the adequacy of intercity service, which would require that TxDOT spend or reserve the full minimum percentage of Section 18 funds for intercity bus projects. This option would reduce the amount of dollars available for other rural service funding, and would reduce the flexibility of TxDOT in administering these funds and determining the best use of the funds within the State.

This second option provides the least amount of flexibility to the State, but the greater amount of funding stability for the rural carriers, assuming the State did not exceed the statutory minimum allocation of 15%.

Option 1 provides the most flexibility to the State, and enables it to determine from time to time what the proper appropriate allocations of funds should be between rural and intrastate bus system support.

Under Option 1, there are a number of suboptions open to the State, including:

- as a policy matter, allocating some fixed or minimum percentage of Section 18 funds for intrastate, intercity bus projects
- allocating lower or higher percentages than the statutory minimum 15% in option 1, based on specific project solicitations
- using the $2.9 million current reserve as a revolving fund to finance projects in one year, and then replacing those expenses from the subsequent year's allocations.

Intercity Program Options

If TxDOT is going to develop a program to assist intrastate, intercity, carriers, it must also decide what types of projects it intends to fund.

Coordination, Marketing, Planning And Technical Assistance - TxDOT could serve as a catalyst to coordination of intercity bus carriers and local rural transportation providers. TxDOT could facilitate communication between the two industry sectors to promote the use of joint passenger facilities and the coordination of services.

TxDOT could allow intercity operators who serve rural areas to participate in its "Circuit Rider" technical assistance program. This program allows Section 18 providers to request technical and planning assistance from consultants under contract to TxDOT for help in areas such as data automation, improved scheduling, and financial planning.

Marketing assistance could take many forms. A good example of a needed marketing effort is to provide assistance in posting routes and schedule information for local transit services at all intercity bus stops.

Capital Assistance - Capital assistance could be provided for the construction of intermodal terminal improvement, bus purchases, ADA compliance, or signs. The assistance could be in the form of grants or, to spread the limited funds further, in the form of low-interest loans. Such loans may require State enabling legislation.

The low-interest loan concept could be used for bus purchases as well. If having TxDOT grant or lend money to a private operator were not administratively possible, the money could be awarded to a municipality or local rural provider who would build the facility.

Operating Subsidies - Direct operating subsidies could be provided for routes that would be abandoned in the absence of public financial support, but demonstrate at least a threshold level of manifest demand. Short or long term subsidies may be the most direct way to prevent loss of coverage in sparsely populated areas.

Establishing fair and administrable criteria for receiving operating subsidies can be problematic at best. In addition, if Federal funds were used to subsidize private carriers, the carriers would be subject to a number of Federal transit grantee regulations that would be complicated and potentially expensive.

Another form of operating subsidy that is easier to administer is in the form of relief from State motor fuel taxes. Intercity operators are exempt from federal motor fuels tax. A similar exemption from state motor fuels tax would reduce the operating costs of these carriers. This exemption could be limited to carriers that provide fixed route services within the state.

Chapter 8

Evaluation of a Sample of Transit System Financial and Operations Plans

Chapter 8

Evaluation of a Sample of Transit System Financial and Operations Plans

One major consideration in the current and future role of transit in the overall State transportation network is the nature and extent of operating and financial plans across the State, what the content of those plans suggests with respect to the future of transit in Texas, and what they imply for the role of the State in that future.

As a means of estimating the impact of the collective plans for Texas among the small urban and rural transit agencies on the State, a review was conducted of the overall adequacy of financial and operations plans of a selection of transit agencies in small urban and rural communities in Texas.

The task was undertaken in two steps. The first step was to collect short and long range financial and operations plans from a representative sample of Section 9 municipal and Section 18 rural operators, metropolitan planning organizations, and TxDOT district offices. The plans and related documents were reviewed to establish their content and scope. The second step was to interview appropriate officials of the involved agencies to discuss the status of financial and operations planning at the local level.

Agencies Selected for Evaluation of Plans

Seven Section 9 and eight Section 18 agencies in seven areas were selected for evaluation of plans. The agencies were selected from each of the seven TxDOT planning regions, plus the two largest Section 18 operators in the state. The sample was selected, in consultation with TxDOT staff, to represent urban and rural operators, different geographic areas, and a variety of Section 18 sponsors. All of the Section 9 agencies are municipal transit operators. The areas selected were:

- Brownsville
- Lubbock
- Wichita Falls (Section 9 only)
- Tyler
- San Angelo
- Beaumont
- Waco

The two additional Section 18 operators selected were:

- Brazos Valley Community Action Agency
- Capital Area Rural Transportation System

A contact was identified for each of four types of agency categories in each area. Sources for the information included a representative from each of the following agencies in each of the areas reviewed:

- Section 9 operator
- Section 18 operator
- Metropolitan Planning Organization
- TxDOT's local Public Transportation Coordinator

Planning Documentation Requested

A list of planning documents to be requested from each of the agencies was developed. The requested information included:

- short-range financial and operating plans (1 to 5 years)
- long-range financial and operating plans (over 5 years)
- transit funding needs assessments
- vehicle inventory and procurement plans
- other capital plans
- service and performance standards
- ADA compliance plans
- public involvement programs
- organizational structure and management plans
- FTA triennial reviews or TxDOT quarterly performance reports
- transportation improvement plans (TIP)
- metropolitan transportation plans (MTP)
- assessments of future service needs

Each contact was called and asked to send the available planning documents and information. Several contacts were unavailable for interviews by telephone, and a list of information was sent by fax with a return mailing address and telephone number. In most cases, information was received directly from the Section 9 or Section 18 operator.

The MPO coordinators provided the TIP and MTP documents and whatever planning background for transit service needs assessment in the urbanized area was available. In most cases, TxDOT public transit coordinators were not familiar with the financial and operations plans of the local transit operators.

The majority of persons contacted were willing to assist in providing information for the inventory of planning documents. The exceptions included the Section 9 transit operator in Beaumont who was unwilling to participate, and the Section 18 transit operator in Lubbock, who did not return telephone calls. In addition, Section 18 transit operators in the Brownsville and Tyler areas agreed to provide copies of planning documents but have not yet provided any information.

A matrix of planning documents received from each of the sources is included as Exhibit 8-1. A complete bibliography of the documents collected is included as Appendix D to this report.

The Status of the Plans

The areas and agencies selected for review in this work were expected to yield a reasonably representative sample of planning among the more sophisticated transit agencies in the small urban and rural areas. As it turned out, few planning documents were available, and the scope and content of the plans that were reviewed was very limited.

The TIP and MTP products required by the federal planning process contained little financial and operations planning for the transit systems. Most apparent was the extraordinarily limited amount of financial and operations planning information being developed for the Section 18 operators.

The current state of planning in the areas evaluated in this work reflects a general need for change if these areas - and others like them - are going to participate effectively in flexible funding options under ISTEA.

Planning in the Selected Section 9 Systems

The review of the financial and operating planning at the selected Section 9 agencies suggests a pattern of minimal planning. The limited nature of the financial and operations plans among these agencies can be seen in the following findings:

- Only two of the seven Section 9 operators have current short-range plans. The two plans are comprehensive and address transit service needs, financial and operations plans for five years, and service and performance standards.
- One other Section 9 operator developed a comprehensive short-range plan in 1990. The period of the financial and operations plans included in that document have now expired.
- None of the Section 9 operators has developed a long-range transit plan. Several agencies referred us to the long-range plans in the MPO's metropolitan transportation plan for the urbanized area.

- Section 9 operators periodically prepare statements of transit funding needs as requested by TxDOT that are used by TxDOT to prepare the biennial "master plan" or to estimate federal funding requirements. No agency has performed a local financial capacity analysis.
- Section 9 operators have transit vehicle inventories. Section 9 operators include anticipated vehicle acquisition plans in the TIP and MTP plans prepared by the MPO.
- Three Section 9 operators have plans for capital investment beyond vehicle acquisition. These capital projects are documented for purposes of federal grant applications (Section 9 and/or Section 3) and for the local capital improvement budget process.
- Three Section 9 operators provided copies of service standards, and four provided copies of performance standards. However, no agency provided a service evaluation and monitoring plan that documents use of the standards to ensure service quality and to measure effectiveness of operations.
- Section 9 operators must develop ADA compliance plans as part of the federal grant approval process. Only four agencies submitted their plan for review. These plans are typically prepared by the Section 9 operator and included as part of the MTP prepared by the MPO.
- The scope and content of the public involvement programs among Section 9 operators are limited. One transit operator coordinates public participation with the MPO's planning process. Others referred to public hearings for grants as public involvement. Only one Section 9 operator cited a public advisory board appointed by the local city council. None of the Section 9 operators provided a formal public involvement plan.
- Section 9 operators are subject to triennial reviews by the Federal Transit Administration. The local transit operators are periodically evaluated for compliance with the federal requirements for grant administration.
- The only assessment of transit service needs were reported by the MPO's in San Angelo, Tyler, and Beaumont. Transit service needs assessments were included in the short-range plans of Lubbock, Waco, and Brownsville.

Planning in the Selected Section 18 Systems

The results of the review of the planning at the Section 18 systems revealed an even more minimal level of planning among these agencies:

- None of the eight Section 18 operators was able to provide a short-range financial and operations plan. Only one Section 18 operator reported that a short-range planning effort was currently underway.
- None of the eight Section 18 operators prepare any form of a long-range financial or operations plan. Rural areas are not included in the metropolitan planning process.

Therefore, Section 18 operators do not have and cannot rely upon the regional planning assistance of an MPO.

- The only transit funding needs assessments prepared by Section 18 operators are for submittal to TxDOT as part of the database for the biennial "master plan." None of the Section 18 agencies has performed a financial capacity analysis. Section 18 operators are limited in their ability to forecast financial capacity, and deal mostly with the annual budgeting process of local jurisdictions that fund them.
- Section 18 operators have vehicle inventories that are prepared annually for the TxDOT coordinator. The most recent inventory was prepared for the state's Public Transit Management System (PTMS). Section 18 operators include projected vehicle acquisitions for the next three years in the MPO records for the TIP.
- Section 18 operators did not provide service standards. Section 18 operators refer to the TxDOT mandated quarterly performance reporting requirements as "performance standards".
- The scope and content of the public involvement programs among Section 18 operators vary. Several operators reported appointed advisory committees and/or task forces (which meet once per year). Some of these are advocacy groups that represent the interests of the clients of the services provided. Others referred to public hearings as public involvement. None of the Section 18 operators provided a formal public involvement plan.
- TxDOT coordinators visit the Section 18 in their area at a minimum of once each quarter. The coordinator reviews a selection of two line items of the monthly billing documentation. These line items do not necessarily relate to current issues at the operators.
- The only transit service needs assessment for a Section 18 service area was prepared for the Heart of Texas Council of Governments in Waco in 1982.

Results of Interviews with Local Officials

To supplement the review of the planning documents, a number of interviews were conducted with local transit and planning officials and TxDOT public transit coordinators. The focus of the discussions was on identifying opportunities for TxDOT, transit operators, and the MPO's in urban areas to resolve the deficiencies and strengthen the public transportation planning process.

Public Transportation Coordinators - The role of the public transportation coordinators has not yet resulted in substantial improvements in the planning and operations of the local transit agencies.

TxDOT public transportation coordinators are responsible for administration of grant contracts and enforcement of regulations. The coordinators are only nominally involved in the local transit planning process, and are not familiar with basic planning activities.

The coordinators are often assigned to multiple job responsibilities in the District offices, and some report that they frequently are unable to perform the duties of the coordinator effectively.

Among the kinds of additional job responsibilities that the coordinators may have are safety, multimodal transportation planning, administration for disadvantaged business enterprise programs, and secretarial or clerical duties. While this mixture of assignments may be an effective use of the time and skills of the coordinators from the point of view of the benefit to the district offices, the result is a limited amount of time spent, and limited impact on, improving the planning and delivery of services by the carriers in their jurisdictions.

The majority of the time spent working on public transportation issues by the coordinators is focused on administrative activities and the Section 16 and Section 18 operators. Interface with the Section 9 operator is limited basically to grant administration for the annual Public Transportation Fund contracts.

Relationships Among TxDOT Austin, the Coordinators, and The Operators - Many Section 9 and Section 18 transit operators view the TxDOT staff, especially at the state level, as an impediment to the delivery of transit service. There is a sense among them that the operators and TxDOT do not have a common purpose, and in fact that TxDOT staff may be inadvertently working at cross purposes with the providers. The current relationships are generally more adversarial than collegial, more regulatory than supportive.

Grant administration and management is not delegated by TxDOT to the coordinators in the district. Austin is seen as the only source for information concerning state transit program regulations. Both the coordinators and the transit operators report a lack and understanding of and access to the development of regulations, and to guidance in interpreting the regulations.

The coordinators are frustrated by a lack of consistent and documented guidance for use in the execution of their job responsibilities in the field, and by a lack of support from Division personnel. This frustration detracts from their performance and contributes to the lack of confidence in the coordinators by local transit operators.

If the decision or direction of a coordinator does not meet the expectation of the local transit operator, the line of appeal is directly to the TxDOT Public Transportation Division in Austin. Both the local transit operators and the coordinators recognize this fact and acknowledge the negative effect on the authority of the coordinators.

The varied experience and backgrounds of the Coordinators, and their responsibility for different additional duties, does not always prepare them or give them adequate time to carry out their transit responsibilities.

Local Constraints on Better Planning - The small urban and rural operators lack several requirements for basic financial and operations planning. The two key missing factors are skilled personnel and funding.

Lack of funding for planning work and limited planning skills limits planning efforts of transportation providers, especially by Section 18 operators.

Another problem is the lack of understanding of the need for and usefulness of planning. Many of the managers of these systems have a variety of duties, and have little time, sense little need for, and express little interest in planning. For example, one frequent comment by Section 18 operators is "How can I plan when I do not know where funding for next year will come from?" This attitude belies the fact that it is the very existence of such uncertainty that creates the need for better planning.

The approach that TxDOT takes in planning for biennial funding by the State has not been received well by the local transit operators. The effort to identify transit funding needs through TxDOT staff alone is generally considered ineffective by the operators. At the same time, TxDOT expresses a lack of confidence in the needs that are identified by the local operators, especially the Section 18 operators.

Lacking confidence in the statement of funding needs by the local transit operators, TxDOT does not tie the local data to the department's biennial funding request. Accordingly, the biennial budget process becomes a competitive and adversarial process. This is further complicated by the fact that the Division does not play a major role in the development of the Department's budget for transit, but is still viewed as the "problem" by the industry.

Another example of the kind of action that complicates the relationship between the Division and the operators is the new performance measures reporting program. TxDOT implemented this reporting program last year to help improve the effectiveness of transit services. The concept of the program has merit, but the manner of the implementation added to the difficult relationship between TxDOT and the transit operators, especially the Section 18 agencies.

Performance requirements were communicated to transit operators as mandates, with a possibility of loosing funding if the performance goals were not met. There was no effort to develop training programs for coordinators or the transit operators on the merits and benefits of the program, or how to establish appropriate standards and measures.

Chapter 9

Transit Program Funding and Management Experience of Other States

Chapter 9

Transit Program Funding and Management - Experience of Other States

Introduction

The transit funding and management programs of states across the country vary widely from state to state, and include a wide variety of approaches to funding, financial assistance, technical assistance, and system ownership and operation. These programs have evolved largely over the past thirty years since the passage of the first Federal transit assistance programs in 1964. Although several states had transit programs prior to 1964, the development of Federal funding has had a profound impact on the nature and extent of state programs since that time.

Transit funding consists of various patterns of local, regional, state, and federal funding for capital expenses and operating subsidies, as well as such particular purposes as planning, technical assistance , user side subsidies, and programs designed to aid particular groups of users such as the elderly or disabled populations. These patterns generally vary by state, and within states, by the kinds of transit organizations that are in place.

The most current source of data relating to transit funding by the states is a 1993 report sponsored by AASHTO. In the latest version of this biennial report, 35 of the 39 states providing data reported at least some form of direct state financial assistance to transit providers in the form of grants or appropriations from state funds.

Two general factors tend to influence the organization and content of transit programs in the states:

- the history of public transit ownership and financing in a state, and the influence of the urban areas in general state policies including transit, have a major impact on the nature and extent of state transit programs
- the organization and regulations of the Federal transit assistance programs have a significant impact on the roles of the states in transit program administration, particularly among those states that are new to transit assistance programs over the past 20 years.

A few states, particularly the smaller eastern states including Maryland, Connecticut, Delaware, and Rhode Island own and operate urban bus and rail systems. California also contracts directly for commuter rail services in the Bay Area, and a number of states contract for services for intercity bus services within the state. By and large, however, the operation or contracting for transit services by

states is the exception, and takes place in the absence of an appropriate local or regional transit agency.

The states with long-standing transit assistance programs that predate the 1973 changes in the federal program typically have a higher proportion of direct state aid to local transit operations. These state programs were typically developed at the urging of local governments and state legislators from urban areas, who sought to regionalize struggling city owned transit systems and to become eligible for financial assistance for those systems from the state. The programs in these states tend to have a high proportion of direct aid from state funds, rather than local option taxes.

States that have newer transit programs that have come along over the past twenty years - particularly since the inception of formula federal programs and operating subsidies. These states have tended to develop urban transit funding programs that depend on referenda for local option taxing or rely in some other way on local rather than state financial resources - particularly in the larger urban areas.

Texas generally falls in the latter category, with its reliance on local option sales taxes for the large urban areas, with its emphasis on Federal program administration, and with state and local funding for the small urban, rural, and specialized transit programs.

The states with long-standing financial assistance programs provide either capital or operating assistance, or both, out of general funds or other sources that may or may not be subject to the normal appropriations process.

In many cases, these state funds are subject to appropriations and grant applications processes that are administered by State Departments of Transportation. Examples of this method include:

- operating subsidies provided in Wisconsin
- state aid to capital programs in New York

A third example of the techniques used are those states that collect a specific statewide tax specifically for the benefit of transit, and allocate these funds by formula or discretionary programs. An example of this method includes the use of the proceeds of the state lottery in Pennsylvania, which are "dedicated" to providing reimbursement for reduced fares for the elderly on all Pennsylvania transit systems. Another example is Massachusetts, which at one point dedicated a percentage of its cigarette tax for transit debt service for Boston's transit system.

In other cases, specific taxes are imposed by state statute for the benefit of transit agencies and are collected by the state, but are remitted directly to the qualifying transit agencies without grant applications and outside of the appropriations process. Examples of the latter include:

- mortgage recording taxes are collected in transit districts by the state, and are remitted to the transit agency in the areas from which they are collected
- motor vehicle excise taxes in Washington state that are collected for vehicles registered in certain transit districts are remitted by the state to those districts

Overview of "Direct" State Funding for Transit

The report of direct state funding for transit produced by AASHTO provides an overview of the nature and extent of these programs among the 39 states that reported data for that study. The data in the AASHTO report were not verified during this project, and the validity of some of the specific dollar values in the report is subject to interpretation. Nevertheless, the overall picture presented by the data in the report is instructive.

A summary of the extent of funding by groups of states in the various regions in the country is illustrated on Table 9-1. The magnitude of state transit funding tends to follow the extent of urbanization within a state, as shown on Table 9-1.

