2016 Texas Rail Plan Update

Chapter 2: Texas' Existing Rail System

May 2016

2.1 Introduction

The purpose of this chapter is to provide an overview of the existing rail system in Texas. The sections included in this chapter provide a summary inventory of the existing rail lines and services in the state (Class I and III freight railroads, port and border crossings) and Amtrak intercity passenger rail services. Infrastructure issues for all carriers are also addressed in this chapter, as well as a listing of abandonments since the 2010 Texas Rail Plan (TRP).

2.2 Existing Freight and Intercity Passenger Railroad Inventory

The Texas freight and passenger rail system is a significant component of the national network. There are 49 freight railroad operators located in Texas, second in number to Pennsylvania (**Exhibit 2-1**). Of these operators, three are Class I railroads (**Exhibit 2-2**). There are only seven Class I operators in the United States; together they account for 69 percent of freight rail mileage, 90 percent of employees, and 94 percent of rail freight revenue in the country. The remaining railroad operators in Texas are categorized as Class III short line railroads.

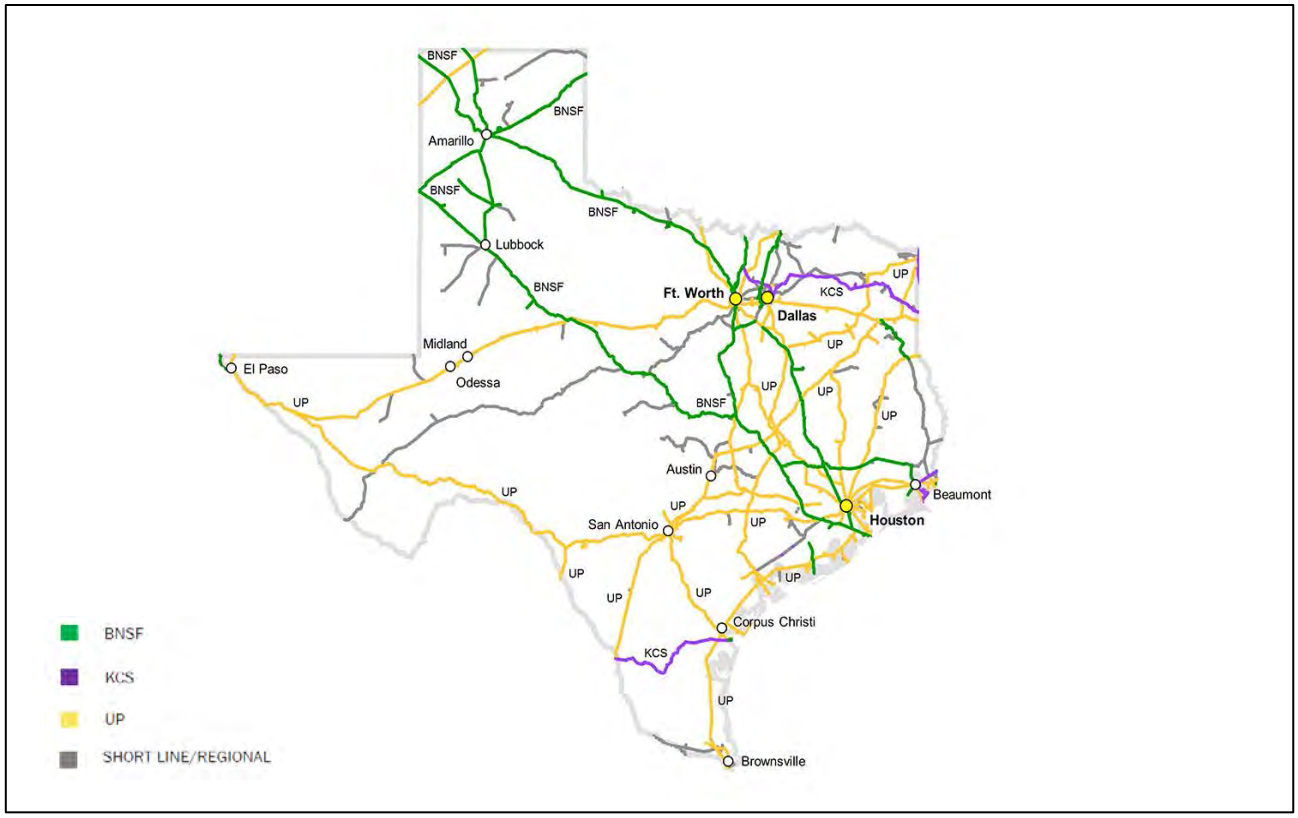
The Class I railroad operators in Texas are Fort Worth-based BNSF Railway (BNSF), Kansas City Southern (KCS), and Union Pacific (UP). UP is the largest railroad operator in the nation, with BNSF second, and KCS seventh. BNSF and UP primarily serve east-to-west freight traffic while KCS serves north-to-south. KCS operates as Kansas City Southern de Mexico (KCSM) in Mexico, traveling as far as the Mexican state of Veracruz in the east and the Port of Lazaro Cardenas to the west. BNSF and UP interchange with Ferromex at the Mexican border. Ferromex is considered the largest and most significant operator in Mexico, covering 80 percent of Mexico's industries with intermodal facilities in eight major business centers in Mexico's main central and western cities.

Exhibit 2-1: State Rankings by Railroad Operator

Rank	State	Number of Railroads
1	Pennsylvania	57
2	Texas	46
3	Indiana	42
4	Illinois	40
5	New York	38
6	Ohio	35
7	Michigan	28
8	Mississippi	27
9 [Tied]	Alabama	25
9 [Tied]	California	25
9 [Tied]	Tennessee	25

Source: American Association of Railroads, 2013

Exhibit 2-2: Class I Railroads in Texas



Source: 2015 Association of American Railroads

In 2012, Texas ranked first in the nation for number of rail miles by state (10,469 miles) and first in rail tons terminated (206.6 million tons).

2.3 Railroad Classification

Railroad classification is determined by the U.S. Surface Transportation Board (STB) based on annual revenue dollars. In 2012 dollars, a railroad with operating revenues greater than $433.2 million for at least three consecutive years is considered a Class I railroad. Similarly, a railroad with revenues greater than $34.7 million, but less than $433.2 million, is considered a Class II railroad. These railroads are commonly referred to as "regional" railroads.

A railroad not within the Class I or II categories is considered a Class III railroad, also known as a "short line". As the name indicates, short lines operate over a relatively short distance. Short lines serve the larger railroads by collecting and distributing railcars to individual industrial and agricultural shippers and receivers. They provide a critical service, particularly in lower-density rail corridors and markets where the larger railroads cannot operate cost-effectively. From a historical standpoint, many of the nation's short lines operate on branches previously owned and operated by the Class I railroads.

2.3.1 *Class I Railroads*

Class I railroads provide several distinct rail services and, over time, the types of rail services have evolved to meet shifting customer demands and changing economic realities. A summary of the major types of rail services is described below.

Intermodal Services - In the context of railroad services, "intermodal" generally refers to trains that carry shipping containers between rail terminals where the shipping containers then move by truck between the rail terminals and shipper locations and/or by vessel between ports. The containers are interchanged between the various modes of transportation at the terminals by lifting equipment. Within the intermodal service categories, Class I railroads typically offer several tiers of service, with double stack containers being premium service, and containers or trailers on flatcars loaded at transload facilities being lower tier intermodal service.

Intermodal is the fastest growing rail service and competes most directly with trucking service, particularly long-haul trucking. Intermodal is usually the fastest service and is, to some extent, the most resource-intensive. Railroads must commit to filling trainloads of intermodal boxes and adhere to strict schedules. In addition, the terminals are expensive to build and operate.

Major intermodal rail facilities are located in Amarillo, El Paso, Dallas, Fort Worth, Houston, and Laredo with additional facilities located in smaller areas such as Donna, Rosenberg, and Wylie. In total, Texas is home to approximately 20 intermodal rail facilities, concentrated mostly in the eastern portion of the state. BNSF and UP operate intermodal facilities at the Port of Houston, which is the number two seaport, by volume (tonnage), in the United States. The state's two intermodal logistics facilities, Alliance and Port San Antonio, have integrated terminals with BNSF and UP. Intermodal facilities for KCS are located primarily in the Dallas/Fort Worth area and Laredo.

Manifest or Carload Service - The traditional method of moving goods by rail delivers goods from a shipper to a receiver using a relatively small number of cars. Manifest trains are typically assembled from a variety of railcars including boxcars, flatcars, hoppers, gondolas, and other specialized cars travelling in mixed trains of different commodities and going to different origins/destinations. Carload rail terminals usually contain numerous sidings for sorting the rail cars by destination. The service is relatively slow, since cars must be sorted between trains at classification yards. This service has generally declined over the past decades, but not uniformly.

Unit Train Services - Unit train service offered by Class I railroads refer to trains of over 100 cars that carry a single commodity between a single shipper and receiver. Unit train service is used for large volume commodities like coal, grain, automotive, and, increasingly, oil where the volume is sufficient to fill an entire train with the same commodity from one origin

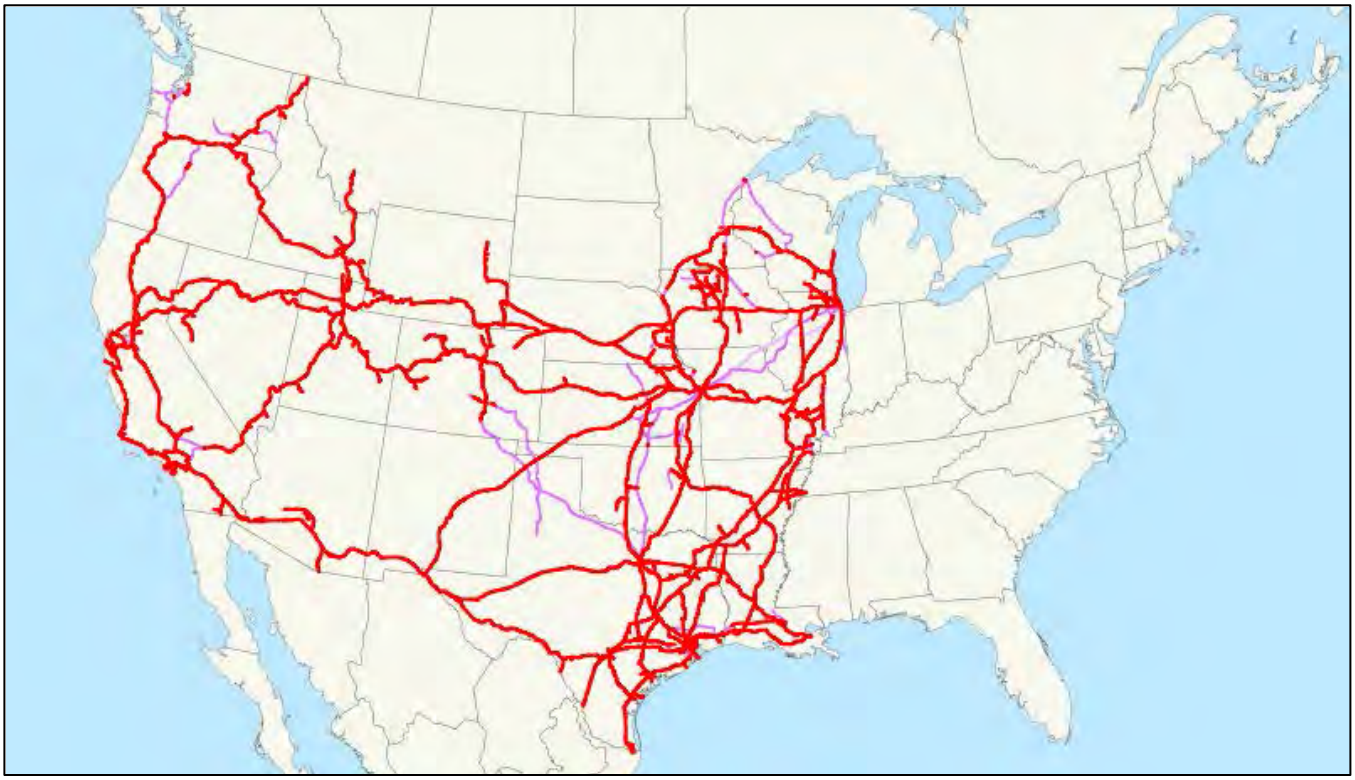
to one destination. It is much faster than manifest service. Demand for unit train service has grown in recent years in line with demand for the underlying commodities.

There are three Class I railroads operating in Texas with total track miles equaling 9,600 (not including trackage rights). **Exhibit 2-2** depicts the locations of UP, BNSF and KCS rail lines in the state. UP has the most coverage in Texas with 5,976 miles of track followed by BNSF with 2,956 miles and KCS with 668 miles.

Union Pacific Railroad (UP)

Within the UP system (shown in **Exhibit 2-3**), UP's high-volume, major east-west lines connect California with the Gulf Coast and Memphis, and its north-south NAFTA corridor connects Mexico to the northeast U.S. and Canada markets. Dallas, Fort Worth, Austin, and San Antonio are each on the heavily-used rail corridor connecting Laredo with the Upper Midwest. Houston is a UP hub for six lines, linking the region with the Louisiana Gulf Coast, Midwest, West Coast, and Mexico. El Paso, San Antonio, Dallas, and Ft. Worth are also on main east-west corridors going across the southern tier of the U.S. connecting to ports at Los Angeles and Long Beach. The Sunset Route, which ultimately connects New Orleans, Louisiana to Los Angeles, California, crosses the southern portion of the state, connecting Houston, San Antonio, and El Paso.

Exhibit 2-3: UP System Map



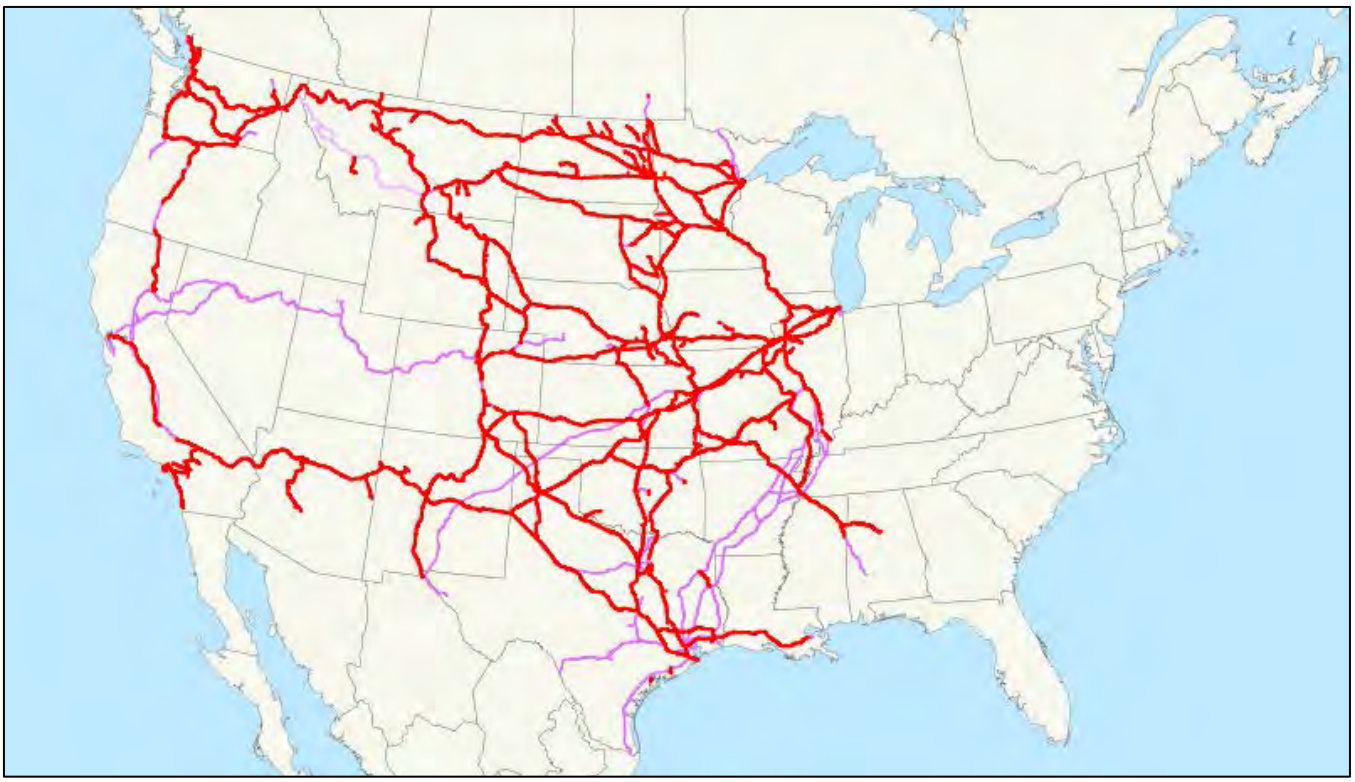
Source: 2015 Union Pacific Railroad

UP also maintains automobile distribution facilities in Texas. The UP Mesquite facility has both an intermodal and an automotive terminal that are two separate operations managed by different groups and different contractors. The Mesquite, Arlington and Houston Westfield automotive terminals serve General Motors, Ford, Nissan, and Chrysler. UP also serves, but does not own or operate, the Gulf States Toyota facility across from the Westfield facility. In San Antonio, UP's Kirby Yard handles General Motors, Ford, and Chrysler and south of San Antonio UP serves the Toyota manufacturing facility.

BNSF Railway (BNSF)

Within the BNSF system (shown in **Exhibit 2-4**), Ft. Worth lies on a heavily-traveled line connecting coal from Wyoming's Powder River Basin with Central Texas and the Houston area. Also entering Ft. Worth is a busy BNSF line originating in the grain-producing Plains states which then continues to Texas Gulf Coast Ports. BNSF primarily serves the north and east portions of Texas and connects them to the more northern Gulf ports, including Houston, Galveston, and Beaumont. BNSF connects these ports to the metropolitan areas of Dallas and Fort Worth, and it is the only Class I railroad serving Lubbock and Amarillo. The BNSF's Transcontinental Line traverses the Texas Panhandle, carrying freight each way from Los Angeles to Chicago.

Exhibit 2-4: BNSF System Map



Source: 2015 BNSF Railway Company

The BNSF currently has five automobile distribution facilities statewide. The Amarillo facility serves Ford, and the Alliance facility near Ft. Worth serves Honda, Hyundai, Mitsubishi, Subaru, and Isuzu. The Midlothian facility ships Mazda vehicles, while a Temple facility handles Gulf States Toyota vehicle shipments. Lastly, the Houston (Pearland) facility handles cars manufactured by Isuzu, Mazda, Honda, Mitsubishi, Hyundai, and Nissan, as well as used GM trucks.

Kansas City Southern (KCS)

In the KCS system (shown on **Exhibit 2-5**), 908 miles of track are operated in the state (including the Tex Mex, which KCS acquired in 2004), and is limited to other rail connections in Laredo, Corpus Christi, Houston, Dallas/Ft. Worth, and Beaumont. In June 2009, KCS added approximately 84.5 miles to its Texas rail network when it opened for operation a restored Southern Pacific Railroad line segment between Victoria and Rosenberg. KCS provides connections between the International Port of Entry (POE) at Laredo to Corpus Christi as well as connecting Victoria to the Houston/Galveston area. An additional KCS rail line connects the Dallas/Fort Worth area to Shreveport, LA.

Exhibit 2-5: KCS System Map

Source: 2015 Kansas City Southern Rail Railway

2.3.2 *Class II and III Railroads*

Class II and Class III, or regional and short line railroads respectively, account for 31 percent of U.S. freight rail mileage and 10 percent of employees. More than 550 short line and

regional railroads operate in the United States and often feed traffic to Class I railroads and receive traffic from Class I railroads for final delivery.

Class II Regional Railroads

As of 2012, the Association of American Railroads (AAR) classification listing does not include any Class II Regional Railroad in the state of Texas. Two railroads possess characteristics of Class II railroads, although they do not meet the previously mentioned financial criteria: Texas Pacifico Transportation, Ltd. (TXPF), which operates on 393 miles of state-owned track in West Texas (the "South Orient rail line," or SORR); and the Texas Northeastern Railroad (TNER), which operates on 104 miles of track in Northeast Texas.

Class III Short Line Railroads

The majority of railroad operators in Texas are classified as Class III railroads, although their 1,823 miles of track, including trackage rights, made up only 12.4 percent of the state's total trackage in 2012. Often referred to as "short lines," Class III railroads usually engage in specialized services and are typically geographically concentrated. One characteristic of short lines is that they may be privately owned to serve only a specific company or industry. For example, the Angelina & Neches River Railroad was founded by a paper mill and now connects shippers in the Lufkin area to UP rail lines. Short lines are also used to connect a group of local customers to Class I networks. Many short lines came into existence through the purchase of track formerly controlled by Class I railroads. For example, the Gulf, Colorado & San Saba Railway operates on 69 miles of track in Central Texas acquired from the Atchison, Topeka and Santa Fe Railway Company (ATSF) following an abandonment proceeding.

Some Texas ports, such as Houston, Corpus Christi, and Orange, are served by dedicated switching railroads (Port Terminal Railroad Association, Corpus Christi Terminal Railroad, and the Orange Port Terminal Railway, respectively) that provide rail services in close proximity to the port areas. Switching railroads, such as the Dallas, Garland & Northeastern (DGNO), operate on Class I lines or on their own track and deliver or pick up goods (e.g., limestone, farm products, plastics, lumber, soybean oil, steel, paper, chemicals, and auto parts) within the region. The DGNO serves as a switching carrier for UP in the Dallas region and interchanges rail cars to provide cross-country rail services to area shippers.

Rail trackage on short line railroads may be also owned by one entity, either public or private, but operated by another through an operational lease. For example, there are large holding companies who own many short line railroads in Texas, such as Genesee & Wyoming, Watco, OmniTrax, and Iowa Pacific. These holding companies and their respective operations in Texas are described below.

Texas Department of Transportation (TxDOT)

TxDOT is actually the owner of several short line railroads in the state. Brief descriptions of these railroads are provided below.

South Orient Rail Line (SORR)

The SORR is a TxDOT-owned facility that runs from Presidio, on the Mexican border, to San Angelo Junction. It was constructed to interchange with Ferromex at Presidio, but the Presidio-Ojinaga International Rail Bridge is not currently operational. The line interchanges with Union Pacific Railroad at Alpine and with BNSF Railway and the Fort Worth and Western Railroad at San Angelo Junction. Texas Pacifico Transportation Ltd. (TXPF) operates over the South Orient Rail Line under a lease and operating agreement with TxDOT.

