

TEXAS TRANSPORTATION COMMISSION

ALL Counties

MINUTE ORDER

Page 1 of 1

ALL Districts

In compliance with Title 23 U.S.C. §135, as implemented by 23 C.F.R. Part 450, and Transportation Code §201.601, the Texas Department of Transportation (department) has developed a statewide long-range transportation plan (SLRTP) covering a period of 24 years that provides for the development and implementation of a transportation system and contains all modes of transportation, including: (1) the systems and facilities for highways and turnpikes, aviation, public transportation, railroads and high-speed railroads, waterways, pedestrian walkways, and bicycle transportation facilities; and (2) the transportation users of each type of transportation facility.

The 2035 SLRTP, which is attached as Exhibit A, has been developed in cooperation with the metropolitan planning organizations and, as appropriate, in consultation with affected state, tribal, and local agencies responsible for transportation, land use management, natural resources, environmental protection, conservation, and historic preservation. The SLRTP includes capital, operations and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient use of the existing transportation system. In addition, it includes long-term transportation goals with measurable targets, priority corridors, a financially constrained project listing and an unconstrained identification of needs.

The SLRTP has been presented for public comment by means of various public meetings conducted in each department district throughout the state. Stakeholder meetings were also held in each department region to solicit input and comment from affected public agencies, representatives of transportation agency employees, freight shippers, private providers of transportation, providers of freight transportation services, representatives of users of public transit, and other interested parties. A public hearing on the SLRTP was held in Austin on October 1, 2010 and written comments were accepted through November 1, 2010. A summary of the comments is included in the SLRTP.

By letter dated October 4, 2005, the governor delegated the power and responsibility for approving the SLRTP to the Texas Transportation Commission (commission) or its designees. After due deliberation and consideration, the commission finds that the requirements of Title 23 U.S.C. §135 and Transportation Code §201.601 have been fully satisfied as they pertain to the development of the SLRTP.

IT IS THEREFORE ORDERED that the 2035 SLRTP, which is attached as Exhibit A to this order, is hereby adopted.

IT IS FURTHER ORDERED that the executive director, or his designee, submit the 2035 SLRTP to the Federal Highway Administration in accordance with federal requirements.

Submitted and reviewed by:

James R. Randall
Director, Transportation Planning
and Programming Division

Recommended by:

Armando
Executive Director

112495 NOV 18 10

Minute Date
Number Passed

Texas Statewide Long-Range Transportation Plan 2035 Executive Summary





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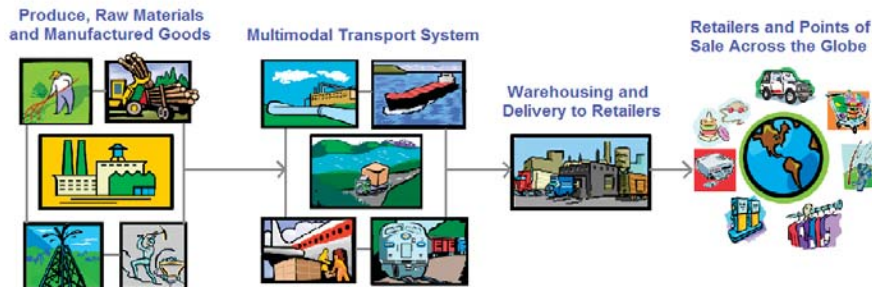


Executive Summary

Introduction and Overview

Our Transportation System and Its Importance to our Future

Transportation empowers us all and affects every aspect of our daily lives. Most people must travel to school, to work, to obtain necessities or medical care, and for social reasons. Whether you own a vehicle, use transit, fly on an airplane, ride a bicycle, or walk, transportation gives you the freedom to move about and makes the life you enjoy possible. The goods we consume are transported from a farm, a manufacturer, a refinery, or a warehouse—often using more than one mode of transportation.



As our population and economy grow, our transportation system needs a plan for how best to meet these challenges. Transportation planning allows us to look ahead to determine the future demands on our transportation systems, and to establish goals and strategies that allow us to overcome the challenges.

Our mission at TxDOT is to provide safe and efficient movement of people and goods, enhance economic viability, and improve the quality of life for the people that travel in the state of Texas by maintaining existing roadways and collaborating with private and local entities to plan, design, build, and maintain expanded transportation infrastructure. As we plan, we have emphasized cooperation, accountability, and transparency. Our outreach has promoted widespread, meaningful participation in planning the future of Texas' transportation from our transportation partners, elected officials, industry stakeholders and the public. The analysis we have conducted will help Texas plan for improved connectivity between modes and between communities, and enable our multimodal system to operate more efficiently. We want to provide the best value for every transportation dollar spent. We appreciate the perspectives and suggestions that you have provided and that will help guide future decisions.

Amadeo Saenz, Jr., P.E.
Executive Director, TxDOT

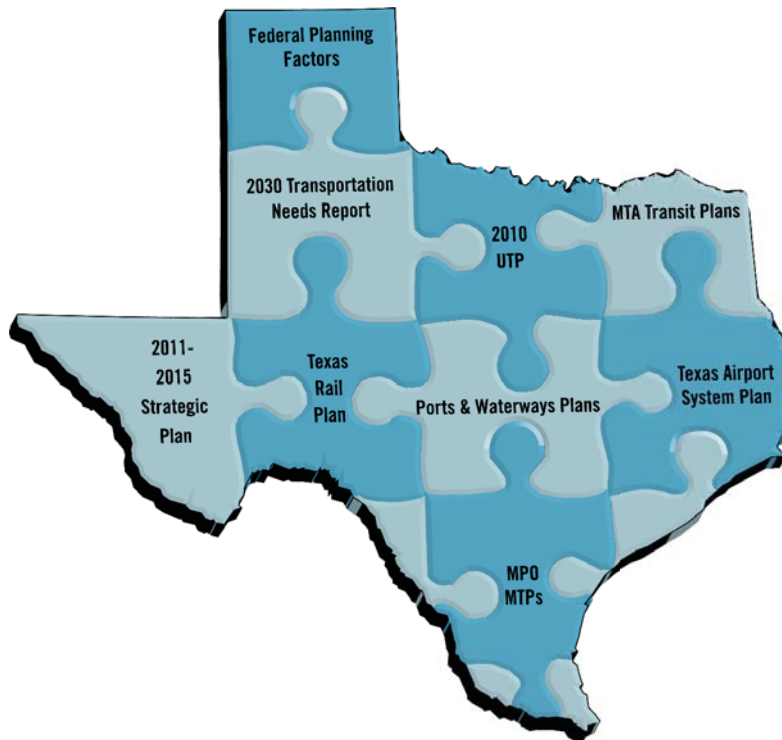
Texas, with a diverse population, dynamic economy, and vast geographic area has an equally vast, diverse, and dynamic, transportation system. This complex transportation network moves people and goods between destinations and markets, delivering almost every product or service we use and enabling our movement to school, to work, and to play.

Over the next 24 years, the population and the economy of Texas will experience significant change. That change will put increasing demands on our transportation system, whether it is the ports, rails, or highways that deliver goods to market or the roads, sidewalks, or buses that deliver us to our homes, work, or school.

These demands will create challenges to this complex system. To understand these challenges and help plan for a vibrant future, the Texas Department of Transportation (TxDOT) has collaborated with the owners, operators, and users of this system to develop this Statewide Long-Range Transportation Plan 2035 (SLRTP). This plan will provide a framework and guidance for meeting the challenges ahead.

What is the Statewide Long-Range Transportation Plan?

This plan is the 24-year blueprint for the transportation planning process that will guide the collaborative efforts between TxDOT, local and regional decision-makers, and all transportation stakeholders to reach a consensus on needed transportation projects and services. Every transportation mode is an interdependent component of the overall transportation system. This plan provides an inventory and addresses the need for improvements to the state's transportation system—roadways, pedestrian and bicycle facilities, transit, freight and passenger rail, airports, waterways and ports, pipelines, and intelligent transportation systems (ITS).



How was the Statewide Long-Range Transportation Plan Developed?

Transportation planning is an ongoing effort at all levels of government. TxDOT and the Metropolitan Planning Organizations (MPOs) develop various transportation-related plans (goals, strategies, and policies) and programs (funding mechanisms and sources) in conjunction with other transportation agencies.

This statewide long-range plan builds on these ongoing planning efforts. Individual plans prepared by TxDOT such as the Texas Rail Plan, the Texas Airport System Plan, Regional Coordinated Public Transportation planning, and the TxDOT Strategic Plan were incorporated into the Statewide Long-Range Transportation Plan effort.

Stakeholder meetings were held around the state, which included various state and MPO officials, local transportation providers, elected officials, and representatives of airports, railroads, seaports and the trucking industry. Two rounds of public meetings were held in each of TxDOT's 25 Districts. Collectively, this work effort, technical analysis, review of other plans, and stakeholder and public input shaped the Statewide Long-Range Transportation Plan.