Table 9-1
Direct State Funding by Region

Region	States	Direct State Aid per Capita	% Urban Population
Northeast	Connecticut, Delaware, Washington D.C., Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont	$45.36	72%
Pacific	Alaska, Hawaii, Washington, Oregon, California	11.61	79%
Great Lakes	Illinois, Indiana, Michigan, Ohio, Wisconsin	10.73	62%
South	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia	2.34	51%
Midwest	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	1.67	46%
Southwest	Arizona, New Mexico, Oklahoma, Texas	0.12	63%
Mountain	Colorado, Idaho, Montana, Nevada, Utah, Wyoming	0.04	61%

This distribution of average funds per capita implies three tiers of state transit funding:

- highly urbanized states in which transit funding is a high priority, either because of infrastructure preservation concerns as in the older rail systems, or constraints on building additional highway capacity as in the Pacific states
- moderately urbanized regions, in which most residents live in smaller mid-sized cities, and transit needs are more modest and are met mainly by local funds (South, Midwest), but some large-city transit needs also exist (e.g., Florida, Virginia, Georgia)
- regions that are sparsely settled, and have widely-scattered principal cities (Southwest, Mountain).

The amounts of direct state aid for transit as reported in the AASHTO summary are shown on Table 9-2.

Table 9-2
Direct State Transit Aid
As Reported by AASHTO - FY1993

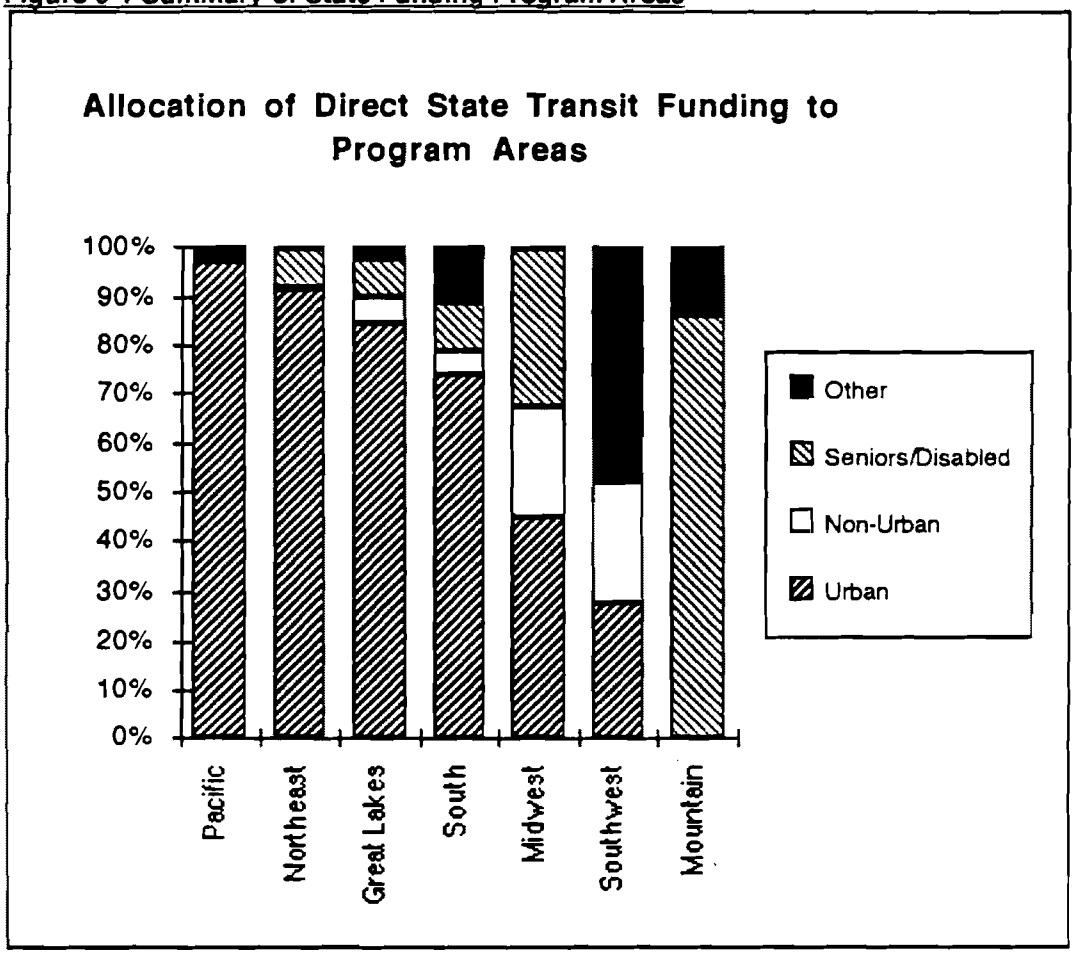
State	Amount	State	Amount
Alabama	$1,047,722	Missouri	$1,471,755
Alaska	NR	Montana	$71,250
Arizona	$11,187,000	Nebraska	$1,500,000
Arkansas	$350,000	Nevada	$366,095
California	$1,336,903,698	New Hampshire	$1,925,060
Colorado	$0	New Jersey	$269,480,000
Connecticut	$118,122,392	New Mexico	$0
Delaware	$14,194,683	New York	$1,339,200,000
District	$127,402,000	North Carolina	$9,657,576
Florida	$81,211,888	North Dakota	$786,542
Georgia	$177,967,139	Ohio	$32,414,460
Hawaii	$3,323,737	Oklahoma	$963,355
Idaho	$0	Oregon	$27,065,287
Illinois	$246,905,900	Pennsylvania	$617,600,000
Indiana	$17,200,000	Rhode Island	$15,773,000
Iowa	$5,800,000	South Carolina	NR
Kansas	$390,000	South Dakota	$290,793
Kentucky	$1,076,180	Tennessee	$11,530,000
Louisiana	NR	Utah	$38,817,098
Maine	$1,484,482	Vermont	$2,700,000
Maryland	$422,156,246	Virginia	$86,493,191
Massachusetts	$671,217,740	Washington	$146,790,000
Michigan	$118,363,129	West Virginia	$3,579,973
Minnesota	$36,656,205	Wisconsin	$69,322,501
Mississippi	$492,500	Wyoming	$866,135

NR - did not report

Direct financial assistance by the states and the District of Columbia totaled $3.73 billion in 1993. Three states – New York, California, and Pennsylvania – accounted for 68% of the total. Massachusetts and Connecticut did not report to AASHTO, but are known to provide substantial financial support to transit. Collectively, these five states account for 75% or more of direct state financial assistance to transit.

The Texas experience lies somewhere between that of the states in the South and the Southwest. Like these states, Texas has several large principal cities and a substantial rural population. In some cases such as Virginia and Florida, the states fund transit from statewide tax revenues. In others such as Colorado, Louisiana, and Georgia, local option taxes are the primary funding mechanism, and state funding for transit is very limited.

Figure 9-1 Summary of State Funding Program Areas



Sources of State Transit Funds

In contrast to the commonalities that exist among states with respect to the magnitude of transit funding, the sources of these funds cover a wide range. Of the 34 states reporting to AASHTO that provide direct financial assistance to transit, the most prominent sources of funds were:

- state general funds, 22 states
- motor fuel taxes, 5 states
- transportation funds, 5 states
- sales taxes, 4 states

- bond proceeds, 4 states.

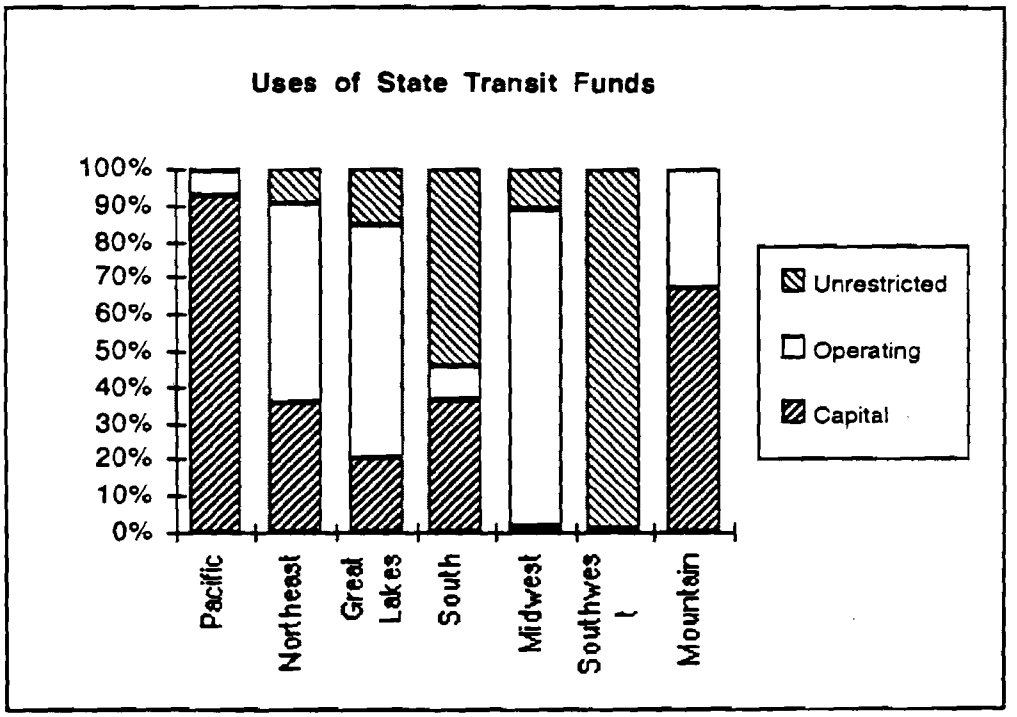
Other sources of funds included oil overcharge funds, lottery proceeds, and various types of taxes on motor vehicles. Sixteen of the states reporting to AASHTO used two or more sources of funds for transit financial assistance.

Uses of State Transit Funds

The uses of state transit funds were analyzed to determine the kinds of transit activities that could be supported by the state assistance. The results of this assessment are summarized on Figure 9-1.

About 90% of state transit funds are used in urban areas to support fixed-route or fixed-guideway transit services. This is influenced by the magnitude of transit funding in the most highly urbanized regions, although funding in the South is also used primarily in urban areas. Funding for non-urban and senior-disabled transit services tends to dominate in the Mountain, Southwest, and Midwest regions, where there are fewer concentrations of large urban populations.

Figure 9-2 Uses of State Transit Funds



The application of state transit funds to capital or operating purposes does not follow a consistent pattern among the regions, as shown on Figure 9-2. Overall, a slight majority of state transit funding is used for capital purposes, influenced primarily by rail construction funding in California. In all other

regions and in most states, however, operating support or unrestricted funding is more common than funding that is restricted to capital uses.

Transfers to Transit From "Flexible" Funds

In 1993, states reporting to AASHTO transferred $311 million to transit programs from the Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ) funds administered by the Federal Highway Administration. Over $1.37 billion had been transferred to transit projects through August 1994.

These "flexible" transportation funds are allocated to states for use either for highway or transit programs. In urban areas, they can be transferred to transit projects by metropolitan planning organizations, or by state departments of transportation (statewide STP funds and STP funds in non-urban areas).

States are increasing their rate of flexing funds for transit, as the program becomes more familiar and as the project selection and approval process works it way through the decision making system:

- in 1992, thirty two states exercised this option, while in 1994, forty two did so.
- transferred funds for transit grew from $301.5 million in FY92 to over $600 million in FY94.

Table 9-3 presents the amount of STP and CMAQ funds transferred to transit, according to the 1993 AASHTO report for state transit funding, .

Table 9-3
Flexible Funds
By Region -1993

Region	Flexible Funds Transferred	Flexible Funds per Capita	Direct Funds Per Capita	Flexible Funds As % of Direct Funds
Northeast	$169.8M	$2.96	$39.34	7.5%
Great Lakes	$52.7M	$1.40	$12.82	10.9%
South	$51.7M	$0.85	$2.93	28.9%
Pacific	$21.4M	$0.52	$18.83	2.8%
Southwest	$9.1M	$0.35	$0.10	347.9%
Mountain	$3.2M	$0.24	$0.02	1133.2%
Midwest	$3.2M	$0.17	$2.54	6.8%
Total	$311.1M	$1.22	$14.64	8.3%

Generally, the use of flexible funds tends to follow the pattern of per capita state funding, with two exceptions. Flexible funding in the South was larger than would be expected given the state per capita funding, due primarily to extensive use of flexible funding in Virginia. Virginia accounted for $33.9 million of the $51.7 million in flexible funds in the South. The state applied these funds to an extensive bus replacement program and to commuter rail start-up costs. Flexible funds in the Pacific

region were less than would have been expected, given the relatively high per capita state funding for transit.

Exhibit 9-1
Distribution of Funds Transfers
By Region and Fund

Region/Fund	Buses	Other	Other Bus	Rail	Grand Total	Percent of Total
Great Lakes						
CMAQ	13,443	0	23,156	9,248	45,847	14.7%
STP	2,190	0	1,226	3,389	6,805	2.2%
Great Lakes Sum	15,633	0	24,382	12,637	52,652	16.9%
Midwest						
CMAQ	0	0	0	0	0	0.0%
STP	2,960	0	240	0	3,200	1.0%
Midwest Sum	2,960	0	240	0	3,200	1.0%
Mountain						
CMAQ	2,400	0	841	0	3,241	1.0%
STP	0	0	0	0	0	0.0%
Mountain Sum	2,400	0	841	0	3,241	1.0%
Northeast						
CMAQ	1,933	1,500	4,300	127,425	135,158	43.4%
STP	1,310	0	0	33,375	34,685	11.1%
Northeast Sum	3,243	1,500	4,300	160,800	169,843	54.6%
Pacific						
CMAQ	14,415	0	4,253	0	18,668	6.0%
STP	931	0	678	1,115	2,724	0.9%
Pacific Sum	15,346	0	4,931	1,115	21,392	6.9%
South						
CMAQ	12,907	1,000	6,013	0	19,920	6.4%
STP	23,967	0	2,160	5,625	31,752	10.2%
South Sum	36,874	1,000	8,173	5,625	51,672	16.6%
Southwest						
CMAQ	1,400	0	7,304	0	8,704	2.8%
STP	0	0	400	0	400	0.1%
Southwest Sum	1,400	0	7,704	0	9,104	2.9%
Grand total	77,856	2,500	50,571	180,177	311,104	100.0%
% of total	25.0%	0.8%	16.3%	57.9%	100.0%	
Fund Totals						
CMAQ	46,498	2,500	45,867	136,673	231,538	
STP	31,358	0	4,704	43,504	79,566	
Fund % of Total						
CMAQ	14.9%	0.8%	14.7%	43.9%	74.4%	
STP	10.1%	0.0%	1.5%	14.0%	25.6%	

Flexible funds for California appear to have been under-reported, at less than $1 million. Another possible explanation is that recent state and local initiatives have adequately funded most transit needs. States in the Mountain and Southwest regions transferred a large amount of funds relative to their state direct funds, indicating that even in regions where state funding for transit low, some value was placed on transferring highway funds to transit and transit related projects.

Flexible funds were derived mainly from the CMAQ program, which is controlled entirely by MPOs in urban areas. Overall, 74% of flexible funds came from CMAQ, and the remaining 26% from STP. This pattern held across most regions, although the South drew its funds primarily from STP.

The uses of flexible funds showed two distinct patterns, as shown on Exhibit 9-1. In the Northeast, 95% of flexible funds were applied to rail projects. In all other regions, bus purchases were the dominant use (53%), followed by bus facilities and equipment (33%), and rail facilities and equipment (14%).

A trend toward flexing more STP funds was evident in FY 94, with MPO allocations for transit increasing at the fastest rate. Only two transfer projects have used National Highway System funds.

The there are financial, policy, and procedural problems in the process for using flexible funds for transit projects. Among these problems are:

- different Federal project development and approval regulations for highway and transit projects
- slow processing time for requests for approval by the federal agencies
- funding needs for highway projects that exceed the available funding, which discourages highway agencies and local governments from seeking to postpone highway projects and transferring the funds to transit
- Federal appropriations and obligations of funds that are lower than authorizations for ISTEA
- a shortage of local matching funds, often because of constitutional restrictions on use of state highway matching funds for non-highway purposes
- lack of a prescribed process for flexible funding decision making in the rural areas, to match the process prescribed for urban areas.

Approaches to Non-Urban
Flexible Funding Decision-Making

A number of states have experience in making flexible funding decisions in non-urban areas. These include Alabama, California, Connecticut, Idaho, Kentucky, Michigan, Minnesota, Ohio, Utah, Vermont, Virginia, Washington, and Wisconsin.

The state long range planning process is providing the basis for better identification of non-urban needs in a number of states. In other states, special efforts to develop intermodal regional plans have identified program and project needs that then are used to make flexible funding decisions in urban and non-urban areas.

Michigan developed a "Customers and Providers Advisory Committee" to guide its development of statewide goals with measurable objectives. The state was then divided into four regions: three rural, plus Detroit. Regional planning committees identified issues and opportunities to implement the state goals in their region. This has resulted in identification of specific projects, including transit equipment purchases using flexible funds. The old system was first come, first served.

Florida statutes require formula distribution of transportation funds to the seven highway districts. Concern over the failure of this system to produce multi-modal funding decisions in the last two years has resulted in the central DOT office developing training programs for the Districts on such things as flexible funding and public involvement.

Washington state has an extensive sub-allocation process to local and county governments which was worked out shortly after ISTEA passed. However, some decisions are still made at the Department level.

Three states - Washington, California, and Colorado - are using rural advisory boards that are somewhat analogous to the urban MPOs to provide advice on needs and possible projects in multi-county rural areas. These existed prior to ISTEA in Washington and California, but Colorado adopted this approach when their attempt to use the Colorado DOT districts for ISTEA implementation - especially flexible funding issues - failed.

Ohio conducted extensive outreach to develop a policy framework for the whole state. The MPO's were given considerable latitude in deciding how to develop their plan within that framework and the state concentrated on "balance of state". While several non-urban intermodal freight projects using flexed funds have resulted from that process, it is not clear how much rural or intercity transit may have been affected.

Wisconsin is using its recently completed state long-range plan as a guide to funding rural transit, as well as road investments. The plan calls for new intercity bus and rail service along specific routes. Flexible funds will be used for some of these projects. Decisions about maintenance and rehabilitation of rural roads remains with the Districts.

The process for allocating transportation enhancement funds in a number of states also may be instructive for Texas in making flexible funding decisions. California, Washington, and Colorado use their rural advisory boards along with the MPO's. However, the majority of states have developed

centralized programs. Several of these centralized programs such as in Maryland are in effect competitions, in which providing above-minimum local matching funds is encouraged or required for projects to be successful.

Recognizing that most states are struggling with making intermodal trade-off decisions, the Transportation Research Board has several projects underway to develop measurable criteria and methodologies for multi-modal decision making.

Potential New Sources of Local Matching Funds

The need to increase the amount of local matching funds for transit projects that are not restricted by state constitutions or by the lack of available cash has created several approaches that help to speed project approval. Some of these are currently permissible, while others are part of pending Federal legislation. These include:

- using private dollars for local match
- using expenses for facilities, labor, or right of way
- match transit funds with toll revenue expenditures in State
- allowing future highway apportionments to be used to secure debt for the project
- using revenues from commercial use of interstate right of way

Using Private Dollars For State Match. Expenses related to the project that are paid for by private entities can be used as funds to match Federal funds. This reduces the amount of the state or local share of transit of intermodal projects. This is being allowed under the FHWA T&E Program.

Using Expenses for Facilities, Labor, Or Right Of Way. This results in savings of local funds to the project sponsor only when the facilities or right of way would have to be purchased as part of the project cost. An example might be the acquisition and conversion of rail depots into inter-modal terminals. The 1987 surface transportation legislation made the donation of land eligible. Facilities and labor may be part of new legislative package.