In 2001, TxDOT, entered into a lease agreement with TXPF to operate and maintain the SORR. Approximately 391 miles in length, this line extends from San Angelo Junction (in Coleman County, five miles southwest of Coleman) through San Angelo to Presidio at the Texas-Mexico border.

The largest volume of traffic on the line in 2013 continues to be due to the dramatic increase in oil and gas exploration efforts in the region. Sand unloading facilities are located in San Angelo, Barnhart, Big Lake, McCamey, Rankin, and Fort Stockton; with new or expanded facilities under development at Harriet, Barnhart, Sulphur Junction, and Fort Stockton. Crude oil loading facilities have opened at San Angelo and Barnhart, while others are under development near Barnhart and Sulphur Junction. Customers received 15,269 carloads of sand while crude oil shipments totaled 5,787 carloads for the year. The total carloads interchanged totaled 23,558, which is a 121 percent increase over 2012 statistics and 1,060 percent over historical averages.

Bonham Subdivision

In 2006, TxDOT entered into a lease agreement with Fannin County Rural Rail Transportation District (FRRTD) to operate on the state-owned rail line located in Lamar and Fannin counties that extends from mile post 94.0 to mile post 127.5 on the Bonham Subdivision—a total of approximately 33.5 miles. FRRTD is working to identify potential funding sources for rehabilitation of the line and possible operators that it would contract for freight rail service.

Blacklands Railroad

The North East Texas Rural Rail Transportation District (NETEX) secured a legislative appropriation rider that granted it funds from state general revenue, through TxDOT, for the purchase and operation of the rail line from a point west of Sulphur Springs at mile post 524.0 to a point west of Greenville at mile post 555.0. Blacklands Railroad, through an

operating lease with NETEX, has been successfully moving commodities such as grain, plastic, rock, and aluminum.

Iowa Pacific Holdings

Iowa Pacific Holdings (IPH) was formed in 2001 to acquire railroads and develop rail-related business. IPH purchased, operated and sold several railroads in west Texas, but today only operates the Rusk, Palestine and Pacific Railroad.

Rusk, Palestine, and Pacific Railroad

Founded in 1881 by the State of Texas as the Texas State Railroad to haul freight, the Rusk, Palestine and Pacific Railroad ended regular service on the line in 1921. The State of Texas leased this line to private companies until 1969 then turned it over to the Texas Parks and Wildlife Department in 1972. In 2007, the railroad was transferred to the Texas State Railroad Authority and the line was leased to Iowa Pacific Holdings in August of 2012.

Watco Companies

Watco Companies, LLC, is a Pittsburg, Kansas, based transportation company providing mechanical, transportation, and terminal and port services solutions for railroad customers throughout North America and Australia. Watco is the owner of Watco Transportation Services, LLC, one of the largest short line railroad holding companies in the U.S. with 32 short line railroads operating on more than 4,600 miles of track, as well as 28 industrial contract switching locations. The Terminal and Port Services division currently manages 50 terminals, 9 warehouses and 2 port locations. The short line railroads described below are owned by Watco.

Austin Western Railroad (AWRR)

The Austin Western Railroad (AWRR) operates 155 miles of track from Llano, TX to Gidding, TX with a 6.4 mile branch extending from Fairland, TX to Marble Falls, TX. The line dates back to 1871 when the Houston and Texas Central Railroad built the Giddings to Austin line. The AWRR interchanges with the UP at McNeil and Elgin. Nearly 49,000 carloads move annually, shipping commodities such as aggregate, crushed limestone, calcium bicarbonate, lumber, beer, chemicals plastics and paper. Capital Metropolitan Transportation Authority began commuter service on portions of this line in March of 2010.

Lubbock and Western Railway (LBWR)

Lubbock and Western Railway (LBWR) is a 163 mile railroad in two segments operating from Lubbock to Seagraves and Whiteface, TX, and from Plainview to Dimmit, TX carrying frac sand, chemicals, fertilizer, grain, animal feed, and oil.

San Antonio Central Railway (SAC)

The San Antonio Central Railroad (SAC) began operations September 1, 2012, and it operates within Port San Antonio's East Kelly Railport. Railport customers include

warehousing, distribution, transloading, manufacturing and trucking operations. SAC is adding infrastructure to meet the rapidly growing transportation needs of the energy sector. The Railport is the only site inside San Antonio with available rail-served facilities and land sites with switching service off the BNSF Railway and Union Pacific lines.

Texas & New Mexico Railway (TXN)
Located in the heart of the Permian Basin, the Texas & New Mexico Railway (TXN) operates 111 miles of track in New Mexico and Texas. The TXN interchanges with Union Pacific at Monahans, TX and terminates at Lovington, New Mexico. The railroad primarily handles oilfield commodities such as drilling mud and hydrochloric acid, frac sand, pipe, and petroleum products including crude oil. In addition, TXN also ships iron and steel scrap.

Watco Switching Services
Watco Switching Services began providing specialized industrial contract switching services in 1983. Watco currently operates contact switching services at the following locations:

- Alvin, TX for Solutia
- Deer Park, TX for R&H
- Galena Park, TX for Kinder Morgan
- Houston, TX for Igenia
- Houston, TX for TPC Petrochem
- Port Neches, TX for TPC Petrochem

Greens Port Industrial Park
Watco operates rail service at Greens Port Industrial Park located on 655 acres on the Houston Ship Channel in Harris County, Texas. This is the largest private multi-tenanted industrial park in the Gulf Coast market. Greens Port offers deep water and barge docks along the Houston Ship Channel. Greens Port provides approximately three million square feet of indoor warehousing that feature large bay widths, numerous cranes ranging from five to 125 ton capacity, the ability to clear heights ranging from 20 to 45 feet, and heavy floor loading capacity. Direct rail service to buildings and storage yards is also available.

Watco Terminal Services
Watco's Terminal & Port Services (WTPS) is the rail centered transloading division which brings together all aspects of terminal or port operations to better serve the needs of their Customer. Watco currently provides terminal services at the following locations:

- Galena Park, TX
- Houston, TX – Terminal & Warehouse
- Houston, TX – Port of Houston – Greenwood

- Houston, TX – Port of Houston
- Houston, TX – Watco Texas Terminal

OmniTrax, Inc.

OmniTRAX is a private railroad and transportation management company with interests in railroads, terminals, ports and industrial real estate. OmniTRAX operates a network of 18 regional and short line railroads that cover 12 states in the US and 3 provinces in Canada. The company's railroads interchange with BNSF, CN, CSXT, NS & UP and transport commodities within the Agricultural, Aggregate & Industrial Mineral, Energy, Food, Crude Oil, Chemical, Lumber, Metal, Petroleum and Plastic industries.

Through its affiliate, Quality Terminal Services, LLC, OmniTRAX also operates and manages terminal and intermodal facilities where services such as railcar switching, container handling, ramp/deramp and carrier management are provided. OmniTRAX Logistics Services, LLC offers custom design logistics solutions.
Alliance Terminal Railroad (ATR): This railroad is owned by OmniTRAX operating a 7-mile terminal system near Haslet for the Alliance Intermodal Facility. ATR interchanges traffic with BNSF.

Brownsville & Rio Grande International Railroad (BRG): The BRG operates about 42 miles of railroad serving the Port of Brownsville. It currently has interchanges with three Class I railroads: UP, BNSF, and KCS de Mexico. BRG began operations in 1984 by acquiring former Texas & Pacific (MP) property handling a variety of products such as steel, agricultural products, food products, and general commodities.

Panhandle Northern Railway (reporting mark, PNR): This OmniTRAX property operates 31 miles of the former Santa Fe Railroad between Panhandle and Borger. Its traffic currently consists of carbon black, liquid petroleum gas, chemicals, petroleum products, scrap metal, fertilizer and grain.

Tarantula Corporation

The Fort Worth & Western Railroad (FWWR), Fort Worth & Dallas Railroad, and Fort Worth & Dallas Belt Railroads are operating under their corporate parent company, Tarantula Corporation, based in Fort Worth, Texas.

Fort Worth & Western Railroad
The FWWR began in 1988 with the purchase of 6.25 miles of track from the former Burlington Northern Railroad through the west side of Fort Worth. Since then, FWWR had grown through the purchase and lease of track from Class I carriers, UP and BNSF.

As of 2014, the FWWR handles over 45,000 cars, operating over 276 miles of track through 8 counties in North Texas. FWWR has interchanges with UP in Fort Worth and BNSF in Fort

Worth as well as Brownwood, Texas. FWWR interchanges with KCS through trackage rights with BNSF in Fort Worth, and with Texas Pacifico (TXPF) at San Angelo junction.

Genesee & Wyoming (G&W)

G&W owns or leases 120 freight railroads worldwide with 113 short lines with more than 13,000 miles within 41 U.S. states. In Texas, G&W operates three freight railroad switching operations which interchange between the Class I railroads and three terminal railroads operating within an existing port authority.

Corpus Christi Terminal Railroad (CCPN)

In 1997, G&W acquired the Corpus Christi Terminal Railroad (CCPN) and is operating on its 30 mile short line serving the Port of Corpus Christi and interchanging with BNS, KCS and UP. Commodities transported include aggregates, brick and cement, chemicals, ethanol, food and feed products, machinery, minerals and stone, and petroleum products.

Dallas, Garland & Northeastern Railroad (DGNO)

The DGNO is a complex switching terminal that started operations in 1992 and is made up of a conglomeration of spurs and industrial leads. DGNO operates 337 miles of rail line in the Dallas and north Dallas area using a combination of owned and leased lines as well as trackage rights. The DGNO provides extensive switching service and line haul extensions between their interchange locations with BNSF, UP and KCS.

Galveston Railroad (GVSR)

Acquired in 2005, the GVSR is a 38 mile short line freight railroad serving the Galveston Port Authority and interchanging with BNSF and UP.

Kiamichi Railroad (KRR)

The KRR is located in Oklahoma, Arkansas and Texas for a total of 261 miles of track shipping coal, paper, clay, concrete, lumber, food and kindred products between five (5) interchange locations. The KRR interchanges with BNSF, KCS, TNER, and UP.

Point Comfort & Northern Railway (PCN)

The PCN was incorporated in 1948 and interchanges with UP while serving the Port of Port Lavaca – Point Comfort. The PCN provides unit train services, interplant switching, car washing, weighing and inspection and traffic coordination. Main commodities on the PCN's 19 mile of track include alumina, aluminum fluoride, fluorspar, and fertilizers.

Texas Northeastern Railroad (TNER)

The TNER operates in Texas west of Bonham through Bells to Sherman and east from New Boston to Texarkana. The TNER interchanges with the BNSF, DGNO and UP. Major commodities for the TNER are coal, military equipment, wheat and polyethylene with their largest customer being the Red River Army Depot located just west of Texarkana.

Port Terminal Railroad Association (PTRA)

Though mergers and acquisitions, the Port Terminal Railroad (PTRA) today is an association of the Port of Houston Authority and the three Class I railroads operating within Texas – UP, BNSF, and KCS. The PTRA infrastructure consists of a total yard capacity of 5,000 railcars, with a daily spot/pull rate of 2,500 industrial cars. The PTRA straddles both sides of the Houston Ship Channel and maintains 154 miles of track with 20 bridges while serving 226 local customers from 6 serving yards.

1. PTRA North Yard – 6 Receiving/Departure Tracks with a capacity of 415 railcars and 46 classification tracks with a capacity of 1200 railcars – Direct interchange with BNSF, UP, and KCS.
2. PTRA Storage Yard – 19 classification tracks with a capacity of 800 railcars – Direct interchange with UP.
3. PTRA American Yard – 10 classification tracks with a capacity of 400 railcars - Direct interchange with industrial customers.
4. PTRA Penn City Yard – 3 tracks with a capacity of 120 railcars – Direct interchange with industrial customers.
5. PTRA Manchester Yard – 26 classification tracks with a capacity of 800 railcars – Direct interchange with UP and BNSF.
6. PTRA Pasadena Yard – 15 classification tracks with a capacity of 700 railcars – Direct interchange with UP and BNSF.

Other Class III Railroads

Other Class III railroads operate in Texas that are not associated with larger holding companies and are described as follows:

Alamo Gulf Coast Railroad (AGCR): This short line is owned by Martin Marietta Materials and consists of a line that is just 3.5 miles in length near the town of Beckman. AGCR primarily transports aggregates and timber products and began operations in 1996 over former Southern Pacific (SP) property.

Angelina & Neches River Railroad (ANR): This historic short line traces its roots back to 1900 where it served the timber industry. ANR currently operates 12 miles of main line trackage and 28 miles total radiating away from Lukin. This includes the West Lufkin Branch, Clawson Branch, and its main line heading east. ANR's traffic currently includes newsprint, ground-wood paper, lumber, chemicals, scrap metal, sugar, corn syrup, grocery products, clay, aggregates and industrial products.

Blacklands Railroad (BLR): This privately-owned short line first began service in 1995 and currently operates 73 miles of former Cotton Belt property between Greenville and Mt.

Pleasant. BLR handles a wide range of freight including salt, food products, metals, bricks, paper, chemicals, pipe, building materials, plastics, feed products, fertilizer, and machinery/equipment. The company also offers transload services.

Border Pacific Railroad (BOP): The Border Pacific began service in 1984 over 32 miles of former Missouri Pacific Railroad (MP) trackage between Mission and Rio Grande City. Its traffic currently includes silica sand, ballast, crushed stone, asphalt, scrap paper, and feed grains.

Georgetown Railroad (GRR): The original Georgetown Railroad dates back to 1878, running 10 miles between Georgetown and Round Rock. It was later acquired by the International-Great Northern Railroad which went on to become part of MP. In 1959, eight miles of the MP's old Georgetown Branch was sold to a new short line the Georgetown Railroad Company. Today the operation owns about 30 miles of track serving communities such as Kerr, Granger, Belton, and Smith. GRR traffic includes aggregates, ammonium nitrate, lumber, and grain.

Hondo Railway (HRR): This small short line operates about five miles of track near San Antonio and has been in service since 2006. HRR's traffic base currently consists of ethanol, food products (sweetener), agricultural products, petroleum, and frac sand. The railroad also offers transload services.

Moscow, Camden & San Augustine Railroad (MCSA): The MC&SA dates back to 1898 to serve lumber interests owned by the W. T. Carter & Brother Lumber Company. MCSA was a common carrier offering both freight and passenger service, eventually operatinging between Moscow to Camden. Today, railroad continues to operate this trackage, now owned by Georgia Pacific, and still handles primarily forest products including outbound plywood, lumber, and other freight.

Orange Port Terminal Railway (OPT): Owned by Lone Star Locomotive Leasing, this terminal railroad operates 1.8 miles of track formerly owned by SP and began service on November 10, 1995.

Pecos Valley Southern Railway (PVS): This railroad, owned by Watco, has been in continuous operation since 1910 and today owns about 23 miles of track between Saragosa and Pecos, where it has an interchange with UP. PVS's primary sources of traffic are aggregates and ore and recently added service to support the region's booming Permian Shale Oil basin.

Rio Valley Switching Company (RVSC): This railroad, owned by Ironhorse Resources, Inc., serves Harlingen (where it has an interchange with UP), Mission, Edinburg, and Santa Rosa. The Rio Valley operates about 66 miles of track. Its traffic includes oil field services, paper,

agricultural products, lumber, bulk plastics, steel, scrap metals, cottonseed, corn sweetener, lime, cement, canned goods, frozen food, and aggregates.

Rockdale, Sandow & Southern Railroad (RSS): The RS&S dates back to 1923 and has always handled aluminum products. It currently runs five miles from Rockdale and Marjorie with traffic consisting of alumina, petroleum code, electrode binder pitch, aluminum ingot, and slag.

Rusk, Palestine & Pacific Railroad (RPP): This short line is an Iowa Pacific property (since 2012) that operates 30 miles over the historic Texas State Railroad (TSR) between Palestine and Rusk. RPP initiated freight service on the line during June of 2014 for the first time since the 1960s.

Sabine River & Northern Railroad (SRN): The "SR&N" is owned by Temple-Inland Incorporated and operates about 40 miles of track on two lines serving Bessmay, Echo, Buna, and Evadale. The trackage was built in the mid-1960s to serve a linerboard mill. Today, SR&N traffic still consists of forest products such as paper and lumber.

South Plains Lamesa Railroad (SLAL): This small short line operates in the Lubbock area providing mostly switching and terminal services. SLAL has been in operation since 1993 and also offers railcar storage and transload services.

Southern Switching Company (SSC): This terminal railroad is an Ironhorse Resources property operating just over 8 miles of track and serving the Abilene area, where it has a connection with UP. SSC's traffic currently consists of grain, animal feed, fertilizers, petroleum products, scrap, corn sweetener, and lumber.

Texas Central Business Lines (TCB): This 13-mile terminal railroad serves the industries of the Midlothian area and connects with both UP and BNSF. TCB's traffic consists of aggregates, metals, automotive products, steel/scrap, and forest products.

Texas, Gonzales & Northern Railway (TXGN): The TG&N operates between Harwood and Gonzales on a system that is approximately 12 miles in length operating on former SP trackage. It began operations in 1992.

Texas & Northern Railway (TN): The "T&N" owned by Transtar operates close to eight miles of railroad near Lone Star. It currently interchanges with KCS west of Hughes Springs. The railroad began operations in 1948 to serve steel mills and continues to carry steel products today.

Texas North Western Railway (TXNW): This short line dates back to 1982 when it took over trackage originally owned by the Chicago, Rock Island & Pacific (Rock Island) between Etter

and Morse Junction, Texas as well as Stinnett, Texas and Hardesty, Oklahoma. TXNW's traffic currently consists of agriculture, chemicals, petroleum products, and coal.

Texas Rock Crusher Railway (TXR): This short line is a division of the TNW Corporation and serves the Brownwood area over 5.65 miles of former Santa Fe industrial trackage. TXR began operations in 1998 and also serves the nearby Vulcan limestone quarry.

Timber Rock Railroad (TIBR): The Timber Rock is a Watco subsidiary and has been in service since 1998. TIBR operates 160 miles of trackage between Silsbee and Tenaha with a branch to Deridder, Louisiana. Its traffic largely includes aggregates and forest products, handling more than 26,000 carloads annually.

Texas South-Eastern Railroad (TSE): This operation first began service in 1900 as division of the Southern Pine Lumber Company hauling logs and related forest products. TSE eventually grew into a 78-mile system reaching such locations as Diboll, Everett, Blix, Lufkin, Vair, and Neches. Operations were reduced over the years and today are limited to terminal/switching services at Diboll. TSE has been a division of R.J. Corman since September of 2014.

Wichita, Tillman & Jackson Railway (WTJR): The WT&J is currently owned by the Rio Grande Pacific Corporation, running on disconnected trackage in Texas and Oklahoma once owned by the Rock Island and UP. WTJR has been in service since 1991.

2.4 Port and Border Crossings

Railroads serve as important connections to sea ports and land Ports-of-Entry (POE). Much of the freight carried by rail comes into Texas through these POEs. As rail is often utilized for shipment of bulk goods and is not typically a suitable, direct-to-consumer mode of transport, the ability of rail to transport goods and commodities from these locations to intermodal terminals, transshipment terminals, and warehouse and distribution centers are integral to the supply chain.

Each of the major freight sea ports in Texas is served by at least one Class I railroad, as shown in **Exhibit 2-6**. The land POEs with rail crossings are fairly evenly distributed across Texas' border with Mexico. **Exhibit 2-7** lists the land POEs with rail connections. Of the five land POEs with rail connections, four are Class I railroads, while Presidio is served by the short line Texas Pacifico Transportation (TXPF) railroad. TXPF leases the South Orient Rail Line from TxDOT. The rail bridge in Presidio has been closed since it was damaged by fire in February 2008.

Exhibit 2-6: Texas Ports and Connecting Railroads

Port	Connecting Railroads
Beaumont	KCS, UP, BNSF
Brownsville	Brownsville & Rio Grande International switching with UP,BNSF, KCS
Corpus Christi	KCS, UP, BNSF
Freeport	UP
Galveston	UP, BNSF
Houston	UP, BNSF, KCS (via trackage rights)
Orange	UP, BNSF
Port Arthur	KCS, UP, BNSF(via trackage rights and switching)
Port Lavaca- Point Comfort	Port Lavaca via UP, Point Comfort via Point Comfort & Northern
Texas City	UP, BNSF
Victoria	UP

Source: Texas Rail Plan, TxDOT, 2010

Efficient customs processing at border entry ports is critical to maintaining the flow of goods at rail crossings. Texas is home to five of the seven U.S. rail border crossings with Mexico (**Exhibit 2-7**), located in Brownsville (B&M Bridge), Laredo (Texas Mexican Railway International Bridge), Eagle Pass (Camino Real International Bridge), Presidio (the Presidio Rail Bridge closed because of a fire in February 2008) and El Paso (Bridge of the Americas, which is two separate structures). In 2013, Texas handled 90 percent of loaded containers crossing the U.S.-Mexico border. The crossings are maintained by the private railroads and provide important links for a wide variety of commodities. In 2010, approximately 9.1 million tons of freight crossed the Texas-Mexico border by rail. Laredo is the leading port-of-entry for rail freight in terms of total trains (36 percent of the U.S.-Mexico total) and loaded rail containers (54 percent of the U.S.-Mexico total).