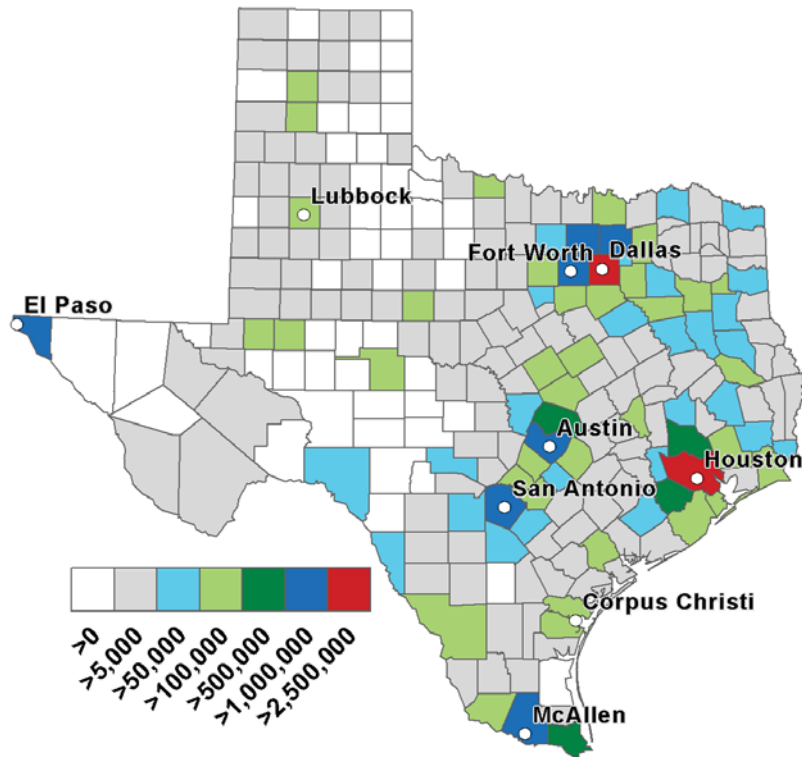
Future Trends and Challenges (2010–2035)

How Are We Changing and What Will Be Our Future?

Demographic and Economic Changes

Over the past 25 years, Texas has experienced growth in population, employment and changes in where people live and work. This growth, combined with evolving trends in technology and the choices Texans make about transportation will have a profound impact and demand on our transportation system.

- ★ Between 1990 and 2008 the population of Texas increased by 39 percent or more than 6½ million persons. By 2035 the population of Texas is projected to increase by 43 percent, exceeding 33 million and outpacing the nation.
- ★ Over the next 24 years, the entire baby-boom generation enters the 65+ age group. The transportation needs of this age group will be different.
- ★ Currently greater than 50 percent of the workers who live in suburban counties travel to a neighboring county to work.
- ★ The Texas economy has grown faster, on average than the U.S. economy as a whole since 1990.



Texas Forecast 2035 Population

Urban Livability and Sustainability Trends Will Influence Transportation

Livability and sustainability are concepts that are likely to be central to future surface transportation legislation. Impacts could include an increased focus on transit and rail services, transit-oriented development, smaller personal vehicles, and increased use of human powered modes, such as bicycle or walking. This trend includes:

- ★ A revival of downtown and inner-city residential development and infill of central metropolitan regions,
- ★ Development of urban rail and streetcar systems,
- ★ An increasing desire for more bicycle and pedestrian opportunities

Freight changes

In 2008 the total amount of freight shipped to, from, and within Texas was greater than 2.389 billion tons. By 2035, the total tons and value of goods shipped by freight is expected to increase by approximately 82 percent and 166 percent, respectively.

With the opening of the Panama Canal expansion project in 2014, the dynamic of freight movement into and out of Texas ports is likely to change impacting port activity, and rail and truck freight demand.

Infrastructure Maintenance Needs Are Growing

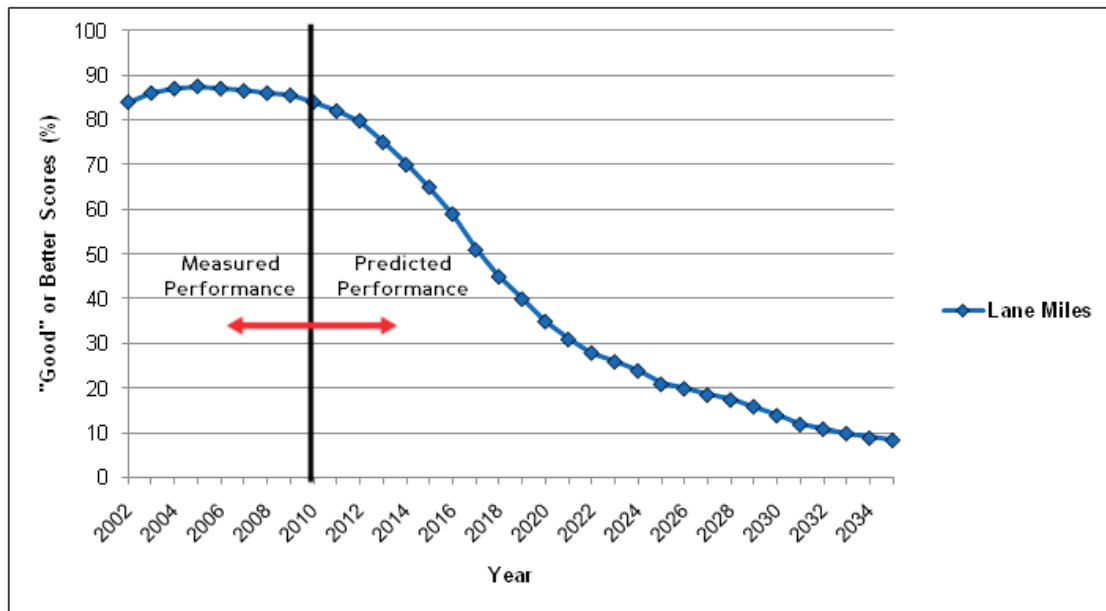
Modal fleets and infrastructure in the US are aging-many reaching their intended lifespan-requiring additional maintenance and reconstruction. Inventories of modal systems are provided in the SLRTP. Highways, bridges and pavements represent the largest state investment.

Texas has more than 51,000 bridges, which require significant resources to maintain, rehabilitate, or replace. The correlation between the age of bridges and their need for special maintenance predicts the need for resources to support bridge replacement and rehabilitation.

The Texas Transportation Commission established the goal of achieving 80 percent of the bridges rated in good or better condition by September 2011. While there has been a decrease in the number of deficient bridges, there are a substantial number of the structures in the system that will reach their predicted lifespan during the time frame of this plan.

The thousands of miles of Texas highways and other public roads require large investments to maintain the traveling surface. As demand increases, particularly truck traffic, the wear and tear on Texas' highways increases. A significant difference exists between TxDOT's projected maintenance funding for 2010-2035 and the pavement maintenance funding needs recently identified by The University of Texas Center for Transportation Research.

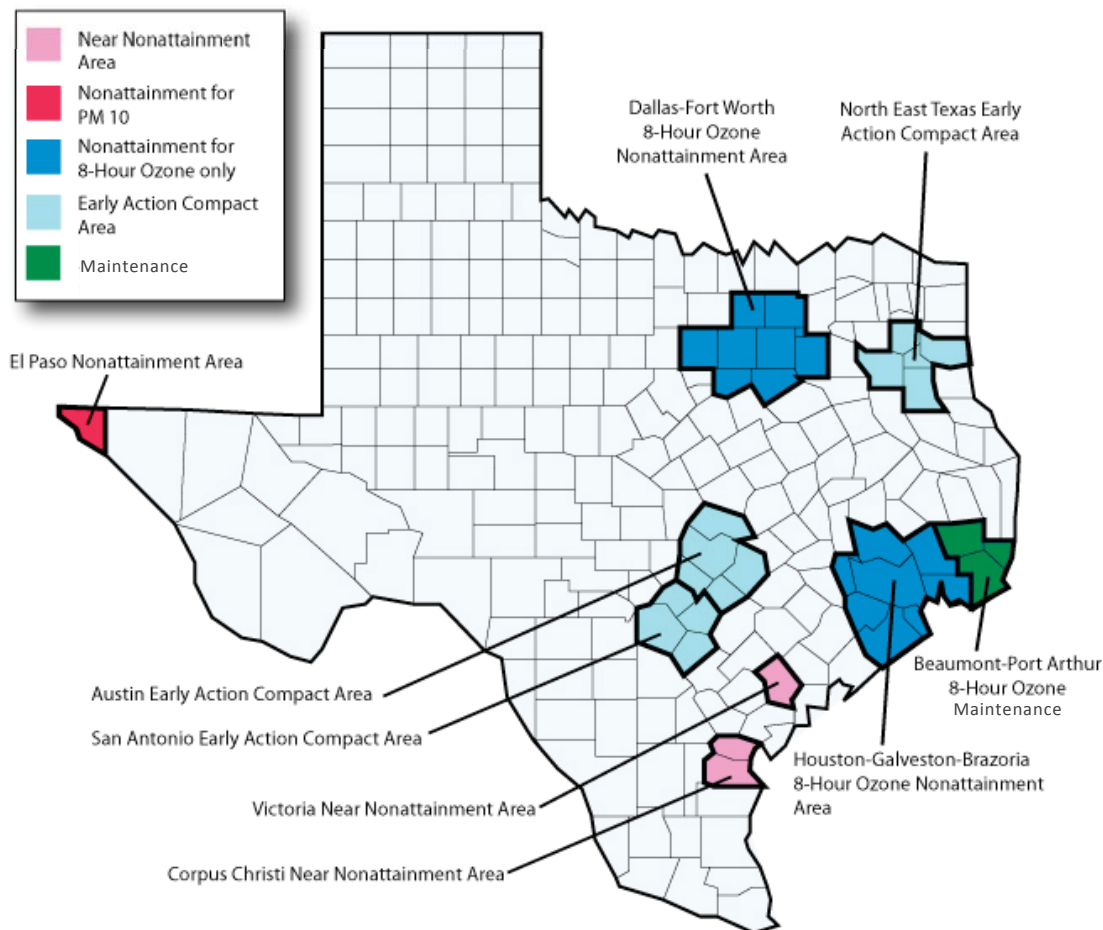
Although TxDOT is close to meeting its goal of 90 percent of pavements rated as good or better, current trends in funding may lead to a rapid decline in overall average statewide pavement rating. This decline, given current funding trends, will cause Texas' pavement scores to average less than 10 percent good or better by 2035.



