

# 1.0 Introduction to Transportation Planning

“A good plan is like a road map: it shows the final destination and usually the best way to get there.” H. Stanley Judd

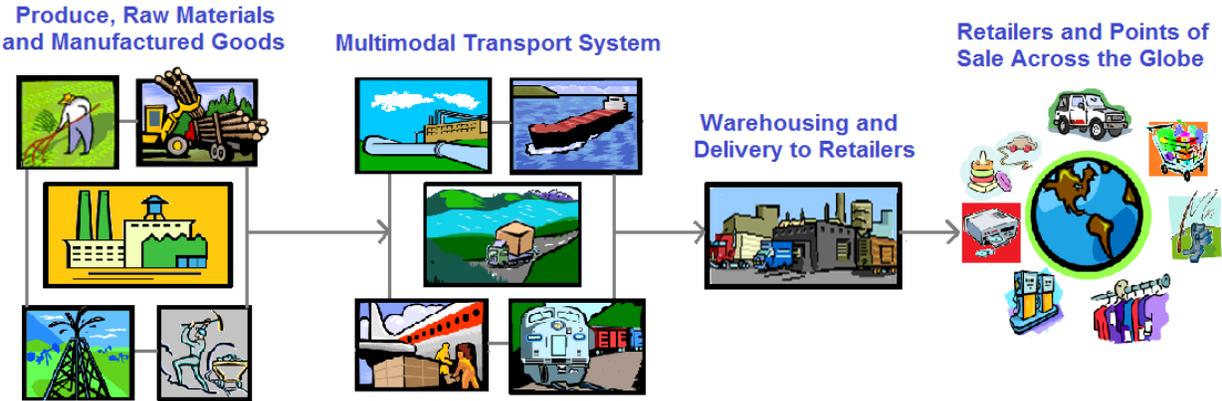
## 1.1 Purpose – Why is Transportation Planning Important?

**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 multimodal transportation system in Texas serves the growing needs of an ever-changing and increasingly diverse traveling public. Our growing business sector demands increasing levels of road, rail, ports and waterways and aviation services to remain competitive in today’s global marketplace. Our growing population demands choices in transportation beyond the personal automobile, whether walking, cycling, or traveling by public transportation.

The goods we all consume are transported from a farm, a manufacturer, a refinery, or a warehouse—usually via several modes of transport—to retailers (i.e., points of sale) where you make your purchases (Figure 1-1).

**Figure 1-1: Freight Supply Chain**





Multimodal transportation planning is an integral part of the Texas Department of Transportation's (TxDOT) mission and vision.<sup>1</sup> In conjunction, they describe how TxDOT will conduct its business and define the performance and expectations for the multimodal transportation system in Texas.

**Mission** – 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.

**Vision** – To be a trusted, performance-driven organization committed to collaborating with internal and external partners to deliver a modern, interconnected, and multimodal transportation system that enhances the quality of life for Texas citizens and increases the competitive position for Texas industry.

TxDOT does not have direct influence over the operation and the performance of several modes that comprise the multimodal statewide transportation system that it does not manage, but is committed to working collaboratively with its local and regional multimodal partners to enhance the transportation system as a whole.

The challenge facing TxDOT is balancing the ability to respond to the needs of Texas' residents and businesses with ever-shrinking transportation funding resources.

## 1.2 The Transportation Planning Process

The transportation planning process enables decision-makers and users of the transportation system to cooperatively make well-considered decisions regarding transportation investments. Simply put, there are a few basic steps to any planning process:

Step 1: Identify Needs and Opportunities.

Step 2: Collect Information about those Needs and Opportunities.

Step 3: Compare and consider all of the alternatives that will enable you to meet those Needs and take advantage of Opportunities.

Step 4: Develop a Plan that sets Goals based on Steps 1, 2, and 3.

Step 5: Monitor the progress of your Plan and amend it as necessary to meet the stated Goals.

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<sup>1</sup> TxDOT 2011–2015 Strategic Plan.



Setting realistic, attainable goals and providing the best value for every transportation dollar spent is accomplished through a (3-C) planning process—one that is **comprehensive**, **cooperative**, and **continuing**. The process must be thoroughly transparent and inclusive of all transportation stakeholders.

## 1.3 Factors that Influence the Transportation Planning Process

Effectively meeting the transportation needs of the state requires consideration of changes in population, employment, and economic trends. This section provides a brief overview of factors that will be discussed in more detail in later chapters.