Exhibit 2-7: Texas Land Ports of Entry with Rail Connections, 2013

Class I Railroad	El Paso	Presidio	Eagle Pass	Laredo	Brownsville
BNSF*	X		X		X
KCS		X		X	
UP	X		X	X	X

*via shared line operating agreement with UP Source: Bureau of Transportation Statistics, 2013

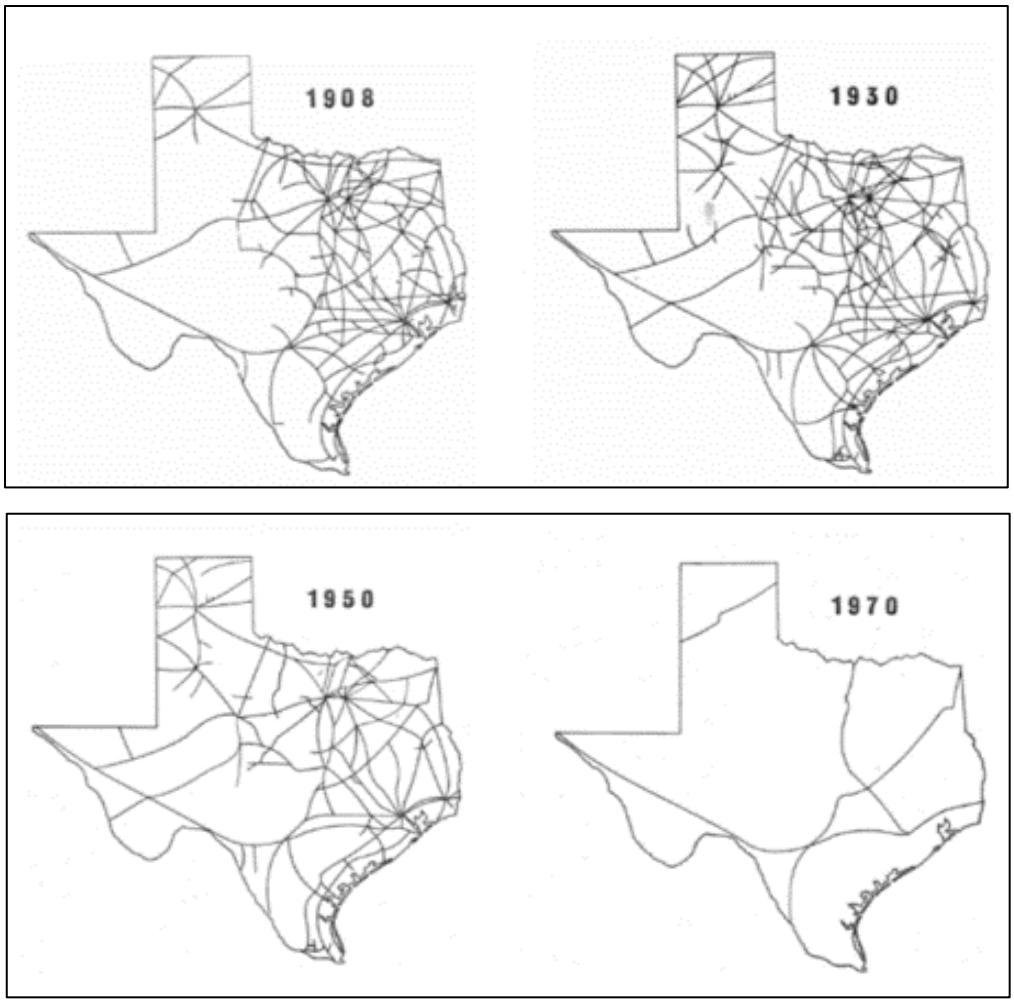
2.5 Intercity Passenger Rail Services

This section summarizes the history of passenger rail service in Texas and also provides an overview of the current service provided by the National Railroad Passenger Corporation (Amtrak).

2.5.1 *Historical Rail Passenger Perspective*

Historically Texas was served by a network of long-distance through passenger trains linking Texas, the Gulf Coast and Mexico with key Midwest cities and the West Coast. In addition to providing long-distance service, these through trains also provided local service between cities in Texas and adjacent states. Only Southern Pacific's Dallas – Houston route offered trainsets specifically oriented for local service. Combining the schedules offered by multiple railroads, the Dallas – Houston and Houston – New Orleans city pairs had a level of frequency that almost reached the level of a "corridor service." In addition to transporting passengers, the trains also carried mail and express. Rail stations, usually located close to the center of each community, were activity hubs with city development radiating outward. Public investment in roads and the airways system and the resulting shift in travel to other modes of transportation resulted in a loss of passengers and a reduction of the once extensive network. **Exhibit 2-8** illustrates the extent and decline of the passenger rail network in Texas. In an effort to address this decline Amtrak was created in May of 1971 to consolidate and coordinate the remaining passenger rail service into a more efficient network.

Exhibit 2-8: Passenger Rail in Texas 1908, 1930, 1950, 1970

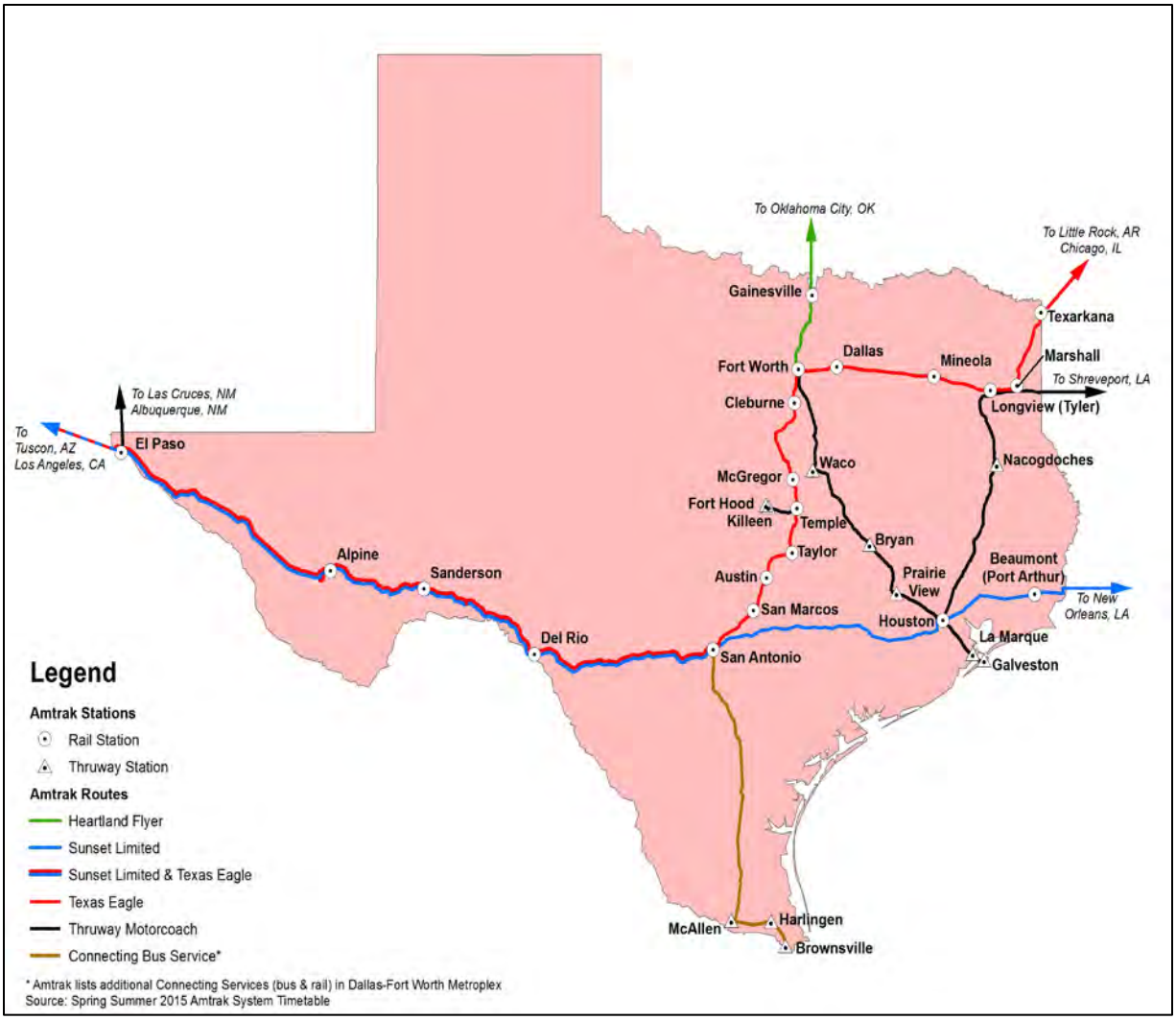


Source: Texas Transportation Institute, The History of Rail Passenger Service in Texas 1820-1970, 1976

2.5.2 *Current Amtrak Service*

Amtrak, the National Railroad Passenger Corporation, operates all of the current intercity passenger rail service in Texas. With the exception of Dallas Union Station, The Fort Worth Intermodal Transportation Center and the trackage between Fort Worth and Dallas (usage in negotiation), Amtrak operates entirely over trackage of the Class I freight railroads. Three routes are operated in Texas -The *Heartland Flyer, Texas Eagle*, and *Sunset Limited* (**Exhibit 2-9**). The *Sunset Limited* and *Texas Eagle* are operated with Superliner (double-deck) coaches, sleeping cars, a diner and lounge car. The *Heartland Flyer* is operated with Superliner coaches and a Superliner snack coach. Utilizing a combination of multiple freight railroad lines, Amtrak's routes in Texas serve most of the major urban areas. However, with the exception of the state-supported Heartland Flyer, Amtrak's routes and schedules are focused on serving longer distance passengers and providing the maximum connectivity to the Amtrak network as a whole.

Exhibit 2-9: Current Texas Amtrak Routes



Source: Texas Transportation Institute, 2012

Amtrak's service in Texas and connecting Texas to neighboring states gives travelers choices for intercity travel. The intercity corridor service of the *Heartland Flyer* has proven to be a successful transportation alternative between Oklahoma and Texas. The long-distance routes provide options for travelers who cannot or prefer not to fly or drive. Also, Amtrak provides service to communities without any other intercity transportation service.

This section provides an overview of the overall Amtrak system in Texas, with information on ridership and ticket revenue, stations, boardings and alightings, financial results and on-time performance. While structural constraints (access to freight rail lines) and the limited number of cars available has constrained traffic growth, revenue management, targeted marketing, rising air fares and fluctuating gas prices have driven ridership and ticket revenues to record levels.

HeartInd Flyer

The *Heartland Flyer* operates daily between Oklahoma City, OK and Fort Worth, TX (206 miles) serving the intermediate stations of Norman, Purcell, Pauls Valley, and Ardmore, OK. There is one intermediate stop in Texas, Gainesville. Southbound the train leaves Oklahoma City at 8:25 AM, arriving in Fort Worth at 12:23 PM. Northbound the train leaves Fort Worth at 5:25 PM and arrives in Oklahoma City at 9:23 PM. The schedule is timed to allow same day trips to Fort Worth. Also at the Fort Worth Intermodal Transportation Center, *Heartland Flyer* riders can connect with the *Texas Eagle* for travel to Dallas, Texarkana, Austin, San Antonio, and cities along the route in Arkansas, Missouri, Illinois, New Mexico, Arizona and California. Passengers can also connect with Trinity Railway Express for travel to Dallas Union Station, Arlington, Victory station and other cities between Fort Worth and Dallas. *Heartland Flyer* riders can also connect to an Amtrak Thruway Bus route serving Waco, Bryan (College Station), Prairie View and Houston. The Fort Worth Intermodal Transportation is also a hub for local transit buses operated by The T (Fort Worth Transportation Authority). In order to increase connectivity, bridge the "last mile" gap and expand the market Amtrak, TXDOT and Oklahoma Department of Transportation are offering the free carriage of bicycles on the

Heartland Flyer at Fort Worth Intermodal Transportation Center

Heartland Flyer. Bicycle carriage has shown to be a very popular traffic generating amenity on other Amtrak routes such as the *Capitol Corridor* in California.

The route segments of the *Heartland Flyer* are presented in **Exhibit 2-10**. Through Texas the *Heartland Flyer* operates on 206 miles of track owned by the Burlington Northern Santa Fe Railroad. In an effort to improve the competitive position of the service compared to auto travel and to increase ridership, TxDOT received a $3.8 million grant funded through the American Recovery and Reinvestment Act of 2009 (High Speed Rail grants) to upgrade the signals along the Texas portion of the route to allow for an increase in speeds to 79 mph. This upgrade reduced the run time from approximately 4 hours and 15 minutes to 3 hours and 58 minutes for travel from Oklahoma City to Fort Worth, saving approximately 17 minutes.

Exhibit 2-10 - Route Segments of the Heartland Flyer

Route Segment	Length (miles)
Oklahoma City – Norman	20 miles
Norman - Purcell	15 miles
Purcell – Pauls Valley	22 miles
Pauls Valley - Ardmore	45 miles
Ardmore - Gainesville	39 miles
Gainesville – Ft. Worth	65 miles
Total:	206 miles (71 miles in Texas)

The *Heartland Flyer* operates with Amtrak Superliner equipment. These cars are bi-level with passenger accommodations on two levels. The train carries two full coaches and a coach/café car. The capacity of the train is about 210 passengers. In addition to food service and bicycle carriage, the *Heartland Flyer* offers the Trails & Rails program which is a partnership between Amtrak and the National Park Service. Volunteer docents from the Chickasaw National Recreation Area periodically ride the Heartland Flyer describing the geographic, cultural and historical background of the countryside the train is passing through.

In Fiscal Year 2015 the *Heartland Flyer* carried 69,006 riders, an 11.4 percent decrease compared to the previous year. This ridership decline was in part the result of severe flooding and service outages during the late spring/early summer. Customer research undertaken by the Texas Transportation Institute in 2010 (Measuring the Benefits of Intercity Passenger Rail: A Study of the Heartland Flyer) found passengers are mostly taking leisure trips (75 percent - 80 percent). A large portion of these trips (about 40 percent) are for visiting family or friends. Traveling to school, vacation, and other recreational trips range from 7 percent to 18 percent depending on the season. Of the remaining riders about 10 percent are making business or personal business trips. Not surprisingly, given that there is only one frequency, the majority of passengers (40 percent - 45 percent) are making trips

involving overnight stays. Most *Heartland Flyer* riders would have driven if the train was not available and overwhelmingly cited comfort/relaxation, price and issues with driving (congestion, etc.) as reasons for taking the train. The majority of riders are female (at least 60 percent or more) with most passengers skewing older. In all, over 50 percent of all travelers are employed, but large segments (24 percent - 27 percent) are retired.

From 1999 through 2005 The *Heartland Flyer* was managed and funded by the Oklahoma Department of Transportation (ODOT). As a result in changes in funds available, ODOT approached Texas for funding assistance. ODOT's proposal was accepted, and the train is now jointly funded by both TX DOT and ODOT. From 2006 through 2013 Texas' funding contribution ranged from $1.3 – $2.0 million per year. In FY2014 a change in cost allocation mandated by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) raised the Texas contribution to $3.07 million.

Sunset Limited

The *Sunset Limited* operates on a tri-weekly schedule between Los Angeles and New Orleans (1,995 miles), serving major intermediate stations at Maricopa, AZ (Phoenix), Tucson, AZ, El Paso, TX, San Antonio, TX, and Houston, TX (937 miles in Texas). Through cars (one coach and one sleeper) from Chicago (via St. Louis and Dallas) are switched from the *Texas Eagle* to and from the train in San Antonio. Eastbound the train passes through central and eastern Texas on Tuesday, Friday and Sunday; westbound the train passes through central and eastern Texas on Monday, Wednesday, and Saturday. Eastbound the train leaves Los Angeles at 10:00 PM, stopping at El Paso at 3:35 PM (the next day), leaving San Antonio at 6:25 AM (day 2), arriving in Houston at 11:10 AM and arriving in New Orleans at 9:40 PM. Westbound the train leaves New Orleans at 9:00 AM, leaving Houston at 6:55 PM, arriving at San Antonio at 12:05 AM (the next day), stopping at El Paso at 1:22 PM and arriving in Los Angeles at 5:35 AM the next day. The train also serves smaller cities in Texas - Beaumont, Del Rio, Sanderson and Alpine. The Sunset Limited offers overnight service between Houston and El Paso and daytime/evening service (7 – 12-hour rides) locally within central and eastern Texas. However, the tri-weekly service significantly limits the appeal of the train for short-distance travel within Texas. Short-distance travelers are more likely to be taking trips of shorter duration where same-day or next-day departure (daily service) is critical to their mode choice.

The route segments for the *Sunset Limited* are presented in **Exhibit 2-11**. Through Texas the *Sunset Limited* operates on track owned by the UP.

The *Sunset Limited* operates with Amtrak Superliner equipment. These cars are bi-level with passenger accommodations on two levels. The train carries coaches, sleeping cars, a diner, a Sightseer Lounge, crew dormitory car and a baggage car with a capacity of about 340 passengers (including the through coach and sleeper from Chicago).

Exhibit 2-11: Route Segments of the Sunset Limited

Route Segment	Length (miles)
Los Angeles – Maricopa (Phoenix)	416 miles
Maricopa - Tucson	86 miles
Tucson – El Paso	315 miles
El Paso – San Antonio	605 miles
San Antonio - Houston	210 miles
Houston - New Orleans	363 miles
Total:	1,995 miles (937 miles in Texas)

In Fiscal Year 2015 the *Sunset Limited* carried 100,713 riders, a 4.1 percent decrease compared to the previous year. Based on the 2005 Amtrak Ridership Profile for the Sunset Limited, passengers are mostly taking leisure trips (96 percent). A large portion of these trips (61 percent) are for visiting family, friends or personal business, while traveling to school, vacation and other recreational trips account for the remainder in this category (35 percent). Of the remaining riders 4 percent are making business trips. The majority of riders are female (57 percent) with an average age of 53 years. In all, 41 percent of all travelers are employed, but large segments (40 percent) are retired.

Amtrak's Sunset Limited near Alpine, Texas

Over the years one of the *Sunset Limited's* key issues has been poor on-time performance (OTP). In an attempt to address this issue additional time (several hours) was added to the schedule. This added time did not solve the problem and OTP was still very poor. Performance improved after PRIIA with its on-time performance requirements was enacted in 2008. Finally, after negotiations with the UP the additional schedule time was removed in the spring of 2012. The train returned to its former schedule with more marketable times at key cities and a connection to the *Coast Starlight*.

The route originally extended east to Orlando, FL; however, since Hurricane Katrina in August 2005, Sunset Limited services east of New Orleans have not yet resumed. The Southern High-Speed Rail Commission and local stakeholders are undertaking efforts to reinstate service.

Texas Eagle

The *Texas Eagle* operates on a daily schedule between Chicago and San Antonio (1,305 miles), serving major intermediate stations at St. Louis, Little Rock, Dallas, Ft. Worth and Austin (with 531 miles in Texas). Three days per week, eastbound and westbound, through cars (one coach and one sleeper) to/from Los Angeles (via Maricopa and El Paso) are switched to and from the train in San Antonio.

Eastbound the train leaves San Antonio at 7:00 AM, stopping in Austin at 9:31 AM, leaving Ft. Worth at 2:20 PM, Dallas at 3:40 PM and arriving in St. Louis at 7:19 AM (the next day) and Chicago at 1:52 PM. Westbound the train leaves Chicago at 1:45 PM, St. Louis at 8:00 PM and arriving in Dallas at 11:30 AM (the next day), Ft. Worth at 1:25 PM, Austin at 6:30 PM and San Antonio at 9:55 PM. The train also serves smaller cities in Texas – Marshall, Longview, Mineola, Cleburne, McGregor, Temple, Taylor and San Marcos. The *Texas Eagle* offers overnight service between St. Louis and Dallas and daytime/evening service (7 – 12-hour rides) locally within northern and central Texas.

The route segments for the *Texas Eagle* are presented in **Exhibit 2-12**. Through Texas the *Texas Eagle* operates on tracks owned by the UP and BNSF. Discussions continue on the proposal to operate the train on tracks of the Trinity Railway Express between Dallas and Ft. Worth (jointly owned by Dallas Area Rapid Transit and Fort Worth Transportation Authority).

Exhibit 2-12: Route Segments of the Texas Eagle

Route Segment	Length (miles)
Chicago – St. Louis	284 miles
St. Louis – Little Rock	350 miles
Little Rock - Texarkana	140 miles
Texarkana - Dallas	217 miles
Dallas – Ft. Worth	31 miles
Ft. Worth – San Antonio	283 miles
Total:	1,305 miles (531 miles in Texas)

The *Texas Eagle* operates with Amtrak Superliner equipment. These cars are bi-level with passenger accommodations on two levels. The train carries coaches, sleeping cars, a diner, a Sightseer Lounge, crew dormitory car and a baggage car. Including the through coach and sleeper to/from Los Angeles, train capacity is about 290 passengers.

In 1996, Amtrak announced that it would terminate the *Texas Eagle*, which at the time ran three times a week between Chicago and Los Angeles. Efforts by community and passenger stakeholders, aided by TXDOT and the 75th Texas Legislature, facilitated a loan of $75 million that forestalled this proposal. Through this action *Texas Eagle* service was retained.

In addition, in order to improve the financial performance of the route, train frequency was increased from tri-weekly to daily. Daily service improves equipment and crew utilization and provides more attractive service especially for shorter distance passengers traveling between cities in Texas.

Eastbound and Southbound Texas Eagle Trains at Fort Worth Intermodal Transportation Center

Also during the period, the Texas Eagle Marketing and Performance Organization (TEMPO) was founded at the request of the Texas Eagle Mayors' Coalition to establish a mechanism for local input to Amtrak on issues affecting the Texas Eagle. Part of TEMPO's mission is to promote and improve passenger rail service along the *Texas Eagle* route, with particular emphasis on Texas and Arkansas, and to increase public awareness of the economic benefits of passenger rail service. One of the major achievements of TEMPO is its participation in the *Texas Eagle* local revenue management project. Beginning in 1999, the project allows those familiar with local travel trends to adjust fares to maximize ridership and ticket revenue.

In Fiscal Year 2015 the *Texas Eagle* carried 317,282 riders, a 1.3 percent increase compared to the previous year. Based on the 2005 Amtrak Ridership Profile for the *Texas Eagle*, passengers are mostly taking leisure trips (89 percent). A large portion of these trips (63 percent) are for visiting family, friends or for personal business, while traveling to school, vacation and other recreational trips account for the remainder in this category (26 percent). Of the remaining riders 11 percent are making business trips. The majority of riders are female (53 percent) with an average age of 49 years. In all, 60 percent of all travelers are employed, but a major segment (27 percent) is retired.

2.5.3 *Thruway Bus*

Thruway Motor Coach Service extends Amtrak's route network with connections between trains and motor coach services facilitated by through ticketing, scheduling, and bus/train

reservations. Amtrak's Thruway Motor Coach routes in Texas include Houston-Longview, Houston-Galveston, Galveston-Longview, Fort Worth-Houston and Killeen/Fort Hood-Temple (**Exhibit 2-13**). Amtrak Thruway Motor Coach schedules are all coordinated with the Amtrak passenger rail schedules, and the connection is guaranteed so the motor coach arrives before a train arrives and departs after the train departs. In addition to coordinated Thruway Bus routes, Amtrak has interline ticketing agreements with several intercity motor coach operators wherein Amtrak acts as a sales agent and sells tickets on key motor coach routes. While schedules are not coordinated or guaranteed, interline ticketing does offer the traveling public additional convenience, travel options and increases awareness of non-automobile travel alternatives.