Match Transit With Toll Revenue Expenditures In State. Toll agency expenditures can be used as local match for transit projects. Expenses by toll agencies and not generally subject to the same constitutional restrictions that highway trust funds are.

Allowing Future Highway Apportionments To Be Used To Secure Debt For The Project. This proposed legislation would allow the acceleration of projects in a manner similar to grant anticipation

notes. This would permit faster starts, especially for large projects which might otherwise have to be phased.

Using Revenues from Commercial Use Of Interstate Right-Of-Way - Allowing commercial uses of rights of way not in use for highway purposes, such as areas under elevated structures, is a potential revenue-generating activity. Legislation approving this is under consideration in Washington.

Case Studies of Elements of Public Transportation Programs in Eight States

To put the public transportation programs and experience in Texas in perspective, the basic elements of public transportation programs in eight states were evaluated: Ohio, Michigan, Wisconsin, Pennsylvania, Florida, Virginia, Oregon, and Washington.

These states were chosen because of some aspect of their public transportation program that may prove valuable in considering possible changes in the Texas program. These case studies were selected and developed based on:

- analysis of the most recent AASHTO, APTA, US DOT, and American Bus Association reports documenting the nature and extent of state involvement in public transportation
- examination of state transportation plans required by ISTEA, which have been completed in several states
- a series of personal interviews and telephone conversations with officials of these DOT's and with others knowledgeable about the state's programs such as representatives of the state transit associations.

Table 9-4
Summary of Case Study Issue Areas

Issue	OH	MI	WI	PA	VA	FL	OR	WA
Administrative Structure		x				x	x	x
State Oversight	x	x						
Technical Assistance	x	x	x		x			
Funding Program			x	x		x		
Funding Sources	x			x	x	x		
Service Coordination						x		
Intercity Service		x		x				
Public Involvement			x				x	x

Table 9-4 summarizes the features of each state's transit program that are the focus of these case studies.

Florida: Overview

State support for public transportation in Florida has grown steadily since the adoption of new funding programs in the late 1980's. Under the new program structure, the Florida Department of Transportation provides block grants that give maximum flexibility to transit operators in small urban areas in determining how to use funds. For areas with over 200,000 population, the state provides some assistance through the block grants, but local option taxes are the predominant means of funding, and the state has little regular involvement.

Key features of FDOT's public transportation program that may prove instructive to the Texas situation are:

- simplified formula funding programs
- coordination of programs for the disadvantaged through state level teams and county coordinators.
- a decentralized administrative structure.

Block Grants - In the late 1980's, Florida replaced its primary source of financial assistance, the Urban Capital Fund, with the Public Transit Block Grant program. Under the new program, all recipients of federal Section 9 funds are eligible to receive money that can be used for either capital or operating through a formula that places equal weight on county population, revenue miles, and ridership, with a cap on state assistance so that it does not exceed local support. Most systems use the funds for operations, in part because of the decline in federal operating assistance.

State oversight is limited to signing the supplemental agreement for small urban Section 9 funds and ensuring that the projects are on the TIP. Recipients are required to submit an annual transit development plan and Section 15 data.

The funding for the Block Grant has grown from $39.3 million in FY1993 to $47 million in FY1996. The primary source of these funds is the state Transportation Trust Fund, which is supported almost entirely by the gas tax. Under state law, at least 14.3% of the Transportation Trust Fund must be used annually for public transportation, which includes state rail and aviation activities. Approximately 16% of the Transportation Trust Fund will be used for these purposes in this fiscal year.

Rural Transit Funding and Coordination- Section 18 carriers are eligible for the Block Grant program for funding under the state's Transportation Disadvantaged Fund (TDF). Operators cannot use both programs. Only one Section 18 carrier has not chosen to receive funding through the TDF.

The Key West system operates a fixed route service and does not want to accept the other responsibilities that come with the TDF funds.

An advantage of using the TDF is the eligibility for other resources from the State Commission for Transportation Disadvantaged. The Commission works through task teams of representatives of several state agencies, including FDOT. These teams work to minimize duplication among the agencies' efforts and to identify and provide funding to meet defined needs. These efforts often result in joint funding of projects, including funds from FDOT and a variety of social service agencies.

All services for the transportation disadvantaged are coordinated through community transportation coordinators. The Commission also designates an official planning agency, which appoints and staffs a coordinating board to oversee the work of the community transportation coordinator.

Funding for the Transportation Disadvantaged Fund comes from:

- 15% of the Block Grant funds
- $0.50 of the motor vehicle registration fee
- $1.50 surcharge on taxi rides
- contributions from member agencies.

Grants require a 10% local match. The total estimated funding for FY1995 for all state and federal aid for transportation services for the disadvantaged was reported to be $205.7 million.

Structure - Florida DOT's public transportation program is managed by a staff of 15 people in headquarters and three to four additional staff members in each of seven District offices. Policy and procedures are determined at headquarters, and operational and technical assistance is handled by the staffs in the Districts.

The Block Grant program, with its formula allocation, is handled in headquarters. The FTD program decisions involve headquarters, county governments, and district personnel. In addition to the two major programs, there are four small programs (each with $1 to $2 million annually) and flexible federal funding, for which decisions are split between headquarters and District offices. This situation appears to be in transition.

One of these smaller programs is the Service Development Program, which provides seed money for innovative practices. Under this program, the Districts submit applications for individual projects that are then ranked by Headquarters. Headquarters then allocates funds to the Districts based on these

rankings. Once the allocations are made, the Districts can decide which of these, or any other projects, it funds.

The other three small programs are for park and ride, corridor development, and commuter assistance. In this program, the District staffs propose projects to headquarters to secure individual project funding, or to receive individual District allocations and then make the project selections. In the case of flexible funding projects under ISTEA, the decisions are made by District offices in non-MPO areas and by the MPOs with the Districts in the larger urban areas. To date, the only flexible funding projects are in the urban areas.

Michigan: Overview

The state of Michigan has a long standing program of support and oversight of transit that was established over 20 years ago. The program has a significant staff and administrative budget devoted to transit, and is one of the states that are becoming more involved in oversight of transit systems.

The key elements of the state's public transportation program that may be of potential interest to Texas include:

- the organization of transit systems along municipal lines
- the level of involvement of the state in oversight and technical assistance
- breadth of funding programs.

Organization of Local Transit Systems - Local transit agencies throughout the state have taken the form either of municipal transit departments operating within the structure of local government, or of municipal transit authorities. These transit departments or authorities are strictly based on local municipal boundaries.

According to state officials, the existing patchwork of local transit departments and authorities has proven to be inefficient, costly to maintain, and make regional transit coordination difficult. In retrospect, state officials believe that the establishment of regional transit agencies may have been in the state's best long-term interest.

State Oversight and Technical Assistance - The state plays a major oversight role in some aspects of local transit operations. Program managers from the state's transit staff are assigned to specific agencies to review quarterly status reports from the local transit agencies, agency audits,

and agency compliance with federal and state regulations. This oversight role does not cross the boundary into operational decision-making, which is left to the staff of the transit agency.

Michigan also provides extensive technical assistance to local transit agencies, most of which goes to the small urban and rural transit operations. The state prepares vehicle and equipment specifications (there is a specification committee that includes local transit officials), has assisted agencies in compliance with ADA regulations, and has developed an inspection program for buses. The state also helps to initiate and manage transit studies, provides accounting assistance, and assists in transit marketing efforts. The state has also purchased computers for local transit agencies.

Breadth of Funding Programs - Michigan provides both operating and capital funding for five major classifications of transit in the state:

- transit systems in urbanized areas
- rural transit
- specialized transit for the elderly and the handicapped
- intercity bus service
- intercity rail service.

According to the AASHTO 1993 Transit Survey, Michigan was one of only two states in the country that provided some level of funding for both capital and operating support in all five transit classifications. Pennsylvania was the other. In FY1993, Michigan provided $92.7 million for urban transit, $2.3 million to support elderly and handicapped services, and $11.1 million for rural systems.

Structure - The Urban and Public Transit Bureau is one of five bureaus in Michigan DOT. Each bureau is headed by a Deputy Director. The Bureau is organized in two divisions, Freight Services and Passenger Services. In addition, there is a high speed and intercity rail working group that falls outside of these two divisions. The Passenger Services staff monitors local transit agencies and oversees intercity bus operations activities.

The Public Transit Bureau has a staff of 108. About two thirds of this staff are in Passenger Services and are responsible for regulations, local transit oversight, grant administration, and local limousine licensing. The transit programs are administered in the Lansing headquarters. The Bureau has nine transit agency project managers assigned to the highway district offices.

According to AASHTO, the state's cost of administering the public transportation program was approximately $6 million in FY 1993. The state's administrative activities are funded strictly from state revenues, not from federal funds for capital projects. All federal funds are passed through to local transit agencies.

Ohio: Overview

The state of Ohio maintains an active program of planning, oversight, and training for Section 18 recipients. While the state's program is focused on the Section 18 recipients, financial assistance is also provided to both urban and non-urban operators. The public transit staff trains all transit system managements in new funding opportunities, and provides training programs upon request of any system. The state has recently made changes to minimize the its role in administration of Section 9 grants to the small urban transit systems.

Key Features: Performance Reviews - Ohio conducts extensive management performance reviews of each Section 18 operation every three years. To avoid potential bias in the process, the staff alternates with contractors in conducting the reviews. In any six-year period, the systems are reviewed by Ohio DOT staff once and once by a contractor.

All reviews are conducted according to a handbook that includes requirements for both reviewers and system managements. Reviewers ride the routes and talk to passengers, interview local officials, and work with the managers to review performance results compared to current goals.

As part of this process, the system managements prepare new goals for both the long and short term. While some review of financial performance is included, no financial audit is conducted. Ohio DOT performs financial audits only if there is a perceived need or a request.

Changes in Section 9 Administration - Traditionally, the state transit staff has administered the Section 9 small urban program for FTA and has provided oversight in areas such as procurement, finance, and personnel procedures. As of this fiscal year, Ohio has turned the program back to FTA due to several disagreements between Ohio DOT and the FTA. Two problems were cited by the state:

- the FTA did not support the Ohio DOT on several occasions when the state identified potential problems with the procurement or financial procedures of some of the grantees
- the cost of providing the oversight of these systems.

The result of the state's action to turn the program back to FTA is that Ohio's involvement with all Section 9 recipients is now limited to grant making through the state's two programs: the formula capital and operating program and the capital discretionary program. In FY 1993, these programs amounted to some $21.5 million in formula funds and $3.3 in discretionary funds for the urban systems.

"Soft Match" for Transit - Ohio's state highway trust funds are restricted to highway projects, and the state's transit funding program is dependent on severely constrained general fund appropriations for transit projects. Ohio has used prior expenses from toll revenues as matching funds for federal programs as a means of increasing the pool of local funds. This has increased the state's ability to use the federal aid available to the state.

Ohio is one of a few of states that is taking advantage of a provision of Section 1044 of ISTEA that allows state and local toll revenues to be credited toward the state or local match of any highway or transit project. These expenditures can be used as local matching funds for either highway or transit projects. These funds have been used for several flexible funding grants for transit projects. Ohio has chosen to use them to support transit projects.

Structure - Ohio DOT has two major organizational units - Highways and Transportation Modes - each of which is headed by an Assistant Director. Administration and decision making for the state's transit program is centralized in the 20 member staff of the Division of Public Transportation within Transportation Modes. The Department is currently undergoing re-engineering, and the staff expects to delegate responsibility for transit planning to the District Offices. No decision has been made about changes in staffing levels.

According to the AASHTO Survey of State Involvement in Public Transportation, Ohio allocated $275,000 for state level administration of the public transportation program in 1993.

Oregon: Overview

The state of Oregon has successfully implemented changes in transit funding targeted toward improving rural mobility. These changes emphasize a decentralized process for determining those programs and projects that are of the most benefit to small urban and rural communities. The state's involvement in urban fixed-route systems is limited to major capital projects.

Key elements of the state's public transportation program that may be of potential interest to Texas include:

- decentralized method of allocating public transportation funding for areas under 50,000 population
- the involvement of local officials in the funding process
- the emphasis on the ODOT regions in making Surface Transportation Program (STP) decisions.

Decentralization and Role of Local Officials - ODOT has focused on forming local partnerships and decentralizing decision-making authority on transit programs for the state's small urban and rural operators. This has been accomplished by de-emphasizing the distinctions between the major sources of funds for these operators – Section 16(b)(2), Section 18, and the State Special Transportation Fund, and by directly involving local officials and the ODOT regional offices in program decisions.

Federal and the state transit funds are allocated via a two-step process. Both sets of funds are split into "formula" and "discretionary" allotments. The formula funds are allocated directly to counties. Each county manages the allocation of these funds to individual operators, and establishes priorities for project selection. The discretionary funds are allocated to ODOT regional offices for administration. The primary difference between the federal and state allocation process is the split between formula and discretionary funds – federal funds are split 50-50, whereas 75% of state funds are allocated on a formula basis.

In this decentralized process, the central office – the Public Transit section within the Transportation Development branch of the ODOT – focuses on policy and managing the overall allocation of funding so that funds are used effectively across regions.

For the discretionary funds, each ODOT regional office convenes a committee to oversee the project selection process and to make recommendations to the state. Other than a requirement to ensure that the elderly and disabled communities are represented, the state has established no mandates for the size or composition of the committees. Generally, however, local officials and operators participate in this process by serving on the committees formed by the counties and by ODOT.

The process for the allocation of Surface Transportation Program funds is similar to this model, though fewer opportunities exist for local officials and operators to influence project selection in non-MPO areas. STP funds are divided into two streams – regional allocations and statewide discretionary funds. The regional allocations are managed by the ODOT regions. In MPO areas, the MPO leads on project selection. In non-MPO areas, the ODOT regional office is responsible for

project selection, taking into account the results of public hearings. ODOT retains control over projects to be financed from the statewide fund.

Structure - ODOT has two major branches - transportation development and operations. The public transit section is within the transportation development branch and is responsible for administration, planning, policy, and long term strategic direction. This section has 12 full-time employees whose duties include public transportation as well as bicycle-pedestrian planning and demand management.

No field staff are specifically assigned to public transportation, but ODOT regional offices are involved extensively in the transit program. Regional office staff are responsible for project selection for the state and federal discretionary funds that are allocated by ODOT, and they represent the state at the MPO's.

Pennsylvania: Overview

Pennsylvania supports both intercity and community-based public transportation in small urban and rural areas through a variety of programs and funding sources. Although over 90% of the state's financial support for transit goes to the Pittsburgh and Philadelphia urban areas, the state provides financial support for small urban and rural systems.

The State also provides a subsidy to all transit operators for providing fare-free off-peak service for the state's elderly population. These funds come from the state lottery.

This summary identifies key elements of the state's public transportation program that may be of potential interest to Texas and describes the general administrative structure for public transportation in Pennsylvania. Key features described include:

- support for rural and small urban operations through both funding programs and provision of extensive technical assistance,
- long standing interest and support of intercity bus service
- free or heavily discounted transit fares for the elderly paid for by state lottery proceeds.

Rural and Small Urban Financial and Technical Support - The state has a long history of providing both financial and technical support to the small urban and rural operators. An eight person unit of the Public Transit Bureau, is assigned to work with this group of operators on a full-time basis. They provide grant application support, management, and planning expertise.

Although the amount of funding dedicated to small transit operators represents a small percentage of the total state transit budget, it provides a major share of funding for these operations. In FY 1993, state support for small urban and rural operations amounted to an average of 49% of the operating budgets for 21 transit providers, a much higher percentage than for large urban systems.

State capital assistance amounted to about one third of operating support in FY 1993. The state provides 82.5% of the non-federal share, with local agencies or governments providing 17.5%. Assuming an 80% federal share, the state provides 16.5% of the project funding with local agencies and governments required to provide 3.5%.

PennDOT has undertaken a number of initiatives to improve technical assistance to these smaller operations, primarily through making consultants available. For example, it created the Penn Train program that pulls together a consortium of consultants to provide training for staff of small transit operations in areas including vehicle maintenance, fleet dispatching, and driver training.

The state is currently starting a new technical assistance program called Technical Assistance for Rural Transit Operators. This program will provide transit consultants with a broad range of skills in transit operations to assist rural operators on a task-order basis. In addition to these two programs, rural operators with a specific operational or management problem can document their needs and request assistance from the Bureau. The Bureau staff will perform a needs assessment and will often contract with a consultant to assist the local operator.

Intercity Bus- PennDOT has provided financial support for intercity bus service since 1977 with the creation of the Intercity Bus Operating Assistance Program. Today, the state supports approximately 15 routes, which is down from 21 in the early 1980's. The state policy is to provide a minimum of one round trip per day on all routes and some support several trips. While there has been growing requests for capital assistance in the last four years, the Bureau is maintaining its long standing policy of providing only operating support.

In FY1988, the state subsidy for the intercity bus program was $962,000. By FY1993, the state increased its operating subsidy to $1.3 million. Pennsylvania has used a growing amount of the Section 18(i) funds for intercity bus support. In FY1992, the state used $300,000 in Section 18(i) funds. In FY1994, Pennsylvania used almost $1 million in Section 18 funds for this purpose. State funds are provided from a general fund appropriation that has been flat for four years.

The state supports those services which it determines are "essential" and might otherwise be abandoned.

Senior Citizens Subsidy - The Pennsylvania Lottery is a key source of funding for transit, providing $125 million in FY 1995. These funds are used exclusively to reimburse transit agencies for discounting or eliminating transit fares for senior citizens. In Pennsylvania, senior citizens ride transit free during mid-day hours on all transit systems in the state. This is a major source of ridership for some systems. The Bureau staff maintains that peak ridership on some of the smaller systems is at mid-day as a result of this fare policy.

Structure - The transit program is housed in the Public Transit Bureau of the Department of Transportation. The Public Transit Bureau director reports to the Deputy Secretary for Local and Area Transportation. This Bureau has a staff of 24 and is organized in three divisions based on funding classifications:

- The Urban Division, with a staff of eight, administers the federal Section 9 program and State assistance to the large transit operators.
- The Rural Division (eight staff members), administers the federal Section 18 program and State rural assistance programs.
- The Lottery Division (eight staff members), administers the transit subsidies for senior citizens from the State lottery.

All staff members are located in Harrisburg, and there are no field offices.

According to AASHTO, the PennDOT administrative budget for transit was $1,029,000 in FY 1993.

Virginia : Overview

Virginia is a relatively new participant in transit systems planning and financial support. It faces a growing demand for transit services and funding around the state, particularly in the urbanized area of the Northern Virginia suburbs of Washington, D.C. It has responded to the challenge through an expanded state role in transit planning and technical assistance, and through a layered and complex set of funding sources.

Key features of the State's program that are the focus of this case study are:

- the state planning and technical assistance program
- the layered approach to transportation funding
- the recently reorganized transit and rail organizational structure to respond to increasing transit program demands

Planning and Technical Assistance - Most projects are initiated by the locality with the state providing technical assistance and financial aid. The state takes a lead role on planning projects that are considered to be of regional or state significance. VDOT and the Virginia Department of Rail and Public Transit together define the project, select consultants, and oversee the planning and development process.

Examples of this are the Dulles Corridor Transit Study and the I-66 Corridor MIS Study. For smaller projects that are not of statewide or region-wide significance, the state provides project planning funds and management assistance to local operators.

