Texas Freight Mobility Plan

Chapter 1: Introduction

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The Texas Freight Mobility Plan (the Freight Plan) gives Texas a road map for boosting our economic growth potential through a solid but flexible strategy for addressing freight transportation needs throughout the State.

With nearly half of Texas’ economy being directly impacted by freight transportation, the importance of setting the right course for and investing in our State’s mobility improvements can’t be understated.

"The future stability of the State’s economy will rely on businesses, workers and consumers being able to connect through all modes of transport." – Lt. Gen J.F. Weber, USMC (Ret), TxDOT Executive Director

Texas Freight Transportation Overview
Freight and the movement of goods is the backbone of the Texas economy. The ability of the State to compete and thrive in the global economy depends on the strength of Texas’ freight transportation system. Texas’ transportation system provides access to markets, access to jobs, and delivery of raw materials and shipment of finished goods. As the trade and logistics hub of North America, an efficient freight transportation system that connects rural and urban centers, economic activity and production and consumption centers is critical to maintaining the State’s position as a leader in trade and global competitiveness.

Commerce and community quality of life in Texas depend every day on the delivery of millions of tons of goods shipped through the State’s multimodal gateways. The movement of freight through, from, within and into Texas will continue to grow, due to increasing economic growth and population. In 2010, 1.6 billion tons of freight moved in Texas, and it is anticipated to double to more than 3.3 billion tons by 2040.¹ This freight moves on a multimodal network comprised of rail, waterways, highways, pipeline and airports. The freight transportation system must keep up with current demands from businesses, manufacturers and residents of Texas, as well as with the demands of future growth.

The increase in freight movement in Texas is driven by several factors, including a robust economy, population growth, increased trade and growing energy production. These factors highlight the need for Texas to continue to make strategic investments in the transportation system that facilitate continued economic growth and improves the quality of life for Texans.

¹ IHS/Global Insight TRANSEARCH, 2010.
**Economy**

Efficient and safe movement of freight plays a critical role in the economy of the State. Texas has the second largest economy in the United States and relies on its multimodal transportation system to ensure continued prosperity. If Texas were a nation, it would rank as the 14th largest economy in the world.  

The movement of goods is the backbone of the Texas economy. – Ted Houghton, Chairman, Texas Transportation Commission

The State is home to over 10 percent of the nation’s Fortune 500 companies. In 2013, the Texas annual Gross Domestic Product was more than $1.5 trillion. More than 6 million Texans’ jobs rely on freight transportation to deliver goods. These employees earn more than $325 billion and generate over $563 billion in value-added production. In total, those industries associated with freight transportation represent approximately 43 percent of the State’s economy.

**Population**

Texas is the second most populated state in the nation, with a population of 26.4 million in 2013. The State’s population has grown and continues to grow at a very rapid pace, with the addition of more than 4 million people between 2000 and 2010. Additionally, Texas’ population is projected to grow to approximately 45 million people by 2040. This projected increase in population will translate into further demand on the transportation system – more people ultimately means more consumers who rely on freight to deliver goods and commodities.

**Trade**

In 2013, Texas was ranked the number one exporting state in the nation by the U.S. Census Bureau, a position it has maintained for 12 consecutive years. In the same year, the State’s export revenues amounted to nearly $279.7 billion, up

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4 Based on 2010 HIS/Global Insight Transearch data and Implan model.

5 Texas State Data Center. Retrieved July 2014 from [http://txsdc.utsa.edu/data/TPEPP/Projections/Index.aspx](http://txsdc.utsa.edu/data/TPEPP/Projections/Index.aspx)
5.4 percent from 2012, outpacing total U.S. export growth. To maintain its status as the leading export state in the nation, Texas must continue to invest in its multimodal freight transportation system to ensure that the system can support growth and move freight efficiently and safely.

Texas serves as a critical gateway for the nation’s strategic trade relationships with Mexico, Central America and South America. The State is ideally positioned at the center of the North-South North American Free Trade Agreement (NAFTA) Corridor and the national West-East corridor. The Texas A&M Transportation Institute notes that approximately 60 percent of U.S./Mexico trade (in terms of value) crossed at Texas land ports between 2004 and 2012.7

**Energy**

Texas leads the nation in crude oil and natural gas production. According to the Texas Railroad Commission, final production for May 2014 was 77,787,308 barrels of crude oil and 532,125,557 (thousand cubic feet) of gas well gas. The latest Texas oil and gas boom is occurring largely in rural areas of the State, in the Permian Basin and Eagle Ford Shale areas in West and South Texas. Access to these areas is largely constrained to roadways and highways, with limited connectivity or multimodal options, such as pipelines or freight rail. Due to the potential for new development in other areas of the State, oil and natural gas production is projected to continue to increase, further impacting the transportation network.

"The Eagle Ford Shale now ranks as the largest single oil and gas development in the world based on capital expenditures. …

For the 14 producing counties, the 2012 economic impact was estimated to be over $46 billion, supporting 86,000 jobs. For the larger 20-county area, Eagle Ford Shale activity generated over $61 billion in economic impact and supported 116,000 jobs in 2012. Looking ahead to 2022, the 14-county area is expected to generate approximately $61 billion in economic impact and support over 89,000 jobs. In the 20-county area, the economic impact in 2022 is projected to be over $89 billion, supporting 127,000 jobs."