Exhibit 2- 13: List of Connecting Thruway Bus Services

Train Routes	Amtrak Stations with Thruway or Intercity Bus Connections	Destinations	Operator
Heartland Flyer	Fort Worth	Waco	Greyhound Lines
		Bryan/ College Station	Greyhound Lines
		Prairie View	Greyhound Lines
		Houston	Greyhound Lines
Texas Eagle	Longview	Shreveport, LA	Lone Star Coaches
		Nacogdoches	Lone Star Coaches
		Houston	Lone Star Coaches
		Galveston	Lone Star Coaches
	Temple	Fort Hood	Southwestern Coaches
		Killeen	Southwestern Coaches
Sunset Limited	Houston	Galveston	Lone Star Coaches
	El Paso: Connecting service available at Greyhound Lines station	Las Cruces, NM	Greyhound Lines
		Albuquerque, NM	Greyhound Lines
	San Antonio: Connecting services for both *Texas Eagle* and *Sunset Limited* routes available at Greyhound Lines station	Harlingen	Valley Transit
		McAllen	Valley Transit

Source: Amtrak

2.5.4 *Connectivity*

While Amtrak's long-distance routes are reviewed individually (and origin destination ridership data is compiled and reported on a route basis), the Amtrak network is in fact a large matrix of interconnected city pairs. Generally, approximately 30 percent of the riders on each train are connecting to other trains. On short-distance multiple frequency routes, certain schedules have large numbers of connecting riders. Most passengers are not traveling between major endpoint cities with frequent air service. They are traveling between small and medium size cities, small cities and large cities often connecting at

major hub cities to other trains. Passengers often are choosing the train because they live or are traveling to towns without air or motor coach service or they find that their chosen travel route using the current market-based air and motor coach hub system is expensive or circuitous with long layovers at connecting hub cities.

2.6 Infrastructure Issues

Given current rail freight and rail passenger growth trends and proposals to add new passenger service, rail line capacity is the critical issue. Additional rail line capacity will need to be constructed for both the growing rail freight market as well as for any additional passenger rail service. In some cases former mainlines may need to be upgraded as bypass routes or new bypass routes constructed. Key highway/rail crossings need to be separated with parallel crossings closed in order to create a more reliable, more fluid rail line that can be operated without concerns regarding the blocking of highway crossings.

In developing any passenger rail expansion plan, the freight railroads' traffic and capacity needs must be a key element. Provision for rail freight growth must also be included in any plan. Operations analysis and capacity simulation should be the first step in planning any service improvement. The corridor improvement strategy must not only improve and add capacity for the proposed rail passenger service, but also identify how freight service is maintained and freight capacity improved as part of the investment. An additional issue for the freight railroads is that even though the public investment may build sufficient capacity to operate passenger trains without delay to freight trains, the passenger investment may consume valuable right-of-way that results in future privately funded freight capacity investment being dramatically more expensive.

2.6.1 *Abandonments*

Rail freight service, including the lines over which rail service is operated, are under the jurisdiction of the Federal Surface Transportation Board (STB). Rail owners and operators must apply to the STB for permission to discontinue, or abandon, freight service on a line.

The STB requires a railroad to publish a notice to abandon an active line once a week for at least three consecutive weeks and provide notice at its stations and to its rail customers. For a line on which no service has been provided over the past two years and where no customers object, prior notice is not required and the carrier is exempt from many of the STB abandonment requirements. For each abandonment application, the STB establishes a docket number and collects information and testimony before deciding whether to allow abandonment or permit other actions as may be requested by interested parties. In addition to STB's authority to grant or deny abandonment of a rail line, it may also impose other conditions, such as granting "Interim Trail Use" or "Public Use" of the line.

The National Trails Act allows for reserving railroad right-of-way through the interim use of the railroad corridor as a trail. Interim trail use can be utilized when it is determined that the railroad right-of-way may be needed in the future for railroad use. Public agencies may also request that the rail corridor be made available for "public use" if it has determined that the right-of-way is suitable for highway or mass transit usage, conservation, energy production or transmission, or recreation.

Exhibit 2-14 below describes the abandonment proceedings which have been completed since the 2010 State Rail Plan was published.

Exhibit 2-14: Abandonments in Texas Since 2009

Filing Date	Railroad	Line	STB #	Miles	Status
5-26-2009	UP	Henderson Ind. Lead	AB-33-275-X	15.69	Consummated 9-11-09
8-7-2009	UP	N. Fort Worth Branch	AB-33-280-X	1.23	Acquired by Tarrant Regional Water Dist. 4-29-2011
12-28-2009	RRROW	Cotton Belt	AB-1050-0-X	5.34	Assigned to DART for interim trail use 1-22-2010
1-18-2013	Rusk Co. Rural Rail Dist.	Henderson-Overton Branch Spur	AB-1103-0-X	0.9	Consummated 4-3-2013

Source: 2015 STB

2.7 Freight and Passenger Rail Terminals and Stations

2.7.1 *Freight Terminals and Intermodal Connectors*

Rail lines in Texas, together with trucking, support the intermodal freight transportation system for the state. Texas has the most extensive rail system in the United States with more rail lines than any other state at more than 10,400 miles. The state's rail lines even extend across borders with coordination agreements with Mexican railroad operators. Overall, the rail system ranks first in the nation in regards to employment and freight handled by railroads. Carrying over 8.8 million car loads annually, Texas ranks second in the nation.

Trucking, along with rail, serves as the backbone for the Texas intermodal freight transportation system. Annually, trucks on Texas roadways move 1.2 billion tons of freight, valued at over $1.6 trillion. In 2010, the trucking industry's freight movement accounted for 62 percent of all of the freight moved in the state with projections to increase its share to 66 percent by 2040. In fact, 73 percent of goods manufactured in Texas are moved via truck. The strength of the trucking industry in Texas is not only felt by the goods it moves in, out and within the state, but also by the residents it employs; 1 in 16 Texans are employed by

this industry alone. In 2011, Texas ranked third in the nation for intermodal tons originated or terminated in the state, with over 19.3 million tons. Major intermodal terminals in Amarillo, El Paso, Dallas, Fort Worth, Houston, and Laredo anchor the system with smaller facilities located in other areas including Donna, Rosenberg, and Wylie. In total, there are approximately 20 intermodal rail facilities, concentrated mostly in the eastern portion of the state. The state is home to two intermodal logistics facilities, AllianceTexas and Port San Antonio.

Intermodal connectors link rail yards, seaports, airports and distribution facilities where the transfer of freight is completed on-site. Access to and from these intermodal facilities is along local roadways that connect to the state's highway freight corridors and serve as the last mile for freight movement. A total of 191 National Highway System (NHS) intermodal connectors, more than 180 miles, are recognized by the Federal Highway Administration (FHWA). Freight intermodal connectors in Texas include 23 airport/truck, 39 port/truck, 18 truck/pipeline and 20 truck/rail connectors.

Intermodal connectors serve an important function in the freight network. The intermodal connectors can connect freight movements at origins or destinations as those first or last mile connections and they can allow for freight to move from one mode to another to facilitate the continued movement of goods along the supply chain. **Exhibit 2-15** lists the NHS intermodal connectors serving truck/tail intermodal terminals where goods transfer to and from highway and rail modes.

The AllianceTexas and Port of San Antonio intermodal logistics centers are important multimodal nodes, where air, rail, and highway modes produce unique opportunities for Texas' logistics and distribution industries. Investment in these connection nodes and the highways leading out of them are catalysts for future Texas freight development.

Exhibit 2-15: NHS Truck/Rail Intermodal Facilities, 2013

Facility	Connector Description
A.T.S.F. Intermodal Facility	Served by an Existing NHS Route/SH 35
Empire Truck Lines Container Yard, Houston	Wallisville Rd (IH 610 to Oates)
Fort Worth Amtrak	St. Louis between (US 75) Central Expressway to IH 30
Howard Industries Inc., Houston	Served by an Existing NHS Route/Industrial Blvd
M.P. GMAC Yard	Hardy Rd between the Terminal and FM 1960 (Humble Westfield Rd)
Maurice Pincoffs Co. Inc., Houston	Served by an Existing NHS Route/Jacinto Port Blvd
McAllen EC Dev. Corp. & Foreign Trade Zone	FM 1016 between Ware Rd and Spur 115
Port of Laredo (Union Pacific	I-35 Frontage Rd between Del Mar and the Facility/Test Track
S.P. Barbours Cut Intermodal Terminal	Served by an Existing NHS Route/Barbours Cut Rd
S.P. Houston Intermodal Hub	Lockwood between I-10 and Wallisville [0.875 mi]; Wallisville between Lockwood and the Terminal
Santa Fe Railroad Yard (El Paso)	Served by an Existing NHS Route/US 62
Santa Fe Railway Intermodal Facility (DFW)	Westport Road between IH 35W to Terminal
Southern Pacific (San Antonio)	Pine St between I-35 and Sherman [0.300 mi]; Sherman between Pine Street and the Terminal
Southern Pacific RR Alfalfa Yard (El Paso)	Dodge Rd between SH 20 and FM 76
U.P. Settegast Yard (Houston)	Kirkpatrick Blvd between the Terminal and I-610
Union Pacific Intermodal Center (Arlington)	Served by an Existing NHS Route/SH 360, SH 180
Union Pacific Intermodal Facility (DFW)	South Parkway between US 80 and Forney [0.040 mi]; Forney between South Parkway and Sam Houston [1.172 mi]; Sam Houston between Forney and Terminal [0.409 mi]
UPS Mykawa Road Facility, Houston	Mykawa Rd (IH 610 to Wayside)
UPS Stafford Facility, Houston	Stafford Rd (US 90A to Ellis)
UPS Sweetwater Lane Facility, Houston	W Canino (IH 45 to Sweetwater Ln) [0.1 mi]; Sweetwater Ln (Terminal gate to W. Canino) [0.1 mi]

AllianceTexas

AllianceTexas is a 17,000 - acre master - planned, mixed - use community located about 20 miles north of downtown Fort Worth. The development includes the first cargo-centered airport created in the United States, a large BNSF Railway intermodal facility, two Class I railroads, and connecting highways. Alliance Texas was developed as a freight village and supports a number of corporate campuses, office complexes, shopping, and entertainment venues, residential housing, schools, and churches. Alliance is a unique global logistics hub

that supports the interchange of freight between rail, air, and truck modes. The development is located on I-35W and has direct access to SH 114 and SH 170. Alliance is home to a 735 acre intermodal yard that handles over 600,000 lifts a year, with an overall lift capacity of 1 million. More than 320 companies reside at Alliance Texas, which employ over 31,000 workers. The economic impact of Alliance Texas has been estimated at more than $40 billion over the past 22 years.

Port San Antonio

Port San Antonio is an adaptive reuse of a former Air Force base that was decommissioned in the 1990s. The development plan is anchored by air cargo and freight rail facilities and like Alliance Texas has been developed as a freight village that will include commuter rail and housing. Port San Antonio is home to a 350 acre railport that is directly served by the San Antonio Central Railroad, which provides switching services to UP and BNSF Railways. The railport can accommodate 20,000 railcars per year. The development is adjacent to Lackland Air Force base and the two facilities share landing facilities. Port San Antonio recently invested in an 89,600 - square - foot air cargo terminal capable of accommodating up to four Boeing 747s and facilitates the quick transfer between the air and truck modes. The area is served directly by US 90, however I-35, I-10 and I-37 are all within 10 miles. Port San Antonio and Lackland Air Force Base are responsible for the creation of over 12,000 direct jobs and the annual economic benefit of Port San Antonio is more than $1.15 billion (2011 dollars).

Mexico

Intermodal transportation is also an important factor in cross-border movements with Mexico. Over 89 percent of all shipping containers imported from Mexico cross the Texas border. As congestion and regulatory changes make shipping through the Port of Los Angeles/Long Beach less attractive, more ocean carriers are serving Mexican ports like Manzanillo and Lázaro Cardenas as an alternative. At these ports, intermodal containers from Asia are transferred to KCSM and Ferromex trains destined to manufacturing sites in northern Mexico and across the Texas border.

2.7.2 *Passenger Terminals and Stations*

Stations

In addition to serving as gateways to the trains, rail stations are also gateways to and from the cities served by these trains. Rail stations are a focus for activity and foster economic development, commercial endeavors, tourism, cultural activities, civic pride and historic preservation in their cities.

There are nineteen active Amtrak stations in Texas, seven serving the *Sunset Limited,* two serving the *Heartland Flyer* and twelve serving the *Texas Eagle*. The San Antonio station serves both the *Sunset Limited* and the *Texas Eagle*, and the Fort Worth Intermodal

Transportation Centers serves both the *Heartland Flyer* and the *Texas Eagle*. With two daily trains and connections between the Heartland Flyer and the *Texas Eagle,* the Fort Worth Intermodal Transportation Center serves the greatest number of riders (approximately 130,000 yearly), followed by San Antonio (approximately 65,000 yearly). Several Texas stations have been restored or newly constructed in the past decade. In FY15 almost 380,000 riders boarded Amtrak trains in Texas.

Seven of the stations, Austin, Dallas, El Paso, Fort Worth, Houston, Longview and San Antonio, are full-service stations with ticket agents and checked baggage service. Four of these stations, Austin, Dallas, Fort Worth and San Antonio also have Quik-Trak kiosks for the delivery of boarding passes associated with transportation paid through Amtrak's on-line booking system. Two stations, Marshall and Temple have staffed ticket offices but do not offer checked baggage. The station at Mineola is unstaffed but has a Quik-Trak kiosk. The other eight stations are unstaffed. Unstaffed stations are facilities with platforms and structures (generally former stations) with enclosed waiting rooms. There are no station employees, although the facilities may be hosted by part-time or volunteer caretakers that open and close station structures at train time and offer limited assistance to passengers. No ticketing facilities are available, and passengers generally purchase their transportation through Amtrak's on-line booking system and print their boarding passes at home. One station in Texas, Sanderson, is a flag stop. A flagstop is a stop where the train will stop if there is a passenger with a reservation to board or detrain at the station.

The platforms, waiting rooms and facilities (rest rooms, etc.) of eleven of Texas's stations, Austin, Dallas, El Paso, Fort Worth, Gainesville, Longview, Marshall, McGregor, Mineola, San Antonio and San Marcos are fully wheelchair accessible. Seven of the remaining stations are partially accessible, meaning that while platforms are accessible there are some facilities/pathways that preclude the station from being considered fully accessible - usable by the disabled without any kind of assistance. As a flagstop Sanderson has no facilities and disabled passengers will most likely need assistance to use the stop. Alpine, Houston, Longview, McGregor and Mineola have restrooms but they cannot be accessed by wheelchair bound passengers. All other stations with restrooms are accessible. Nine stations, Austin, Beaumont, Dallas, El Paso, Houston, Longview, Marshall, McGregor San Antonio and Temple have spaces set aside as accessible parking. Several stations have vending machines for the convenience of passengers.

Intercity Stations and Intercity/Commuter Rail Union Stations

Amtrak does not own any passenger rail stations in Texas; stations are usually owned by the cities or by the freight rail operator. Some stations are used by more than one route, such as the *Heartland Flyer* and *Texas Eagle* use of the Fort Worth station, and in some cases such as the Fort Worth Intermodal Transportation Center (ITC), the station is shared with local commuter services as well. **Exhibit 2-16** lists all the stations used by Amtrak, their

ownership, services, and whether the station is an intermodal terminal. The total number of available short-term and long-term parking spaces available at each station listed by Amtrak is also provided. The number does not include private parking facilities near each station unless otherwise noted.

A summary of Amtrak stations follows:

Alpine, TX (ALP) | Texas Eagle, Sunset Limited
The station serving Alpine, "Gateway to Big Bend National Park," was constructed in 1946. It has a waiting area, a train platform and a limited amount of parking located on-site. The station is unstaffed and is served by 6 trains per week (3 each direction).

Austin, TX (AUS) | Texas Eagle Route
Austin is served by a brick station building built in 1947 for the Missouri Pacific Railroad with a waiting area, train platform, ticket office, and a limited amount of on-site parking. It is served by 2 trains daily (1 each direction).

Beaumont, TX (BMT) | Sunset Ltd Route
Beaumont is served by a new station building completed in 2012 with covered benches adjacent to the train platform. The access road, sidewalks and parking area were also replaced. The city acquired connecting property that will host a police substation with public restrooms. Beaumont is unstaffed and is served by 6 trains per week (3 each direction).

Cleburne, TX (CBR) | Texas Eagle Route
Cleburne Intermodal Transportation Depot was completed in 1999 and serves as a local bus station as well as an Amtrak station. A

waiting area, restrooms, and limited parking facilities are available on-site. Additionally, it serves as a dispatching station for CLETRAN (Cleburne's local transit system). Cleburne is unstaffed and is served by 2 trains daily (1 each direction).

Dallas, TX (DAL) | Texas Eagle Route The Beaux-Arts Dallas Union Station was built in 1916 and serves as a station for Trinity Railway Express (TRE), Dallas Area Rapid Transit (DART) light rail and local bus service in addition to Amtrak service. The waiting area is equipped with public restrooms during station hours and a ticket counter. Limited short-term parking and ample hourly and contract parking are also located on site. It is served by 2 Amtrak trains daily (1 each direction) and 47 TRE commuter trains (Monday-Friday) and 22 commuter trains on Saturday. TRE does not operate on Sunday.

Photo Credit: Ron Reiring

Del Rio, TX (DRT) | Texas Eagle, Sunset Limited Routes

Del Rio is served by an intermodal station that offers local bus service in addition to Amtrak service. The waiting area is equipped with public restrooms during station hours; however station hours do not coincide with early morning train arrivals and departures, and limited short-term parking is available on-site, with long-term street parking available off-site. Del Rio is unstaffed and is served by 6 trains per week (3 each direction).

El Paso, TX (ELP) | Texas Eagle, Sunset Limited Routes

The neoclassical El Paso Union Depot, designed by famed architect and city planner Daniel Burnham was completed in 1906. A waiting area is located inside with public restrooms and a ticket counter. Extremely limited street parking is located off-site, and no parking is available on-site. Future plans call for transitioning the station into an intermodal terminal. It is served by 6 trains per week (3 each direction).

Fort Worth, TX (FTW) | Texas Eagle, Heartland Flyer Routes

The Fort Worth Intermodal Transportation Center, built in 2002, serves as a local transportation hub for Amtrak, Trinity Railway Express, intercity motor coach service, local transit bus service (The T). R ental car and taxi services, as well as bike share are available. The waiting area is equipped with public restrooms during station hours and a ticket counter. Limited short-term parking is available on-site. Paid parking is available adjacent to the Transportation Center off-site. The Center is served by 4 Amtrak trains daily (1 frequency each direction on two routes, the Heartland Flyer and Texas Eagle) and 41 TRE commuter trains (Monday-Friday) with 22 TRE commuter trains on Saturday. TRE does not operate on Sunday.

Gainesville, TX (GNS) | Heartland Flyer Route

The Gainesville depot was completed in 1902 for the Gulf Coast & Santa Fe Railroad. Restored in 2001, it contains a waiting room restrooms, a limited amount of parking on-site, as well as a railroad museum in an area separate from the Amtrak facilities and office space upstairs. Gainesville is unstaffed and served by 2 trains daily (1 each direction).

Houston, TX (HOU) | Sunset Limited Route

The current Amtrak station is the fourth Houston passenger depot, constructed by the Southern Pacific (now UP) in 1960, and provides a ticket office, waiting area, restrooms, and a limited amount of parking located on-site. There were plans for the Amtrak station to be moved to the proposed Burnett Plaza intermodal facility. However, these plans were not implemented for financial reasons. The station is served by 6 trains weekly (1 each direction 3 times per week).

Longview, TX (LVW) | Texas Eagle Route

Longview is served by the Longview depot which was completed in 1940 and provides a ticket office, waiting area, restrooms, and a limited amount of parking located on-site. It underwent a $2.8 million major renovation of the main building and was re-opened in May 2014. Amtrak services were moved back into the original waiting space and ticket office, sharing the facility with Longview Transit and Greyhound. The rest of the building is used for city offices and meeting space. It is served by 2 trains daily (1 each direction).

Marshall, TX (MHL) | Texas Eagle Route
The Marshall Station was built in 1912 by the Texas & Pacific Railroad and provides a ticket office, a waiting area, restrooms and a limited amount of parking located on-site. In addition, it has a museum on its second and third floors. The station was restored in 1999. It is served by 2 trains daily (1 each direction).

Photo Credit: Ron Reiring

McGregor, TX (MCG) | Texas Eagle Route
The McGregor depot, built in 1904, includes a waiting area, restrooms, ticket counter, and a limited amount of parking located on-site. McGregor is is served by 2 trains daily (1 each direction).

Mineola, TX (MHL) | Texas Eagle Route
The Mineola station was built in 1951 and underwent a thorough renovation that was completed in 2006. It provides a waiting area, restrooms, a limited amount of parking located on-site, as well as a railroad museum that shares the facility's space. Mineola is unstaffed and is served by 2 trains daily (1 each direction.

San Antonio, TX (SAS) | Sunset Limited, Texas Eagle Routes
Amtrak has been operating in its current facility in San Antonio since 1998. It provides a ticket office, waiting area, restrooms, and a bike share station adjacent to the building. No parking is available at this location. It is served by 2 trains daily (1 each direction for the *Texas Eagle* route) as well as 6 additional trains per week (1 each

direction, 3 times per week for the *Sunset Limited* route).

Sanderson, TX (SND) | Sunset Limited, Texas Eagle Routes

Sanderson is a flagstop, which means that the *Sunset Limited/Texas Eagle* only pauses to pick up or discharge riders if they have made a reservation; otherwise, the train continues through town. Until recently, a depot stood on-site, however, it has been demolished, and all that remains is the small Union Pacific storage building and Amtrak informational sign. The station is unstaffed and is served by 6 trains per week (3 each direction).

San Marcos, TX (SMC) | Texas Eagle Route

The San Marcos Intermodal Station, in operation since 2001, serves Amtrak, Greyhound, taxi, and interurban coach passengers. It provides a waiting area, restrooms, and a limited amount of parking on-site. San Marcos is unstaffed and is served by 2 trains daily (1 each direction).

Taylor, TX (TAY) | Texas Eagle Route

Only a platform exists at Taylor for Amtrak service, which shares a site with a Union Pacific office building. A small shelter with picnic tables has been constructed adjacent to the building and train platform. Taylor is unstaffed and is served by 2 trains daily (1 each direction).

Temple, TX (DRT) | Texas Eagle Route

Amtrak service in Temple is located in the former Atchison, Topeka, and Santa Fe station, built in 1911. The waiting area is equipped with public restrooms during station hours, a ticket office, and ample parking available on-site. The station was restored in 1999. It is served by 2 trains daily (1 each direction).

2.7.3 *ADA Compliance*

Amtrak's *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, produced in 2009, notes that eighteen in-service Texas stations are required to be ADA (Americans for Disability Act) compliant. The only exception is Sanderson which is a low volume flagstop and is not required to be ADA compliant.