The Department offers a wide range of technical assistance to transit operators and municipalities, including staff training, recruitment of transit managers, funding of student interns to work at transit agencies, development of equipment specifications, transit demand analysis, annual program reviews, and marketing and promotional support. For example, the state played a major role in the planning, construction, and initial operation of the state's new commuter rail operation, Virginia Railway Express.

Transportation Funding - The state of Virginia has been under increasing pressure from local governments and regional agencies throughout the 1980's and 1990's to provide increased operating and capital support for transit as demand for transit services continues to increase. Virginia has implemented a layered set of incremental funding strategies for meeting the needs of expanding services in the state.

Virginia has two dedicated funds for transportation: a Highway Maintenance and Operations Fund (HMO), and a Transportation Trust Fund. The Transportation Trust Fund was created in 1987 because the HMO Fund could not provide all of the funding required for highway maintenance and new projects. The HMO fund is based on four primary sources: a gasoline tax, a motor vehicles sales tax, motor vehicle registration fees, and a tax on tires. This fund has been stable for a number of years. Transit receives a 2% "set-aside" from this fund, which translates into $35 million per year.

The Transportation Trust Fund is supported mainly by a 0.75% general sales tax, but also includes fuel tax and vehicle registration fees. The funds are allocated to modes:

- 8.4% of the revenue from this tax goes to mass transit
- 4.2% goes to aviation
- 2.4% to ports

- 85% goes to highways.

This source of revenue for transit has grown modestly from $35 million in 1988 to a projected $44 million in 1996. The fund is used to support both operating aid and capital projects, except that funding for highways is restricted to capital projects.

Virginia also has also enabled localities to impose special regional taxes to pay for transit. The state enabled the Northern Virginia Transportation Commission (Arlington, Alexandria City, Fairfax and Loudoun Counties, Falls Church City, and Fairfax City) to assess a 2 cent gas tax at the retail level to fund transit. The state collects the tax and transfers it to NVTC monthly. This tax raises between $13 to $15 million per year. Currently NVTC turns this revenue over to WMATA for Metrorail.

A second district, the Potomac & Rappahanock Transportation Commission (PRTC), was recently enabled to levy a 2 cent per gallon gas tax to fund the creation and operation of Virginia Railway Express. PRTC encompasses Prince William and Stafford Counties, Fredricksburg, and Manassass. Approximately $12 million is produced from this tax per year. In this case, the state did not require that the revenue from this tax be restricted to transit programs.

As another source of funding for transit, the state collects a deed recording fee from all property transactions in the state. A portion of the revenue from this source is used to pay local bond issues that fund transit projects.

Structure - In 1992, a reorganization of state transportation programs and departments led to the creation of a separate Department of Rail and Public Transit which reports directly to the Secretary of Transportation. Prior to this reorganization, the transit and rail programs were part of the Department of Transportation, which was responsible for highways. As part of the compromise on reorganization, the planning function is split between the DOT and DRPT.

There are 30 staff persons in the Department of Rail and Public Transit in three divisions. These divisions are Rail (10 staff members), Public Transportation (12 staff members), and Administration (6 staff members). The Rail Division covers freight rail and intercity rail. The Public Transit Division covers bus operations and coordination with Metrorail. All staff members are located in Richmond. There are no transit staff members in the district offices, but there is a satellite project office in Northern Virginia that is not permanently staffed.

Washington: Overview

The State of Washington can be characterized as being in the early stages of a reorientation toward multimodal transportation system management, and shifting away from its traditional emphasis on state highway improvements. This re-direction has been encouraged by a variety of community, fiscal, and governance-related considerations within the state, and by the requirements of ISTEA. It also moves the state away from a virtually "hands off" transit policy, and toward new policies and funding programs that place much greater reliance on transit to facilitate mobility in both urban and rural areas.

The key elements of the state's public transportation program that are of potential interest to Texas include:

- shift toward multimodal planning and funding due to ISTEA and state growth management legislation
- new competitive project selection process that emphasizes local officials and the regions.

New Multimodal Emphasis - The Washington State Department of Transportation (WSDOT) is becoming increasingly involved in transit policy, planning, and funding in addition to its more limited traditional role of providing technical assistance to small urban and rural transit operators. This broader role for WSDOT has been prompted by the State's Growth Management Act of 1990, which requires concurrency between facility capacity and new development, and by ISTEA, which emphasizes a multimodal approach to transportation system planning and funding.

The emerging role for WSDOT in transit planning and funding is articulated in the state's Transportation Policy Plan, and in the public transportation component of the state's Multimodal Transportation Plan. The requirements for the policy plan and for the Multimodal Plan are expressed in state law. The state policies and objectives for public transportation are presented in the Appendix to this report.

Executive-level interest in a multimodal approach to managing the state transportation system has been the key element in the cultural re-orientation of WSDOT. Whereas the agency was historically highway-oriented, the Transportation Commission (appointed by the Governor) came to realize the fiscal and community-acceptance limitations of expanding highway capacity in the state's large urban areas. The WSDOT's planning efforts have consequently shifted to an evaluation of modal trade-offs in urban areas, coupled with improvement to rural highways to facilitate goods movement and to improve safety.

This changing role for the WSDOT can be seen in a new revenue package proposed by the Transportation Commission, which would make an additional $150 million per year available for transit-related and multimodal projects. This would double the present state contribution to such projects. These funds could be used for a wide range of activities including high capacity transit systems, high speed rail between Portland and Vancouver, British Columbia, rural mobility programs, and ADA compliance.

The source of funds for these programs would be either a refinery tax, or the existing Transportation Fund (funded from a portion of the state Motor Vehicle Excise Tax) if sufficient gas tax revenue are generated to fund highway improvements. There is a constitutional provision against use of motor fuels taxes or vehicle registration fees for anything other than highway uses.

New Project Selection Processes - The state also has established a significant new level of public involvement in decision making that is unusual among state DOT's. Today, there are three broadly based statewide project selection committees. Two of these committees allocate small urban section 9 grants, Section 16 grants, and Section 18 grants and state rural mobility funds. These grants totaled about $7 million in 1993. Representation on the transit committees includes public operators, non-profit service providers, municipalities, counties, and affected state agencies.

The third committee is responsible for several other multimodal state funds, which are awarded on a competitive basis. Awards from these programs totaled about $22 million in 1993. Awards to transit systems accounted for about 70% of the total.

This 21-member committee includes an appointee of the governor, and representatives from the WsDOT, urban transit systems, rural or small urban transit systems, ports, non-motorized transportation, mayors of large and small cities, a mayor serving on a transit board, a city engineer or public works director, a city planner, a county executive from a large county and a small county, a county executive serving on a transit board, a county public works director or engineer, a county planner, the executive director of the Transportation Improvement Board, and a representative from special needs transportation providers.

Additionally, the state suballocates a portion of the federal Surface Transportation funds to regional transportation planning organizations (RTPOs), which are organized in both rural and urbanized areas. In urbanized areas, the RTPO's are the MPOs. Thus, even in the most rural areas of the state there may be two separate committees advising WSDOT, one on transit funding and one on flexible funds.

The project-selection-by-committees process has been in place just over two years, and the results for transit are not clear. However, some officials are concerned that the process is resulting in an emphasis on small-scale projects at the expense of major rehabilitation needs. A review of all funds flexed to transit from the highway account during FY1992-94 shows a series of small scale transit projects for Washington State. It also shows is that less than 15% of the total CMAQ and STP funds potentially available during this period have been transferred to transit projects.

Structure - Transit programs are administered by the Public Transportation and Rail Division, one of five divisions reporting to the WISDOM Secretary. The other divisions include Highways and Local Programs, State Ferries, Aviation, and Freight Mobility & Economic Development.

This Division was created in 1994 to facilitate the development of a culture of multimodal management. Each of these divisions acts as an advocate for the mode it represents. Each of these modal divisions develop implementation plans to be carried out by regional offices, which oversee construction and maintenance projects and programs. The divisions and regional offices are supported by five service centers: planning and programming, finance and administration, operations, environment and engineering, and financial assistance.

Within the Public Transportation and Rail Division, activities are organized in three offices: public transportation, passenger and freight rail, and high capacity transit. Staffing for these offices is sixteen. Another four people are located in WSDOT regional offices, and are responsible for representing public transportation and rail modal interests during project implementation. These transportation coordinators also serve as liaison to local transit operators.

Wisconsin: Overview

The Wisconsin DOT provides substantial financial and technical support for the urban and rural public transportation systems in the state. It has a transportation trust fund that is technically unrestricted by mode, but has not resulted in any major shifts in modal funding since the establishment of the trust fund. A new state plan calls for increased funding for certain transit activities, but the effect of the plan on resource allocation cannot yet be determined.

The elements of the state's public transportation program that may be of potential interest to Texas include:

- an expansive technical assistance program
- flexible intermodal Transportation Trust Fund

- long range multi-modal transportation planning and public involvement process

Technical Assistance - Wisconsin DOT provides substantial and ongoing technical assistance to local transit operators. Past emphasis has been on four specific areas: transit insurance, computerization of transit management activities, paratransit planning, and transit marketing. In addition to these examples, the state provides technical support to individual small urban and rural transit operations in the form of budgeting assistance, planning, and project development.

Much of the technical assistance program planning has been done in cooperation with the Wisconsin Urban Transit Association, and has been designed to meet a manifest need that has been identified by the local transit operators.

Transit Insurance - When local transit agencies were having difficulty securing affordable liability insurance, the state and the transit association initiated a study to evaluate alternatives for insurance contracting and coverage. This led to the development of a transit operators' insurance purchasing cooperative, which substantially reduced insurance costs. This later led to the formation of "TIMCOW": the Transit Insurance Mutual Company of Wisconsin", a company that is owned and managed by the member transit systems.

Computerization - WisDOT sponsored a $500,000 study of computerization at local transit systems, at a time when only a few operators had adequate computer equipment. Based on the outcome of that study, the state embarked on a program of buying computers for operators and training of staff on computer usage and the effective integration of computers into transit operations management.

Paratransit Planning - Each transit operator is required to provide a plan for paratransit and to update the plan on an annual basis. Except in the cases of the largest operators, Wisconsin DOT staff plays a major role in the preparation and updating of these plans.

Marketing - Wisconsin DOT and the transit systems are currently involved in their third broad marketing campaign in support of public transit. The first two campaigns were statewide multimedia efforts to develop general support for transit services. Currently, the state is engaged in a more intensive media campaign targeted at Southeastern Wisconsin, an air quality non-attainment area. The focus of this campaign is to raise the profile of transit and to communicate the benefits that transit offers.

Flexible Transportation Trust Fund - Wisconsin is unusual in that its state transportation trust fund has no constitutional, administrative, or legislative proscriptions on the use of funds for transit, water, or rail. Transit must compete with all other transportation programs for funding from the trust fund during each biennial legislative budget process.

The funds for the Transportation Trust Fund come from two primary and twelve smaller sources. The two major sources are a 23.2 cent gas tax, which yielded approximately $566 million in FY1993, and vehicle registration fees, which are set at a flat $40 as of FY1993. There are approximately twelve other sources of revenue, such as a private aircraft registration fee, which collectively provide no more than 5% of the total available revenues to fund transportation programs.

At present, the state provides 42% of the operating costs of local urban and rural transit service, except in Madison and Milwaukee, where the State provides 50% of the operating expenses. Both appropriations come from the Trust Fund. State capital assistance is limited to about $700,000 for specialized transit systems.

In each biennial budget, the Governor recommends and the legislature determines the percentage of operating costs to be funded by the state. In a separate action, the legislature then approves the dollar amount to meet that percentage. In the early 1980's when this funding mechanism was first instituted, the percentage was set at 35% and it has increased incrementally over time to its current levels. In FY 1993, this formula provided urbanized transit with $60.3 million in funding. Rural transit received $3.4 million and specialized transit received $4.94 million.

Planning Process and Public Involvement - Beginning in 1993, Wisconsin DOT engaged in a state-wide process to evaluate the way transportation services and facilities are planned, funded, and maintained in the state. This long range transportation planning process is referred to as TRANSLINKS 21.

TRANSLINKS21 involved extensive outreach to the public, businesses, and transportation providers through a series of public forums and newsletters over an 18-month period. Issue papers, including several on public transit and transit related highway improvements, were circulated to a broad network.

The resulting plan emphasizes more reliance on public transit within the two major metropolitan areas, and improved intercity service between urban areas and linking rural areas to towns and

cities. It also emphasizes tests and demonstrations of new transit services, especially of a regional nature.

The TRANSLINKS 21 planning process was completed in late 1994. The results of this planning process have not yet been incorporated into agency budgets scheduled for July 1995. Until a proposed budget is submitted by the governor and passed by the legislature, the effect of this planning process on transit funding levels will be unclear.

Structure - Wisconsin DOT has five divisions reporting to the Secretary of Transportation: Highways, State Patrol, Business Management, Planning & Budget, Transportation Assistance, and the Division of Transportation Districts.

Public transportation issues are managed by the Division of Transportation Assistance. This division is divided into three bureaus: Aeronautics, Railroads, and Transit & Local Transportation Aid. Railroads handles both freight and intercity rail and has a staff of 12. Transit & Local Transportation Aid covers all community transit services and intercity bus service programs and has 18 staff members. It also has the role of distributing local transportation aid (highway & street funds) for the DOT, which involves two additional staff members.

The WisDOT public transportation activities are centralized in the Headquarters in Madison. The nine district offices have little role in the administration of transit programs. The TRANSLINKS 21 planning process was centralized in the Planning & Budget Division.

Chapter 10

Projections of Transit Activity in Texas: 1995-2015

Chapter 10

Projections of Transit Activity: 1995-2015

A major question facing TxDOT and its transit operators is what growth the industry will experience over the next several years, and how will that growth be provided for. The objective of the assessment in this chapter is to estimate the growth in transit costs, services, revenues, and ridership over the next 20 years.

The nature and extent of transit services in the State over the past 20 years has grown substantially, because of a combination of several contributing factors:

- the establishment of the MTA's in the large urban areas, and the voter approval of local option sales taxes in those areas
- the creation of the Federal operating assistance programs, which contributed to the acquisition or creation of public transit systems in many of the small urban areas of the State
- the establishment of the State's Public Transportation Fund
- the development of rural transit systems
- passage of the Americans with Disabilities Act, requiring access to transit systems for persons with disabilities.

It is unlikely that the rate of growth that has been achieved over the past 20 years will continue over the next 20 years. Among the signs that this rate will not continue are such considerations as:

- the flattening of the growth rate over the past two or three years
- transit services of some kind are now available to five of every six residents in the State
- Federal funding supporting transit, which has been a major factor in the historic expansion, is expected to be reduced significantly by the Federal government
- the fiscal constraints facing many local governments, including the large number of counties and cities that are at or near the 8.25% constitutional cap on sales tax
- the reductions in funding for social programs now being proposed in Washington, which could also reduce the funding for some of the social services to which client transportation provides access.

These and other factors resulted in the decision that historic trends in transit growth would not be a sound basis on which to project growth over the next two decades. Alternative "parametric" means of projecting the changes were developed, and are described in detail in Appendix 1A2.

Future transportation policies at the State and local level could have a favorable impact on the trends in transit ridership that could mitigate the likely reductions in Federal operating assistance and the impact of the maturation of the major historic transit markets in Texas. Among the kinds of policies that could increase ridership and the effectiveness of the systems in the State are:

- a stronger advocacy of transit in the overall transportation investment and land use development decision making process
- better promotion of transit use
- increased State and local funding for transit, at least to offset the loss of Federal operating assistance
- improved financial and operating performance of the current operations, to increase the impact of existing funding levels
- better coordination of existing services
- increased attention to such transit supporting programs as car and van pooling, park and ride facilities, HOV lanes, and related highway signage.

Growth Scenarios in These Projections

The basic approach taken in these projections in this assessment was to develop two sets of growth rates of service and ridership, and two sets of growth rates of capital requirements. The two sets of assumptions used for projecting growth in service, ridership, and operating expenses are:

- increasing the services of existing agencies in proportion to a percentage of the rate of growth of population
- adding to these projected increase by creating new services in the unserved areas of the State, and projecting increases in these services using the same factor of population growth used in the first scenario

The two sets of variations used in projecting capital requirements are:

- using the capital requirements in the Public Transportation Division's latest Master Plan for next four years, and then projecting these requirements forward for the remaining period through 2015. For this purpose, the needs statements in the Master Plan for each system were used to develop a four year average for the final 16 years of the period, and then projected to increase with the rate of change in miles for each system
- developing a new "vehicle based" capital requirements estimate using factors drawn from data of existing Texas systems to determine the future capital needs. In this case, the capital requirements were estimated using typical industry values for the relationship between the number of miles operated with the need for vehicles and facilities, combined with normative values for the useful life of the assets.

The combination of the two operating and capital scenarios results in the development of four basic sets of projections:

- Scenario 1, growth of existing services, using Master Plan capital needs
- Scenario 2, growth of existing services, using vehicle-based capital needs
- Scenario 3, growth of existing services, plus services in unserved areas, using Master Plan capital needs for existing services and vehicle-based needs for new services
- Scenario 4, growth of existing services, plus services in unserved areas, using vehicle-based capital needs for all systems.

The basic elements of these scenarios are outlined on Table 10-1.

Table 10-1
Basic Elements of
The Four Scenarios

Scenario	Current Services	Unserved Areas	TxDOT Master Plan	Vehicle Based
Scenario 1	x		x	
Scenario 2	x			x
Scenario 3	x	x	current systems	new systems
Scenario 4	x	x		all systems

The population growth rates used in this project were based on the projections developed by Texas A&M University that are in general use in the State. These estimates were also used in the Comptroller's recent "Forces for Change", as well as in TxDOT's recently completed Statewide Plan. The growth rates used in this assessment are conservative, and result in growth rates that are lower than likely population, inasmuch as they assume no net in-migration of population over the twenty-year period.

Other important elements of the methodology used in these projections include:

- the estimates of passenger trips are based on current observed rates of annual passenger trips per capita in Texas
- the estimates of vehicle miles are based on current observed rates of annual vehicle miles of service per capita
- the estimates of operating expenses are the product of the estimated annual vehicle miles and observed rates of operating costs per vehicle mile for each sector
- the estimates of fare box revenues are the product of the estimated annual passenger trips and observed rates of passenger fares per passenger trip
- the projections of operating deficits are calculated by subtracting estimated fare box revenues from the estimated operating costs.

Estimates of Growth:
Existing Systems

The figures on Table 10-2 illustrate the overall growth in transit demand and service for five of the next twenty years, as well as the capital and operating requirements to support these expanded services for each annual period. Each column represents the figures for the year noted on the heading of the column.

Table 10-2
Scenarios 1 and 2
Projection of Transit Growth
Existing Systems Only
Statewide Totals

	1996	2000	2005	2010	2015
Population	14,958,712	15,475,249	16,024,507	16,522,325	17,014,543
Passenger Trips	258,375,187	265,647,400	273,069,370	279,615,893	286,319,031
Vehicle Miles	195,659,961	202,869,025	210,218,149	216,690,378	223,261,020
Operating Cost ($)	567,252,634	588,538,612	609,895,177	628,504,646	647,585,455
Fare box Revenue ($)	103,348,478	106,183,317	109,043,039	111,516,032	114,064,598
Operating Deficit ($)	463,904,156	482,355,295	500,852,138	516,988,614	533,520,857
Capital Needs (Four Year Average)	250,147,081	259,485,423	268,918,535	277,195,114	285,636,658
Capital Needs (Vehicle Based)	125,879,262	130,448,289	135,121,704	139,239,073	143,419,741

1993 dollars

This forecast assumes that transit growth occurs only in response to population increases in areas now served by transit systems. .