Projected Percentage of Lane Miles with Good or Better Pavement

The Environment

Currently, there are three areas in Texas that do not meet air quality standards (nonattainment) as established by the Environmental Protection Agency. There are three other near-nonattainment areas and one maintenance area of the state that are in risk of violating current standards. As a result, these metropolitan areas will be faced with challenges as they look for transportation solutions while trying to improve the air quality in their region.



Texas Nonattainment and Near-nonattainment Counties

Where we choose to live and work, particularly in areas of rapid growth, will also have an impact on our ability to find solutions to transportation needs while minimizing the impact that they have on our environment. Reliance on single-occupant vehicles (SOVs), suburban sprawl, and the lack of transportation choices contribute to increased congestion and air quality challenges.

In addition, climate change may have several important implications for the Texas transportation system by the end of the century. While these are beyond the time frame for this plan, it is nonetheless timely to consider possible impacts of climate change.

Technology Changes

The future of transportation technology is increasingly about the integration of transportation with telecommunications. Most people now travel with one or more personal communication devices. These devices are being integrated with cars and trucks. One-quarter of Americans already have a GPS device.

The freight industry is becoming increasingly reliant on these technologies. Many trucks already use fleet management systems to track and manage goods movement—these usually include a GPS system along with some form of wireless communication. Railroads and some intermodal shippers also make use of transponders (similar to the devices used for electronic toll collection) to monitor the location of containers and rail cars.

Changing energy sources will influence transportation. Regardless of the exact timing, petroleum-related fuel prices are expected to rise significantly, unless fuel efficiency improves and/or global demand for oil decreases by at least the same rate as the decline in production. As a result, future travel patterns may shift from historic trends, unless alternate sources of transportation energy are brought online.

Our Transportation System – Now and in the Future

What Makes Up Our System and What Are the Future Demands?

Moving People

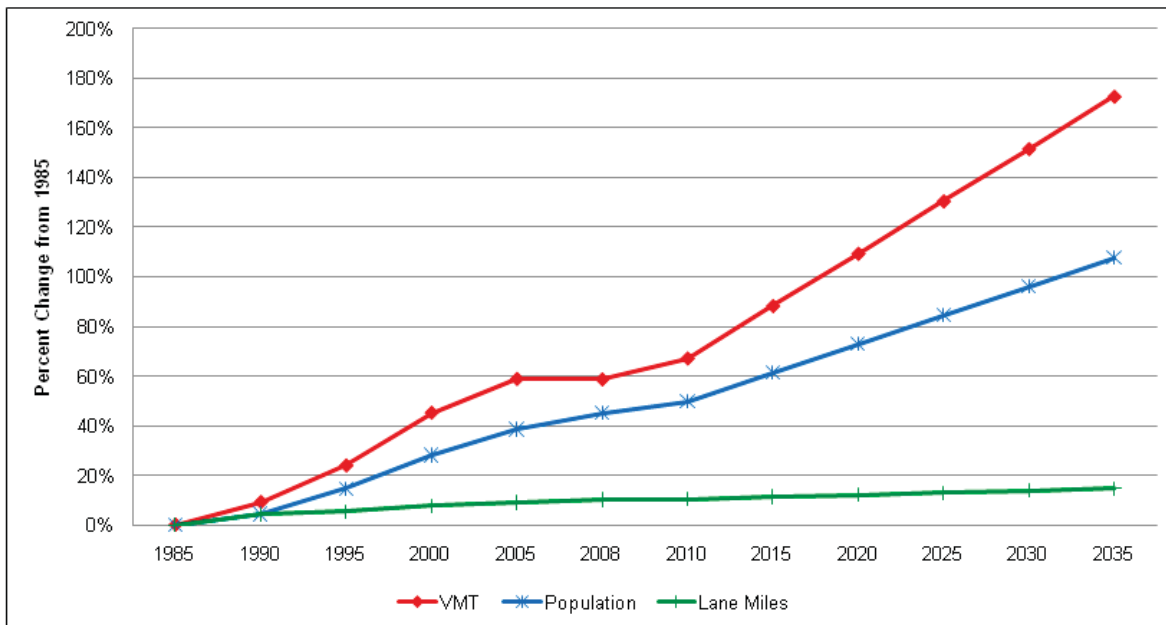
The Texas transportation system is made up of networks of various modes, sizes, and ownership. Each contributes to the economic vitality of Texas by moving people and moving goods into, out of, and across the state.

The Texas highway system is made up of over 80,000 centerline miles of roadway. The interstate system in Texas is 9.7 percent of the total U.S. interstate system. In Texas, U.S. highways, state highways, business routes and farm-to-market type roads make up most of the system.

Growth in Travel

Demand for roads is typically measured in Vehicle Miles of Travel (VMT). VMT is the total daily vehicles that use a road multiplied by the length of the roadway. One car travelling 1 mile equals one VMT. Two cars travelling for 2 miles are four VMT, and so on.

VMT is currently outpacing population growth in Texas. This trend is predicted to continue at an accelerated pace. From the measured 2008 levels, VMT is predicted to increase 72 percent, while population will grow by 43 percent by 2035.



VMT, Population, and Lane Miles, 1985–2035

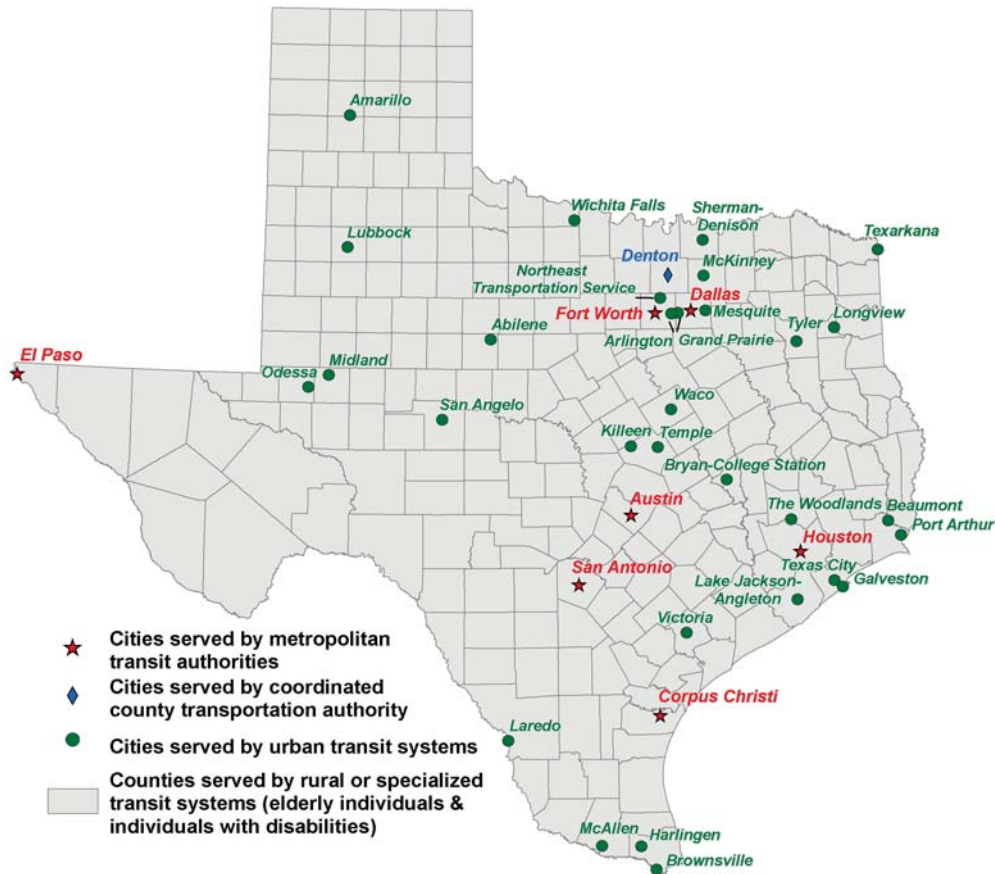
Total VMT is made up of both personal autos and trucks. While auto VMT is expected to increase by 66 percent from 2008 to 2035, truck VMT is expected to grow by 123 percent.