### 1.3.1 Population

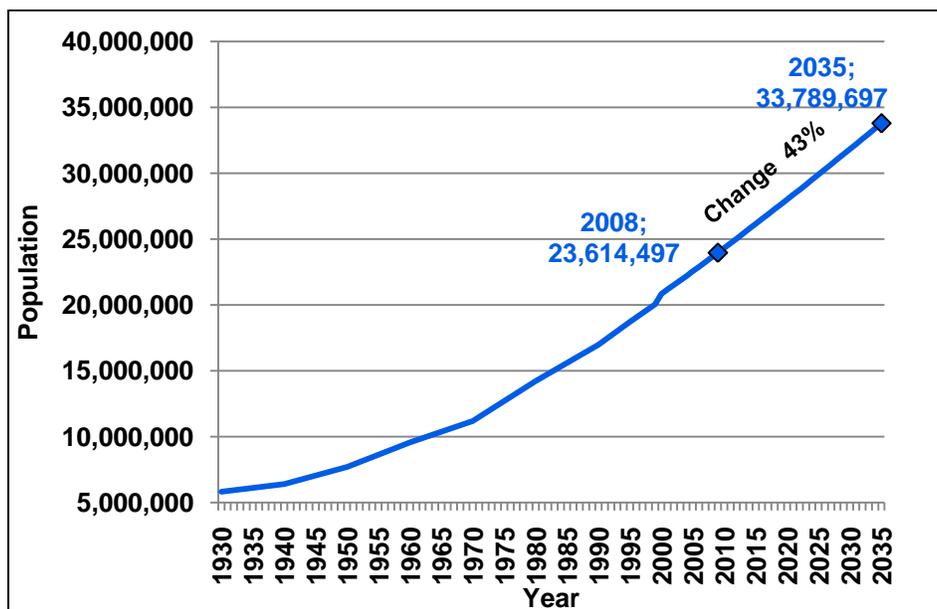
Of the many factors driving and shaping growth in transportation demand, population is one of the largest. The Texas State Data Center estimates from 1990 to 2008, the population of Texas increased by an estimated 6,627,987 persons (i.e., a 39.0 percent increase). From 2008, Texas' population is forecast to grow an additional 10,175,200 persons by 2035, or a 43.1 percent increase over the estimated 2008 levels (Figure 1-2).<sup>2</sup> This population growth is nearly equivalent to adding three cities the size of Houston to the state. The vast majority of growth will occur in urban areas.

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<sup>2</sup> “Historical population data (1930–2007) is based on actual U.S. Bureau of the Census population decennial population counts and interim estimates. Population projections from 2008–2035 are based on the Texas State Data Center’s (TSDC) *2008 Population Projections, The One-Half 1990–2000 Migration (0.5) Scenario* (which is the TSDC’s recommended scenario) . In January 2010 additional estimates were published by the Texas State Data Center for July 2008. These estimates vary from the projections presented in this plan and indicate that the July 2008 population of Texas was 24,326,974 or 712,477 persons greater than their estimate under *The One-Half 1990-2000 Migration (0.5) Scenario*. Additionally, the U.S. Census periodically releases its own population estimates and these also vary from both the TSDC’s estimates projections. See *2008 Total Population Estimates for Texas Counties, Comparisons to U.S. Census Bureau Estimates*, available at [http://txsdc.utsa.edu/tpepp/2008\\_txpopest\\_county.php](http://txsdc.utsa.edu/tpepp/2008_txpopest_county.php), for a discussion of how estimates may vary.”



**Figure 1-2: Texas Historical and Forecast Population Growth, 1930 to 2035<sup>3</sup>**



Additionally, the overall population of the United States (U.S.) and Texas is aging, as the baby-boom generation enters the 65+ age group. Between 2008 and 2035, Texas will add an additional 3.4 million persons in the 65+ age group, a 144 percent increase. Texas will go from having 10 percent of its population in this age group to over 17 percent.

### 1.3.2 Employment Growth

Between 2000 and 2008, employment in Texas grew by 13 percent from 9,951,010 jobs to 11,200,334. Most importantly to transportation, the location of jobs relative to housing has an impact on the ability of businesses to access labor markets and to individuals needing to access jobs. The American Community Survey annual sample of U.S. households contains the basic journey-to-work information from the U.S. Census. Based on this information, twenty-five Texas counties had greater than 50 percent of their residents work in, and therefore commute to, adjacent counties.

### 1.3.3 Economic Trends

While there have been four recessions in the U.S. over the past 30 years (i.e., 1981–82, 1990–91, 2001, and 2007–09) it is generally accepted that the most recent economic recession was the worst since the Great Depression of the 1920s and 1930s. While

<sup>3</sup> Ibid



slowed by the current recession, the Texas economy has remained stronger than that of the U.S. as a whole.

Forecasts from the Texas Comptroller of Public Accounts predict that the U.S. and Texas economies will rebound from the current recession (in terms of gross state product [GSP] and gross domestic product [GDP]), and grow at 2.6 percent and 3.37 percent respectively, on average, per year between 2010 and 2035.<sup>4</sup> An efficient and well-maintained transportation system is vital to the state's ability to remain economically competitive at home and abroad.

## **1.4 Regulatory Framework for the Development of the Statewide Long-Range Transportation Plan**

Title 23 of the U.S. Code, Section 135 and Title 23 Code of Federal Regulations (CFR), Part 450.214, and Title 43 of the Texas Administrative Code (TAC), Part 1, Chapter 15, Subchapter A (43 TAC §15.6) define the basic federal and state regulatory framework for the development of the Texas Statewide Long-Range Transportation Plan (SLRTP). In short, as noted in 23 CFR, the state must develop a plan with:

“...a minimum 20-year forecast period at the time of adoption, that provides for the development and implementation of the multimodal transportation system for the State. The long-range statewide transportation plan shall consider and include, as applicable, elements and connections between public transportation, nonmotorized modes, rail, commercial motor vehicle, waterway, and aviation facilities, particularly with respect to intercity travel.”