Among the major changes that occur over this period in these projections, compared to 1996, are:

- population in the areas now served by transit increases by 14% and 2 million, from 15 million to 17 million
- annual passenger trips increase 11% and 28 million, from 258 million to 286 million.
- annual operating cost increases 14% and $80 million, from $567 million to $647 million 1993 dollars
- annual operating deficit increases 15% and $70 million, from $463 million to $533 million 1993 dollars
- annual capital needs increase 14%

The data on Table 10-3 illustrates the impact of adding to the growth of the existing systems the expansion of service to all areas in the State that is now not served by an existing MTA, small urban system, or rural system.

This forecast assumes the same growth in areas now served by transit systems as is illustrated on Table 10-2, and adds transit service to all areas in Texas that are not now served. The major statistical and financial differences between these projections and the baseline forecast shown on Table 10-2 include:

- population of the area served increases 20% and 3.5 million from 18 million in 1996 to 20.5 million in 2015
- annual passenger trips increase by 15 million to 301 million in 2015
- annual operating cost increases $35 million to $682 million 1993 dollars
- annual operating deficit increases $28 million to $561 million 1993 dollars
- annual capital needs increase 7% to 8% per year, because of the compound impact of increased services and increased unit costs.

Table 10-3

Scenarios 3 and 4
Continuation of Existing Systems
Plus Expansion to Unserved Areas
Statewide Totals

	1996	2000	2005	2010	2015
Population	18,038,390	18,650,073	19,317,118	19,925,307	20,516,042
Passenger Trips	271,351,716	279,055,744	287,022,404	294,085,967	301,255,978
Vehicle Miles	210,064,477	217,734,442	225,658,360	232,672,063	239,727,508
Operating Cost ($)	597,522,546	619,795,027	642,388,824	662,168,615	682,301,233
Fare box Revenue ($)	109,412,209	112,447,427	115,559,006	118,270,572	121,033,868
Operating Deficit ($)	488,110,337	507,347,600	526,829,818	543,898,043	561,267,365
Capital Needs (Four Year Average)	266,600,196	276,465,394	286,553,944	295,448,201	304,442,020
Capital Needs (Vehicle Based)	136,885,751	141,797,735	146,898,840	151,418,274	155,959,386

1993 dollars

(The numbers for the first decade in this projection are overstated in view of the fact that it is unlikely that all of these unserved areas would mobilize transit services this quickly.)

A summary of the total operating and capital costs of the four scenarios is summarized on Table 10-4. As these figures show, the operating costs of existing services increases over the 20 years by about $80 million in constant dollars. When services are added in the currently unserved areas, the costs increase by $30 million in 1996 - assuming a 100% start up - and by $35 million in 2015.

The capital costs differential between the two sets of capital costs assumptions is more marked. The projections that are based on the TxDOT's most recent Master Plan are about double the estimates based on normative relationships between service levels and capital costs. In 1996, the TxDOT based costs would be $250 million, versus $125 million for the vehicle based methodology. By

2015, the TxDOT based costs would increase to $285 million, while the vehicle based estimate would be $143 million.

Table 10-4
Summary of Costs of
The Four Scenarios
(1993 Dollars)

Scenario	1996	2005	2015
Scenario 1			
Operating Costs (Millions)	$567	$610	$647
Capital Costs	250	268	285
Total Costs	817	878	932
Scenario 2			
Operating Costs	567	610	647
Capital Costs	125	135	143
Total Costs	692	745	790
Scenario 3			
Operating Costs	597	642	682
Capital Costs	266	286	304
Total Costs	863	928	986
Scenario 4			
Operating Costs	597	642	682
Capital Costs	136	146	155
Total Costs	733	788	837

MTA Growth Projections

The MTA's carry 91% of the state's transit passengers, and incur 89% of the state's transit operating deficit. The population of these service areas is currently 52% of the population of the State that now has transit service.

Inasmuch as the MTA's represent such a large percentage of the total transit industry in the State, the projections of the growth alone is presented on Table 10-4. This table isolates the projected growth for the MTA's as a group over the 20 year period.

This forecast assumes that MTA transit growth occurs only in response to population increases in areas now served by MTA's. Unserved urbanized areas are assumed to be served by Section 9 transit systems that would develop in the urban areas in the fringes of the MTA service areas, especially in Houston and Dallas.

The overall rate of increase in population of these large metropolitan areas is projected at 14% total. Among the major changes that occur in the MTA areas over the 20 years

- population in the MTA areas now served by transit increases 1 million (14 percent) to 8.8 million
- annual passenger trips increase 24 million (10 percent) to 259 million.

- annual operating cost increases $71 million (14 percent) to $581 million (1993 dollars)
- annual operating deficit increases $63 million (15 percent) to $477 million (1993 dollars)
- annual capital needs based on the four year average are more than twice those forecast using the vehicle based method.
- annual capital needs increase by 14% in both methods.

Table 10-4
Continuation of Existing Systems
MTA Systems Only
Statewide Totals

	1996	2000	2005	2010	2015
MTA Areas Population	7,729,448	8,026,517	8,323,488	8,580,853	8,844,528
Passenger Trips	234,580,589	241,040,400	247,511,602	253,162,041	258,960,714
Vehicle Miles	156,286,624	162,196,112	168,053,813	173,115,919	178,326,911
Operating Cost	509,854,143	529,094,824	548,077,134	564,439,365	581,303,005
Fare box Revenue	95,101,570	97,659,308	100,192,956	102,358,394	104,595,913
Operating Deficit	414,752,573	431,435,516	447,884,178	462,080,971	476,707,092
Capital Needs (Four Year Average)	214,670,791	222,824,859	230,905,308	237,886,488	245,083,896
Capital Needs (Vehicle Based)	96,892,333	100,529,898	104,119,415	107,205,480	110,395,397

1993 dollars

Small Urban System
Growth Projections

The data on Table 10-5 illustrate projections of growth in the urban areas with existing transit services that currently are between 50,000 and 200,000 in population.

The first set of figures in the table shows the estimates of growth of existing systems that provide fixed-route services. Some also operate demand-responsive services. The second set of figures shows the estimates of growth in existing systems that provide demand-responsive services only.

These "Section 9" small urban systems are the second largest group of transit providers in the State. They serve 16% of the population in the State that now has transit service, carry 6% of the State's passengers, and incur 4% of the total operating deficit.

The existing fixed-route systems are much larger than the demand response systems. In 1996, the fixed route systems are estimated to carry 98% of the Section 9 passengers and incur 90% of the operating deficit of the small urban systems.

These forecasts assume that Section 9 transit growth occurs in response to population increases in areas now served by Section 9 systems, and that unserved urbanized areas will be served by Section 9 fixed-route systems and grow at a similar rate.

Table 10-5
Small Urban Area Systems
Statewide Totals

	1996	2000	2005	2010	2015
Existing Fixed Route Systems					
Population	1,525,490	1,578,825	1,640,922	1,704,342	1,764,989
Passenger Trips	15,493,831	16,040,070	16,688,507	17,301,930	17,935,967
Vehicle Miles	8,890,273	9,236,369	9,640,966	10,038,374	10,431,113
Operating Cost ($)	22,398,684	23,358,676	24,486,857	25,566,147	26,670,651
Fare box Revenue($)	6,063,901	6,281,023	6,538,711	6,781,566	7,032,932
Operating Deficit	16,334,783	17,077,653	17,948,146	18,784,581	19,637,719
Capital Needs ($) (Four Year Average)	10,843,149	11,269,892	11,770,934	12,265,537	12,752,021
Capital Needs ($) (Vehicle Based)	5,981,357	6,206,035	6,467,465	6,721,646	6,974,904
Existing Demand Response Systems					
Population	941,340	970,593	998,513	1,020,039	1,043,117
Passenger Trips	301,720	309,087	316,482	322,361	328,471
Vehicle Miles	1,244,279	1,278,340	1,311,973	1,338,293	1,366,049
Operating Cost ($)	1,994,628	2,050,307	2,105,274	2,148,456	2,194,073
Fare box Revenue ($)	127,084	130,438	133,704	136,149	138,703
Operating Deficit ($)	1,867,544	1,919,869	1,971,570	2,012,307	2,055,370
Capital Needs ($) (Four Year Average)	1,088,442	1,118,703	1,148,095	1,170,819	1,194,874
Capital Needs (Vehicle Based)	731,513	751,757	771,622	787,280	803,876

The major changes over the 20 years that can be observed in these characteristics of the small urban areas include:

- population in the areas now served by transit increases by 14% and 340,000 people, to 2.8 million
- annual passenger trips increase 16% and 2.5 million, to 18 million
- annual vehicle miles increase 16% and 1.7 million, to 11.8 million
- annual operating cost increases 18% and $4.5 million, to $29 million 1993 dollars
- annual operating deficit increases 19% and $3.5 million, to $22 million 1993 dollars
- annual capital needs based on the four year average are twice those forecast using the vehicle based method
- the two options for annual capital needs increase at about the same rate: 16% and 17%.

Expansion Into All Urban Unserved Areas

A summary of the impact of expansion of services into all unserved areas within the large and small urban areas in the State is provided on Table 10-6. These data show the increase of service into all

such currently unserved areas, beginning in 1996 - even though it is not likely that service will be created in these areas at that pace.

Table 10-6
Expansion of Service in Unserved MTA and Small Urban Areas

	1996	2000	2005	2010	2015
Population, Unserved Areas	2,030,705	2,099,379	2,186,262	2,268,902	2,343,685
Passenger Trips	12,184,230	12,596,274	13,117,572	13,613,412	14,062,110
Vehicle Miles	11,168,880	11,546,587	12,024,444	12,478,964	12,890,270
Operating Cost($)	25,688,425	26,557,150	27,656,221	28,701,619	29,647,621
Fare box Revenue ($)	5,482,904	5,668,322	5,902,908	6,126,037	6,327,950
Operating Deficit ($)	20,205,521	20,888,828	21,753,313	22,575,582	23,319,671
Capital Needs($) (Four Year Average)	12,285,769	12,701,246	13,226,888	13,726,861	14,179,298
Capital Needs ($) (Vehicle Based)	7,977,771	8,247,562	8,588,888	8,913,546	9,207,335

The population in the unserved segments of the unserved areas increased by 15%, which drives similar changes in the other statistics. The apparent latent demand for service in these areas is about 1.9 million rides per year. The operating deficit for these services would approach $24 million by 2015, in 1993 dollars, and the annual capital requirements would reach from $9 million to $14 million.

Estimated Growth of Section 18 Rural Systems

The Section 18 rural systems are a relatively small part of the statistics of the Texas transit program, but they serve a relatively large portion of the geographic area of the State. They serve about 3% of the state's population, carry about 2% of the state's passengers, and incur 4% of the state's total operating deficit. The projected patterns for the Section 18 rural transit systems are illustrated on Table 10-7.

This forecast assumes that Section 18 transit growth occurs in response to population increases in areas now served by Section 18 systems and that unserved rural areas will be served by new or existing Section 18 systems.

The major changes that can be observed among the existing Section 18 systems over this period include:

- population increases 600,000 to 5.4 million
- annual passenger trips increase 570,000 to 4.7 million.
- annual operating cost increases $3 million to $25 million (1993 dollars)
- annual operating deficit increases $2.7 million to $24 million (1993 dollars)
- annual capital needs increase $2 million in both methods

Table 10-7
Section 18 Systems Projections
Statewide Totals

	1996	2000	2005	2010	2015
Existing Systems					
Population	4,762,434	4,899,314	5,061,584	5,217,091	5,361,909
Passenger Trips	4,174,908	4,304,028	4,457,550	4,605,396	4,744,478
Vehicle Miles	16,557,796	17,047,203	17,631,463	18,190,301	18,714,169
Operating Cost ($)	22,809,664	23,493,560	24,307,645	25,088,655	25,821,812
Fare box Revenue ($)	2,055,923	2,112,548	2,177,668	2,239,923	2,297,050
Operating Deficit	20,753,741	21,381,012	22,129,977	22,848,732	23,524,762
Capital Needs ($) (Four Year Average)	15,809,296	16,274,258	16,810,438	17,327,700	17,807,972
Capital Needs ($) (Vehicle Based)	17,087,168	17,597,820	18,208,616	18,795,198	19,346,230
Unserved Areas					
Population	1,048,973	1,075,445	1,106,349	1,134,080	1,157,814
Passenger Trips	792,299	812,070	835,462	856,662	874,837
Vehicle Miles	3,235,636	3,318,830	3,415,767	3,502,721	3,576,218
Operating Cost ($)	4,581,487	4,699,265	4,837,426	4,962,350	5,068,157
Fare box Revenue ($)	580,827	595,788	613,059	628,503	641,320
Operating Deficit	4,000,660	4,103,477	4,224,367	4,333,847	4,426,837
Capital Needs ($) (Four Year Average)	4,167,346	4,278,725	4,408,521	4,526,226	4,626,064
Capital Needs ($) (Vehicle Based)	3,028,718	3,101,884	3,188,248	3,265,655	3,332,310

Expansion of Section 18 services into the unserved rural areas would serve a population that is projected to grow 10% to 1.2 million by 2015. This population has the potential for making just under 900,000 annual transit trips. The costs of providing these services would reach $5 million annually by 2015, in addition to as much as $4.6 million annual capital expenses.

Table 10-8
Section 16 Systems
Statewide Totals

	1996	2000	2005	2010	2015
Population	18,038,391	18,650,073	19,317,118	19,925,307	20,516,042
Passenger Trips	3,824,139	3,953,815	4,095,229	4,224,165	4,349,401
Vehicle Miles	12,680,989	13,111,001	13,579,934	14,007,491	14,422,778
Operating Cost ($)	10,195,515	10,541,245	10,918,267	11,262,023	11,595,914
Fare box Revenue (4$)	0				
Operating Deficit ($)	10,195,515	10,541,245	10,918,267	11,262,023	11,595,914
Capital Needs ($) (Four Year Average)	7,735,403	7,997,711	8,283,760	8,544,570	8,797,895
Capital Needs ($) (Vehicle Based)	5,186,891	5,362,779	5,554,586	5,729,469	5,899,334

Projected Expansion in Client Transit Systems

A summary of the projected growth in services operated under the "Section 16" program is provided on Table 10-8. These systems operate in both the urban and rural areas of the State, and are generally limited to use by handicapped and elderly populations.

This forecast assumes that Section 16 transit growth occurs in proportion to the increase in the general population. The projected increase in Texas population between 1996 and 2015 that is used in this project is 14%, from 18 million in 1986 to 20.5 million in 2015. Therefore, Section 16 service and ridership are forecast to increase by 14%.

Cost Projections Adjusted for Inflation and Federal Funding Changes

The figures shown on Table 10-9 show the "unfunded" financial requirements of the industry. These estimates are built on the prior projections of operating and capital costs and revenues, and the resulting systemwide deficit.

Table 10-9
TxDOT Transit Study
Estimate of Funding Needs
Using Various Assumptions
(Millions of Dollars)

Case	1996	1997	1998	1999	2000	1996-2000	1996-2015
Case 1A	$18.1	$26.0	$34.2	$42.4	$50.8	$171.5	$1,515.0
Case 2A	21.6	33.4	45.7	58.4	71.6	230.7	2,415.3
Case 3A	13.6	17.0	20.6	24.3	28.2	103.7	1,108.4
Case 4B	17.1	24.4	32.1	40.3	49.1	162.9	2,008.7
Case 1B	$24.6	$32.8	$41.2	$49.8	$58.5	$207.0	$1,784.8
Case 2B	28.7	41.3	54.5	68.3	82.6	275.3	2,755.7
Case 3B	20.1	23.8	27.7	31.7	35.9	139.2	1,378.2
Case 4B	24.1	32.3	41.0	50.2	60.0	207.6	2,349.1

The figures on Table 10-9 reflect three changes to the projections developed on the preceding tables:

- all costs are changed to reflect an assumed annual inflation rate of 3.5%
- Federal operating assistance is assumed to decline by 20% per year beginning 1996
- the rate of implementation of service into the unserved areas is slowed to 10% per year, with all services implemented by the end of the 10th year.

The "A" cases on Table 10-9 show the unfunded needs to support the four scenarios for the next five years, as well as the cumulative need for the five year and 20 year periods, at current Federal operating assistance levels

The "B" cases show the impact on these scenarios of reducing Federal operating assistance in five years by 20% per year beginning in 1996.

As these estimates suggest, the unfunded requirements to support the four scenarios over the next five years range from a low of $104 million to a high of $2.4 million, assuming current levels of Federal assistance. The unfunded requirements for the four scenarios for the next five years increase by the reduced level of Federal assistance for the "B" set of scenarios, with a low of $139 million and a high of $275 million.

Chapter 11

Impact of Changes in Demographics and Technology on Transit Ridership

Chapter 11

Impact of Changes in Demographics and Technology on Transit Ridership

Introduction

The accuracy of projections of transit demand over a 20-year period are subject to a wide range of unknowns. For example, the approval of the North American Free Trade Agreement has already had a measurable impact on transportation in Texas - yet the unexpected devaluation of the peso is expected to cost as many as 75,000 jobs.

The projections in Chapter 2 of this report laid out the potential demand for transit assuming growth rates for each economic region based on a particular set of common circumstances and assumptions. This chapter looks at the possible impact of two categories of variables that could change the demand for transit over the next two decades: changes in demographics and changes in technology.

Potential Impacts of Changes in Technology on Transit Demand

As information processing and communications technologies continue to grow in power and shrink in cost, the range of commercially-viable application of these technologies becomes ever larger. Few aspects of our lives will go untouched by this phenomenon, and transportation is no exception.

The opportunities presented by these technologies are of great interest to transportation professionals, for they have the potential to improve travel in several ways:

- by eliminating the need to make certain trips
- by making selection of a travel means or route more efficient
- by enabling more efficient management of available highway space
- by more closely relating highway usage to highway cost.

This section of the report presents a summary of the technologies that are relevant to information-based transportation improvements, and evaluates the impact of specific types of improvements on transit use.

Generally, technological improvements for transportation are likely to provide more benefit to highway users than to transit users. This reflects the relative strength of these two consumer markets. Nonetheless, certain technological improvements - such as ease of access to transit information – are of benefit to transit users and will encourage a broader base of occasional riders.

In all, factors other than technology will have much greater leverage on transit ridership than will technology alone, as is the case today. Land use, service quality, service frequency, travel time, and personal security will continue to be the key factors influencing transit ridership. Transit managers should look to the emerging information technologies as useful tools for moderate improvements to transit demand and supply.

Relevant Technologies

The technological improvements that are envisioned to affect transportation belong to one or more of the following categories: computers, communications, or data acquisition. Each of these types of technologies are constantly improving their performance-to-cost ratio, and are becoming more adaptable to operating in a "merged" environment. Consequently, the market for their application is expanding rapidly.

Computers arguably have the best trend in performance-to-price ratio of any man-made product, ever. In the last ten years, a desktop computer's processing speed has improved by more than an order of magnitude, increasing to over 100mhz from 8mhz. At the same time, their price has fallen by more than half.

This improvement in the performance-to-cost ratio greatly expands the market for potential applications, not only because of hardware considerations (more complex tasks can be solved per unit of time), but also because the commercial viability of software is improved by the broader base of potential customers. Also, the higher volume of computers produced for the mass market yields manufacturing economies which allow purpose-built computers to be sold at a reasonable price.