Congestion in Texas is getting worse, as population grows and VMT outpaces construction of new capacity. While 67 percent of freeway travel in urban-metro counties is currently occurring in heavy or worse congestion, this is expected to grow to over 80 percent of travel by 2035.

Public Transportation

Public transportation is an integral part of the Texas transportation system. It not only provides an alternative means of travel in both urban and rural areas, but also provides vital services for the elderly and persons with disabilities.

Public transportation in Texas includes both urban transit systems and rural transit services. Urban transit systems are multifaceted and include fixed-route and demand-response bus systems, trolley systems, and urban rail systems. Rural systems provide services in small cities and rural areas, providing transportation to the general public, elderly, and persons with disabilities.



Public Transportation Systems

Within Texas, urban and/or commuter rail systems currently exist within the Dallas-Fort Worth metroplex area (Dallas Area Rapid Transit [DART], the Trinity Railway Express [TRE], and McKinney Avenue Transit Authority [MATA]), Houston (MetroRail), and Austin (Capital MetroRail). In addition, the cities of Dallas, Fort Worth, and Austin have initiated studies for the planning and design or expansion of urban streetcar systems to complement regional rail.

Intercity Passenger Rail and Bus

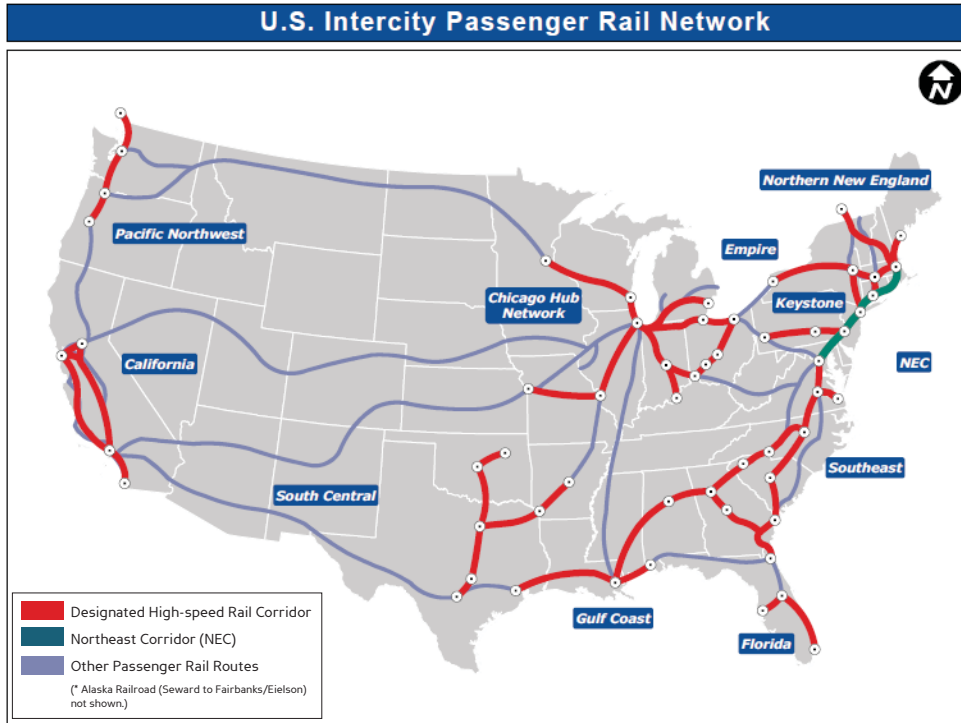
For many Texans intercity travel in Texas is by auto. However, there are important alternatives to the automobile. Intercity passenger rail service in Texas is provided by Amtrak. Amtrak routes in Texas in 2010 include:

- ★ The Texas Eagle: Chicago to San Antonio, via St. Louis, Little Rock, Texarkana, Dallas, Fort Worth, and Austin,
- ★ The Sunset Limited: New Orleans to Los Angeles, via Houston, San Antonio, Alpine, and El Paso, and
- ★ The Heartland Flyer: Daily round trip between Oklahoma City, Oklahoma and Fort Worth, Texas.

The largest intercity bus systems are Greyhound Lines and the Trailways system. Other systems in Texas include Kerrville Bus Company, Americanos, Valley Transit Company, and others.

High-Speed Rail Planning in Texas

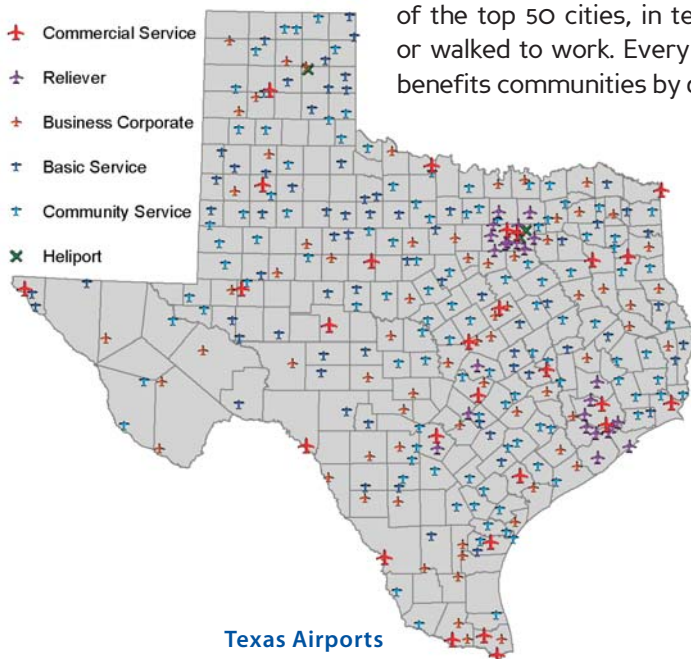
As the U.S. and Texas grow and as expressed at public and stakeholder meetings, there is increasing interest in high-speed rail systems. The distance between large metropolitan regions in Texas is well suited to service by high-speed rail. In April 2009, The Federal Railroad Administration of the USDOT released a strategic planning document outlining the administration’s vision for high-speed rail systems development.



High-Speed Rail Map from the Federal Railroad Administration

Bicycles and Pedestrians

Bicycle and pedestrian travel are increasingly important parts of the Texas transportation system. Between 1990 and 2007 Texas experienced a 38% increase in commuters who biked to work. Between 2000 and 2007 people walking to work increased by 9 percent. In 2010, Texas had seven of the top 50 cities, in terms of percent of commuters who bicycled or walked to work. Every trip taken by bicycle or on foot immediately benefits communities by decreasing traffic and air pollution.



Aviation

Texas is home to one of the most robust and active state airport systems in the nation. There are 27 commercial service airports and 265 general aviation airports in Texas, with large clusters of airports close to population centers in Dallas-Fort Worth and Houston. The importance of aviation to Texas is highlighted by the fact that three of the world’s largest commercial airlines (American, Continental, and Southwest) maintain headquarters in the state and conduct major operations from Texas airports.

Moving Goods

Including all modes of freight movement, Texas moves more freight than any other state. Texas is unique having 27 border crossings on its large international boundary with Mexico. These handle the most international truck, rail, and personal vehicle crossings of any state. Texas seaports are of national importance. Millions of gallons of petroleum products and tons of manufactured goods and other freight are moved into and out of Texas, and between the global marketplace and the rest of the U.S. Additionally, the ports serve a key role in military deployment.

Truck Freight

Trucks are vital to freight transportation because they usually provide the first and last step in the supply chain for goods movement. Whether hauling raw materials prior to production or refinement, finished goods after manufacturing, or delivering goods directly to consumers, trucks are part of Texas' economic lifeline.