The SLRTP must also:

- ★ Include capital, operations and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient use of the existing transportation system;
- ★ Reference other transportation plans, programs, studies and policies that were relevant to the development of the SLRTP;
- ★ Include safety and security elements;
- ★ Be developed in cooperation and consultation with Metropolitan Planning Organizations (MPOs) and nonmetropolitan officials responsible for transportation, and State, Tribal, and local agencies responsible for land use

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<sup>4</sup> Texas Comptroller of Public Accounts and HIS Global Insight, Inc. Data are historical through 2007. Numbers are in 2000 dollars.



management, natural resources, environmental protection, conservation, and historic preservation;

- ★ Include a discussion of potential environmental mitigation activities; and
- ★ Have been made available for public review to provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, providers of freight transportation services, and other interested parties with a reasonable opportunity to comment on the SLRTP.

Eight federal planning factors (23 CFR 450.206) must be considered and addressed during the development of the SLRTP:

- ★ Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
- ★ Increase the safety of the transportation system for motorized and nonmotorized users;
- ★ Increase the security of the transportation system for motorized and nonmotorized users;
- ★ Increase accessibility and mobility of people and freight;
- ★ Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- ★ Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- ★ Promote efficient system management and operation; and
- ★ Emphasize the preservation of the existing transportation system.

## **1.5 What Information is Included in the SLRTP?**

Every transportation mode is an interdependent component of the overall transportation system. This plan provides an inventory of the state's transportation system and addresses the need for improvements to roadways, pedestrian and bicycle facilities, transit, freight and passenger rail, airports, water ports, pipelines, and Intelligent Transportation Systems (ITS). This inventory, along with identified needs, addresses connectivity between modes and between communities to enable our multimodal system to operate more efficiently.



The SLRTP is not a list of projects, but rather the 24-year “blueprint” for the planning process that will guide the collaborative efforts between the department, local and regional decision-makers, and all transportation stakeholders to reach a consensus on needed transportation projects and services. The MPOs undertake a similar planning process at the local or regional level to identify needed transportation improvements and services within the metropolitan area boundaries.

TxDOT and the MPOs take into account the individual needs of cities and counties, as well as the needs of private railroads, the trucking industry, airports, water ports, bicyclists and pedestrians. The projects and services identified through the cooperative planning processes are then included in Metropolitan Planning Organization (MPO) Metropolitan Transportation Plans (MTPs) and Transportation Improvement Programs (TIPs); and in TxDOT’s Unified Transportation Program (UTP) and Statewide TIP (STIP). These documents are briefly described in Table 1-1.

**Table 1-1: Texas Transportation Plans and Programs**

Plan/Program	Who Develops?	Who Approves?	Time Period	Content	Update Cycle
Statewide Long-Range Transportation Plan (SLRTP)	TxDOT	Texas Transportation Commission	24 Years	Future goals, strategies, and performance measures	Every 4 Years
TxDOT Strategic Plan	TxDOT	Texas Transportation Commission	5 Years	TxDOT’s operational goals and strategies	Every 2 Years
Statewide TIP	TxDOT	USDOT	4 Years	Transportation investments	Every 2 years
Unified Transportation Program (UTP)	TxDOT	Texas Transportation Commission	Current Year + 10 Years	Projects to be funded/ built in a 10-year period	Annual
Metropolitan Transportation Plan (MTP)	Metropolitan Planning Organization	MPO	20 + Years	Future goals, strategies, and projects	Every 5 Years (Every 4 Years in Air Quality Non-Attainment Area)
Transportation Improvement Programs (TIPs)	MPO-TxDOT Districts	Governor*/MPOs	4 Years	Transportation investments (projects)	Every 2 Years
Corridor Studies (e.g., MY-35)	TxDOT	Texas Transportation Commission	N/A	Benefit cost analysis and feasibility	As Needed
Texas Rail Plan	TxDOT	Texas Transportation Commission	5 and 20 Years	Future goals and strategies	Every 5 Years
Texas Airport System Plan	TxDOT	Texas Transportation Commission	5, 10, and 20 Years	Focus on general aviation needs	Annual
Texas Port 2010-2011 Capital Plan	Port Authority Advisory Committee	Texas Transportation Commission	2 Years	Goals, objectives, and projects	Annual
Texas Transit Statistics	TxDOT	TxDOT	1 Year	Public Transportation Operation Statistics	Annual

\*Governor delegates his authority to TxDOT

The SLRTP integrates relevant information from the above mentioned state and local plans to form a single, statewide, multimodal plan.



## 1.6 Defining the Goals of the SLRTP

The SLRTP is built around the six TxDOT Strategic Plan goals (Figure 1-3).

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.

**Figure 1-3: SLRTP Goals**