One example are low-voltage computers used in personal digital assistants, such as Apple's Newton, and other remote computing applications, such as real-time interpretation of traffic slowdowns for incidence response.

Central to the widespread use of computers are improvements to the communications network – the devices used to transmit information from one computer to another. Two types of improvements to these networks are particularly notable. First, one is able today to transmit a greater volume of information per unit of time than previously. This minimizes delays in "real time" communications (e.g., where two or more people are simultaneously sharing information) and provides enough capacity for very demanding applications, such as video, to be transmitted over a fairly wide network.

Second, new types of communications links are becoming commercially viable. Cellular technology, already widely used for voice communications, is being increasingly used for data communications as well. For example, one can send and receive faxes via a cellular modem. Also, new high-speed digital networks are providing the throughput and flexibility required for multi-media communications to the office and home.

The recent US Supreme Court case allowing regional telephone companies to enter what had previously been the cable access television (CATV) market should hasten the widespread application of digital transmission.

Data acquisition devices likewise are becoming more efficient and widespread, owing to the improvements noted above in computers and communications networks. These devices include inductance coils (for traffic counts), video imaging, and pressure and motion sensors, all of which may be applied to a wide variety of transportation uses.

Also, hand-held devices are being developed to capture information from the Global Positioning System (GPS), which can be used to identify a vehicle's location or the location of field personnel. The GPS is a system of satellites in fixed orbit, each of which transmits a unique radio signal, allowing precise latitude and longitude to be determined via triangulation. Because the GPS is world wide, there is a huge potential customer base and accordingly low-cost GPS applications should proliferate.

The merger of these technologies is central to many of the transportation improvements that are contemplated for the near future. Because the commercial viability of these technologies, as well personal and institutional acceptance, is not fully developed, their implications for travel cannot be precisely evaluated. Nonetheless, sufficient information exists to broadly gauge their impact.

Trip Substitution

Trip substitution, as used here, refers to the use of some electronic media to accomplish the same purpose as could have been accomplished by physical travel to a particular place. Opportunities for trip substitution are thus constrained by the availability of suitable electronic media. An individual's decision to use electronic media – if available – in lieu of physical travel, is affected by a variety of behavioral and situations which further constrain the market to well below what is technically achievable.

Telecommuting – Telecommuting refers to temporarily working in a place other than one's normal work location - typically in one's home. Rather than commuting to work, one would complete a day's

tasks at home (probably on a computer), and communicate with co-workers via a communications network, using voice, fax, data, or video transmission, or some combination thereof. Closely linked to the concept of telecommuting is the "virtual office", whereby one may be employed outside the home but have no fixed office location.

Companies with field sales representatives, for example, are looking to the virtual office as a means to increase responsiveness to customers and to minimize the cost of office space. Telecommunications technologies are central to both telecommuting and the virtual office.

The potential impact of telecommuting on travel, particularly in urban areas, has been of keen interest to transportation planners, given the effect of peak-hour commuting on transportation facility design. Opinion varies among the researchers in this field, however, regarding the maximum percentage of trips that could be avoided.

In a case study of telecommuting conducted in the Dallas metropolitan area, researchers theorized that a maximum of 10% of peak period commuter trips could be replaced by telecommuting. This was based on 32% of employees participating in telecommuting programs, at an average of 1.8 days per week, with roughly 85% of commute trips avoided by those participants. However, this estimate does not adjust for differences among businesses regarding the types of employees whose job duties are amenable to telecommuting, and accordingly is probably overstated.

In another telecommuting study among California state workers, reduction in vehicle miles traveled (VMT) was estimated to be only 1% for work trips and less than 0.5% for all trips. As in the Dallas area study, there was a substantial reduction in trips and VMT for individuals participating in the program (i.e., 90% in Dallas and 75% in California). But when the results were expanded to the population as a whole, the effect of telecommuting on trip reduction was found to be rather small.

The potential effect of telecommuting on transit ridership is likely to be negligible, if only because of its small effect on travel as a whole. In the Dallas study, less than 1% of the participants traveled to work via transit *before* the telecommuting project commenced. Because the sample size was small (130 employees at a single location), it is unclear whether low transit use was the result of the employment characteristics of the workers who could participate in the program, or the location of the job site, or simply a lack of preference for transit.

Other Forms Of Trip Substitution – Some non-work trips are amenable to substitution via electronic media, as was the case with telecommuting. These include tele-shopping (an electronic

form of catalog shopping), distance learning (a more sophisticated form of correspondence courses), medical diagnostics, and various forms of electronic recreation. Since these trips are less prominent than work trips in general, and since telecommuting has been seen to have a marginal effect on trip reduction, one can deduce that the ability of telecommunications to effect meaningful trip reductions for these other types of trips is very small indeed.

In summary, the market for trip substitution appears to be relatively small. It is unclear whether the reduction in trips would draw proportionately or disproportionately from transit, given the small sample size of the case studies. Because the overall impact on travel is likely to be small, it is equally likely that its impact on transit ridership would be negligible.

Travel Information

Improved travel information is one of the key attributes of the ITS as envisioned by the U. S. Department of Transportation. For highway users, this means better access to information on current traffic conditions and the ability to determine alternative routes for a particular trip. For transit users, this means the ability to obtain current information on transit schedules, and the ability to automatically obtain routing information. Both strategies involve the application of vehicle location systems, geographic information systems (GIS), and telecommunications.

Improved travel information for highway users is likely to encourage vehicular use, and could contribute to a reduction in transit mode share.

Improved travel information for transit is likely to have a positive effect on ridership, since schedules and transit route patterns generally are not well understood by the occasional user or new residents.

Traffic Conditions And Routing Information – Several state departments of transportation have installed traffic monitoring systems that provide real-time traffic counts and enable quick detection of highway incidents that impede traffic flow. The idea expressed in the ITS strategic plan is to extend this concept, so that traffic condition data is collected from more points (e.g., all principal arterials) and made available to the public electronically. Private vendors could then develop in-vehicle systems (or desktop systems) which integrate this information with GPS information and computerized maps to develop real-time routing options.

This concept is in fact already being tested. A national car rental company is test-marketing an in-vehicle navigation system in Los Angeles. The user enters a destination or series of destinations, working down via menus from the destination city to the exact street address. The navigation system,

which computes the vehicle location from the GPS, determines the most efficient route for the itinerary.

A street map is displayed on an LCD panel, and the car's position is highlighted. Turns are announced in advance, based on the system's knowledge of the vehicle's location, with a large arrow and a thermometer-type "countdown" noting the time before the turn must be made. The system even has the intelligence to know if a turn has been missed, and can recalculate the route needed to return to the itinerary.

In the near future, it is conceivable that such a device would be widely available and could be bundled with some form of electronic yellow pages so that other destinations of interest could be available to the driver or a passenger while the vehicle is mobile.

These conveniences would tend to encourage vehicular travel, all other factors being equal, and thus encourage an erosion in transit market share. Because this technology is relatively new, its effect is likely to occur later rather than earlier.

Transit Routes & Schedules – Transit information has traditionally been limited to printed timetables and maps, augmented by customer information centers which provide customized trip information to callers. Some transit systems have implemented automated schedule systems whereby one can call in to obtain information on the next scheduled bus at a particular location.

The scheme envisioned in the ITS strategic plan is to take this information several steps farther, and to make the information easier to use. One concept is to integrate vehicle location information with schedule information so that potential riders can more reliably determine when a vehicle would arrive at a particular stop, based on real-time conditions. Another concept is to illustrate this information graphically – the bus of interest moving on an electronic map, displayed via a public network. This approach could be integrated with trip-planning software which allows a potential rider to determine which routes to take, where to transfer, and the time it would take to complete the trip.

At least one transit system (King County Metro in Seattle, Washington) is testing a graphical trip planning application on a bulletin-board system. Callers to the bulletin board system see a map of transit routes and streets in a section of the county, and can visually plan a trip by entering origin and destination information.

More accessible and more readily understood transit schedule and routing information is likely to have a positive effect on ridership, all other factors being equal. It is likely to be of most use to the occasional rider, and to new residents who have limited familiarity with their local transit system.

Traffic Management

Improved traffic management is a key attribute of the ITS, and is intended to improve traffic flow and throughput. This is envisioned to be accomplished by new systems which monitor current traffic conditions and adjust lane usage, speed limits, traffic signals, and roadway ramp access based on actual conditions rather than historical patterns. The chief technical issue in achieving this vision is the integration of these various channels of information, and the development of decision rules for adjusting traffic flow.

An extension of this concept, but one that appears to be somewhat more distant, is the automated highway. This strategy would integrate roadside systems with in-vehicle systems to actively manage each vehicle's speed, lane position, and braking on selected high-capacity roadways. The ITS strategic plan contemplates a 300% improvement in vehicular capacity on roadways equipped with this technology.

Either of these programs would tend to have a negative effect on transit market share since they would improve the relative speed and convenience of vehicular travel.

Electronic Toll Collection

Electronic toll collection technology provides a means of charging tolls while avoiding the costs and vehicle delays associated with the physical collection of cash. It involves the use of a transponder, barcode, or other electronic "tag" on-board a vehicle, and a corresponding piece of roadside equipment that can uniquely identify the vehicle for billing purposes. The toll may vary according to time of day, type of vehicle, and distance traveled. Tolls may be prepaid, or billed to some intermediary, such as a credit card company.

Electronic toll collection already exists in the U.S. New toll roads in California and Virginia, the North Tollway in Dallas, and several airport access roads use electronic toll collection. This technology is also widespread in Europe (e.g., the toll roads managed by Cofiroute outside of Paris).

A more expansive application of electronic tolls in the United States is being driven by two important trends – privatization, and the declining utility of the motor fuels tax as a surrogate for a more precise highway user fee. Privatization of some highways is being considered by many states as a means to

replace or expand costly, high-use facilities. These highway improvements are typically financed by tolls, at least in part.

Electronic toll collection serves both the investor in the project, because collection is more efficient, and the users of the facility, because no queues form at the electronic toll gates. Consideration of electronic tolls goes beyond privatization projects, however. The motor fuels tax, traditionally the tax of choice for highway financing, may be approaching its limits. Fuel efficiency is constantly improving, and has in and of itself contributed to a 50% decrease in fuel tax per VMT since 1970.

A recent report to the National Cooperative Highway Research Program documented these issues, and recommended the use of VMT-based charges for highway financing. Integration of this concept with electronic toll collection provides an efficient and equitable means of allocating roadway charges to users. Tolls could be priced higher, for example, during peak periods (because peak capacity has a higher marginal cost) and on roadways that are more expensive to construct and maintain.

Expanded use of electronic tolls could have a slight positive effect on transit ridership. Because price elasticities for tolls would probably be similar to that for motor fuel cost (about -0.02), the tolls would have to be fairly high to encourage a mode shift of any material amount.

In summary, the impact of technology on transit ridership depends on the travel markets to which the technology will be applied, and the relative competitiveness of transit in those travel markets. All other factors being equal, new technology will probably have a more beneficial effect on highway users than on transit users, reflecting the commercial market strength of the former. Nonetheless, transit can benefit from technologies that facilitate distribution of customer information, and may also benefit from roadway pricing which could divert some travelers to transit.

Impact Of Demographic Trends

Conventional wisdom in transportation planning holds that transit ridership is related to demographic characteristics of the population in a given service area. A series of evaluations was conducted to attempt to isolate any statistical relationship between demographics and transit ridership in Texas, with special attention to the rural systems.

Using regression analysis, the major demographic factors of the 1993 ridership for the 40 existing Section 18 operators were isolated. The 40 Section 18 operators cover parts of Texas that range from highly rural areas to parts of Texas that are suburban as well as rural. The demographic profiles are

based on 1990 census data for all residents of counties served by each Section 18 operators. The following observations can be made:

- The number of households with no automobile, the number of residents living below the poverty line, and the number of residents with a workforce disability (unable to work) are not significant predictors of rural transit ridership.
- Population density and median household income are highly correlated variables. When densities are low, median household income is low. When predicting ridership, only one of the two variables is needed. With correlated variables, it can be difficult to determine which one may be *causing* the variability in ridership and which variable may be simply *correlated* with ridership.
- The size of the population in an area is positively and significantly related to ridership.
- The number of elderly residents in a rural area is negatively related to ridership. While seniors may have a need for transit services, this negative correlation may reflect the fact that seniors make less trips (using any mode) than younger or working residents. Hence, the more elderly the population, the lower the utilization on a rural transit system. The positive impact of the elderly on ridership may also be already captured with the median household income variable, since many of the rural elderly have lower median household incomes.
- The number of minority residents is negatively related to ridership. The positive impact of minority residents on ridership may also be already captured with the median household income variable, since many rural minority residents have lower median incomes.
- Using population, the number of minority residents, the number of elderly residents, and either density or median household income as independent variables to predict rural ridership, about 75% of the variability in ridership can be explained. For a data set that is subject to a number of non-demographic factors that affect ridership as well (e.g. funding levels), an R-square of 75% is quite high.
- Most of the explanatory power of the equation is from the population and density/household income variables; the minority and elderly variables are statistically significant but add less to the overall power of the equation.

These results point to the general conclusion that rural ridership is more a function of population levels of the general public that of any special groups such as the elderly, disabled, or minority populations. Therefore, the growth in overall population will likely be the primary driving factor in future rural transit growth. Only to the extent that an aging rural population or an increasingly minority rural population significantly effects median household income levels will these expected future trends have an impact on ridership.

If the same analysis is repeated for Section 18 operators that operate exclusively in highly rural areas (i.e. exclude operators whose service areas abut large urban areas), the results are very much the same. The only variables that are significant are again population and either density or median household income.

The R-square is lower (less than 50%), indicating that highly rural ridership is the most difficult to predict with purely demographic factors. This may result from lower service coverage (i.e. ridership is constrained by the availability of service and thus is not reflecting transit *demand*) in highly rural areas.

Important Demographic Factors for Small Urban System Ridership

Regression analysis was also used to isolate the demographic factors that influence ridership on small urban, predominantly fixed-route transit systems. Due to the greater homogeneity of the fixed-route systems in types, levels, and geographic span of the service offered (as compared to the rural operators), the factors influencing small urban transit ridership are clearer. The 1993 ridership on the thirteen municipal transit systems that operate fixed-route service were correlated with the 1990 census demographic profiles of the residents in those communities. The following observations can be made:

- The population density and the number of households with no automobile are not significant predictors of small urban transit ridership.
- The total population and the number of minority residents in a city are significantly positively related to ridership. In fact, these two variables account for over 80% of the variability in ridership among the systems. The number of minority residents is significant, even when holding household income constant. Ethnicity is not a surrogate for income.
- The number of elderly residents, the median household income, and the number of residents below the poverty level are all significantly negatively related to ridership. Together, they explain another 15% of the variability in ridership, for a total R-square of 95%.
- The negative relationship of the number of elderly residents and the number of residents below the poverty level indicates the importance of work trips to small urban transit ridership. While lower-income residents tend to use transit (hence, the negative relationship between median household income and ridership), these low-income residents are generally employed. Those living below the poverty line may represent the unemployed, who do not utilize transit regularly.

These results indicate that demographic changes will have far more effect on small urban transit ridership than on rural ridership. If the minority population of Texas cities continue to increase, as they

did between 1980 and 1990, and if household incomes decline, transit ridership will rise more rapidly than population. The aging of the population may actually decrease the demands on small urban transit slightly, as older patrons drop out of the work force, but this effect is not as strong as the impact of population growth and minority growth.

Chapter 12

Funding Needs and Foreseeable Funding

Chapter 12

Funding Needs and Foreseeable Funding

Introduction

A number of subtasks in this project deal with some aspect of the expected levels of revenues and expenses that might occur over the next 20 years in the transit industry sectors in Texas that TxDOT funds. This chapter combines the results of the assessments of future operating and capital expenses "needs", with a review of the "foreseeable" revenues, under a series of scenarios. The result is a set of four pro forma projections of revenues expenses, and estimates of funding requirements for two periods: 1996-2000, and 1996-2015.

The four scenarios that are used in this chapter are based on as those used in Chapter 10:

- Scenario 1: existing services growing at the same rate as the growth in population of the areas now served, with capital expenses at the rate estimated in the most recent TxDOT Master Plan
- Scenario 2: the same service assumptions as those used in scenario 1, but with capital expenses based on growth in fleet size proportionate to ridership and service growth
- Scenario 3: the same service assumptions used in the previous scenarios, plus initiation of new service into unserved areas, with capital expenses at the rate estimated in the most recent TxDOT Master Plan
- Scenario 4: the same service assumptions as those used in scenario 3, but with capital expenses based on growth in the fleet size proportionate to ridership and service growth.

Table 12-1
Basic Elements of
The Four Scenarios

Scenario	Current Services	Unserved Areas	TxDOT Master Plan	Vehicle Based
Scenario 1	x		x	
Scenario 2	x			x
Scenario 3	x	x	current systems	new systems
Scenario 4	x	x		all systems

The basic elements of these scenarios are summarized on Table 12-1. These basic scenarios which were developed in the projections in the earlier chapters have been revised in two ways:

- cost estimates in this chapter have been adjusted for inflation at the rate of 3.5% per year,

which is virtually the same as the rate of growth that the State Comptroller has projected for the Gross State Product

- the pace of initiation of transit services in the unserved areas has been changed in these estimates to an implementation schedule which is less ambitious. In the scenarios in this chapter, the service in the unserved areas is projected to be implemented at the rate of 10% a year over ten years.

In addition, a new set of optional futures were developed that show the impact on funding requirements of the elimination of Federal transit formula assistance to urban and rural systems over five years beginning in 1996.

Current Revenues by Sector and Source: 1993

Revenues for the systems that are supported by TxDOT's transit program follow a basic pattern. All sectors use a combination of Federal, state, and local operating and capital subsidies, in addition to revenues derived from operations. Most of the Federal funding is provided by the Federal Transit Administration, although there is a measurable amount of social service agency funding for "client" users of the specialized transit operations. These funds are usually reported as "local" funds in TxDOT an agency reports. They generally are provided to the local agencies by a Federal agency, without involvement by TxDOT.

Table 12-2
Funding By Source and Sector
For Projects Approved in Calendar 1993

Recipients	Capital	Operating	Studies	Sect 16	Sect 18	Total
Federal						
Urban Systems	$54,250,099	$32,018,894	$1,203,131	$0	$0	$87,472,124
MPO's	0	0	2,063,540	0	580,000	$2,643,540
Section 16 operators	0	0	0	2,244,353	0	$2,244,353
Section 18 Operators	0	0	0	0	5,095,937	$5,095,937
TxDOT	0	0	524,445	249,373	450,000	$1,223,818
Other Agencies	429,549	0	0	0	0	$429,549
Total Federal	54,679,648	32,018,894	3,791,116	2,493,726	6,125,937	$99,109,321
State Funding	267,053	2,893,290	803,389	62,343	15,081,442	$19,107,517
Local Funding	12,211,507	53,048,807	144,390	561,089	5,514,880	$71,480,673
Total Funding	67,158,208	87,960,991	4,738,895	3,117,158	26,722,259	$189,697,511

Source: TxDOT

A summary of the sources of revenues in calendar year 1993 for each sector is illustrated on Table 12-2. These funds include aid to the MTA's as well as to the smaller urban and rural systems in the state.

As the data on this table indicate, the distribution of funding by source for calendar year 1993 reflects the heavy reliance on funding from the Federal government in the three major sectors funded by TxDOT: small urban, rural, and Section 16 operators.