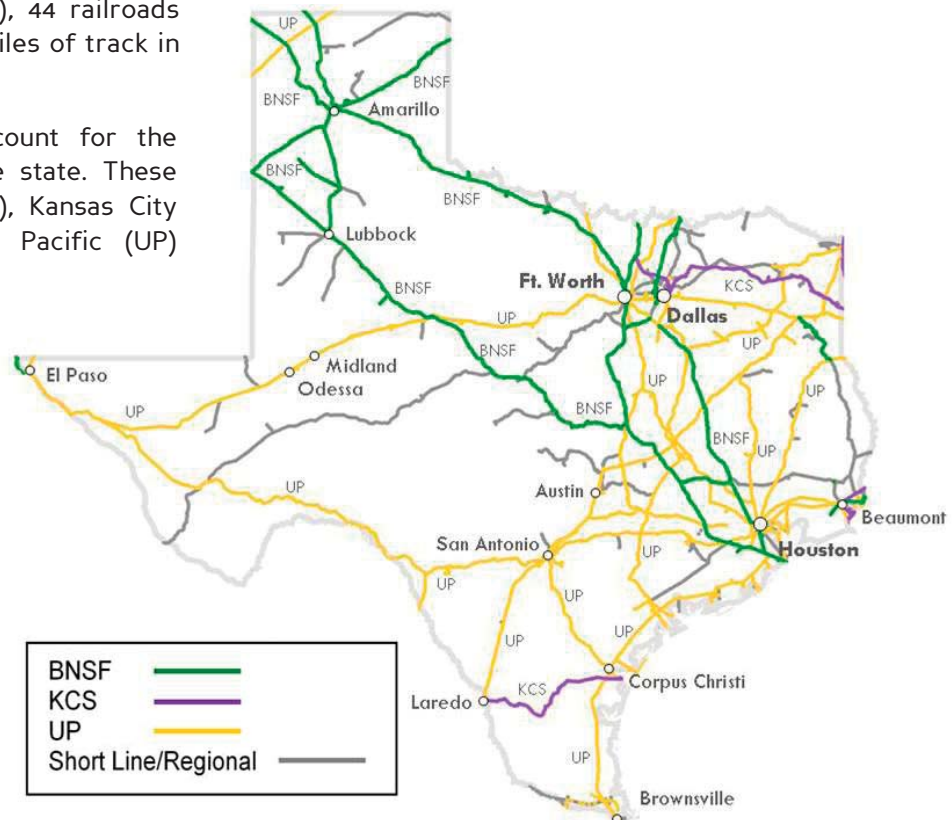
In terms of gross tonnage, trucks are expected to carry the majority of most commodities with the exception of raw materials and chemical/petroleum commodities in Texas. It is expected that from 2008 to 2035 the value of goods shipped by truck within, from, and to the state will grow by 176 percent.

The Texas Freight Rail System

Texas has the largest freight rail network in the country handling 8 percent of all freight moved in the state. According to the Association of American Railroads (AAR), 44 railroads operate more than 10,000 miles of track in Texas.

Three Class I railroads account for the majority of rail miles in the state. These include BNSF Railway (BNSF), Kansas City Southern (KCS), and Union Pacific (UP) railroads.

According to statistics published as part of the FHWA's Freight Analysis Framework, it is expected that from 2008 to 2035 the value of goods shipped by rail within, from, and to the state will grow by 77 percent. This equates to approximately 546 million tons of goods with a combined value of more than \$136 billion by 2035.



The Texas Freight Rail Network

Texas Ports and Waterways

The state has almost 300 miles of deep draft channels along with 12 deep draft public ports. There are also over 700 miles of shallow draft channels along with multiple shallow draft public

ports. TxDOT recently estimated that Texas waterways are expected to move over 700 million tons of freight by 2030.

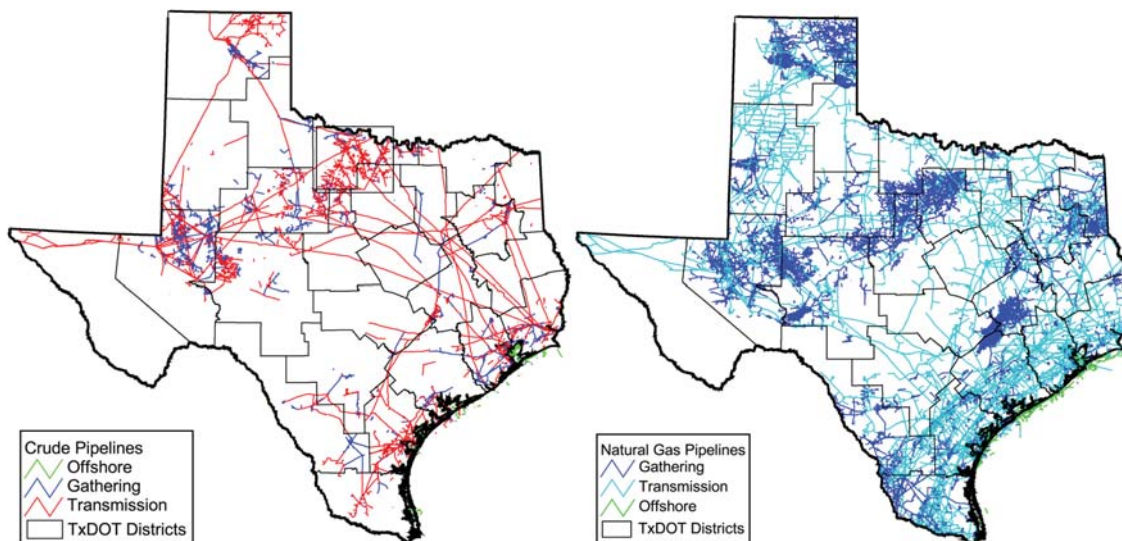
The primary shallow draft waterway in Texas is the 1,300-mile Gulf Intracoastal Waterway (GIWW), which stretches from Brownsville, on the Mexican border to St. Marks, Florida. The GIWW is the nation's third busiest waterway with the 423-mile Texas portion handling more than 58 percent of its traffic.



Ports, Waterways, and Navigation Channels along the Texas Gulf Coast

Texas Pipelines

Pipelines are a major mode of transportation of crude oil and natural gas in Texas, which help in economic and efficient movement of these commodities. Natural gas and crude oil are the major commodities transported by pipelines—these together constitute 67 percent of the 222,285 pipeline miles in Texas. Although oil production in the state is in decline, natural gas production in the state continues to increase rapidly due to an increased production from unconventional sources in northeast Texas.



Crude Petroleum and Natural Gas Pipelines in Texas

Our Future Needs and Finances

What Is Needed and How Will We Pay For It?

Who Owns, Builds, and Operates the Transportation System?

Highways: TxDOT manages funds to build and maintain the state highway system (farm-to-market/ranch-to-market, state highway, U.S. highway, and interstate). Counties and cities may execute pass-through finance agreements with TxDOT to develop on-system projects by using local funds to pay for construction with TxDOT reimbursing the local government out of future highway funding over an agreed upon timeframe. Regional Mobility Authorities and toll authorities also own, build, and operate highways.

Transit: There are seven Metropolitan Transportation Authorities (MTAs) located in the largest Texas cities and one coordinated county transit authority. There are 30 urban systems operating in cities between 50,000 and 200,000 in population. Rural public transportation is provided by 38 entities (local governments, public agencies or rural transit districts) that provide service in rural areas and towns outside of urban districts or MTA systems. Transit providers finance the construction, operation, and maintenance of transit systems from different sources—including federal and state grants, loans, bonds, local sales taxes, passenger fares, and advertising fees.



Rail: Texas has three Class 1 railroads—BNSF, UP, and KCS—that own, maintain, and operate rail infrastructure. Most short-line railroads are owned by a number of privately held freight rail companies. Each of these private firms uses revenues from shipping fees to make improvements to the rail infrastructure. The state owns rail infrastructure in west Texas, from Presidio to northeast of San Angelo, and leases it to a privately held company. In addition, the state owns or has a security interest in the Bonham Subdivision between Paris and Bonham and the Northeast Texas Rural Rail Transportation District between Mount Pleasant and west of Greenville. Public and private funds have been used for improving this rail line to allow higher operating speeds.

The National Railroad Passenger Corporation, Inc. (Amtrak) is the sole provider of intercity passenger rail service in Texas. Amtrak trains run on freight rail infrastructure under operating agreements with each track owner. States provide financial assistance to Amtrak to retain non-long distance rail service.

Airports: Airports in Texas are owned by the cities or counties in which they operate—although many of the large commercial airports are operated by financially independent authorities. At many commercial airports, airlines have developed complex contractual arrangements that determine the use of and payment for airfield and terminal facilities. Commercial airports use a combination of federal grants and local funding to make improvements. TxDOT administers public funds for grants to general aviation airports throughout Texas.

Ports: Ports in Texas are owned and operated by port authorities, which are subdivisions of the State of Texas, municipalities, and private entities. Most have a board that directs the policies of the port and answers to local area constituents in their respective navigation district. Federal funding is available on a competitive basis for dredging, harbor maintenance and port security.



Pipelines: Natural gas and oil pipeline systems are owned, operated, and maintained by several different private companies. Expansion and maintenance are funded through service charges.



Texas Transportation Needs

Highways: Travel needs in urban areas were estimated based on traffic forecasts of urban mobility needs from studies carried out by the Texas Transportation Institute (TTI). The needs were based on a calculation of the amount of highway capacity needed to satisfy projected demand in 2035, or “lane mile equivalents.” However, the actual solution to satisfy the need is decided at the local level in each metropolitan area and can be highways, public transportation, other modes, or a combination of modes.



Travel needs in rural areas were estimated on the same lane mile equivalent concept. Traffic volumes were forecast to 2035 and the number of lane mile equivalents needed to avoid severe congestion was calculated.

Travel needs, based on highway capacity costs, pavement rehabilitation, and bridge maintenance, inspection and replacement costs, total \$370 billion—measured in 2010 dollars. The needs exceed the current forecast of funds that TxDOT has available.