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In addition, as of January 2013, the 27 oil refineries located in Texas processed nearly 5.1 million barrels of oil a day. The combination of exploration, production and refining activities puts additional stress on roads not originally designed to handle heavy truck traffic. Such production requires a robust multimodal freight transportation network to transport the crude oil to the refineries and the refined products to market.

**Rural Transportation**

Texas’ rural transportation system provides the first and last link in the agricultural supply chain from farm to market while supporting the energy and tourism industries. Approximately 71 percent of the land area in Texas is classified as rural, according to the U.S. Office of Management and Budget. The quality of life in Texas’ rural communities and the health of the State’s rural economy depend on the quality of the State’s transportation system, particularly on its roads, highways and bridges.

**Multimodal Transportation System**

To meet the future challenges of moving freight and people and achieve the goals of this Freight Plan, additional investment is needed in the transportation system, focused on strategic elements of the system with the greatest return on investment.

The multimodal transportation system necessary to support the State’s economy includes waterways and ports, rail, highway, air and pipeline. These modes, which are briefly described in the following section, connect the gateways and nodes with origins and destinations. Gateways include facilities through which exports/imports flow, such as Mexico border crossings, deep-water ports, inland ports, intermodal transfer facilities, warehouse and distribution facilities and commercial airports.

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9 TRIP. 2014. “Rural Connections: Challenges and Opportunities in America’s Heartland.”

"Developing a state-of-the-art transportation system in Texas is the most important thing we can do. Our State alone is one of the top economies in the world, and we are continuing to make sure that all our economic centers are linked together by efficient highway, rail, port and airport activity." – Mike Berry, President, Hillwood Properties
Texas’ waterways and ports are important economic engines for the State and the nation and play critical roles in the movement of freight. There are 27 seaports in Texas. These include 16 shallow draft ports and 11 deep-water ports. According to the U.S. Department of Transportation (USDOT), seven Texas ports rank in the top 50 of all U.S. ports in terms of annual tonnage, including Houston (2nd), Beaumont (6th) and Corpus Christi (7th).\(^\text{10}\)

Also integral to the movement of freight within Texas and the Gulf region of the U.S. is the Gulf Intracoastal Waterway (GIWW). This waterway stretches 1,050 miles along the Gulf of Mexico from Brownsville, Texas to St. Marks, Florida. It is the nation’s third-busiest inland waterway. The 406-mile Texas portion of the waterway is the longest of any of the Gulf States, links Texas ports, handles 63 percent of the waterway's traffic and moves approximately 73 million tons of cargo a year.\(^\text{11}\)

Texas has more miles of rail and more railroad employees than any other state. In fact, Texas has 30 percent more freight rail miles than the next highest state (Illinois). The State has the most extensive rail network in the nation with more than 14,361 of track, making the State a major rail hub in North America. Texas is served by three major (Class I) railroad companies that directly service the border: Kansas City Southern, Union Pacific and Burlington Northern Santa Fe.\(^\text{12}\)


Highways are the backbone of freight movement in Texas. Texas has the most extensive highway network of any state in the country with over 312,910 centerline miles of public roadways. In Texas, there are more than 3,200 miles of interstate and over 12,000 miles of U.S. highways. Trucks accounted for 62 percent of freight movement in Texas in 2010, and that number is expected to grow to 66 percent by 2040.\(^\text{13}\)

Air cargo is a key component of Texas’ multimodal freight transportation system. In 2012, Texas was home to six of the top 60 cargo airports in North America in terms of total tonnage.\(^\text{14}\) Those airports include Dallas/Fort Worth International, George Bush Intercontinental, Fort Worth Alliance, San Antonio International, El Paso International and Austin-Bergstrom International.

Pipelines play a critical role in moving oil and natural gas. Texas has the most extensive pipeline network in the country, boasting approximately 425,939 total miles, of which 59 percent are intrastate and 41 percent are interstate.\(^\text{15}\)

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\(^\text{13}\) HIS/Global Insight TRANSEARCH, 2010.

\(^\text{14}\) Airports Council International – North America (ACI NA).

The multimodal freight network must be maintained in a state of good repair and expanded to support current and future trade opportunities. The need to understand and address the issues of all freight transportation modes and facilities in a comprehensive manner is the primary reason for the development of the Freight Plan.

**Mobilizing Texas: Purpose of the Freight Plan**

The Freight Plan is the first comprehensive multimodal transportation plan that focuses on the needs of the State’s freight industry and business community. The Freight Plan provides Texas with the knowledge, priorities and guidance to ensure that the Texas freight transportation system continues to support the State’s economic development goals, the growing economy and the needs of businesses and residents. The Freight Plan identifies the investment strategies, policies and data needed to enhance freight mobility; to provide efficient, reliable and safe freight transportation; and to improve the State’s economic competitiveness.