Foreseeable Funding

The predictability of funding sources at this point in transportation funding history in general and transit funding in particular has to be at its lowest point in years. The current transit funding programs have been in place in a more or less consistent form for over twenty years, since the inception of Federal transit operating subsidies and the current Federal matching ratios were established in 1973. The recent reductions in Federal assistance appropriations, and the pending changes in the Federal programs being proposed by the Congress and the Administration, place all of the historic assumptions about Federal transit funding in question.

The predictability of each of the current sources of funds is complicated by some element of the current policy changes and budget problems at every level of government. These changes, and additional changes that are likely to occur in the coming year, make predictions of revenues even more speculative than usual:

- each of the sources of Federal transportation funding is currently being reviewed or revised as a part of the congressional effort to balance the Federal budget or as part of the Administration's reorganization of DOT programs
- state funding in Texas has not followed a particular pattern from biennium to biennium that can be used reliably as a basis for predicting future state funding
- local funding is subject to increasing competition for funding for other programs of local governments, which will in turn may be influenced by reductions in Federal funding for other programs administered at the municipal level
- Federal social service agency funding that is currently used as "local match" for some transit programs is subject to reduction under the on-going Federal budget reductions, some of which are focused on the social service programs that provide client service funding
- operating revenues from fares and other sources depend on the predictability of ridership, which could suffer if the reduction of other Federal funding results in reductions in operations for cost saving purposes.

Adding to the difficulty of developing a logical and sound approach to estimating future operating revenues is the pattern of historic changes in the growth of the industry in Texas over the past two decades. Each of the industry sectors experienced exceptional growth in different parts of the past two decades. Much of the difference in these growth rates can be correlated with state and Federal

funding or regulations.

Six major milestones have motivated spurts in growth in transit expenses and funding in Texas:

- the 1973 Federal transit legislation that created operating subsidies for urban transit systems, and increased the Federal share of transit capital projects from 66 2/3 % to 80%
- the creation of Section 16 and Section 18 of the Urban Mass Transportation Act, which made rural and specialized transit agencies eligible for Federal transit aid
- the enactment of the legislation in Texas that authorized the creation of MTA's and permitted local option sales tax referenda for these organizations
- the creation of the Texas Public Transportation Fund that established the state's transit funding program
- the elimination of the MTA's eligibility for PTF funds
- the passage of the national Americans with Disabilities Act that requires all transit services to be accessible to the handicapped
- the Intermodal Surface Transportation Efficiency Act of 1991, which allowed use of Federal highway funds for public transit projects.

Each of these milestones created a new reality for one or more of the sectors of transit organizations in Texas, and each has contributed to changes in the growth of some combination of capital and operating

In short, any effort to estimate future revenues by sector and source can only be done on a parametric basis, using assumptions as what might happen to funding at the different levels under different assumptions.

Federal Funding Futures

Major changes in Federal transit funding are expected to occur this year: overall funding will be reduced from recent levels, and the operating subsidy program will be reduced or eliminated. In addition, it is possible that the maximum Federal share of transit capital projects could be reduced from 80% to as low as 50%.

The elimination of operating subsidies may be achieved through an outright elimination of this program over a period of three to five years. The elimination of operating subsidies may also be accomplished through the mechanism of providing block grants to states at funding levels lower than current levels and prohibiting or restricting the use of block grant funds for operating assistance.

The Federal operating subsidy program has been the seed that grew into many of the current transit operations in Texas and elsewhere. Many local governments have opted over the years to take advantage of this funding program and start a new transit system, rather than let the funds lapse or go elsewhere. These funds are an important part of the financial foundation for many local transit operations in small urban and rural areas in Texas.

The reduction or elimination of these funds would likely lead to one of several results:

- that local services will have to be reduced substantially
- that some combination of local or state funding will have to be increased to take their place
- some combination of service reduction and new funding.

If the Federal transit funds are put in one undifferentiated block grant to states, the burden of developing allocations to local agencies and programs will presumably fall in whole or in part to the states. In effect, this would result in all Federal transit funds coming to the state to be distributed at the discretion of the state. The allocation of these funds is a potential future role for TxDOT.

There is also some speculation among transit lobbyists in Washington that all highway and transit funds will be allocated to states in a single block grant for each state, with minimal restrictions on how they can be allocated, even between highways and transit. This would further test TxDOT's approach to balancing the needs of the highway and transit programs in the State.

State Funding

The State has been in the transit funding business for over 20 years. The pattern of state funding has varied over the years, while following the basic organization of programs that mirrors the Federal program.

The major urban areas are funded through local option sales taxes, and receive no funding from the State. The proceeds of these taxes go directly to the operating agencies, and can be used for any transit or transit related purpose. The financial capacity of these agencies is currently strong, but could suffer to various extents if Federal aid was reduced or eliminated.

Texas began to provide assistance to transit outside of the major urban areas in 1975. The pattern of assistance, summarized on Table 12-3, has varied significantly over these two decades. As the figures on Table 12-3 show, The level of funding has varied from a negative $30 million in the early 1980's to a positive $42.2 million for the coming biennium.

Table 12-3
State Funding for Transit: 1975-1995
Amounts Appropriated for the
Public Transportation Fund

		Sources of State Transit Fund				
Year	PTF Total	General Fund	Highway Fund 6	Oil Over-Charge	3 Year Rolling Average	Percent Change in Average
1975	$1,024	$1,024				
1976-77	15,000	15,000				
1978-79	15,000	15,000			10,341	
1980-81	25,000	25,000			18,333	177.3%
1981-83	-30,000	-30,000			3,333	18.2%
1984-85	21,500	21,500			5,500	165.0%
1986-87	0	0			-2,833	-51.5%
1988-89	0	0			7,167	-252.9%
1990-91	9,600		9,600		3,200	44.7%
1992-93	10,000		10,000		6,533	204.2%
1994-95	35,000	6,000	20,000	9,000	18,200	278.6%
1996-97	42,200				29,000	59.3%
Total	102,124	53,524	39,600	9,000		

The sources of funds have also varied from year to year. The legislature has reduced reliance on general funds for transit, and has increased its reliance on highway funds that are not restricted by the constitution for use for highways. The use of the oil overcharge funds is a one-time event. These funds will not be available in future years.

The state has contributed over $100 million to transit over the past 20 years, for an average of about $5 million per year. Over the past two bienniums, the average annual State funding has been just over $11 million.

Local Funding

Local funding for transit in Texas consists of three major sources:

- the sales taxes levied for the MTA's in the large urban areas
- local general funds appropriated by local governments to support the services of the other sectors
- funds available to local governments for social service and welfare purposes that are used to support transportation for clients of those agencies.

The prospects for future levels of funding from local governments and transit agencies is similarly cloudy. The financial capacity of the MTA's and Laredo is generally sound, either within current levels of sales tax authorizations or through increased sales tax levies where the current tax rate is below the full percentage allowed by statute.

The other urban and rural area transit agencies rely on local general funds for transit support. These funds are subject to the annual budgetary process of the local governments that provide this assistance. The viability of current funds for transit is highly localized, as is the question of the willingness of local governments to increase current levels of funding.

Although there appears to be no statutory maximum on the ability of these local governments to raise revenues, and the local fiscal and political realities in each community has not been assessed in this study.

The potential loss of Federal operating assistance for transit will be particularly onerous to the local small urban and rural systems which rely heavily on them to support their services.

The "local" revenues for used by some local governments for transit come from Federal funds for client transportation. These Federal funds also are likely to be limited to current levels or reduced over the next fiscal year by Federal action. This will further strain the resources of the general funds of the local governments.

Funding Needs by Sector and Source

The estimates of service and ridership, as well as operating and capital funding needs by sector and source, were developed Chapter 10. Those estimates were developed using constant dollars. The estimates of needs that are presented in the chapter include a factor for inflation. The inflation factor that is used in these projections is the same as is used State Comptroller's estimate for the growth in the Gross State Product - essentially 3.5% per year for the next 20 years.

The funding needs have been developed through a three step process:

- estimates of operating expenses were developed using two sets of assumptions:
  - existing systems would expand service at the rate of population growth in the service areas
  - new services would be created in the unserved areas of the state, and would grow with the rate of population in those areas
- estimates of capital funding requirements were developed using two methods:
  - extending the statement of four year capital needs contained in the TxDOT's most recent Master Plan over the 20 year period
  - developing an estimate of capital needs based on the rate of growth in service and ridership

- estimates of funding requirements were derived by adding the totals of the operating and capital costs for each scenario, and subtracting the operating revenues for each scenario.

The basic foundation for each of these scenarios is:

- Scenario 1, growth of existing services, using Master Plan capital needs
- Scenario 2, growth of existing services, using vehicle-based capital needs
- Scenario 3, growth of existing services, plus initiation of new services in unserved areas, using Master Plan capital needs for existing services and vehicle-based needs for new services
- Scenario 4, growth of existing services, plus initiation of new services in unserved areas, using vehicle-based capital needs for all systems.

Table 12-4 shows the annual unfunded requirements over the five-year period ending 2000 for these scenarios, as well as the cumulative implications for the twenty-year period ending 2015.

Table 12-4
TxDOT Transit Study
Estimate of Unmet Funding Needs
Using Various Assumptions
(Millions of Dollars)

Scenario	1996	1997	1998	1999	2000	1996-2000	1996-2015
Federal Formula Funding is Lost							
Scenario 1	$24.6	$32.8	$41.2	$49.8	$58.5	$207.0	$1,784.8
Scenario 2	28.7	41.3	54.5	68.3	82.6	275.3	2,755.7
Scenario 3	18.1	26.0	34.2	42.4	50.8	171.5	1,515.0
Scenario 4	21.6	33.4	45.7	58.4	71.6	230.7	2,415.3
Federal Formula Funding is Replaced by State Funding							
Scenario 1A	20.1	23.8	27.7	31.7	35.9	139.2	1,378.2
Scenario 2A	24.1	32.3	41.0	50.2	60.0	207.6	2,349.1
Scenario 3A	13.6	17.0	20.6	24.3	28.2	103.7	1,108.4
Scenario 4A	17.1	24.4	32.1	40.3	49.1	162.9	2,008.7

The first set of four scenarios assumes that the Federal formula assistance for urban and rural systems will decline to zero in five years beginning inn 1996, at the rate of 20% of current funding every year. The second set of scenarios show the unfunded requirements assuming that the State would replace the Federal assistance, and overall funding would not decrease.

As the figures in the table suggest, the overall unfounded levels for the next five years, assuming the loss of Federal assistance, would range from $171 million to $275 million. If the State replaced the declining Federal assistance, the unfunded requirements for this period would be between $103 million and $207 million, depending on the scenario.

Chapter 13

Private Sector Role in Public Transportation in Texas

Chapter 13

Private Sector Role in Public Transportation in Texas

Introduction

The objective of this report is to evaluate the current participation and future opportunities for private sector participation in public transportation in Texas.

The private sector already plays a significant role in public transportation in the State. Among the major kinds of activities that private companies participate in the State currently are:

- private, for profit, unsubsidized intercity bus and charter services
- private, for profit, subsidized urban, rural, and specialized transit services
- professional services, including legal, accounting, design, engineering, planning, and other consulting services
- technical services, such as contract maintenance of office equipment, vehicle and component maintenance and servicing, facility maintenance, and similar technical and support activities
- professional transit system contract management
- construction of bus facilities, passenger and parking facilities, DART's rail system, and transit-oriented highway projects
- bus rehabilitation and other maintenance and repair services
- vendors of a wide range of materials and supplies.

The private sector currently plays a critical role in the provision of public transit in Texas through this wide variety of services.

All but the first category - for profit, private bus services - involve public sector expenses. The activities that the private sector provides at public expense can be divided into two broad categories:

- transportation services operated by private companies under agreements with public agencies
- other professional and technical services, materials, and supplies provided to transit agencies in the normal course of business

This assessment focuses on the operations contracts aspects of private sector participation in transit in Texas.

Table 1 shows the level of expenses by the transit systems serving the areas larger than 200,000 in population in Texas in materials and supplies and contract transportation. (The "other" category represents the expenses for a number of small urban systems whose financial and operating data are available on the Section 15 data base.)

As these data show, these seven agencies and a selection of other urban systems spent $160 million in public funds in fiscal year 1993 for services and supplies from private companies in these three major categories of operating expense alone.

Table 13-1
Selected Private Sector Participation in Transit in Large Systems (1)
(millions of dollars)

Agency	Professional and Technical Services	Materials & Supplies	Contracted Transit Service
Capital Metro (Austin)	$2.6	$4.3	$10.3
Corpus Christi RTA	1.1	1.3	2.6
DART (Dallas)	9.0	13.4	36.7
El Paso	1.1	2.9	0.4
Ft. Worth T	3.4	2.6	1.5
Houston Metro	12.1	21.7	16.3
San Antonio	1.7	8.7	3.1
Others	2.3	NA	0.9
Total	$33.3	$54.9	$71.8

(1) Materials & supplies data are for FY1992, all other are for FY1993

Capital expenses for professional and technical services, design engineering, and construction, and other capital purchases are in addition to these operating expenses.

Private Sector Participation in Transit Operations Management in Texas

The private sector operates a significant level of public transit services in the urban and rural areas of the State under contract to local transit agencies or other governments or social service agencies. The contract carriers that provide such services across the State include national transit operations companies, local and intercity transit companies, local specialized transit carriers, and local taxi companies.

As shown on Table 1, over $70 million was spent on such contracts by the major urban systems alone.

These contracts divide the labor between the contractor and the private company along variations of a basic pattern. The private company generally employs management and operating personnel, provides their own internal administrative and accounting functions, collects and deposits all fares,

oversees the delivery of service, maintains the vehicles and facilities, and advises the public agency on policy and operating issues.

The public agencies typically retain the contractor under a competitive process for three to five years. The agency determines the fares structure, routes, and the levels of service to be provided. They typically require compliance with service and maintenance standards specified in the contract, and do at least some spot checking of the operating performance of the contractor. The agency often provides the rolling stock and facilities, the planning and marketing services, and most community and customer relations activities.

MTA Service Contracts - Several of the State's MTA's have relied heavily on private contractors to provide fixed route services under contract:

- DART has contracted for major portions of its suburban and express services since the outset of that Agency
- Houston Metro has similarly contracted with private carriers for significant portions of its express services
- Capital Metro contracts for express services, and for commuter services for the University of Texas
- Corpus Christi RTA contracts for suburban express services
- Fort Worth T contracts for service to the airport.

Virtually all of these services additions to the traditional, locally-operated fixed-route services, and have been provided under contract since their inception. Many of these services were implemented over the past decade as the MTA's organized on a regional basis and sought to meet two mutually reinforcing objectives:

- provide expanded services in new markets in areas that were contributing to new regional sales taxes for transit
- a Federal requirement that agencies develop increased levels of private sector participation in transit operations.

Urban Specialized Service Contracts - Virtually all of the MTA's and many of the small urban agencies contract with a variety of carriers to provide some or all of the specialized transit service in their service areas.

The mix of private contractors, social service agencies, and public transit agencies in operating these services is in constant flux. Some agencies, like the City of El Paso, have converted their private

contract operations to municipal operation. Others are looking to the private sector to provide the increased levels of services usually required under the Americans with Disabilities Act.

Rural Transit Services - Fourteen of the rural transit agencies in Texas contracted for service for all or part of their services. Seven contracted for all services, and seven contracted for part of their services. Some of these contracts are with private companies, and some are with local social service or other human services organizations.

Private Management Companies

Another means of instilling private sector management practices into the management of transit systems is to retain a private company that specializes in transit system management. This approach has been used in a number of Texas cities, including Fort Worth, Austin, El Paso, Corpus Christi, Galveston, Beaumont, Port Arthur, Waco, Lubbock, Brownsville, and Laredo.

Materials and Supplies

The industry will always be dependent on the private sector to provide its materials and supplies. As seen on Table 1, these major urban systems spent over $50 million of operating expenses for materials and supplies in FY1993 alone. This is in additional to capital expenses for new facilities and equipment, and programs such as DART's light rail and commuter rail programs and the transit related highway investments in Houston.

Professional and Technical Services

The expenses for professional and technical services can be broken down into four major categories:

Vehicle Operations	$3.8
Vehicle maintenance	5.0
Non-vehicle maintenance	4.2
General & Administrative	20.3
Total	$33.3

Purchases of services for vehicle operations includes a variety of professional and technical specialties, including security services, computerized scheduling, labor relations consulting, and a wide range of other services that primarily support the provision of on-street operations.

Services for vehicle maintenance include minor and major maintenance and equipment servicing agreements provided by private firms.

Services for facility maintenance include such activities as facility cleaning and maintenance, facility repair, and servicing of shop equipment.

The highest category of expense for services is in the general and administrative category. About two-thirds of these expenses are incurred by Austin, Dallas, and Houston. The kinds of services that are accounted for in this category include audit and legal services, management and operations consulting services, training and organizational development consulting, and planning and other specialized consulting services.

The benefits of contracting for professional and technical services include:

- eliminating the need to maintain permanent staff for occasional, specialized activities
- the ability to respond to rapid changes in technology
- eliminating the need to purchase specialized equipment
- reducing the capital costs for facilities and equipment
- lower costs of many maintenance activities
- access to warranty protection.

Benefits of Contracting for Transit Operations

The benefits of competitive contracting for transit services depend on the nature and extent of the services or functions to be contracted.

The specific financial savings that are realized as a result of competitive contracting can only be precisely determined when the cost proposals from the competitors can be evaluated and compared to the current costs of services.

The record of actual costs savings from competitive services that are in place is not yet extensive, and the evidence that is available in most of these cases is open to interpretation.

A substantial amount of competitive contracting that is now in operation is for new fixed route services or handicapped and elderly services. Since many of these services are new, there is often no "before" picture that can be used as a basis for estimating the costs savings from competitive contracting for these services.

A recent analysis of the comparative costs of transit services provided by private companies versus public agencies suggests that the average cost differential between private and public systems is between 2%, for systems in the 26 to 50 bus size, and 23% for systems in the 51-250 bus range.

This comparison is not particularly compelling, especially when the basis for the comparison is between the costs of public transit systems and private transit services. The difference essentially is that the public transit agency costs in these analyses were all inclusive, while the costs of the private transit services may or may not include all of the costs of the private company, and do not include the costs of the overseeing public transit agencies to which the private companies are under contract.

One category of substantial cost savings that is being realized as a result of competitive contracting is the growing experience of systems which have been able to negotiate improved labor agreements as an alternative means of cutting costs.

To the extent that competitive contracting may in fact produce costs savings, this savings can be translated into any of a number of other benefits. These include some combination of:

- reducing the need for service reductions and transit job loss that might otherwise be required
- making funds available for other transit needs
- reducing the tax burden from the system subsidy costs
- improving the working conditions for the system's employees.

The more indirect benefits of competitive contracting tend to be very case-specific. In general, these kinds of benefits include:

- providing management with a broader range of tools to provide a given level of services
- removing agency staff from day-to-day operating problems, and allowing them to focus on longer range management issues
- providing greater opportunity for the skills of private industry to be brought to bear in the transit industry
- obtaining access to a broader range of sources of capital and technical resources.

Subjective and Objective Costs of Competitive Contracting

The underlying assumption and premise of competitive contracting is that it will be cost effective in strict dollars and sense terms. The basic objective of competitive contracting and privatization is to provide the same or better levels of service for the same or fewer dollars as a public agency incurs. In spite of the advantages, there are some subjective and some objective costs involved in competitive contracting for services.