Summary of Highway Needs through 2035 (\$ millions, 2010)

Highway	2035 needs (\$ millions)
Metro/Urban needs from TTI	\$242,046
Urban needs based on new MPO boundaries	\$1,047
Routine Pavement Maintenance	\$7,540
Preventive / Rehabilitative Maintenance	\$83,244
Rural Capacity Needs	\$3,529
Total Highways	\$ 337,406
Bridges	
Replacement Cost (on-system)	\$22,389
Replacement Cost (off-system)	\$8,042
Maintenance Cost	\$1,162
Inspection Cost	\$548
Total Bridges	\$32,141
Grand Total	\$369,547

Public Transportation: The needs for public transportation are growing but are difficult to quantify. Many transit agencies have plans and programs for improvements based on anticipated funding. Many transit agencies are focusing on less costly, more efficient alternatives that incrementally increase ridership, such as Bus Rapid Transit (BRT) as an interim step towards a light rail or streetcar system.



The vast majority of transit service and funding in Texas is in urban areas with populations greater than 200,000, most of which have locally dedicated funding sources. According to the American Association of State Highway and Transportation Officials, the average state funding for transit in 2008 was \$42.50 per person, while state transit funding in Texas was \$1.18 per person. The anticipated public transportation capital investment needed between 2006 and 2035 is \$40.2 billion, with 95 percent estimated for metropolitan areas and 5 percent for small urban and rural transit operators. The estimated operating funds need (state funds only) for small urban and rural operators is \$3.2 billion.

As Texas' urban areas become more densely populated, transit needs are expected to grow. The growing elderly population will create additional specialized and rural transit requirements. In 2010, total federal funding was \$610 million for all Texas public transportation. This included \$320 million for annual programs and \$290 million for specific project awards. The forecast for annual funding in 2035 is in excess of \$700 million.

Estimated Requirements to Support Public Transportation in Texas (2006-2035)

Expense Category	Total Funds Required (2006-2035) (\$ millions)
Metropolitan Urban Capital Requirements	\$38,309
Small Urban Fleet Replacement/Expansion	\$333
Rural Fleet Replacement/Expansion	\$696
Small Urban/Rural Major Capital Facilities	\$769
Small Urban Passenger Facilities	\$27
Rural Passenger Facilities	\$35
Capital Subtotal	\$ 40,169
Small Urban and Rural Operating (State Funds)	\$3,174
Grand Total	\$43,343

Bicycles and Pedestrians: As previously noted, bicycling and walking to work are growing as a percentage of commuters. In Texas, it is estimated that 0.8 percent of federal transportation funds are spent on bicycle and pedestrian facilities. Between 2010 and 2020, it is anticipated that Texas will spend \$15 million per year for the Curb Ramp Program. In 2009, \$54 million was spent on Safe Routes to School Program.

Rail: The Texas Rail Plan highlights critical issues:

1. **Freight Bottlenecks** – Rail bottlenecks, such as Tower 55, are hindering efficient movement of freight.
2. **Grade Crossings** – Safety at rail grade crossings is major concern.
3. **Rail Yard Capacity** – Increasing amounts of freight are straining capacity at rail yards.
4. **Border Rail Operational Issues** – Limited rail infrastructure contributes to delays in trains crossing between the U.S. and Mexico.
5. **Sidings** – Sidings are needed to accommodate longer and heavier trains.



Identified Freight Rail Improvements Costs (2030) (\$ millions)

Crossing Closure	Crossing Closure and Pedestrian Bridge	Grade Separation	New Rail Connections	Total
\$18.6	\$7.0	\$2,506.6	\$5,227.7	\$7,759.9

Intercity Rail: Nationally, intercity passenger rail has experienced historic growth in ridership over the last several years. The greatest increase has occurred in regional corridor routes that connect major population centers separated by distances similar to those between Dallas-Fort Worth, Houston, and San Antonio. Conventional diesel-powered trains operating on tracks shared with freight trains maintain a central role in intercity passenger rail, but newer, more advanced rail technologies capable of operating at significantly faster speeds are becoming the intercity passenger rail investment of choice. Historically, Texas has assumed little or no initiative in planning or funding intercity passenger rail. However, with the mobility challenges confronting Texas, intercity passenger rail would complement the state’s long-term mobility strategy. While construction needs for high speed intercity passenger rail have not been identified, the Texas Rail Plan identifies the needed studies to determine location and/or improvement to existing routes.



Airports: Passenger travel demand at commercial airports is monitored continuously and airport development projects are initiated when demand drives the need for additional or expanded facilities. Needs at commercial airports are estimated to be several billion dollars. Needs at general aviation airports total nearly \$1.1 billion for the next 5 years.

Ports: Texas port infrastructure has not kept pace with growth and will be greatly strained with the forecasted increases in freight traffic, which could be amplified by the widening of the Panama Canal. Many of the channels have not been maintained at their authorized width and depth and locks are in need of repair. It is estimated that \$5.75 billion is needed for maintenance and operations for the ports and waterway through 2035.



Funding Forecast

The Texas transportation network is large and complex, and the financing needs are equally so. Revenues are generated by a combination of:

- ★ Direct user fees (highway tolls, transit fares, and payments to move freight);
- ★ Indirect user fees (motor fuel taxes and registration fees, for example, fees that do not reflect use of a specific facility but are paid by firms and individuals that use the transport network);
- ★ General taxes (dedicated sales taxes to support transit, for example);
- ★ Federal funds (much of this comes from indirect user fees including federal taxes on motor fuel); and
- ★ Bonds (with repayment backed by future direct or indirect user fees or general revenues).

Chapter 3 of the SLRTP contains more information on these sources of funding for the various modes.

TxDOT manages expenditures to build, maintain, and operate the state highway network as well as support for certain transit, airport, rail, and marine facilities. While vital for the state’s economic and social well being, highway funds support only a portion of the state’s total transportation system.



Currently, TxDOT estimates \$58 billion in available funds for highways.

Future Funds for Highway Projects (\$ millions)

Category	FY 2010– FY 2020	FY 2021– FY 2035
Preventive Maintenance and Rehabilitation	\$10,724	\$11,630
Metropolitan Area Corridor Projects	\$1,963	\$0
Urban Area Corridor Projects	\$282	\$0
Statewide Connectivity Corridor Projects	\$70	\$0
Congestion Mitigation and Air Quality improvement	\$1,246	\$2,230
Structures	\$2,813	\$3,750
Metropolitan Mobility/Rehabilitation	\$2,106	\$3,140
Safety	\$1,444	\$1,950
Transportation Enhancements	\$676	\$900
Supplemental Transportation Projects	\$818	\$490
District Discretionary	\$728	\$940
Strategic Priority	\$178	\$0
CATEGORY SUBTOTAL	\$23,048	\$25,030
Program		
Prop 12	\$2,000	
Prop 14	\$818	
Prop 14 Safety Bond	\$423	
Concessions and Toll Revenue Agreements	\$2,431	
Federal Earmarks	\$625	
Pass through Finance	\$749	
ARRA	\$1,247	
Contracted Routine Maintenance	\$2,054	
PROGRAM SUBTOTAL	\$10,347	
GRAND TOTAL		\$58,425

Source: Texas 2010 UTP and Minute Orders 112048 and 112049 approved by TxDOT in November 2009

Public transportation in Texas is a responsibility of local government, but funding for public transportation comes from federal, state, and local resources. Federal transit funding is allocated annually. The federal apportionment to Texas for FY 2010 was \$610,331,010. Because this funding is determined annually, there is no reliable way for recipients to forecast future funding streams.

The largest transit agencies are funded with a dedicated local sales tax and apply directly to Federal Transit Administration for federal funds for capital improvements. State and federal transit funds are distributed by TxDOT to small urban and rural transit providers.

Texans Speak

How You Feel about Transportation and Solving the Challenges

Public Outreach Effort

A Public Outreach Plan was developed and implemented during the development of the Statewide Long-Range Transportation Plan 2035. During the outreach effort, a number of tools were used to ensure the public was informed of the status and findings throughout the planning process.

Newsletters

TxDOT issued three newsletters to federal, state and local elected officials, transportation stakeholders and the public.

Stakeholder & Public Meetings

Two rounds of stakeholder and public meetings were held in April and July to show the status and findings of this planning process.

Stakeholder meetings were held in each of the 4 TxDOT regions, while public meetings occurred in each of the 25 districts.



Stakeholders are those individuals, associations, and businesses that have an interest in the SLRTP. Included are elected officials, transportation staff members, civic and community leaders, state transportation groups, Indian tribal government representatives, business and economic interest groups, industry representatives for each mode and public agency representatives. TxDOT Districts and the Government and Public Affairs (GPA) Division keep updated lists.



Questionnaire

An optional, informal questionnaire was made available to the public during the initial round of statewide public meetings. Respondents were able to complete it on-line, at the TxDOT District offices, at the public meetings, or complete and mail/fax it in.

Webpage/Social Networking Tools/Telephone Line

TxDOT created a webpage at http://www.txdot.gov/public_involvement/transportation_plan/default.htm.

This website provides information regarding the status of the project. Social media sites such as, Facebook, Twitter, and YouTube were also used. A toll free telephone number and voice mailbox was designed for the public to leave input, feedback or general comments. It will remain operational until November 1, 2010.

Public Hearing

One formal public hearing will be held in Austin, Texas, scheduled for October 1, 2010, to solicit public input on the draft SLRTP before presenting it to the TxDOT Commission for adoption.

What We Heard from the Stakeholders

Stakeholder meetings were held in four regions.