All eighteen stations were assessed as to the levels of ADA compliance of their station structures, platforms and pathways. The assessment ratings outlined in the report noted above are: Generally Compliant, for stations scoring above 80percent on their compliance score; Partially Compliant, for stations scoring between 20percent and 79percent; and Minimally Compliant, for stations scoring lower than 20 percent. Three of the Texas stations, Dallas, Longview and San Antonio which are required to be ADA compliant, were rated as Partially Compliant in 2009. Alpine, McGregor and Taylor were noted as Minimally Compliant for all features. The remaining stations have a mix of compliant, partially compliant and minimally compliant ratings for their features – station structures, platforms and pathways. The same report cited preliminary cost estimates for improvements ensuring ADA compliance and a state of good repair for station structures, platforms, and pathways. For the Texas stations the total of these estimated costs was approximately $22 million. It should be noted that this assessment was made before the completion of new or renovated stations at Beaumont, Gainesville, Fort Worth, Longview, Mineola and San Marcos. These improvements would positively impact the assessment compliance of these stations and the costs to bring all Texas stations into a state-of-good repair and fully compliant with ADA.

Amtrak and the freight railroads are currently working to develop strategies and plans to meet FRA's new requirements requiring level boarding to accommodate passengers with disabilities. This is a very complex task integrating railroad clearance requirements, freight traffic, the mix of different boarding levels by type of equipment (Superliner, single-level, and commuter) that often operate on the same line, while fulfilling the requirements and spirit of the ADA statute. Given the engineering and funding needed to address the level boarding issue, Amtrak and the FRA are making improvements using the following priorities: 1.) Platform state-of-good repair needs; 2.) Stations with known train access deficiencies, where wheeled mobility passengers cannot buy a ticket or access a train; 3.) Stations with known deficiencies in information display systems; and 4.) Stations where entrances and exits or amenities like restrooms are currently not accessible.

2.7.4 *Station Characteristics*

The matrix in **Exhibit 2-16** summarizes the existing intercity stations and intercity/commuter rail union stations in Texas and specific information about each of the stations.

Exhibit 2-16: Detailed Amtrak Station Information

	Alpine	Austin	Beaumont	Cleburne	Dallas
Owner	UPRR	UPRR	City of Beaumont / UPRR	City of Cleburne / BNSF Railway	City of Dallas
Address	102 West Holland Avenue, Alpine, TX 79830	250 North Lamar Blvd., Austin, TX 78703	2255 West Cedar Street, Beaumont, TX 77704	206 North Border Street, Cleburne, TX 76031	400 South Houston Street, Dallas, TX 75202
Route	TE, SL	TE	SL	TE	TE
Platform					
Type	Single	Single	Single	Single	Double (x3)
Length (approx)	470'	850'	550'	30' / 100'	460'
Construction	Concrete	Asphalt	Concrete	Brick Pavers	Concrete / Brick Pavers
Shelter	None	None	Fully Covered	Covered Benches	Covered Benches
Lighting	Fully Lit	Fully Lit	Fully Lit	Unlit	Fully Lit
Amenities	Benches	None	Benches	Benches	Benches
Passenger Safety	Tactile Paver Strip	Yellow Safety Line	Yellow Safety Line, Tactile Paver Strip	None / chain link fence	Tactile Paver Strip
ADA	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible
Depot					
Hours	N/A	7:00 a.m. – 8:00 p.m.	N/A	M-F: 7:00 a.m. – 5:00 p.m.	9:00 a.m. – 4:30 p.m.
Seating Capacity	18	60	25	66	114
Restrooms	Yes	Yes	Yes	Yes	Yes
Vending	No	Yes	No	Yes	Yes
ATM	No	No	No	No	No
Ticket Counter	No	Yes	No	No	Yes
Quik-Trak	No	Yes	No	No	Yes
Telephones	Payphone	Payphone	Payphone	Payphone	Payphone

Shared Uses	UPRR Office	None	None	Local Bus, CLETRAN dispatch center	Light Rail, Commuter Rail
Parking					
Short Term	37	50	4	25	20
Long Term	ST=LT	ST=LT	25	33	84 (pay lot)
ADA Facilities	2 reserved spaces	2 reserved spaces	2 reserved spaces	6 reserved spaces	4 reserved spaces
	Del Rio	**El Paso**	**Fort Worth**	**Gainesville**	**Houston**
Owner	City of Del Rio / UPRR	City of El Paso	Fort Worth Transportation Authority	City of Gainesville / BNSF Railway	UPRR
Address	100 North Main Street, Del Rio, TX 78840	700 West San Francisco Avenue, El Paso, TX 79901	1001 Jones St., Fort Worth, TX 76102	605 East California Street, Gainesville, TX 76240	902 Washington Ave, Houston, TX 77002
Route	TE/ SL	TE, SL	TE, HF	HF	SL
Platform					
Type	Single	Single	Double	Single	Double
Length (approx)	440'	1100'	700'	200'	1000'
Construction	Concrete	Asphalt	Concrete / Brick Pavers	Asphalt / Brick Pavers	Concrete
Shelter	None	None	Fully Covered	Partial Awning	Fully Covered
Lighting	Fully Lit	Fully Lit	Fully Lit	Fully Lit	Fully Lit
Amenities	Benches	None	Benches	Benches	None
Passenger Safety	Yellow Safety Line, Tactile Paver Strip	Yellow Safety Line / Chain Link Fence	Tactile Paver Strip	Yellow Safety Line	Yellow Safety Line
ADA	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible
Depot					
Hours	8:00 a.m. – 5:00 p.m.	9:15 a.m. – 4:30 p.m.	8:00 a.m. – 6:00 pm.	11:15 a.m. – 6:45 p.m.	10:00 a.m. – 7:30 p.m.
Seating Capacity	0	52	85	14	100
Restrooms	No	Yes	Yes	Yes	Yes
Vending	No	Yes	Yes	No	Yes

ATM	No	Yes	Yes	No	No
Ticket Counter	No	Yes	Yes	No	Yes
Quik-Trak	No	No	Yes	No	No
Telephones	Payphone	No	Payphone	Payphone	Payphone
Shared Uses	Intermodal Station (bus/coach)	None	Intermodal Transportation Center	Museum	None
Parking					
Short Term	5	5	15	15	5
Long Term	ST=LT	0	None	ST=LT	ST=LT
ADA Facilities	3 reserved spaces	3 reserved spaces	2 reserved spaces	3 reserved spaces	2 reserved spaces
	Longview	**Marshall**	**McGregor**	**Mineola**	**San Antonio**
Owner	City of Longview / UPRR	UPRR	BNSF Railway	City of Mineola / UPRR	VIA Metropolitan Transit
Address	905 Pacific Avenue, Longview, TX 75602	800 North Washington Street, Suite 2, Marshall, TX 75670	1 Amtrak Boulevard, McGregor, TX 76657	115 East Front Street, Mineola, TX 75773	350 Hoefgen Street, San Antonio, TX 78205
Route	TE	TE	TE	TE	TE, SL
Platform					
Type	Single	Single	Single	Single	Single
Length (approx)	720'	300'	350'	265'	550'
Construction	Asphalt / Concrete	Concrete	Brick Pavers	Concrete	Brick Pavers
Shelter	-	-	Partial Awning	Partial Awning	Fully Covered
Lighting	Fully Lit	Fully Lit	Fully Lit	Fully Lit	Fully Lit
Amenities	-	-	Benches	Benches	None
Passenger Safety	Tactile Paver	Yellow Safety Line	None	Yellow Safety line, Tactile Paver	Yellow Safety Line
ADA	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible	Fully Accessible
Depot					
Hours	7:00 a.m. – 7:30 p.m.	7:00 a.m. – 10:00 am, 5:30 pm – 8:30 p.m.,	Caretaker opens/ closes waiting room as needed (10:45 a.m. – 1:00	9:00 a.m. – 6:00 p.m.	1:00 am – 7:00 am 9:15 pm. – 11:59 pm

		.	p.m., 3:00 – 5:00 p.m.)		
Seating Capacity	14	26	20	48	33
Restrooms	Yes	Yes	Yes	Yes	Yes
Vending	Yes	No (gift shop)	No	No	Yes
ATM	No	No	No	No	No
Ticket Counter	Yes	Yes	No	No	Yes
Quik-Trak	No	No	No	Yes	Yes
Telephones	Payphone	Payphone	Payphone	Payphone	Payphone
Shared Uses	Intermodal Transportation CTR/UP offices	Museum	None	Museum	None (adjacent to bike share station)
Parking					
Short Term	15	48	15	25	0
Long Term	ST=LT	ST=LT	ST=LT	ST=LT	0
ADA Facilities	2 reserved spaces	4 reserved spaces	2 reserved spaces	2 reserved spaces	1 reserved space

	San Marcos	Sanderson	Taylor	Temple
Owner	Capital Area Rural Transportation System	UPRR	UPRR	City of Temple / BNSF
Address	338 South Guadalupe Street, San Marcos, TX 78666	201 West Downie Street, Sanderson, TX 79848	118 East First Street, Taylor, TX 76574	315 West Avenue B, Temple, TX 76501
Route	TE	TE, SL	TE	TE
Platform				
Type	Single	Single	Single	Single
Length (approx)	300'	180'	200'	830'
Construction	Concrete	Asphalt	Asphalt	Brick Pavers
Shelter	Fully Covered	None	Fully Covered	None
Lighting	Fully Lit	None	Fully Lit	Fully Lit
Amenities	Benches	None	Benches, Tables	None
Passenger Safety	Tactile Paver Strip	None	None	Yellow Safety Line / Chain Link Fence
ADA	Fully Accessible	None	Fully Accessible	Fully Accessible

Depot				
Hours	M-F: 7:00 a.m. –9:00 p.m.; Sa: 7:00 a.m. – 12:00 p.m., 2:00 – 9:00 p.m.; Su: 8:00 a.m. – 12:00p.m., 2:00 – 7:00 p.m.	N/A	N/A	M-F: 9:30 a.m. – -6:00 p.m.
Seating Capacity	41	0	20	37
Restrooms	Yes	No	No	Yes
Vending	Yes	No	No	Yes
ATM	No	No	No	No
Ticket Counter	No	No	No	Yes
Quik-Trak	No	No	No	No
Telephones	Payphone	Payphone	Payphone	Payphone
Shared Uses	Greyhound, taxi, Interurban Coach	None	UPRR Yard Office	Museum/Offices
Parking				
Short Term	5	0	23	50
Long Term	ST=LT	0	ST=LT	30
ADA Facilities	4 reserved spaces	None	2 reserved spaces	2 reserved spaces

2.8 Passenger Rail Objectives

Outlined below are actions that will assist and help maintain passenger rail service in Texas. One challenge to Texas's ability to directly impact specific levels of current intercity passenger rail service is that, with the exception of the *Heartland Flyer,* the other two routes in Texas are long-distance trains operated by Amtrak on rail lines owned by the freight railroads. At this point, there are no plans for changes in the frequency or routes of Amtrak services in Texas.

2.8.1 *Support of Existing Amtrak Service*

In the near term, Texas can have a role in monitoring service quality, preserving, and being an advocate for the improvement and expansion of rail passenger service in the state. Section 207 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) established performance and service quality goals for intercity passenger rail service that Texas can reference. These metrics, reported quarterly by the FRA, require continuous year-over-year improvement in financial performance (revenue/cost ratio – total revenues divided by costs), maintaining or improving current schedule run times, satisfactory on-time performance (85 percent for long-distance trains by 2014), no more than 900 minutes of

delay per 10,000 train miles by host railroad and Customer Satisfaction Scores of 90 percent by FY2014.

2.8.2 *Freight Railroad Participation*

Given the volume of freight traffic on Texas's rail routes, a key priority is a close working relationship with the freight railroads. The freight railroads must not only be partners but an advocate of the proposed improvements. Freight railroads' traffic and capacity needs must be a key element in developing any rail expansion plans.

2.8.3 *Multi-State/Multi-County Partnerships for New Service*

Most of the proposed intercity passenger rail routes extend outside the boundaries of Texas (such as Oklahoma City to South Texas - see Chapter 3 Potential Passenger Rail Improvements and Investments). It is imperative that Texas maintain and enhance strong partnerships and working relationships between the state partners, counties, freight railroads and public entities responsible for jointly overseeing the service. The partnership will vary depending on the route of the service. Where the route endpoint is close to the state line, one state may dominate. In other cases all states must be equal partners. Several examples of these partnerships include: British Columbia, Washington and Oregon for the *Cascades;* Maine and the Massachusetts Bay Transportation Authority for the *Downeaster;* and the Midwest Regional Rail initiative (MRRI) – a coordinated effort by Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. These Midwest states are cooperating in designing a multi-state, multi-route network and key connections at the Chicago Hub – a model for the Dallas – Fort Worth Hub. Trinity Rail Express is an excellent example of multi-agency sharing of the financing and management of a rail service.

2.8.4 *Continuing Outreach and Planning*

A continued outreach effort to a wide range of stakeholders is also important in order to achieve the funding required to support the corridor service and in coordinating plans developed in conjunction with the Southern Rail Commission, Oklahoma, Kansas, Louisiana and Arkansas (see Chapter 3 Potential Passenger Rail Improvements and Investments). It is also a key requirement of PRIIA. Public transportation advocates, on-line cities, right-of-way neighbors, the tourism industry, downtown business interests, suppliers, connecting transit networks, taxi companies, the freight railroads, rail labor and rail line freight users all will benefit from an improved rail service. For high-speed rail, stakeholders not only included those noted above but also include potential investors and the financial community. All will need a complete understanding of the need for a consistent funding source and the requirement that the service be expanded in distinct phases.

2.8.5 *Multimodal Integration, Connectivity, and Transit- Oriented Development*

An improved rail passenger route is but one part of a complete transportation product. Riders don't live or work at the train stations; they need connections to their ultimate

destinations. Two key factors provide this connectivity - multiple rail and transit routes, taxi/rideshare connections, accommodations for cyclists and auto access - and transit-oriented development (TOD). Developing the station as a transit hub enables passengers to reach their final destination in a convenient, timely manner whether the passenger's destination is within the city, in the region or another intercity journey. By using the rail station as a development tool, TOD builds rail ridership and builds communities. Improvements in transportation services and development activities at Dallas Union Station, the Fort Worth Intermodal Transportation Center and the condominium development at the Texas & Pacific Station are examples of creating these connections.

2.8.6 *Route Analysis*

Planning for any proposed route must include defining key markets, ridership and ticket revenue forecasts, assumptions of service frequency, schedule run times, stations served, pricing, on-board services and accommodations offered (commuter, coach, Business Class or Sleeping Car). Forecasted ridership levels and schedule run times will determine train capacity and amount of equipment needed. Operational analysis of the rail line will determine capacity and investment required to operate proposed services. Utilizing the ridership forecast, estimated revenue generated and capacity investments required, a cost estimate can be developed enabling the economic viability of the proposed service to be determined.

2.9 Performance Review of Texas' Intercity Passenger Rail Operations

This section provides an overview of the metrics associated with intercity operations in Texas. Where available it describes the ridership, operating and financial results for these services. For Amtrak services, which are interstate in nature, data for ridership, financial performance, on-time performance and customer satisfaction of its trains is compiled and reported on a route-level basis.

2.9.1 *Amtrak Ridership*

Exhibit 2-17 provides an overview of the ridership results for Amtrak routes serving Texas from Fiscal Year 2010 through Fiscal Year 2015.

Exhibit 2-17: Amtrak Riders, Routes Serving Texas FY2010 through FY2015

Route	FY2010	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg	FY2015	% Chg
Heartland Flyer	81,749	84,039	+2.8%	87,873	+4.6%	81,226	-7.8%	77,861	-4.1%	69,006	-11.4%
Texas Eagle	287,164	299,508	+4.3%	337,973	12.8%	340,081	+0.6%	313,338	-7.9%	317,282	+1.3%
Sunset Limited	91,684	99,714	+8.8%	101,217	+1.5%	102,924	+1.7%	105,041	+2.1%	100,713	-4.1%

Source: Amtrak Market Research and Forecasting Department.

Generally as a result of rising air fares, gasoline price increases and targeted pricing, Amtrak ridership has seen steady growth during the early part of this period. Recently (FY13/FY14) the *Texas Eagle* has seen some softening in ridership due to track construction, which resulted in periodic rerouting of the train in Illinois and the loss of local Illinois ridership. Also during the same period there were several service truncations due to Tower 55 construction outages in Fort Worth. There was also a decline in on-time performance in FY14. During the same period (FY13/FY14) the *Heartland Flyer* was been negatively impacted by a substantial decline in on-time performance which is extremely impactful for a short-distance train. Negatively impacting ridership in FY15 for the *Heartland Flyer* was lower gasoline prices, a series of train cancellations and the severe weather and flooding in late spring and early summer. Aided by a strong improvement in on-time performance 2009 – 2013, the *Sunset Limited* rebuilt and maintained its ridership during the last five years.

Boardings and alightings at the nineteen Amtrak stations in Texas from 2010 to 2015 appear in **Exhibit 2-18**. The results are identified by service. The daily *Texas Eagle* serves the greatest number of stations in Texas. Served by two popular daily trains and a station offering intercity, commuter rail and transit connection. Fort Worth has the highest ridership in Texas (128,728 in FY14). San Antonio, another station with two frequencies, is the next highest with 62,002 riders (FY14). Dallas has the third highest ridership at 50,180 (FY14).

Exhibit 2-18: Amtrak Riders in Texas FY2010 Through FY2015

Station	FY2010	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg	FY2015	% Chg
Heartland Flyer											
Fort Worth	67,669	70,821	4.7%	74,883	5.7%	69,517	-7.2%	66,389	-4.5%	58,946	-11.2%
Gainesville	8,603	8,099	-5.9%	8,055	-0.5%	6,476	-19.6%	7,178	10.8%	7,132	-0.6%
Texas Eagle											
Marshall	8,709	9,021	3.6%	10,025	11.1%	10,555	5.3%	10,184	-3.5%	9,390	-7.8%
Longview	34,033	35,469	4.2%	49,126	38.5%	41,305	-15.9%	38,365	-7.1%	32,278	-15.9%
Mineola	6,568	7,165	9.1%	6,965	-2.8%	7,213	3.6%	6,776	-6.1%	6,423	-5.2%
Dallas	47,053	54,498	15.8%	55,764	2.3%	56,564	1.4%	50,180	-11.3%	45,132	-10.1%
Fort Worth	50,530	58,073	14.9%	66,813	15.1%	59,872	-10.4%	62,339	4.1%	50,561	-18.9%
Cleburne	3,130	3,590	14.7%	4,536	26.4%	4,143	-8.7%	3,322	-19.8%	3,612	8.7%
McGregor	4,240	4,644	9.5%	4,988	7.4%	5,209	4.4%	4,328	-16.9%	4,834	11.7%
Temple	15,426	16,471	6.8%	17,856	8.4%	17,690	-0.9%	15,390	-13.0%	16,023	4.1%
Taylor	4,551	4,752	4.4%	4,979	4.8%	5,425	9.0%	4,797	-11.6%	4,798	0.0%
Austin	31,968	39,167	22.5%	41,638	6.3%	38,929	-6.5%	32,951	-15.4%	33,195	0.7%
San Marcos	5,283	6,555	24.1%	7,294	11.3%	7,995	9.6%	6,830	-14.6%	7,568	10.8%
San Antonio	37,593	44,252	17.7%	46,749	5.6%	45,791	-2.0%	37,990	-17.0%	35,074	-7.7%
Sunset Ltd											
El Paso	10,415	11,470	10.1%	12,329	7.5%	13,093	6.2%	13,272	1.4%	13,915	4.8%
Alpine	3,862	4,322	11.9%	4,416	2.2%	4,921	11.4%	4,756	-3.4%	4,969	4.5%
Sanderson	216	344	59.3%	255	-25.9%	261	2.4%	238	-8.8%	316	32.8%
Del Rio	1,881	2,242	19.2%	2,175	-3.0%	2,443	12.3%	2,385	-2.4%	1,960	-17.8%
San Antonio	20,538	22,916	11.6%	23,412	2.2%	22,477	-4.0%	24,012	6.8%	20,293	-15.5%
Houston	18,351	19,637	7.0%	20,327	3.5%	21,617	6.3%	20,603	-4.7%	20,620	0.1%
Beaumont	2,135	2,401	12.5%	2,724	13.5%	3,458	26.9%	3,412	-1.3%	3,265	-4.3%

Source: Amtrak Market Research and Forecasting Department

2.9.2 *Financial Performance*

Amtrak ticket revenue by service appears in **Exhibit 2-19**, and fully allocated costs in **Exhibit 2-20**. Similar to ridership, ticket revenues for the *Sunset Limit* remained at a steady pace during the period, while service issues negatively impacted the *Heartland Flyer* in (FY13/FY14) and the *Texas Eagle* in (FY14). It should be noted that revenue management strategies can be undertaken to maintain ticket revenues despite losses in ridership.

Exhibit 2-19: Amtrak Ticket Revenue, Routes Serving Texas FY2010 through FY2015

Route	FY2010	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg	FY2015	% Chg
Heartland Flyer	$1,807	$1,912	+5.8%	$2,087	+9.1%	$2,023	-3.0%	$1,967	-2.8%	$1,797	-8.6%
Texas Eagle	$22,728	$24,475	+7.7%	$26,305	+7.5%	$27,650	+5.1%	$24,833	-10.2%	$24,404	-1.7%
Sunset Lmited	$9,962	$11,138	11.8%	$11,585	+4.0%	$12,275	+6.0%	$12,598	+2.6%	$11,639	-7.6%

Source: Amtrak Market Research and Forecasting Department

Exhibit 2-20: Amtrak Fully Allocated Costs*, Routes Serving Texas FY 2010 Through FY 2014 (millions)

Route	FY2010**	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg
Heartland Flyer	$7.5	$8.4	12.0%	$9.0	7.1%	$8.3	-7.8%	$9.1	9.6%
Texas Eagle	$51.0	$55.1	8.0%	$61.6	11.8%	$60.4	-1.9%	$58.0	-4.0%
Sunset Ltd	$48.5	$50.1	3.3%	$53.9	7.6%	$53.2	-1.3%	$50.2	-5.6%

Excludes Depreciation, Interest and Other Post-Employment Benefits.
**Fully Allocated Costs include allocations of substantial Common and Joint Costs that would continue to be incurred by Amtrak if a particular route was discontinued. These continuing costs would be allocated to other routes if that route were discontinued.*
***Presentation/Description of Fully Allocated Cost Data changed beginning in FY2010, limiting comparisons to earlier years.*

Source: Amtrak Monthly Performance Report

The revenue/cost ratio by route is shown in **Exhibit 2-21.** Total revenue includes ticket revenue and revenues from meals, other operating sources, and state payments. The revenue/cost ratio is total revenue divided by fully allocated costs. This generates a metric of how much of a route's costs are covered by revenues.