There are some one-time costs and some recurring new costs of establishing and maintaining competitive contract services. These costs need to be included in a cost benefit analysis of any given project. One-time costs for any particular contract include some or all of the following:

- the cost of setting up the project
- the cost of administering the procurement
- the costs of demobilizing any assets of the operating agency which currently provides the service
- the costs of mobilizing the contractor's resources to provide the services
- the costs related to maintaining the ability to operate service in the event the contractor unexpectedly terminates services.

The recurring new costs are generally related to the establishment and upkeep of a staff to administer the service contracts, and to provide supervision over the contractor on a continuing basis. The level of assets associated with this activity is usually a function of the approach which the contracting agency takes relative to service oversight.

These oversight costs vary according to the policies of the agency buying the services. If the agency provides a high level of oversight and other activities, these costs can be substantial. In other cases in which the agency maintains a minimal staff for managing the contract, they can be minimal.

Agencies which both operate and contract for service have similarly different expenses, and their costs of contract administration is typically a function of the extent to which they provide oversight and monitoring over the contractors.

Other Costs of Contracting

There are also a number of potential "other" costs related to competitive service contracting. Most, if not all, of these potential costs can be eliminated or controlled by management action and its overall approach to competitive service contracting. These include:

- adverse impacts on riders and the quality of service
- adverse impacts on the transit agency
- potential long term implications

Potential Adverse Impact on Service - A commonly expressed fear of competitive contracting by transit managers and transit advocates is that contractors will not be able or inclined to provide the same quality of service as the public agency provides. In particular these concerns include the following:

- loss of coordination between services operated by the contractor and by the agency or other contractors
- a reduction in the quality of service, maintenance, and passenger amenities

- loss of reliability, as contractors cut corners to increase their profits
- confusion among riders than can be created by the participation of multiple carriers.

Adverse Impact on the Transit Agency - Incumbent transit policy makers, managers, and employees who oppose contracting or who are skeptical of it often perceive contracting activities as a "threat" to their hegemony, career development, and job security, as well as a threat to the integrity of their operating systems and the agency's long range prospects for growth.

Employee morale and motivation can be adversely affected, as the threat of lost jobs looms, and their general inclination can be complicated by adverse management attitudes regarding competitive contracting.

Potential Adverse Long Range Impacts - The consequences of contracting for services over the long term are as yet unclear. Competitive contracting carries with it some long term risks which need to be considered in the decision making process.

There is a considerable store of both good and bad experiences involving contracting for services. Among the adverse impacts over the long term is the tendency of contractors to become entrenched in a particular system, and for competitiveness to be substantially reduced or eliminated as a result.

The result of this tendency is for costs to increase more rapidly, and for the entrenched contractor to control the agency, rather than for the agency to control the contractor.

Another long term phenomenon is the tendency of agencies to lose the ability to provide the services through any alternative means than through a contractor, and then become a slave to the contractor.

This phenomenon has four parts to it.

- The first is the tendency of contractor operators to enmesh themselves into the local decision making and political process in a way which discourages or eliminates competition and which creates a new monopoly that is less responsive to oversight and controls by the contracting agency.
- The second is the tendency of the contracting agencies to divest themselves of the internal skills and resources necessary to provide the services operated by the contractor. This divestiture includes the loss of managers and operating personnel, and sometimes of equipment and facilities that are required for the operation of the system.

- The third manifestation of this phenomenon is for funding and institutional changes to occur which make changes more difficult.
- The fourth is for the employees of the system themselves to prefer the status quo under a private contractor, and to tend resist change from the incumbent carrier to another carrier.

Potential Deterrents to Contracting

Agencies which have attempted competitive contracting in other parts of the country have encountered as wide range of real and perceived deterrents to success. Among these are:

- statutory or regulatory restrictions to market entry by contractors to public agencies with the power to provide transit services
- attitudinal or public policy deterrents which would create unnecessary or unreasonable obstacles to a successful program
- contractual provisions that represent financial deterrents to contracting - such as high bid bonds or performance bonds
- lack of administrative processes necessary to implement and administer contracting
- the supply of potential contractors is not adequate for meaningful competition.

Generally speaking, the are no statutory or regulator constraints to market entry or to the ability of a public transit agency to contract for services with a private carrier in Texas. The other potential deterrents do not appear to have been constraints in Texas.

Recruitment of Potential Contractors

For any plan to contract for transit operations to be feasible, the supply of private firms with the ability to provide necessary services must be large enough to insure that competitive bidding will be productive.

To assure the maximum participation in any prospective competition for private sector participation, a broad outreach program should be carried out six to nine months before the projected date of implementation.

The overall outreach program should be designed to attract the highest possible level of competitiveness among the largest number of competitors. It must also be consistent with the guidelines in FTA's Third Party Contracting Guidelines specified in FTA's Circular 4220.1C.

The basic elements of the outreach program should include:

- advertising for letters of interest in local and state newspapers of general circulation, business journals, and transportation industry newspapers and magazines
- soliciting letters of interest from firms that are known to be active in contracting for transit services
- direct contact with companies known to be in the business of providing contract services, but which do not respond to the advertisements or written solicitations.

Criteria For Evaluation Of
Potential Privatization Projects

The evaluation and selection of potential projects for privatization of any activities must consider a range of factors that reflect the various, and sometimes divergent, objectives and interests of the stakeholders in transit. It is useful to establish these criteria in advance of identifying candidate projects.

The criteria include both quantitative and qualitative factors such as:

- level of potential cost reduction
- impact on service coordination
- functional feasibility of the project
- viability of the residual services and structure of the transit agency
- compliance with federal competitive service regulations
- impact on administrative and support functions
- impact on governance and management activities
- impact on personnel and labor relations
- ease of implementation
- availability of qualified competitive providers.

Level of Potential Cost Reduction - The fundamental objective of privatization is to achieve lower costs of operations through increased competition among potential providers of the service or function. To achieve this objective, any given privatization project must produce measurable cost reduction, without compromising the quality of the contracted service or the residual service.

A privatization project should provide a minimum threshold of cost savings that would justify the cost and complications that might arise out of the planning and implication of the project - say 10% of the base line cost.

In addition, the expected level of cost reduction should be proportional to the difficulty anticipated in the implementation of the project, as discussed in the "ease of implementation" criteria below.

Impact On Transit Service Coordination - The service coordination objective of a privatization project should be to assure that the services of different carriers is invisible to the riders as they move about the system. In traditional FTA planning requirements terms, the objective is to provide an "officially coordinated" rather than a "unified" transit system.

The service coordination objective for any privatized transit service should be to operate in a way that presents no new obstacles to the use of the services that are a result of contracting. Any change in the institutional arrangement should be "invisible" to the system's users.

Thus, the routes, schedules, fares, transfer policies, marketing, public information system, and bus stop signs of both the privatized services and the residual publicly operated services should not look any different to the rider.

The services of any contractors should be provided in a way that this system unity is not compromised by the participation of multiple providers.

Functional Feasibility - Any proposed privatization project should be comprised of activities that can be functionally separated from the existing operation and organization without undue adverse impact on the efficiency and economy of the system as a whole.

The services or activities must be functionally separable, and the decision to separate them must be within the control of management and policy decision makers to carry out. For example, a geographic area of service might be more easily separated than alternate runs on the same route would be. Major body and paint work might be more separable than running repairs. Advertising might be more separable than public relations. Banking might be more separable than cash handling.

Viability Of Residual Services And Activities - The other side of the same coin is that it is important that whatever is *not* privatized should still be functional, efficient, and manageable. The viability of the remaining transit operations, and the manageability of the residual services with the remaining administrative and support functions must still be strong.

It may be possible to separate large segments of service, or to contract for large portions of the maintenance activity, but it will still be necessary to manage, direct, and support the residual operations and functions, and to oversee the contracted activities.

Impact On Administrative And Support Functions - There are at least two dimensions to this issue. One is whether any administrative and support functions might be privatized, and the other is whether the residual administrative and support functions are capable of handling the new relationships with a private contractor.

If payroll processing is contracted out, for example, what impact will it have on the accounting and financial staff, what will the timeliness and reliability of the service be, and what impact will it have on labor relations and morale in dealing with paycheck issues.

Similarly, if large amounts of service are contracted for, what impact will it have on the staffing levels of the administrative and support staff, and will overseeing the contractor create any new responsibilities.

Compliance With Federal Competitive Service Regulations - To some extent, this is a simple yes or no question. Does the plan comply, or does it not? This question becomes more complicated, depending on the local circumstances. An expanding system with a number of candidate private contractors may find it easier to comply than would a system that is not expanding that operates in an area where there are not enough private contractors available to create competitiveness. (Note: the FTA recently revoked the requirement that fixed route services be reviewed every three years and a determination made as to whether any portion of the services should be offered for competitive contracting. This lowers the compliance threshold for privatization initiatives.)

Impact On Governance And Management Activities - A major consideration is what impact the contracting of a service or function might have on existing institutional arrangements for transit policy making and management. Among the issues are whether the existing institutions are adequate and appropriate, and whether they will be able to assume the responsibility of controlling and directing the activities of the private contractors.

One obvious aspect of this is that the nature of the contracted service will determine what institutions are effected, and to what extent. Contracting for major new elements of service not now provided will have a different set of impacts than contracting say for body repair work or a small segment of service that is currently being provided.

Impact On Personnel And Labor Relations - The potential impact of a privatization project on the personnel of an existing transit operation is particularly important when evaluating the feasibility and level of cost reduction of a privatization project.

The impact can be viewed in at least two dimensions. The first is the human factors involved in attempting to make a change of any kind, and the potential impact of the change on the jobs and careers of managers and employees at all levels of the organization. The second dimension is the extent to which the proposed action may be controlled or constrained by labor agreements or labor laws.

Ease Of Implementation - The basic issue in this evaluation category is whether the potential benefits to be gained by contracting are greater than the problems that might be encountered in attempting to implement the project.

Assuming that the project yields at least a threshold value of cost reduction, the next consideration is to match the estimated cost reduction with the anticipated actions necessary to implement the project, and the weigh the two together.

Availability Of Qualified Competitive Providers - "Availability" in this context means the likelihood that a qualified contractor will compete for the work in question. The availability of qualified competitive providers is a major consideration in developing competitive contract proposals. The fewer there are, the less likely that competitive procurement will have a significant impact on costs.

The contractor may be a local firm with a proven track record and the necessary resources, or it may be a firm from another part of the country that has the ability to enter the local market under the terms of the proposed procurement.

It may be necessary to recruit such contractors through advertisements in industry publications, direct contacts, or other means of making "outside" firms aware of the potential opportunity.

In some cases, the competitors include local non-profit providers or even the transit agency itself, with support from its union in the form of lower wage rates for the competitive service or changes in work rules which reduce the costs.

Contract Types

Contracts which comply with FTA's third party procurement guidelines (FTA Circular 4220.1C) are usually restricted to two basic types . These are a fixed price contract, or a cost reimbursable contract. Under both types of contracts, competitive negotiations are allowed, and awards may be made "to the lowest responsible offerer whose proposal will be most advantageous to the procuring party, cost and other factors considered." Both contract types can also include incentive and penalty clauses.

Fixed Price Contract - Under this type of contract, the contractor is obligated to provide its services for a single, total contract price. Timing and frequency of payments can be negotiated.

In a fixed price contract, the contractor assumes the risk for cost and performance. The risk to the contractor is that the price may be too low and the may contractor suffer a loss. However, if the cost of performance is less than anticipated, the contract benefits through increased profit. The risk to the client is that the contractor may attempt to mitigate the loss by failing to perform some services or to take other risks such as deferring maintenance.

This type of contract contains a specified amount for the services to be delivered, the amount is agreed to before the contract is signed, and generally there is no provision for an adjustment in the fixed fee should the cost to perform the specified services change. The contractor is entitled to a set amount regardless of what it costs to perform.

The incentives in this type of contract are that if efficiencies result in a reduction of costs, an increase of profits will be realized. This type of contract places a minimal administrative load on the contracting agency because the agency will pay the amount specified in the contract as long as the services designated in the contract are delivered.

When entering into this type of contract, it is important that minimum and maximum service levels are established to protect the contractor from excessive demand beyond that which was considered in the cost estimate.

Some versions of this type of contract exclude the costs of some elements of the costs of providing the service, with these costs being borne directly. For example, the contracting agency often provide fuel, bus parts, insurance or self insurance.

Cost Plus Fixed Fee - This type of contract is used most often and is sometimes called a cost-reimbursement contract. The cost plus fixed fee contract provides for payment to the contractor of allowable costs incurred in the performance of the contract. It establishes an estimate of total cost for

the purpose of obligating funds and for setting a limitation of cost ceiling, which the contractor may not exceed without prior approval or subsequent ratification of the contracting agency.

The fixed fee, or profit, can be stated in a fixed dollar amount or as a percentage of the actual costs incurred.

This contract offers little risk to the contractor regardless of uncertainty about costs, productivity, or demand, since all actual direct costs will be covered by the agency. The contractor is reimbursed for allowable costs incurred in performance and is paid a fixed fee. This type of contract tends to offer agencies the chance to trade off cost and service quality as desired, since service quality tends to be directly related to cost and inversely related to productivity. The contracting agency assumes the cost risk in this type of contract and assumes a greater administrative burden.

Public agencies usually do not favor the use of cost plus fixed fee contracts without a cap on total project costs, since the contractor has no incentive to control costs. The percentage of cost fee also tends to be disadvantageous to the agency, since the "profit" for the contractor would tend to increase with costs.

The maximum fixed fee is usually 10% of allowable costs. If a contract's planned reimbursable costs are say $1,000,000, the fixed fee would be $100,000, whatever the actual costs turn out to be.

One variation on a fixed fee is to allow the fee to float inversely with the difference between the planned and actual reimbursable costs. Using a $1,000,000 reimbursable cost number, for example, the fee might vary as follows:

Actual Costs	Fee
Over $1,000,000	$100,000, less $1,000 for every $10,000 in increased reimbursable costs.
$1,000,000	$100,000
Under $1,000,000	$100,000, plus $1,000 for every $10,000 in reduced reimbursable costs.

The float could be left open, or capped at say 15% maximum and 5% minimum.

Fixed Unit Cost - In fixed unit cost contracts, standard costs are calculated by dividing the total contractor cost and profit by the number of units delivered. There are two frequently used types of units: cost units and service units.

Cost units are the easiest for the operator to estimate and are the operator's service input independent of productivity. The use of cost units tends to encourage quality and discourage quantity.

Service units are measures of outputs of service rather than inputs, and are the primary concern of the contracting agency. Examples of service units are passengers and trips. These units are dependent on demand density rather than operator efficiency or service standards. The use of service units offers no incentive for the operator to provide quality service because payments is based on quantity. Service units tend to encourage productivity and discourage quantity.

When service units are used, the contractor has the burden of achieving productivity to meet costs. When cost units are used, the agency has the burden of imposing productivity criteria and the burden of monitoring the productivity criteria. The agency may also face the burden of having to assess penalties or corrective action if the operator fails to meet the productivity criteria.

Incentive and Penalty Clauses - To some extent, each of these three examples of contract have incentive and penalties built into them. Some contracts for transit services have added provisions for incentives and penalties for specific performance achievements.

Industry interest in incentive contracts results from a growing dissatisfaction with the prevailing type of government contract, the cost plus fixed fee. Incentive contracts operate on the theory that profit is the basic motive of business enterprise, and that service quality can be improved if there are adequate profit incentives.

The objective is to ensure that outstandingly effective and efficient performance is met with high profit, mediocre performance with mediocre profit, and poor performance with a low profit or losses.

Several factors that should be considered when developing an incentive contract are as follows:

- incentives should be provided only for those performance areas over which the contractor has control
- standards which are used should be realistic and achievable
- the incentive program should not result in the operator's attention and the and the agency's resources being diverted from other critical performance areas
- performance indicators should be used which are easy to understand and require minimal new data collection and contract administration for either party.

Most importantly, the system for tracking performance related to incentives and penalties should not absorb undue amounts of agency resources, or result in the development of continuing battles over cause or fault.

Development of financial rewards and penalties that are significant enough to influence management action are rare, and the success rate is low. This is particularly true when "penalties" result in reducing the resources available to the contractor to perform its basic responsibilities.

Glossary

GLOSSARY

This glossary provides the definitions or explanations of acronyms and other terms used in this report which may not be known to the general interest reader.

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
APTA	American Public Transit Association
ATCC	Agency Transportation Coordinating Council
BBS	Bulletin Board System
BRRA	Bus Regulatory Reform Act
CARTS	Capital Area Rural Transportation System
CATV	Cable Access Television
CMAQ	Congestion Mitigation Air Quality
DRPT	Department of Rail and Public Transit (Virginia)
FTA	Federal Transit Administration (formerly the Urban Mass Transportation Administration)
FTD	Florida Department of Transportation
GIS	Geographic Information System
GPS	Global Positioning System
HMO	Highway Maintenance and Operation
ICC	Interstate Commerce Commission
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation System
MIS	Major Investment Study, and Management Information System
MPO	Metropolitan Planning Organization
MTA	Municipal Transit Authority
MTP	Metropolitan Transportation Plan
NVTC	Northern Virginia Transportation Commission
NAFTA	North American Free Trade Agreement
OCTS	Office of Client Transportation Services
PRTC	Potomac and Rappahanock Transportation Commission
PTC	Public Transportation Coordinator
PTF	Public Transportation Fund
RRC	Railroad Commission

RTPO	Regional Transportation Planning Organization
STP	Surface Transportation Program
TDF	Transportation Disadvantaged Fund
TIP	Transportation Improvement Program
TTI	Texas Transportation Institute
UMTA	Urban Mass Transit Administration (now the Federal Transit Administration)
VMT	Vehicle miles traveled
WMATA	Washington Metropolitan Area Transit Authority

Other terms used in the report:

Fare Box Revenue - The passenger revenue a transit operator collects from passengers in the form of cash or pre-paid passes or other fare media.

Metropolitan Transit Authority - One of seven Texas transit agencies that are created under section 1118 of the State statutes that is funded with a dedicated sales tax and that provides transit services in urban areas with populations over 200,000.

Oil Overcharge Fund - A source of Texas State funds that was derived from a settlement between the federal government and oil companies that overcharged for products in the 1970's and 1980's.

Paratransit - Any method of passenger transit, often serving elderly and handicapped clients, usually on a demand responsive basis with some combination of small buses, vans, or taxis.

R-Square - A measure of strength of statistical correlation. It indicates the percentage of variability in a data series is explained by the model. For example, an R-square of .90 indicates that a model explains 90% of the variability in a data series.

Revenue Passenger - A paying transit passenger who has completed a full linked trip. If the patron makes a transfer during a one-way trip (uses two buses or other modes of transportation), the revenue passenger is counted only once.

Route Alignment - The path over which a bus travels in revenue service.

Section 9 Operator - A transit operator whose funds are provided by Section 9 of the FTA. The federal government provides up to 50% of capital costs and 80% of operating costs. The operator

provides fixed-route and/or demand-response service to communities with populations between 50,000 and 200,000.

Section 15 Data - Annual data reporting required by the FTA of any federally funded transit operation.

Section 16 Funds - Funds provided under Section 16 of the FTA for specialized transit carriers that provide paratransit service to specific groups of clients, usually the elderly and the handicapped.

Section 18 Operator - A transit operator whose funds are provided by Section 18 of the FTA. The federal government provides up to 50% of capital costs and 80% of operating costs. The operator provides fixed-route and demand-response services in rural and small urban communities with populations less than 50,000.

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