Region	General Stakeholder Comments
East	<ul style="list-style-type: none"> ★ Freight should not focus on merely trucks but short-line rail and the use of barges in the GIWW. ★ Interconnectivity at the Port of Houston will help handle the increase of container traffic predicted from the expansion of the Panama Canal and other trade possibilities. ★ Better multi-modal coordination is needed between pipelines and other modes, as natural gas is one of the biggest commodities. ★ High-speed rail will alleviate congestion concerns. ★ Financial needs numbers should reflect all modes because of intermodal connectivity. ★ Innovative financing is needed to bridge the gap.
North	<ul style="list-style-type: none"> ★ Freight movement by rail needs to be expanded and include rural rail lines. ★ Representatives from rail providers discussed support of innovative financing. ★ There was a desire to include bike lanes in highway projects. ★ There was a discussion to increase overall funding for TxDOT.
South	<ul style="list-style-type: none"> ★ Port representatives discussed increases in rail and barge loads to accommodate port growth. ★ Traffic management via ITS through signs and smart phones could assist with congestion. ★ Innovative financing away from gas tax could help funding concerns and commuter rail/ expansion of other modes could assist higher demand on highways. ★ The need for a social/cultural change away from personal vehicles could help the demand on current transportation. ★ Suggestions were made to shift funding from highways to bicycle/pedestrian facilities as a way to encourage this change. ★ To solve the difference between limited funding and large needs will take both a technological and cultural change.
West	<ul style="list-style-type: none"> ★ Focus on rural needs and lack of available state funding to rural communities. ★ Transportation can enhance economic development. ★ The growing elderly population and the need to increase rural public transportation funding. ★ Innovative financing by the use of tolls and the development of impact fees.

What We Heard from the Public

The public involvement component of the SLRTP consisted of two rounds of public meetings. The first round was held in early May, 2010 and the second round was held in early August, 2010. Each of the twenty-five TxDOT districts held at least one meeting for each of the two rounds of public involvement. A complete summary of public comments can be found in the final SLRTP report, after all comments have been received and the public comment period has ended.



Addressing the Challenges

Setting Goals and Strategies

Goals

The SLRTP is built around the six TxDOT Strategic Plan goals.

1. Develop an organizational structure and strategies designed to address the future multimodal transportation needs of all Texans;
2. Enhance safety for all Texas transportation system users;
3. Maintain the existing Texas transportation system;
4. Promote congestion relief strategies;
5. Enhance system connectivity; and
6. Facilitate the development and exchange of comprehensive multimodal transportation funding strategies with transportation program and project partners.



Meeting the Challenge...Moving Texas

Strategy Options and Recommendations

In order to meet the challenge of limited funding, growing demand, and very large transportation needs in the SLRTP, three strategies are proposed to address the transportation needs and funding differences identified in the SLRTP. These strategies represent a complementary, multi-pronged approach designed to

1. Focus available transportation funds on the most cost-effective investments,
2. Manage our transportation system in ways that encourage cost-effective shifts in how we travel, and
3. Develop partnerships for providing transportation improvements

The first strategy aims to maintain the current system and expand it where possible; the second seeks to manage the system in ways that reduce peak-period demand; and the third would provide funding to help carry out the first two approaches.

Even an aggressive application of these strategies will not close the funding difference between our identified needs and the projected available funding, but they do offer an opportunity to meet the state's most important economic and social transportation needs. Each strategy includes a series of recommendations.

Transportation needs are a result of successful economic growth. Conversely, transportation investment is one of several major drivers of the economy. Not meeting the predicted needs for transportation can have a negative impact on the quality of the state's transportation service and a negative impact on the state's economy. It is predicted that Texans will be faced with a lower level of performance of the transportation system. This lower level of performance can mean increased congestion, decreased reliability, and reduced economic productivity.

Strategy 1 – Maximize Available Resources

TxDOT, along with most other state and local transportation agencies, is experiencing a shrinking amount of revenues from traditional sources. These trends are likely to continue for the foreseeable future. At the same time, the demand for travel continues to grow. The current imbalance between demand for transportation and available resources creates significant risks about sustainability of past trends in economic growth.

This combination of limited funds and increasing demand makes it essential to use available funds in ways that maximize the return on these resources. This calls for operating the transportation system as efficiently as possible. For example:

- ★ What can be done to maximize existing roadway capacity in the most congested areas?
- ★ What can be done to ensure a safe and reliable multimodal statewide transportation network?
- ★ How can Texas take advantage of the strengths offered by non-highway modes of travel?
- ★ How can Texas take advantage of new technologies to achieve more efficient and coordinated use of all modes of transportation?

The focus of this strategy is to make the most of available transportation funds by targeting transportation investments that offer the greatest return for Texans, regardless of mode, type of investment, or location.

Recommendation A. TxDOT should refine current project selection procedures to investigate comprehensive multimodal options.

This recommendation recognizes the vital need for TxDOT to allocate limited resources as effectively as possible. This refinement would provide a comprehensive supplement to TxDOT's current decision-making process and would assist the Transportation Commission in making its decisions.

The traditional benefit-cost technique offers an opportunity to illustrate how such a project decision process might work. A benefit-cost ratio measures the dollar value of benefits generated by a project for every dollar spent on that project—the higher the ratio the greater the return on investment. For example, benefits for a highway project typically include some combination of travel time savings, reduced operating costs (such as fuel saved), and improvements in safety (such as fewer fatalities). When calculated on a consistent basis, the benefit-cost ratio offers one way to rank projects, making it easier to identify the most attractive investments.

In addition to measures of cost effectiveness, the decision process should also consider qualitative impacts, perhaps using cost-effectiveness rankings. Since quantitative benefits are based on forecasts of future traffic flows that are subject to uncertainty, the process should include a risk analysis. Qualitative benefits should also be considered, particularly as part of multimodal alternatives analysis. Any decision process should consider the six SLRTP goals.



Recommendation B. MPOs should implement similar project selection procedures to improve consistency in the overall statewide planning process. While TxDOT can refine its own project selection procedures, the process effectiveness will be enhanced if other transportation agencies have similar processes. Some MPOs already have a robust process in place, but this is not consistent across the state. This would make it possible to adopt a broad, inclusive approach to transportation investment decisions for all modes, congruent to the six SLRTP goals.

Recommendation C. Increase investment in technology that improves system efficiency.

Texas has already made significant investments in intelligent transportation systems (ITS), particularly in large metro areas. Evidence from across the nation suggests that a high rate of return can be achieved by investing in relatively low cost measures such as traffic signal coordination, ramp metering, access management, and signal preemption for buses.

Strategy 2. Manage Demand

This strategy considers ways to meet transportation needs through managing demand, with an emphasis on reducing demand on highway assets during peak periods and on enhancing highway management and operations.

A trend already exists in Texas towards travel other than a single occupant vehicle. More than 20 percent of urban work trips are by other modes (with carpools accounting for most of this travel—between 11 and 13 percent of work trips). About 400,000 workers work at home in Texas. This equates to 3.6 percent of commuting trips—more than double transit’s share.



Recommendation A. Encourage shifts in mode, departure times, and/or route.

This recommendation seeks to encourage individual Texans to adjust their personal travel behavior. There is a desire, and often an unavoidable need, for single-occupant driving in metropolitan areas where people do not live near where they work—indeed 23 percent of Texans live in one county and work in another. This behavior is often the only choice in order to meet work schedules and family responsibilities. However, this behavior comes with a high cost in the form of traffic congestion.



During peak periods (in some urban areas, these include midday peak periods and weekends, not just the traditional morning and afternoon rush hour), increased use of transit, carpools, vanpools, biking, and walking will reduce the number of SOVs. Telecommuting can have a similar effect by eliminating work trips. Alternate work locations that provide high-speed internet and high definition video conferencing can help people relocate travel to locations or times of day with less traffic congestion.

Recommendation B. Consider capital investments that support modal shifts during peak hours.

This recommendation seeks to implement innovative approaches to encourage Texans to adjust their personal travel behaviors. One approach involves public-private partnerships that invest in telecommuting centers (offices where space is unassigned, but available on an hourly/daily basis with shared resources such as reproduction services and high quality tele/video-conferencing). Such centers could be co-located at transit hubs.



Another innovation is to adopt a corridor level approach to planning for bicycling routes and facilities. Typically bike trails are developed in a piecemeal fashion, with little regard to trip making patterns, signage, bicycle priority at traffic signals, continuous dedicated bike trails/lanes that avoid traffic congestion entirely, and bike parking.

Recommendation C. Implement active traffic management to smooth traffic flow and add to effective capacity.

Active traffic management is a relatively new operational concept that holds the promise of greater efficiencies and throughput on congested facilities via a host of real-time, dynamic traffic management techniques. International experience has found that these methods can increase capacity by proactively managing shoulders as peak running lanes, and smooth traffic flow by using variable speed limits.

Recommendation D. Coordinate with local communities to develop land use plans that support existing and future sustainable transportation systems.

TXDOT should work with local communities to identify and encourage more sustainable approaches to development that are consistent with the existing or planned transportation system.

Recommendation E. Explore real-time location information to assist with traveler decisions.