Exhibit 2-21: Revenue/Cost Ratio*, Routes Serving Texas, FY2010 Through FY 2014

Route	FY2010	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg
Heartland Flyer	70.7%	70.3%	-0.6%	60.0%	-14.7%	61.5%	2.5%	80.3%	30.6%
Texas Eagle	47.9%	48.5%	1.3%	46.3%	-4.5%	49.7%	7.3%	47.3%	-4.8%
Sunset Ltd.	22.9%	25.4%	10.9%	24.2%	-4.7%	25.9%	7.0%	28.3%	9.3%

**Total Revenue divided by Fully Allocated Costs (not including Depreciation, Interest or Other Post-Employment Benefits).*

Source: Amtrak Monthly Performance Report

Note that total revenues for the *Heartland Flyer* include state payments. This is the reason that the revenue/cost ratio exceeds that of the long-distance trains serving Texas. If only ticket revenue is measured, the revenue/cost ratio for the Heartland Flyer is about 22%

(FY14). Changes in costs and revenues in FY12 and FY13 caused the changes in the ratio in those years. The large improvement in the *Heartland Flyer's* revenue/cost ratio in FY 2014 was the result of changes in cost methodology. Effective with FY 2014 (October 2013), the Passenger Rail Investment and Improvement Act (PRIIA) mandated that states pick up more of the costs for operating passenger rail routes of less than 750 miles. Amtrak and its state partners established a consistent cost-sharing methodology across all routes of less than 750 miles, in order to ensure a fair and equitable treatment of all states. Under Section 209, Amtrak adopted a cost-sharing methodology and protocol, the Amtrak Performance Tracking (APT) system, in October 2010 to determine and allocate costs for state-supported Amtrak routes. This methodology and protocol was mutually agreed upon by all affected states, except Indiana, and approved by the Surface Transportation Board (STB) in March 2012, with an effective date in April 2012. The result of this new methodology was that states became responsible for funding additional costs associated with operating their state sponsored rail service. As a result of increased state payments, the revenue/cost ratio of the route (as measured by Amtrak) improved. Currently a new group that is an outgrowth of this process, the State-Amtrak Intercity Passenger Committee, is involved in an ongoing discussion regarding the allocations of certain common/joint costs which the states feel are not allocated properly. One result of the heightened financial involvement in funding state-sponsored trains is that each participating state will have more influence with Amtrak on the planning and operations of the corresponding service plan.

Finally, as noted earlier, connections are very important. In FY2013 *Heartland Flyer* riders making connections to/from the *Texas Eagle* at Fort Worth generated about 23 percent of the ticket revenues ($455,000) on the Heartland Flyer. This revenue would be lost (and state payments increased) if the *Texas Eagle* were discontinued.

At almost 50 percent, the revenue/cost ratio of the *Texas Eagle* is about the same as the rest of Amtrak's long-distance services, which average about 50 percent. Connections are also very important for the *Texas Eagle*. Through service and the connection between the *Texas Eagle* and the *Sunset Limited* at San Antonio generated $5.6 million in ticket revenue on the *Texas Eagle* in FY13. That is almost 20 percent of the total ticket revenue on the route. Without the *Sunset Limited* connection, the revenue/cost ratio of the *Texas Eagle* would fall from near 50 percent to about 37 percent.

The *Sunset Limited* has one of the lowest revenue/cost ratios in the Amtrak System. There are two major reasons for this performance. The most important is that it is one of the few trains in the system that operates tri-weekly (or just three days per week). Tri-weekly service impacts the competitive position of the train in competing for customers, especially those traveling shorter distances. Unlike several other long-distance western trains, the *Sunset Limited* serves many major cities 300 to 400 miles apart. But with tri-weekly service these shorter distance riders, who are often taking trips of only a few days, find no train is

scheduled on days they wish to travel. Thus, potential revenue is unrealized while the route incurs many of the same costs as if it were operating daily. The result is a fraction of the revenue to offset the costs of operation. The second factor is an almost two-decade trend of dismal on-time performance (as low as 4 percent) and trains that are hours upon hours late. This substantially eroded the customer base for the train. The *Sunset Limited's* ticket revenue growth over the last five years can be linked very strongly with improved on-time performance. Finally, by convention, all of the ticket revenues of the through cars between the *Texas Eagle* and the *Sunset Limited* accrue to the *Texas Eagle* route. The cost of hauling the cars and serving the passengers from San Antonio to Los Angeles accrues to the *Sunset Limited* route. Following this convention avoids the purely arbitrary allocation of ticket revenue and costs between the two routes. Amtrak's proposed restructuring of the *Texas Eagle* and *Sunset Limited* would address this allocation issue (See additional discussion of the restructuring in Chapter 3 Potential Passenger Rail Improvements and Investments). Union Pacific Railroad has been reluctant to approve the operation of a daily *Sunset Limited* given the level of freight traffic on the train's route.

2.9.3 *On-time Performance*

Amtrak defines On-time Performance (OTP) as the total number of trains arriving on time at a station divided by the total number of trains operated on that route. A train is considered on time if it arrives at the final destination within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance based on how far they travel.

OTP Annual Trend

The on-time performance of the four Amtrak services in Texas since 2010 is shown in Exhibit 2-22.

Exhibit 2-22: On-Time Performance, Routes Serving Texas FY2010 through FY2014

Route	FY2010	FY2011	% Chg	FY2012	% Chg	FY2013	% Chg	FY2014	% Chg
Heartland Flyer	81.4%	75.1%	-6.3%	59.2%	-21.1%	52.1%	-7.0%	48.8%	-3.3%
Texas Eagle	69.6%	55.8%	-13.8%	65.8%	18.0%	76.8%	-11.0%	46.8%	-30.0%
Sunset Ltd.	87.5%	79.9%	-7.7%	67.2%	-15.7%	77.2%	10.0%	62.0%	-15.3%

Source: Amtrak Monthly Performance Report.

After reaching acceptable or near acceptable levels in FY2010, on-time performance has deteriorated, possibly a result of growing freight traffic with the end of the recession and the impact of track work. In FY 2015 (July YTD) negative trends have continued with Heartland Flyer OTP down about 1 percent, Texas Eagle OTP down almost 12 percent and Sunset Limited OTP down 7 percent. Consistent and high on-time performance makes the rail service more attractive to riders, especially those traveling shorter distances.

Cause of OTP Delays

Causes for Amtrak train delays can be attributed to a number of reasons including the host railroad, Amtrak itself, or other delays such as grade-crossing collisions. Delays can be grouped into broad categories that represent the key reasons for these delays. These categories are:

- *Train interference delays* are related to other train movements in the area. These can be freight trains as well as other Amtrak trains.
- *Passenger Operating Delays* are related to equipment turning and servicing, engine failures, passenger train holds for connecting trains and buses, crewing, and detours.
- *Slow Orders* are delays from reduced speeds to allow safe operation due to track or signal problems.
- *Freight railroad operational delays* are all other freight railroad delays and those related to the railroad infrastructure and/or maintenance work being done on the tracks or signaling systems.
- *All other delays* could include delays caused by the weather and non-railroad third-party factors such as customs and immigration, a bridge opening for waterway traffic, police activity, grade-crossing accidents or loss of power due to a utility company failure.

For contractual purposes these broad delay categories are further divided and assigned to particular responsible parties. These are listed in **Exhibit 2-23.**

Exhibit 2-23: Amtrak Delay Categories

Type of Delay	Delay Code	Delay Description
1. Amtrak Responsibility		
Passenger Related	HLD	All delays related to passengers, checked baggage, large groups, etc.
Hold for Connection	CON	Holding for connections from other trains or buses
Total Other		All other delays: delays/miscellaneous; crew & system; locomotive failure; car failure; initial terminal delay; servicing; passenger-related accessibility; late train make-up; injury delay; mail/baggage work
2. Host Railroad Responsibility		
Freight Train Interference	FTI	Delays from freight trains
Slow Order Delays	DSR	Temporary slow orders, except heat and cold orders
Routing	RTE	Routing/dispatching delays including diversions, late track bulletins, etc.
Signal Delays	DCS	Signal failure or other signal delays, wayside defect detector false alarms, defective road crossing protection, efficiency tests, drawbridge stuck open
Maintenance of Way	DMW	Maintenance of way delays including holds for track repairs or maintenance of way foreman to clear
Total Other		All other delays: passenger train interference, detours, debris
3. Other Minutes of Delay: Third-Party Responsibility		
Weather-Related	WTR	All severe weather delays, landslides or washouts, earthquake, heat or cold orders
Total Other		All other delays: police-related, trespassers, unused recovery time

Source: Amtrak Government Affairs

Exhibit 2-24 provides detailed information on specific delays for the *Heartland Flyer* by responsible party for FY 2014. Shown by month are the percentage of delays by responsible party and the minutes of delay for each delay category. The monthly pattern is quite consistent with Amtrak issues generating about 16 percent of the delays, the freight railroads about 80 percent of the delays, and all other factors generating about 4 percent to 5 percent of the delays. This pattern has also been quite consistent year-to-year. Please note that complete information for FY 2015 is not available at this time.

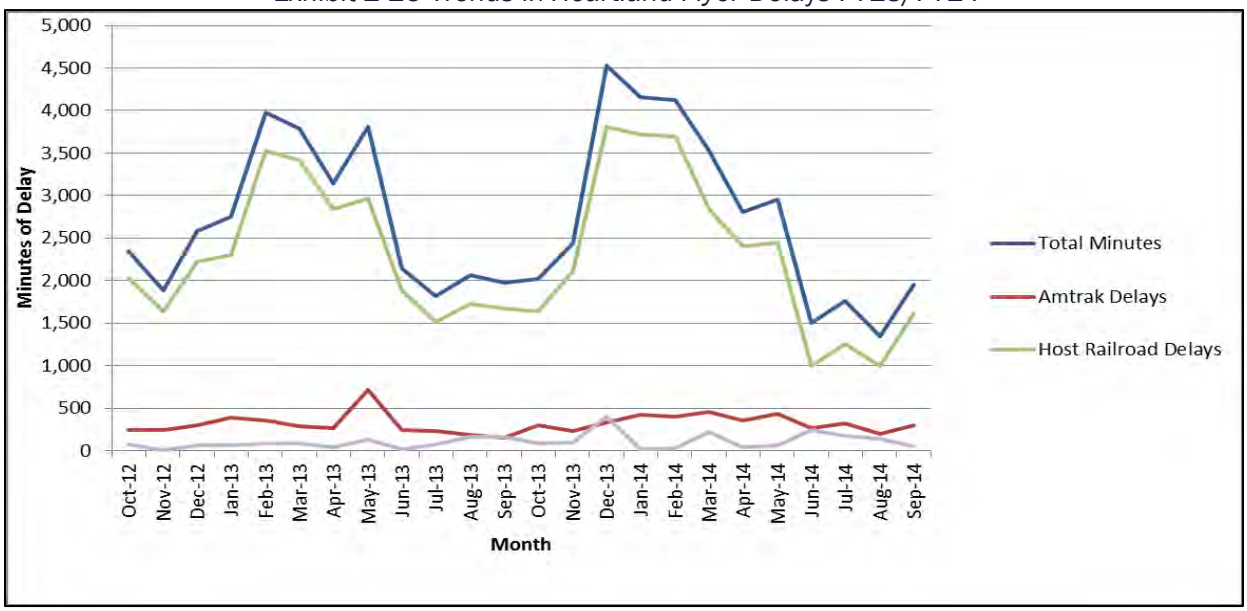
Exhibit 2-24 *Heartland Flyer* Delays by Responsible Party FY 2014

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Total Minutes	2,953	1,507	1,756	1,341	1,956	2,939	2,655	3,355	3,730	4,090	3,499	2,703
% of Delay - Amtrak	15%	18%	18%	15%	15%	19%	11%	13%	14%	14%	17%	21%
% of Delay - Freight	83%	66%	72%	74%	83%	79%	88%	85%	84%	85%	80%	76%
% of Delay - Other	2%	16%	10%	11%	2%	2%	2%	1%	2%	1%	3%	3%
Amtrak Delays	439	268	317	203	294	546	283	445	533	569	583	573
Passenger Holds	100	64	130	53	71	153	102	197	191	196	178	116
Engine Failures	19	29	0	1	45	54	3	11	4	5	8	0
Crew-Related	131	14	14	29	65	158	65	83	179	46	73	150
All Other	189	161	173	120	113	181	113	154	159	322	324	307
Host Railroad Delays	2,447	1,001	1,259	994	1,615	2,326	2,329	2,867	3,140	3,492	2,798	2,052
Freight Train Interference	944	309	581	319	528	958	900	950	1,039	399	633	421
Slow Orders	1,262	596	528	553	719	853	1,016	1,435	1,687	2,690	1,694	1,457
Passenger Train Interference	0	0	0	0	15	0	0	6	0	0	12	0
All Other	241	96	150	122	353	515	413	476	414	403	459	174
Other Minutes of Delay	67	238	180	144	47	67	43	43	57	29	118	78

Source: Amtrak

Exhibit 2-25 tracks the trends in the causes of delays by responsible party for the Heartland Flyer for the 24-month period of October 2012 through September 2014. During that period the *Heartland Flyer* experienced a total of 67,908 minutes of delay (average of 2,829.5 delay minutes per month) operating between Oklahoma City and Fort Worth. Amtrak delays totaled 9,065 minutes (13 percent) of delay for the 24-month period (average of 378 delay minutes per month) for passenger holds, engine failures, crew-related issues, and other issues. BNSF delays totaled 56,303 minutes (83 percent) for the 24-month period (average of 2,346 delay minutes per month) for freight train interference, slow orders, passenger train interference, and other issues. Other minutes of delay totaled 2,540 minutes (4 percent) for the 24-month period (average of 106 delay minutes per month).

Exhibit 2-25 Trends in *Heartland Flyer* Delays FY13/FY14



Source: Amtrak

Exhibit 2-26 provides detailed information on specific delays for the *Texas Eagle* by responsible party for FY 2014. Shown by month are the percentage of delays by responsible party and the minutes of delay for each delay category. The monthly pattern is quite consistent, with Amtrak issues generating about 21 percent of the delays, the freight railroads about 70 percent of the delays and all other factors generating about 9 percent of the delays. Amtrak All Other Delays represents the majority of the delay minutes in the Amtrak category. This pattern of delays by responsible party has also been quite consistent year-to-year. Please note that complete information for FY 2015 is not available at this time.

Exhibit 2-26 *Texas Eagle* Delays by Responsible Party FY 2014

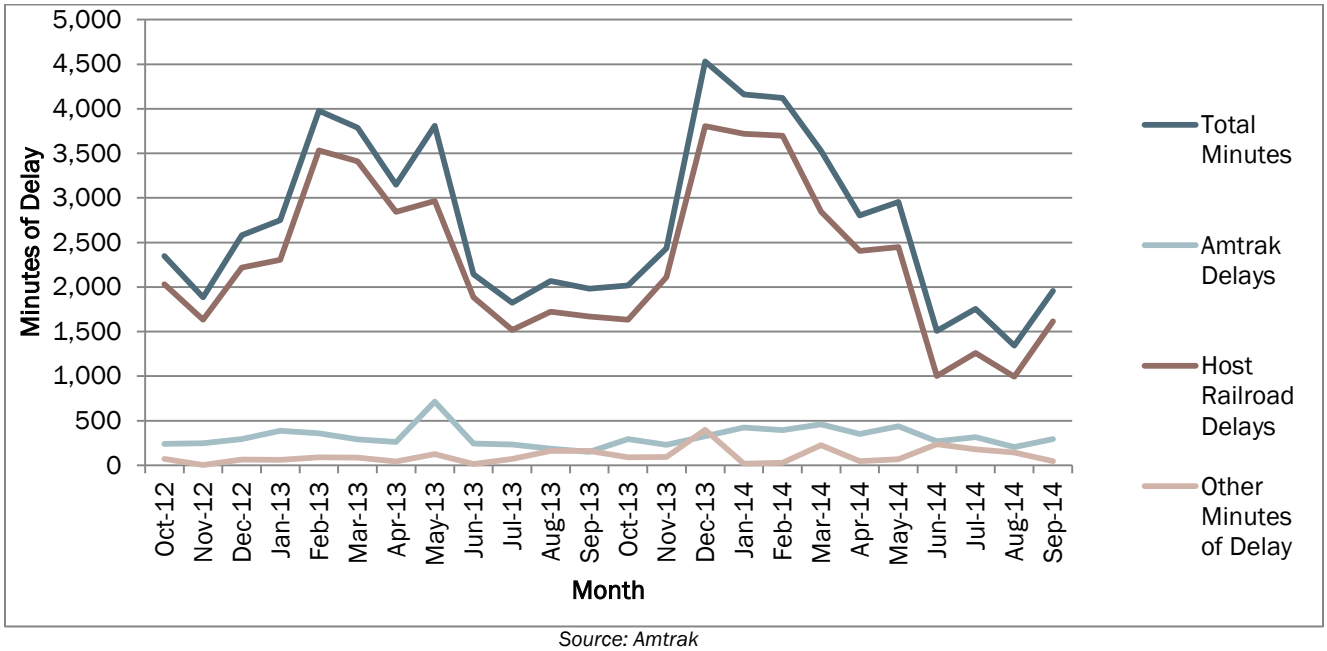
	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Total Minutes	24,434	21,070	24,591	21,460	20,002	24,789	20,203	23,619	23,222	17,282	17,128	22,356
% of Delay - Amtrak	15%	17%	25%	27%	21%	24%	18%	21%	25%	31%	23%	19%
% of Delay - Freight	73%	75%	68%	63%	70%	71%	67%	71%	69%	64%	70%	73%
% of Delay - Other	12%	9%	7%	10%	10%	6%	15%	8%	5%	5%	7%	8%
Amtrak Delays	3,699	3,512	6,082	5,783	4,114	5,851	3,672	4,983	5,909	5,274	4,000	4,318
Passenger Holds	771	1,254	1,774	1,035	883	1,620	1,132	1,382	1,460	915	476	1,019
Engine Failures	189	381	846	1,460	416	861	169	695	483	596	720	551
Crew-Related	674	340	889	815	1,067	1,186	776	767	899	782	850	945
All Other	2,065	1,537	2,573	2,473	1,748	2,184	1,595	2,139	3,067	2,981	1,954	1,803
Host Railroad Delays	17,882	15,762	16,712	13,447	13,905	17,560	13,593	16,826	16,105	11,143	11,968	16,234
Freight Train Interference	5,296	6,770	6,038	4,589	6,035	9,058	6,796	6,972	6,391	4,129	4,668	6,920
Slow Orders	2,664	3,470	4,396	2,442	2,745	2,659	1,612	2,959	3,159	2,178	1,497	2,954
Passenger Train Interference	1,258	1,425	1,925	1,282	1,380	1,678	1,318	1,727	1,874	1,310	1,468	1,609
All Other	8,664	4,097	4,353	5,134	3,745	4,165	3,867	5,168	4,681	3,526	4,335	4,751
Other Minutes of Delay	2,853	1,796	1,797	2,230	1,983	1,378	2,938	1,810	1,208	865	1,160	1,804

Source: Amtrak

Exhibit 2-27 tracks the trends in the causes of delays by responsible party for the *Texas Eagle* for the 24-month period of October 2012 through September 2014. During that period the *Texas Eagle* experienced a total of 479,338 minutes of delay (average of 19,972 delay minutes per month) operating between San Antonio and Chicago. Amtrak delays totaled 101,324 minutes (21 percent) of delay for the 24-month period (average of 4,222 delay minutes per month) for passenger holds, engine failures, crew-related issues, and other issues. Host-railroad delays totaled 325,500 minutes (68 percent) for the 24-month period (average of 13,562 delay minutes per month) for freight train interference, slow orders, passenger train interference, and other issues. Other minutes of delay totaled 52,514 minutes (11 percent) for the 24-month period (average of 2,188 delay minutes per month).

Exhibit 2-28 provides detailed information on specific delays for the *Sunset Limited* by responsible party for FY 2014. Shown by month are the percentage of delays by responsible party and the minutes of delay for each delay category. The monthly pattern is quite consistent with Amtrak issues generating about 21 percent of the delays, the freight railroads about 60 percent of the delays and all other factors generating almost 20 percent of the delays. Amtrak All Other Delays represent the majority of the delay minutes in the Amtrak category, while All Other Minutes of Delay is significant for the *Sunset Limited* compared to the other Texas routes. Please note that complete information for FY 2015 is not available at this time.