With this Freight Plan, TxDOT has developed a strategic roadmap and a comprehensive approach for improving freight transportation in Texas that will facilitate the efficient and safe movement of people and freight. The Freight Plan establishes a framework for Texas’ comprehensive freight planning program and decision-making by:

- Outlining short-, mid- and long-term plans for freight investments and planning activities.
- Identifying freight transportation facilities critical to economic growth and goods movement.
- Providing strategies to enhance economic growth and competitiveness.
- Assessing the economic impact of all freight modes on Texas and its economy.
- Developing policies and investment strategies to enhance Texas’ freight transportation system.
- Ensuring consistency with other State and Federal goals and objectives.
- Providing a realistic implementation plan to ensure prioritized needs are able to be addressed within an acceptable timeframe.

Additionally, the Freight Plan builds upon a decade of multimodal strategic planning at the statewide, regional and local levels in Texas. It has been developed to fill in the gaps that other statewide and corridor plans have not addressed. Those plans were not developed expressly for freight planning purposes; therefore, the transportation issues and goals described in them do not specifically address or identify freight needs. By focusing on the gaps, a true multimodal perspective and a comprehensive freight transportation system can successfully be developed.
The Freight Plan development process involved a number of steps, including analyzing the current and future freight transportation system, identifying needs and gaps and developing recommendations to address those needs and gaps. Stakeholder engagement was incorporated throughout the entire process. As a result of the Freight Plan development process, an implementation plan – a prioritized list of projects, funding considerations, performance measures and a timeline – was created. Exhibit 1-1 displays the Freight Plan development process.

Exhibit 1-1: Plan Development Process

The Road Map: Organization of the Freight Plan
This Freight Plan has been developed to comply with the structure recommended by the Moving Ahead for Progress in the 21st Century Act (MAP-21). MAP-21, enacted in 2012, required the U.S. Secretary of Transportation to encourage each state to develop a comprehensive statewide freight plan. The Freight Plan fulfills the Federal requirement to develop a statewide freight plan that meets all the elements set forth by MAP-21.

The MAP-21 elements are the following:

- An identification of significant freight system trends, needs and issues with respect to the State.
- A description of the freight policies, strategies and performance measures that will guide the freight-related transportation investment decisions of the State.
- A description of how the Freight Plan will improve the ability of the State to meet national freight goals.
- Evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems (ITS), that improve the safety and efficiency of freight movement.
- A description of improvements that may be required to reduce or impede the deterioration of roadway conditions, specifically on travel routes for heavy vehicles (including mining, agricultural, energy cargo, equipment and timber vehicles).
- An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the State, and a description of the strategies the State is employing to address those issues.
The Freight Plan chapters are as follows:

**The Freight Plan Chapters**

- **Chapter 1 Introduction:** Provides an overview and describes the purpose and organization of the Freight Plan.
- **Chapter 2 Texas’ Strategic Goals:** Explains the State’s strategic freight goals to guide investment decisions.
- **Chapter 3 Economic Context of Freight in Texas’ Freight Transportation Planning:** Discusses the importance of freight to the State’s economy.
- **Chapter 4 Texas’ Freight Policies, Strategies and Institutions:** Develops and discusses the State’s freight policies and strategies and includes funding programs, freight-related institutions, governance structure, private infrastructure owners, statutory/constitutional constraints, regional freight planning activities and Texas’ priorities.
- **Chapter 5 Texas’ Freight Transportation Assets:** Provides a statewide inventory of critical multimodal freight transportation infrastructure assets.
- **Chapter 6 Conditions and Performance of Texas’ Freight Transportation System:** Analyzes the conditions and performance of the Texas freight system, including bottlenecks, level-of-service, safety, crashes and pavement and bridge conditions.
- **Chapter 7 Texas’ Freight Forecast:** Analyzes the anticipated amount of freight by mode in the future to determine the impacts on the freight system across the State.
- **Chapter 8 Overview of Texas’ Freight Trends, Needs and Issues:** Explains, based on current and future projections, the needs and issues to be addressed in the future.
- **Chapter 9 Texas’ Freight Transportation System Strengths and Problems:** Explains what works well and where improvements are needed.
- **Chapter 10 Texas’ Decision-Making Process:** Discusses the State’s decision-making process for freight transportation improvements, including outreach to stakeholders and the general public, and how the State has prioritized strategies, projects and policy changes.
- **Chapter 11 Texas’ Freight Improvement Strategy:** Provides recommendations for programs, policies and projects that will address identified needs.
- **Chapter 12 Texas’ Freight Implementation Plan:** Identifies a schedule, funding considerations, potential revenue-generating projects, proposed partners, performance measures and prioritization to ensure the continued efficient movement of freight in Texas.

The details of the Freight Plan – the analysis of current and future conditions, as well as recommended investment levels, policies and data needs – are outlined in the chapters that follow. The mission of this Freight Plan is to not only identify a path for economic growth through transportation improvements, but to clearly define the priorities and funding needed to encourage the smartest investment opportunities in our State.