The recent expansion of personal and fleet-owned devices with GPS capability has resulted in an explosion of real time location information, including speed data. Several private sector companies have begun to use these data to develop commercial traffic information systems, including travel time predictions.



Recommendation F. Explore and encourage demand-based pricing that improves the level of performance for travelers.

One of the most powerful mechanisms for influencing travel behavior is to charge for using it at a level that is consistent with its scarcity. This is the business model that is seen in most commercial businesses. Transportation stands out as an exception in that anyone in Texas can use most of the state's highway system for the same cost at all times. In return, travelers receive no assurance about expected travel time and reliability.

Many rail and transit systems charge higher fares for traveling at peak times. Most airlines charge more to travel when there are only a few seats available. Delivery companies charge more to deliver urgent packages than those that are not time-sensitive. Apart from a few toll roads and

some High Occupancy Toll (HOT) lanes, most of the Texas highway system is available to anyone to use at anytime. In practice the only “charge” for using the highway system at peak times is traffic congestion and uncertainty about when one will reach their destination.

Strategy 3 – Leverage Partnerships

TxDOT faces severe financial constraints, along with most state and local transportation agencies as well as the USDOT. Regardless of the growth in future demand for new transportation system capacity and for preserving transportation assets, transportation funds are trending downward. Long-term there is a downward trend in transportation revenues. State and federal fuel taxes are a fixed amount per gallon. As a result, as vehicles become more fuel-efficient, less revenue is raised per mile driven. In addition, fuel taxes are not indexed to the rate of inflation; therefore, fuel-related transportation revenues lose value over time relative to the cost of preserving, enhancing, or expanding the transportation system.

Transportation investments provide tangible benefits to local communities, individual travelers, and businesses. There are several active programs that attempt to leverage these benefits as ways to help generate additional funds. Examples include:

- ★ Pass-through financing is a technique where TxDOT provides repayment of a portion of facility cost incurred by local or regional entities (including toll roads) or private firms based on usage.
- ★ The Texas State Infrastructure Bank (SIB) provides loans and loan guarantees to local or regional entities and private firms, repaid in full with interest.
- ★ The private sector funds freight rail, pipelines and many port facilities and represents another source of capital.
- ★ Regional Mobility Authorities (RMAs) are independent agencies formed to finance, design, construct, operate, maintain, and expand the full range of transportation facilities, including roads, airports, intermodal facilities, etc.
- ★ Local tolling authorities have been established as financially independent bodies, such as the North Texas Toll Authority, while others are formed by counties, such as Harris County Toll Road Authority and Fort Bend County Toll Road Authority.
- ★ Private Activity Bonds (PABs) provide private developers and operators of transportation facilities access to tax-exempt interest rates.
- ★ The Buy America Bonds (BABs) program is designed to provide a Federal subsidy of 35 percent of the interest payment for state and local governments. BABs can be issued through the end of December 2010.
- ★ A Transportation Reinvestment Zone (TRZ) provides a way to capture a portion of property taxes from increased value in real estate resulting from a highway improvement. In Texas, this mechanism is only available to municipalities and counties that are planning to execute a pass through finance agreement to fund a highway project.



Implementing the Plan: Performance Measures

Performance measures are indicators that enable decision makers to monitor changes in system condition and performance against established visions, goals, and objectives. These serve as a measure of the progress of the implementation of TxDOT’s future improvements to the system to ensure the most productive and beneficial use of available transportation funding and provide TxDOT with the means to update the SLRTP for all modes to meet the challenges ahead.

TxDOT’s Mission and Vision as established in the Strategic Plan have two elements. One shows how TxDOT will act as an agency, and the other shows how the state’s transportation system will function. Both components are relevant to this plan—the first because it relates to how the plan will be implemented, and the second because it characterizes how the transportation system will eventually look and function.



TxDOT 2011–2015 Strategic Plan Mission and Vision

Source	TxDOT	Transportation System
Mission	...maintaining existing roadways and collaborating with private and local entities to plan, design, build, and maintain expanded transportation infrastructure.	... safe and efficient movement of people and goods, enhance economic viability, and improve the quality of life for the people that travel in the state of Texas
Vision	To be a trusted performance-driven organization committed to collaborating with internal and external partners...	... modern, interconnected, and multimodal transportation system that enhances the quality of life for Texas citizens and increases the competitive position for Texas industry.

The six goals established for the Statewide Long-Range Transportation Plan are consistent with federal requirements for long range planning, TxDOT's 2010 Unified Transportation Program, and earlier work undertaken by the 2030 Committee. These other efforts also highlight increasing economic growth which will be an outcome of congestion relief and system connectivity.

The list of performance measures below focus on a core group of measures that reflect TxDOT's priorities for the transportation system and which offer the greatest value to Texans and Texas businesses. Candidate performance measures for inclusion in the core group are shown below.

Performance Measures

Goal	Performance Measures
Develop an organizational structure and strategies designed to address the future multimodal transportation needs of all Texans	<ul style="list-style-type: none"> ★ Percentage of projects let on time and completed within budget ★ Overall customer satisfaction rate (external customers & partners) ★ Number of projects let to construction with more than one mode of transportation
Enhance safety for all Texas transportation system users	<ul style="list-style-type: none"> ★ Injuries and fatalities (number and rate) ★ Percentage of two-lane highways with improved shoulders ★ Reduction of work zone incidents ★ Percentage of general aviation airports with safety improvements ★ Percentage of railroad crossings with signalization
Maintain the existing Texas transportation system	<ul style="list-style-type: none"> ★ Percent of transportation facilities in good or better condition, or Texas Condition Assessment Program (TxCAP) score ★ Percentage of targets met in 4-year pavement management plans ★ Fraction of work trips that use single occupancy vehicles
Promote congestion relief strategies	<ul style="list-style-type: none"> ★ Reduction in large and small urban area congestion (total travel delay, travel delay per commuter, and congestion costs) ★ Effectiveness of multimodal congestion management projects and strategies in large urban areas ★ Progress on top 100 most congested roadway segments
Enhance system connectivity	<ul style="list-style-type: none"> ★ Satisfaction rates on industry access to international markets and gateways via the Texas transportation system ★ Percentage of Texas population within a 30 minute drive of an airport supporting business jet aircraft ★ Percent of Texas communities of 50,000 or more with public transportation services ★ Percent of Texas population with access to rural public transportation services ★ Reduction in the number of bottlenecks on economically critical road and freight corridors ★ Percentage of high volume rural roads with super-2 or 4-lane divided facilities
Facilitate the development and exchange of comprehensive multimodal transportation funding strategies with transportation program and project partners	<ul style="list-style-type: none"> ★ Percentage of projects and programs using alternative financing

Conclusions

Texas, like the rest of our nation, faces many challenges in addressing the transportation needs of our state. There are no easy solutions for meeting these transportation needs of the traveling public and Texas' businesses. The SLRTP identifies the challenges presented by our stakeholders, quantifies the infrastructure and funding needs, suggests consideration of some new processes for making transportation investment decisions, and describes the ideas and solutions presented by the users of our state's transportation systems. The SLRTP planning and public outreach efforts indicate that:

- 1) Difficult decisions will need to be made to prioritize the spending of the limited dollars available for transportation.
- 2) Partnerships must be encouraged and facilitated between providers and users of the various modes to ensure that projects are planned cooperatively to provide a safe, seamless and efficient transportation system.
- 3) Based on projected revenues and the growing need for additional infrastructure and rehabilitation, effective management practices will be crucial to offset, to the extent possible, a decline in the performance of the Texas transportation system.

TxDOT will continue to work with our transportation partners, stakeholders, elected officials, and the public to pursue opportunities to meet Texas' transportation needs while working to enhance our system and expand the transportation choices available in the future.



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MPOs

MPO	Website
Abilene MPO	www.abilenempo.org
Amarillo MPO	www.amarillompo.org
Austin - Capital Area MPO (CAMPO)	www.campotexas.org
Beaumont-Port Arthur MPO	www.setrpc.org
Brownsville	www.cob.us
Bryan/College Station	www.bcsmpo.com
Corpus Christi MPO	www.corpuschristi-mpo.org
Dallas-Fort Worth MPO (NCTCOG)	www.nctcog.dst.tx.us
El Paso MPO	www.elpasompo.org
Harlingen/San Benito MPO	hsbmmpo.com
Hidalgo County MPO	www.hcmpo.org
Houston MPO (H-GAC)	www.h-gac.com/home
Killeen-Temple MPO	www.kttmpo.org
Laredo MPO	www.ci.laredo.tx.us/city-planning/Departments/MPO/index.html
Longview MPO	www.ci.longview.tx.us/services/metropolitan_planning_organization_mpo.html
Lubbock MPO	www.lubbockmpo.org
Midland-Odessa MPO (MOTOR)	www.motormpo.com
San Angelo MPO	www.sanangelompo.org
San Antonio-Bexar County MPO	www.sametroplan.org
Sherman-Denison MPO	www.sdmpo.org
Texarkana MPO	www.texarkanampo.org
Tyler MPO	www.cityoftyler.org
Victoria MPO	www.victoriampo.org
Waco MPO	www.waco-texas.com/MPO/
Wichita Falls MPO	www.wfmpo.com



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