Exhibit 2-27: Trends in *Texas Eagle* Delays FY13/FY14



Source: Amtrak

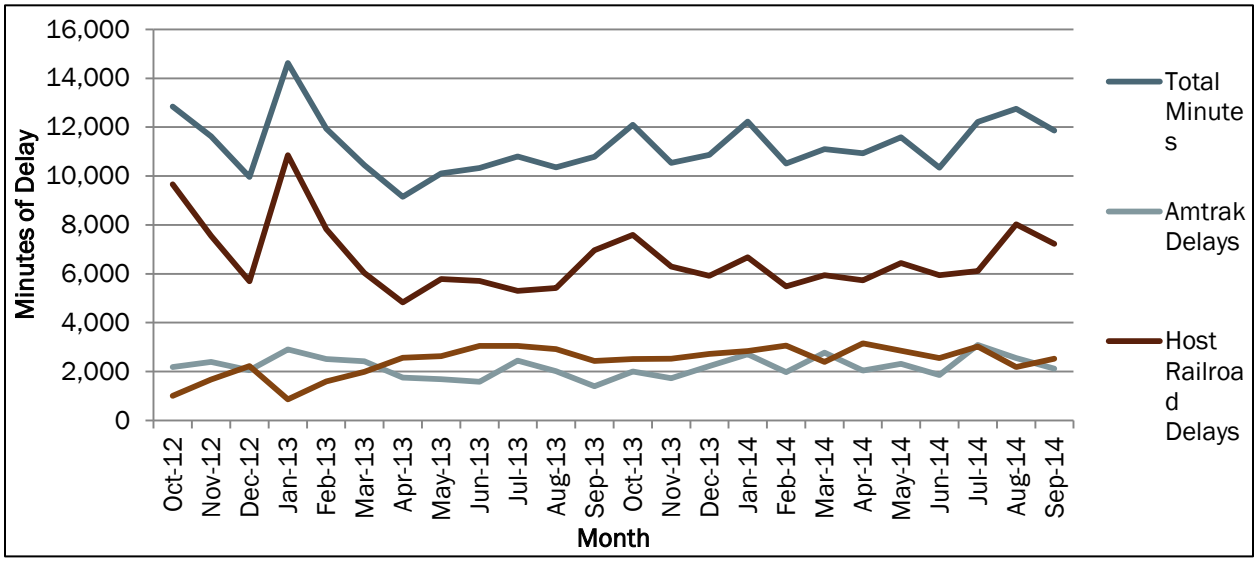
Exhibit 2-28 *Sunset Limited* Delays by Responsible Party FY 2014

	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Total Minutes	10,926	11,592	10,336	12,216	12,753	11,864	10,968	10,491	12,121	13,016	12,431	13,817	11,038
% of Delay - Amtrak	19%	20%	18%	25%	20%	18%	22%	20%	23%	23%	22%	20%	19%
% of Delay - Freight	52%	56%	57%	50%	63%	61%	55%	60%	62%	65%	69%	63%	60%
% of Delay - Other	29%	25%	25%	25%	17%	21%	23%	20%	15%	12%	9%	17%	21%
Amtrak Delays	2,034	2,312	1,852	3,088	2,548	2,111	2,393	2,098	2,806	2,940	2,775	2,817	2,047
Passenger Holds	497	538	540	664	596	476	689	757	702	824	864	826	417
Engine Failures	249	399	23	68	75	308	32	17	254	315	93	213	31
Crew-Related	174	115	107	203	223	185	73	156	344	137	126	372	113
All Other	1,114	1,260	1,182	2,153	1,654	1,142	1,599	1,168	1,506	1,664	1,692	1,406	1,486
Host Railroad Delays	5,735	6,435	5,938	6,108	8,023	7,229	6,062	6,297	7,487	8,473	8,517	8,696	6,670
Freight Train Interference	2,444	3,046	2,925	2,637	3,768	3,433	2,616	3,000	3,347	4,005	4,307	4,624	2,941
Slow Orders	1,106	1,114	969	1,052	1,746	1,424	1,231	1,175	1,358	1,407	1,681	1,285	1,555
Passenger Train Interference	201	176	223	167	259	292	199	188	261	275	125	264	231
All Other	1,984	2,099	1,821	2,252	2,250	2,080	2,016	1,934	2,521	2,786	2,404	2,523	1,943
Other Minutes of Delay	3,157	2,845	2,546	3,020	2,182	2,524	2,513	2,096	1,828	1,603	1,139	2,304	2,321

Source: Amtrak

Exhibit 2-29 tracks the trends in the causes of delays by responsible party for the *Sunset Limited* for the 24-month period of October 2012 to September 2014. During that period the *Sunset Limited* experienced a total of 273,274 minutes of delay (average of 11,386 delay minutes per month) operating between New Orleans and Los Angeles. Amtrak delays totaled 54,347 minutes (20 percent) of delay for the 24-month period (average of 2,264 delay minutes per month) for passenger holds, engine failures, crew-related issues, and other issues. Host railroad delays totaled 158,766 minutes (58 percent) for the 24-month period (average of 6,615 delay minutes per month), for freight train interference, slow orders, passenger train interference, and other issues. Other minutes of delay totaled 60,161 minutes (22 percent) for the 24-month period (average of 2,507 delay minutes per month).

Exhibit 2-29: Trends in *Sunset Limited* Delays FY13/FY14



Source: Amtrak

2.9.4 *Customer Satisfaction Indicator*

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) required the development of metrics and minimum standards for measuring the performance and service quality of intercity passenger trains. The measurement of service quality is done through Amtrak's Customer Service Indicator (CSI) customer survey process. CSI Scores measure the satisfaction by passengers, on an 11-point scale, of a particular aspect of their trip. For example a CSI score of 80 means 80 percent of respondents rated the aspect of their trip in the top three boxes of the 11 steps of the scale.

There six broad customer satisfaction categories are measured as part of the CSI survey. These categories are:

1. *Overall Service* is the measure for the respondents rating for their overall trip experience.
2. *Amtrak Personnel* is the measure for the respondents rating Amtrak reservations personnel, station personnel, train crew and on-board service crew.
3. *Information Given* is the measure for the respondents rating all information they received pertaining to their trip.
4. *On-Board Comfort* is the measure for the respondents rating seat or sleeping compartment comfort, air temperature and ride quality.
5. *On-Board Cleanliness* is the measure for the respondents rating the cleanliness of the train and on-board restrooms.
6. *On-Board Food Service* is the measure for the respondents rating the quality of the food and snacks purchased on-board the train.

Exhibit 2-30 shows the Customer Satisfaction Indicator (CSI) scores for the three Texas services for the third quarter of FY 2014 (latest data available from the FRA). With the exception of On-Board Food Service, the *Heartland Flyer* exceeded the 2010 standards. The *Texas Eagle* and *Sunset Limited* met the customer satisfaction goal for Amtrak Personnel but fell short in the other categories, especially for cleanliness and food service.

Exhibit 2-30: Customer Satisfaction Index Scores for Amtrak Trains Serving Texas Third Quarter 2014

Service Metric	2010 Standard	Routes		
		Heartland Flyer	*Texas Eagle*	*Sunset Limited*
Overall Service	82	86	77	81
Amtrak Personnel	80	91	81	80
Information Given	80	85	72	73
On-Board Comfort	80	90	78	78
On-Cleanliness	80	85	65	65
On-Board Food Service	80	73	69	68

Red: CSI Scores below standard.

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations.

2.10 Rail Safety and Security in Texas

Various aspects of rail transportation can raise concerns regarding safety and security. The safety of rail employees and rail contractors is reliant on the condition of rail equipment and safe operating practices. The safety of the general public can be affected by train accidents and incidents due to derailments, especially if hazardous materials are involved, at highway-rail at-grade crossings, and injuries which may occur while traveling by rail or on railroad property. Rail security has seen increased attention due to the potential for disruption of the transportation system or having large numbers of citizens at risk due to terrorism. The goal of Texas' rail safety programs is to address these issues as they arise through continued coordination with the state's rail operators, safety-related infrastructure improvements, and monitoring the rail network through safety inspections to identify existing and potential

problems. TxDOT also coordinates with other federal and state agencies with regard to transportation security and emergency response.

Rail safety requirements are provided through a combination of federal and state laws. Most safety-related rules and regulations fall under the jurisdiction of the Federal Railroad Administration (FRA), as outlined in the Rail Safety Act of 1970 and other legislation, such as the most recent Rail Safety Improvement Act of 2008. FRA's rail safety regulations can generally be found in Title 49 Code of Federal Regulations Parts 100-299.

The state's rules on rail safety were previously under the jurisdiction of the Texas Railroad Commission (RRC), but were transferred to the Texas Department of Transportation (TxDOT) by the 79th Texas Legislature in 2005.

2.10.1 *State Regulation of Rail Operations*

Texas has adopted federal safety standards relating to railroad track, equipment, operating practices, signals, and train control by reference. In addition to federal regulations, state regulations prescribe standards for the horizontal and vertical clearance of structures over and alongside railway tracks, sight distances at non-signalized grade crossings, and exemptions for certain rail-related structures. Monthly reports of excess hours of service required by federal regulations must also be submitted to TxDOT. Railroads must indicate points of contact for rail operations within the state and provide upon request copies of the railroad's operating rules, timetables, and special instructions; any amendments to a railroad's operational tests and inspections; and copies of programs for employee instruction. Regulations also require railroads to file and maintain a map, list, or chart that indicates the location of wayside detectors in Texas. Railroads are required to report to TxDOT, by telephone or fax, any accidents or incidents that meet certain criteria, such as an incident or occurrence involving railroad on-track equipment that results in the death of any railroad passenger or railroad employee.

TxDOT rail safety investigators conduct safety inspections of railroad infrastructure, facilities and equipment. Texas participates in the Federal Railroad Administration's (FRA) Rail State Safety Participation Program under 49 CFR Part 212 which allows states to enter into an agreement with FRA for the delegation of specified authority. This includes investigative and surveillance authority regarding all or any part of Federal railroad safety laws.

TxDOT has inspectors in each safety discipline: track, which also includes bridges; motive power & equipment; operating practices; signal & train controls; and hazardous materials. Inspections are conducted in cooperation with FRA. Inspectors are assigned to specific regions across the state to achieve comprehensive inspection coverage, quicker accident and complaint response time, and greater operational efficiency. Specific territorial

boundaries are established so state and federal inspectors do not conduct overlapping inspections.

TxDOT rail safety Investigators are on-call 24 hours a day, 7 days a week, and 365 days a year to respond to rail emergencies including crossing accidents, derailments, and hazardous material releases. The Rail Safety Section, in coordination with Texas Operation Lifesaver, also provides rail safety presentations at schools, employers, and communities throughout the State. The Texas Rail Inspection Plan (TRIP) prioritizes inspection activities based on risk assessment and analysis of historical data. The goal of this proactive approach is to reduce rail incidents and accidents and to focus inspection efforts at high-risk locations.

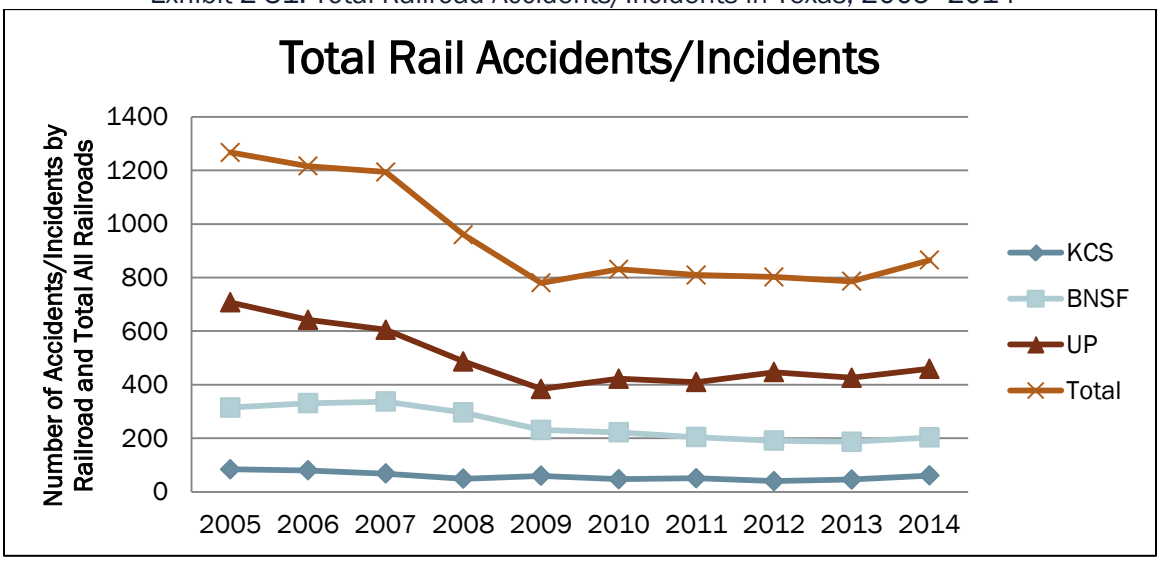
TxDOT maintains the State Safety Oversight (SSO) Program. The oversight agency is required to prepare a program standard, which is a written document developed by the oversight agency that describes the policies, objectives, responsibilities, and procedures used to provide Rail Transit Agencies' safety and security oversight. Findings from the 2012 Federal Transit Administration audit were addressed in the TxDOT State Safety and Security Oversight Program Standard report published in August, 2013 and state statutes will be updated to align with MAP-21 requirements.

Over the past decade, there has been a general downward trend for rail-related incidents, injuries and deaths despite the substantial growth in population, registered vehicles, mile traveled and rail traffic. The Rail Division continues to strive to further improve upon this trend by focusing its safety miles program on core essential principles: educate, enforce, evaluate and engineer.

2.10.2 *Rail Accident Trends*

Rail accidents and incidents in Texas steadily decreased over the first half of the past decade and have leveled off in recent years. **Exhibit 2-31** shows the total number of rail accidents/incidents in Texas as well as for each of the Class I railroads in the state. Total accidents include train accidents, crossing incidents, and other incidents that result in physical harm to persons.

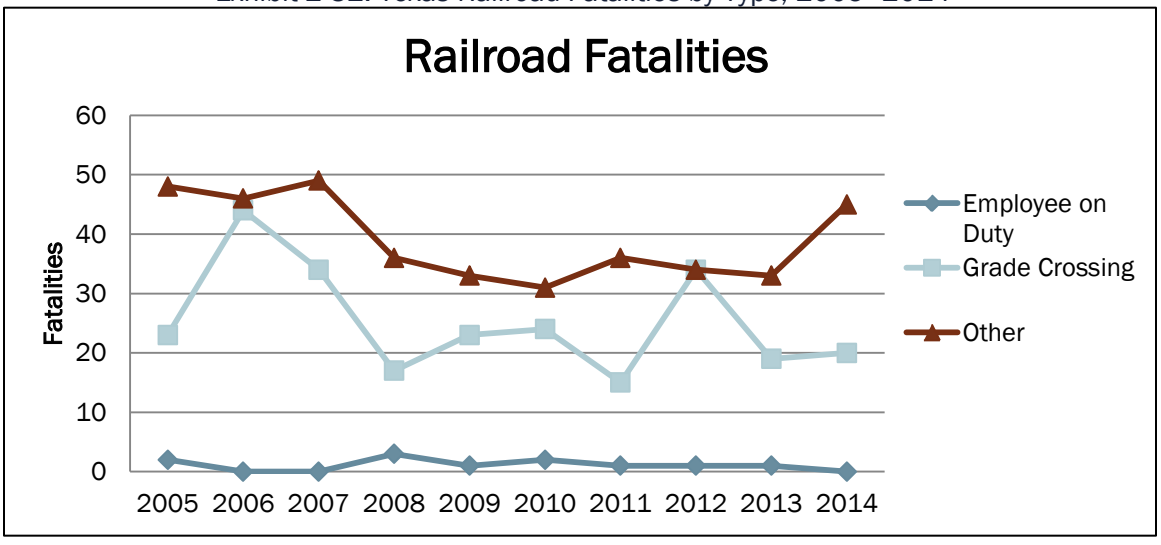
Exhibit 2-31: Total Railroad Accidents/Incidents in Texas, 2005–2014



Source: FRA Office of Safety Data

Exhibit 2-32 shows the number of rail fatalities over the ten-year period. The "Other" accident category refers to incidents that result in physical harm to persons other than train accidents or grade crossing incidents (trespassers make up the majority of FRA's "other accident" category). Most rail-related fatalities involve incidents that occur at grade crossings or illegal trespass on rail property as opposed to those incurred by railroad employees.

Exhibit 2-32: Texas Railroad Fatalities by Type, 2005–2014

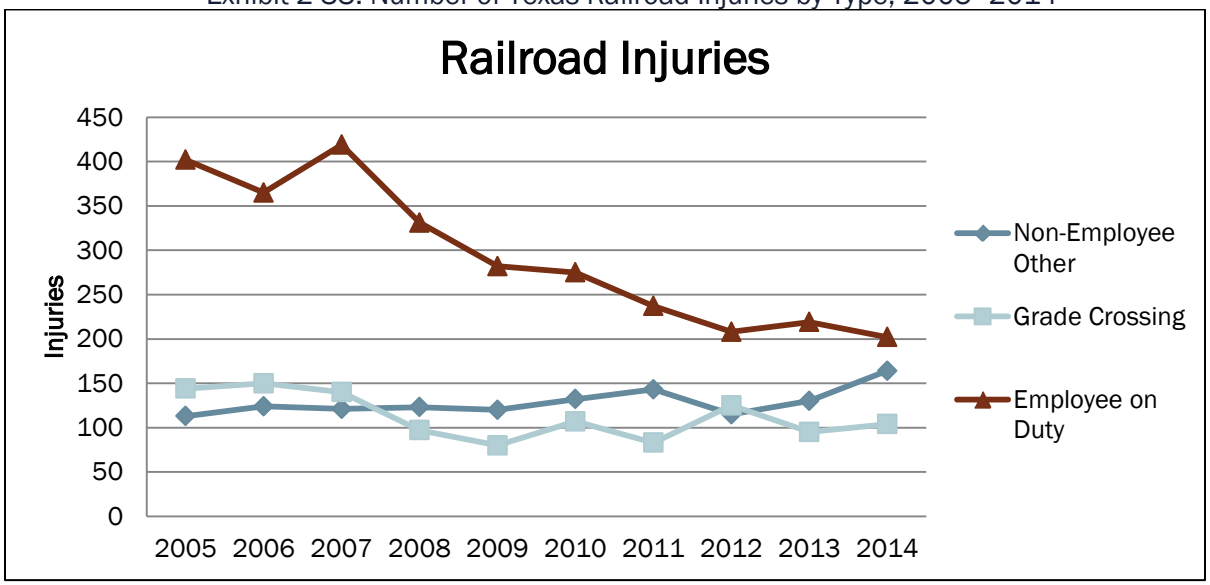


Source: FRA Office of Safety Data

Exhibit 2-33 illustrates the number of rail-related injuries over the period. Employee on duty injuries have dominated the injury figures in the past, in part because railroad employees are more exposed to the dangerous railroad operating environment (e.g. getting on or off equipment, doing maintenance work, throwing switches, setting handbrakes, falling, etc.)

than trespassers or drivers in grade crossing collisions. However, employee injuries have decreased significantly over the study period. The "Non-Employee Other" category refers to incidents other than train accidents or grade crossing incidents that result in physical harm to persons. These can include rail-passenger-related injuries such as boarding or alighting from standing trains or platforms.

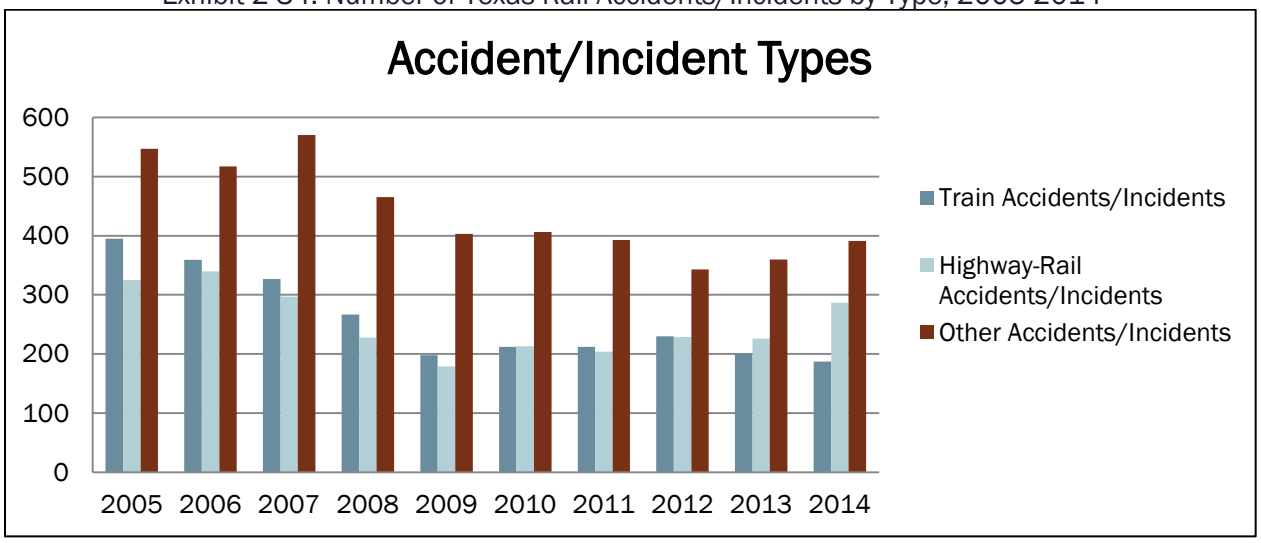
Exhibit 2-33: Number of Texas Railroad Injuries by Type, 2005–2014



Source: FRA Office of Safety Data

Total train accidents/incidents by type are shown in **Exhibit 2-34**. This chart reinforces the fact that although the general trend has been a reduction in accidents and incidents over the past decade, there has been a slight increase in the categories which generally involve the general public as opposed to railroad employees.

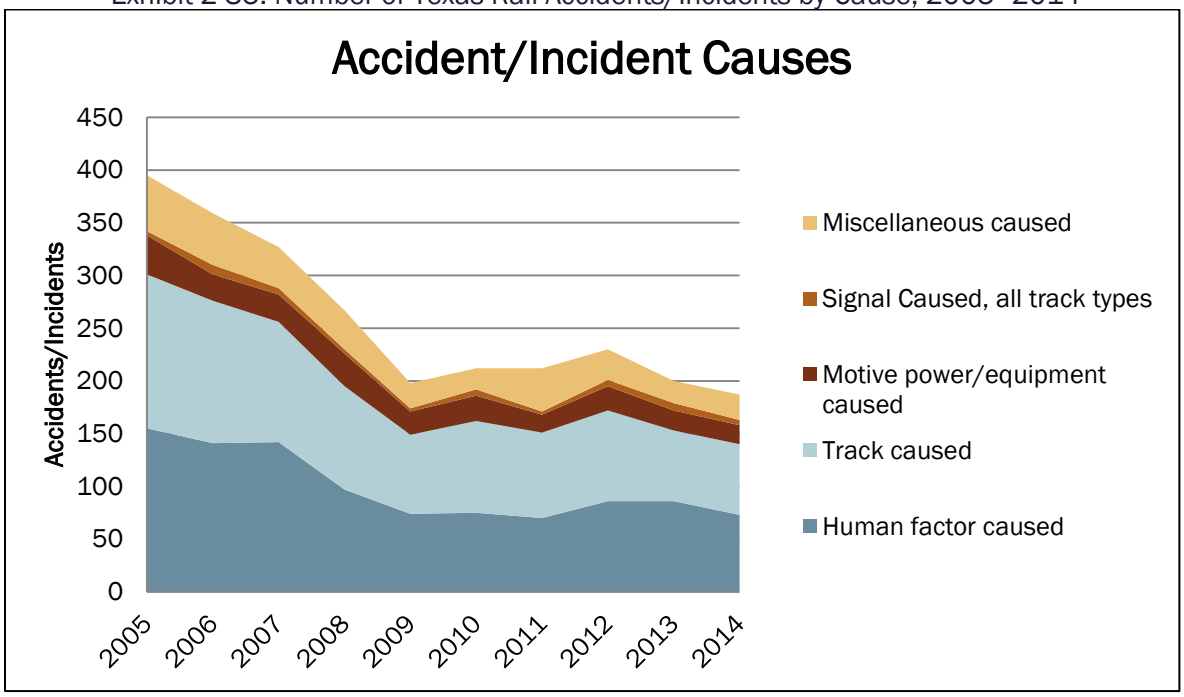
Exhibit 2-34: Number of Texas Rail Accidents/Incidents by Type, 2005-2014



Source: FRA Office of Safety Data

Exhibit 2-35 below shows that track defects and human error were the leading causes of train accidents over the past decade, while equipment defects and other causes comprised lesser shares of rail accidents in the state. Over this period, approximately 70 percent of train accidents occurred on yard tracks with the remainder occurring on main line or other trackage.

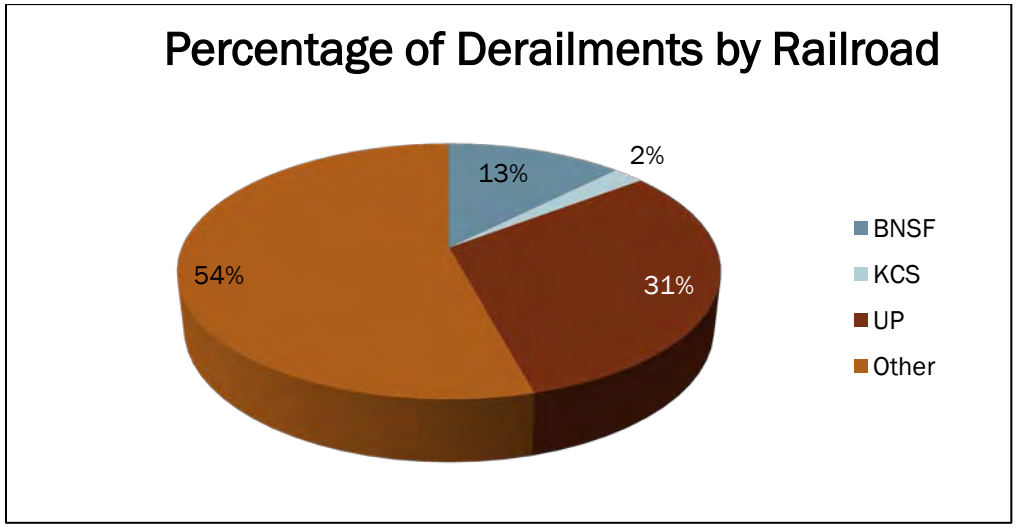
Exhibit 2-35: Number of Texas Rail Accidents/Incidents by Cause, 2005–2014



Source: FRA Office of Safety Data

Train accidents are generally comprised of derailments and collisions, with derailments comprising approximately 74 percent of train accidents occurring in Texas. **Exhibit 2-36** below shows the percentage of total derailments by railroad in 2014 (the most current data available).

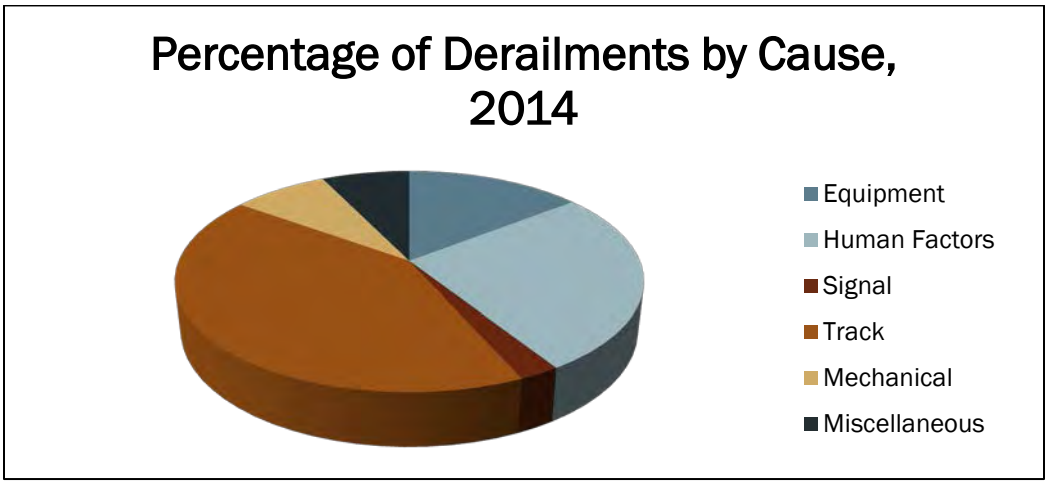
Exhibit 2-36: Texas Derailments by Railroad, 2014



Source: FRA Office of Safety Data

Exhibit 2-37 shows that the large majority of these derailments originated from track conditions and human error.

Exhibit 2-37: Texas Derailments by Cause, 2014



Source: FRA Office of Safety Data

2.10.3 *Hazardous Materials Transportation Safety*

The FRA Office of Safety Assurance and Compliance is granted authority by the U.S. Secretary of Transportation to administer a safety regulatory program that focuses on the transport of hazardous materials. This program is administered through the FRA's Hazardous Materials Division and includes programs such as the Hazardous Materials Incident Reduction Program and the Spent Nuclear Fuel and High-Level Nuclear Waste Program.

At the state level, TxDOT's rail safety program is tasked with collecting information on the transport of hazardous materials by rail in the state and uses this information to optimize the allocation of inspection resources. As with railroad operational safety issues (i.e., track, signal and train control, motive power and equipment, and operating practices), state and FRA safety inspectors monitor regulatory compliance with respect to transport of hazardous materials by conducting on-site investigations.

Congress also enacted the Implementing Recommendations of the 9/11 Commission Act of 2007, which required USDOT to adopt rules regarding routing of hazmat shipments through urban areas. The FRA and the Pipeline and Hazardous Materials Safety Administration adopted these rules in November 2008. Rules establish guidelines for railroads to use in studying hazmat shipping patterns, assessing alternate routes that minimize risk, and establishing procedures for reviewing routing decisions.

These routing decisions are shared with state and local governments through intelligence fusion centers at the state level that work with the federal Department of Homeland Security.

Due the increase in the movement of crude oil by rail in recent years, government agencies in the U.S. and Canada have adopted additional safety standards and issued new regulations for crude oil railcars. The U.S. Department of Transportation (DOT), for instance, issued an emergency order in May 2014 that requires railroad operators to notify local emergency responders whenever oil shipments travel through their states. USDOT and AAR also agreed on a number of safety enhancements to further reduce the risk from transporting the growing level of crude oil in the U.S. The enhancements will focus on increased track inspections, enhanced braking systems, increased use of rail traffic routing, lower speeds depending on location and cargo, increased community relations, increased trackside safety technology, increased emergency response training and tuition assistance and additional emergency response capability planning.

2.10.4 *Highway-Rail Grade Crossing Safety in Texas*

Statistics released by the FRA indicate a moderate decline in the number of grade crossing collisions and injuries occurring in the state during the past decade. A continuing goal of Texas' rail program is continuing improvement of safety and efficiency of traffic movement across the state's 15,042 grade crossings. This effort has resulted in a decrease in total at-grade crossings due to significant efforts to provide grade separations at highway-rail intersections and to provide safe grade crossings for motorists when this is not possible by increasing the number of crossings protected by active warning devices, such as gates and flashing lights.

Exhibit 2-38 lists the numbers of both passive and active warning devices used at highway-rail grade crossings in Texas. The numbers in this table indicate that 64 percent (5,800 crossings) of 9,150 public crossings are equipped with active warning devices.

Exhibit 2-38: Number of At-Grade Warning Devices in Texas

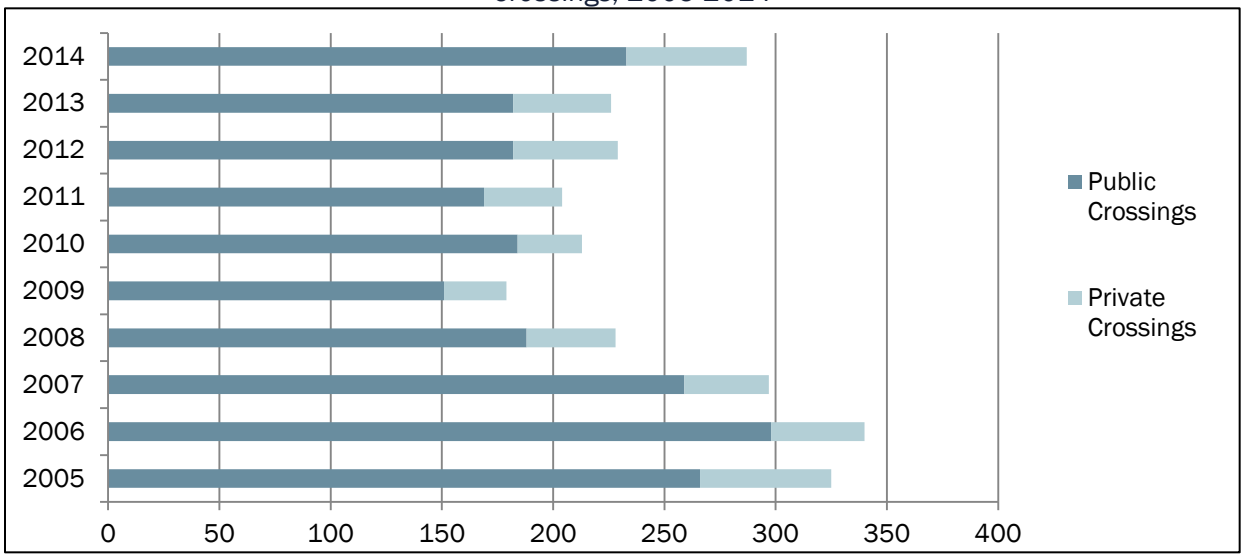
Warning Device	Number
None	115
Other	5
Cross Bucks (Passive)	2845
Stop Signs (Passive)	340
Special Warning	47
Highway Traffic Signal	56
Lights Only	755
Gates	4459
4-Quadrant Gates	151
Quiet Zone	407
Total	9150

Source: Public At-Grade Motor Vehicle Crossings by County and Warning Device for Texas, Federal Railroad Administration, 2015

Following a significant decrease in highway-rail incidents between in the initial part of the past decade, the number of incidents has slowly increased again, although not to previous levels. This is likely due to increased growth in population, vehicular traffic, and rail traffic throughout the state, resulting in an increase of potential accident interfaces at at-grade crossing locations.

Exhibit 2-39 provides the annual levels of highway-rail incidents over the past decade occurring at both public and private at-grade crossings.

Exhibit 2-39: Texas Grade Crossing Accidents/Incidents, Public and Private Crossings, 2005-2014



Source: FRA Office of Safety Data

Highway-Rail Crossing Safety Improvements

Strategies to improve highway-rail grade crossing safety include modifications by TxDOT to existing crossings and the implementation of additional safety measures by state and municipal authorities. These strategies included:

- Crossing Surfaces: TxDOT's safety enhancement program includes funding for "replanking" the crossing area over ties to eliminate humped crossing surfaces and improving crossing approaches to provide a smooth flow of vehicles over the track.
- Highway Median Barriers: To prevent drivers from attempting to drive around warning gates TxDOT may consider the construction of highway median barriers at grade crossings, which generally requires highway widening as a proposed method of addressing this problem.
- Grade Crossing Consolidation: Under TxDOT's safety enhancement program, traffic patterns are reviewed to determine which grade crossings can be closed while minimizing inconvenience to local communities. Crossing consolidation and closure may encounter resistance from local communities due to the inconvenience caused by traffic rerouting.
- Grade Crossing Signal Upgrades: TxDOT upgrades grade crossing signalization as part of the safety enhancement program. This includes the installation of flashing lights or gates at crossings equipped solely with crossbucks, as well as the installation of gates at crossings only equipped with flashing lights.
- Installation of Reflector Systems: Texas regulations authorize the upgrade of existing passive warning systems to high intensity reflectorized systems of crossbucks and track

signs. These systems are for use at all grade crossing locations that do not have train-activated warning devices and consist of reflectorized material placed on both sides of the crossbuck support pole.

2.10.5 *Positive Train Control*

Positive Train Control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents can occur. PTC is designed to prevent collisions between trains and derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair, and by trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and take action if operators do not respond to a warning.

The Rail Safety Improvement Act of 2008 required railroads to place PTC systems in service by December 31, 2015 under the following circumstances:

- On all rail main lines over which regularly-scheduled commuter or intercity passenger trains operate; and
- On all Class I railroad main lines with over 5 million gross ton-miles per mile annually over which any amount of toxic/poison-by-inhalation hazardous materials is handled.

The mandate for PTC excludes all Class II (regional) and III (short line) railroads regardless of tonnage or number of toxic/poison cars handled as long as no passenger trains travel over the lines.

Under these conditions, all rail operators over the Amtrak corridors within Texas, as well as any Class I Railroad main line routes, would likely need to be equipped with positive train control for operation over the lines. Class I railroads are currently developing PTC systems for their networks, which would include implementation of the technology on principal lines in Texas.

Congress has considered several bills that would extend the 2015 deadline of the Act, possibly granting the railroads an extension for full implementation of the technology.

2.10.6 *Rail Security*

Rail security is primarily a federal matter, led by the Department of Homeland Security through the Transportation Security Administration (TSA) in cooperation with FRA. While the FRA and TSA have regulatory authority over railroad security implementation plans, day-to-day actions to keep the railroad industry safe are the responsibility of Railroad Police Officers.

Final federal rules for rail security, published in November 2008, established requirements for protecting security sensitive information, identifying rail security coordinators at railroads and other hazardous materials shippers and receivers, reporting security incidents, and authorizing inspections of rail network facilities by TSA personnel. These rail security coordinators are required to coordinate security practices with appropriate law enforcement and emergency response agencies. TSA also is responsible for coordinating security on passenger rail, commuter rail, and rail transit systems.

The primary state agency responsible for security related to transportation modes in Texas is the Texas Department of Public Safety (DPS). Federal and state transportation agencies and the railroad industry have addressed transportation security largely through identifying critical infrastructure assets, developing protection strategies for these assets, and developing emergency management plans.

The U.S. Department of Homeland Security addresses rail system security through the following means:

- Training and deploying manpower and assets for high risk areas;
- Developing and testing new security technologies;
- Performing security assessments of systems across the country; and,
- Providing funding to state and local partners.

The Association of American Railroads (AAR), working with the U.S. Department of Homeland Security and other federal agencies, has organized the Rail Security Task Force. This task force developed a comprehensive risk analysis and security plan for the rail system that includes:

- A database of critical railroad assets;
- Assessments of railroad vulnerabilities;
- Analysis of the terrorism threat; and,
- Calculation of risks and identification of countermeasures.

The railroad sector maintains communications with the U.S. Department of Defense, the U.S. Department of Homeland Security, the USDOT, the Federal Bureau of Investigation, and state and local law enforcement agencies on all aspects of rail security.

The DPS Division of Emergency Management serves as the state agency responsible for oversight and coordination of emergency response planning among local emergency planning commissions generally established at the county level in Texas.

The Texas Fusion Center is part of the Department of Emergency Management at DPS. The Fusion Center is a state-of-the art facility housing federal, state, regional and local law enforcement agencies at DPS Headquarters. The Fusion Center's Watch Center is a 24/7 unit that works with federal, state, regional, and local law enforcement and serves as the state repository for homeland security information and incident reporting. It provides real-time intelligence support to law enforcement and public safety authorities, and consolidates information and data from all jurisdictions and disciplines. TxDOT participates through interagency Homeland Security committees.

State and local governments work with railroads to prepare for possible hazmat releases through the federal Emergency Planning and Community Right to Know Act of 1986, administered through the Environmental Protection Agency (EPA).

2.11 Financing for Rail Projects

Texas, like many states, has a constitutional limitation that prohibits most direct state transportation fund expenditures from being used for rail projects. TxDOT's financial strategy to support freight and passenger rail projects, as outlined in its 2010 Texas Rail Plan, recognized the restricted role the state could plan in improving rail transportation options. The 2010 TRP Plan emphasized the need for careful planning, accessing federal funds, and reliance on public-private partnerships.

In recent years TxDOT has relied on intermittent budget appropriations and revenue initiatives such as carload taxes on its state-owned South Orient Railroad to develop rail improvement projects, often with a number of federal, state and local partners. The following is a summary of current and prospective rail capital and operating funding sources available to the public sector for the purpose of providing and improving rail operations in the state.

2.11.1 *State Sponsored Rail Funding*

There are some state programs that have been utilized or have the potential to fund eligible rail improvements.

TxDOT Highway-Railroad Grade Crossing Safety Program

The Texas Transportation Commission approves annual amount of Section 130 funds as part of their approval of the Unified Transportation Program (UTP). Funding is then obligated with the FHWA for preliminary engineering and again for construction. Section 130 funds were obligated in FY 2015 for preliminary engineering to study 114 highway-rail crossings for safety improvements. From the FY 2014 Section 130 funds, 85 locations had improvements installed. An additional 3 crossings were approved for closure with Federal funds reimbursing the local public road agency as part of the crossing closure and consolidation.

The functional classification of the 85 crossings selected for warning device upgrade projects are:

- Urban – 33 Crossings
- Small Urban – 16 Crossings
- Rural – 36 Crossings

TxDOT uses a new priority index for Section 130 project selection (Texas Priority Index, TxPI). Project results included a revised formula, TxPIREV, which was utilized in FY 2014, as well as a rule based procedure for prioritizing passive crossings and integrating with active crossings which have been prioritized based on TxPIREV. TxPIREV has several advantages over TxPI, including:

(1) An expanded set of variables which have been shown through historical crash data to affect predicted crashes at a crossing;
(2) Coefficients associated with each variable to represent the relative weighting of the variable; and
(3) A distinction between crossings which have experienced 1 or more crashes in the previous 5 years from crossings which experienced 0 crashes in the previous 5 years.

The prioritized list of passive crossings will ensure that only warranted passive crossings are considered and that low volume rural passive crossings with a crash history will be prioritized with active crossings with high TxPIREV values. TxDOT also considers crossing locations submitted by railroad companies that recommend upgrades for preemption, in accordance with the 2011 Grade Crossing Safety Action Plan.

To supplement the federally funded highway-railroad grade crossing safety program, TxDOT maintains funding program for two types of grade crossing improvements. The At-Grade Crossing Replanking Program provides approximately $3.5 million annually to maintain and improve grade crossing surfaces. The Railroad Signal Maintenance Program provides approximately $1.1 million annually for railroad signal maintenance payments to railroads.

Rail Relocation and Improvement Fund

The purpose of this fund, created through a constitutional amendment in 2005, is to relocate and improve public or private rail facilities with the intention of improving freight mobility and relieving traffic congestion. To-date, however no dedicated revenue source or budget appropriations have been made available to implement projects.

Texas State Infrastructure Bank

The Texas State Infrastructure Bank (SIB) is a low-cost tool for local governments to finance local transportation projects at competitive interest rates. Projects must be consistent with

transportation plans developed by local metropolitan planning organizations. TxDOT manages the SIB program as a revolving loan fund.

Texas Emissions Reduction Program

This program is available for projects that reduce air pollution and engine idling through congestion relief at rail intersections in non- or near non-attainment areas and locomotive emissions remediation. The program has been utilized to retrofit locomotives in the Corpus Christi and Houston areas.

Texas Economic Development Bank

The Economic Development Bank provides incentives to business wishing to relocate or expand in Texas, as well as assist local communities in accessing capital for economic development. Funds can be utilized for rural rail development projects.

Transportation Reinvestment Zones

This funding mechanism is designed to allow the development and financing of transportation projects by incrementally increasing property tax revenue collected inside the designated zone. This mechanism has allowed metropolitan areas operating rail facilities to diversify funding options.

2.11.2 *Federal Rail-Related Programs and Funding*

Passenger Rail Investment and Improvement Act (PRIIA) Rail Capital Assistance Programs

In 2008, PRIIA and related appropriation bills provided funds directly to states for intercity rail passenger investments. In early 2009, the American Recovery and Reinvestment Act (ARRA) also provided flexible transportation funding to states for rail capital projects as well as funding for passenger rail development.

The following section provides a brief history of these programs and federal budget appropriations which were specifically available for rail assistance as well as other programs that have be utilized or may be eligible for future rail-related applications.

PRIIA

This legislation authorized over $13 billion between 2009 and 2013 for Amtrak and promoted the development of new and improved intercity rail passenger services. The act also established an intercity passenger rail capital grant program (HSIPR) for states. States were required to identify passenger rail corridor improvement projects in their state rail plans.

Federal funding authorized under PRIIA or other authorization programs were required to be appropriated in annual budget or other legislative bills. USDOT's last budget appropriation

for the high-speed rail state grant programs was for Federal Fiscal Year (FFY) 2010 (October 1, 2009 through September 30, 2010) and provided $2.5 billion of funds authorized under PRIIA. These funds were provided to states, on a competitive basis, for up to 50 percent of the capital cost of improving intercity rail passenger service.

Previous USDOT appropriation acts also provided funding that could be utilized for intercity rail passenger improvements under similar terms. The FFY 2008 USDOT Appropriations Act provided $30 million to states. The FFY 2009 USDOT Appropriations Act provided $90 million to states. No appropriations for high speed rail grants were included in the FFY 2011 through 2014 budgets and PRIIA authorizations expired on September 30, 2013.

American Recovery and Reinvestment Act (ARRA)

As a result of the economic recession of 2008, the federal government approved the ARRA (Public Law 111-5) in February 2009 to stimulate the economy partly through the funding of infrastructure projects that could be initiated in the short term.

A popular grant program established under ARRA is the Transportation Investment Generating Economic Recovery, or TIGER program, which provides grants for capital investment in rail, highway, bridge, public transportation, and port projects and is awarded by USDOT on a competitive basis. USDOT has held seven rounds of TIGER applications since 2010. Following the sunset of ARRA in 2013, subsequent TIGER programs were funded through annual appropriation acts.

Various Texas transportation agencies have received a number of rail-related federal grants from the above programs. These include:

- A 2009 ARRA grant to TxDOT of $14,090,000 to rehabilitate the South Orient Railroad between San Angelo Junction and San Angelo.
- A 2010 ARRA-HSIPR grant to TxDOT of $3.46 million to improve grade crossing signal timing on BNSF's Fort Worth Subdivision between Fort Worth and Gainesville to reduce overall trip time for the Heartland Flyer passenger service.
- A 2010 HSIPR grant to TxDOT of $5.6 million to conduct a feasibility study, develop a Service Level NEPA document and finalize the Service Development Plan for the South Texas-Oklahoma passenger rail corridor
- A 2010 HSIPR grant TxDOT of $7.2 million for infrastructure improvements to enhance existing passenger rail service between Fort Worth and Dallas along the Trinity Railway Express (TRE) Corridor.
- A 2010 TIGER grant TxDOT of $34.0 million to address a major rail and traffic bottleneck at Tower 55 in downtown Fort Worth. The project increases rail capacity and fluidity and enhances pedestrian safety.

- A 2011 TIGER grant to DART of $5.0 million to complete a 14.5-mile link from Downtown Dallas to Dallas-Fort Worth International Airport (DFW). This segment will link passengers to TEX Rail, a proposed 36-mile commuter rail service from southwest Fort Worth to DFW.
- A 2012 TIGER grant to the Port of Corpus Christi of $10 million to construct 7800 feet of rail siding and a new interchange yard along the Fulton Corridor of the Port.
- A 2012 TIGER grant to the Brownsville Navigation District of $12 million to support the construction of a new cargo dock on the Brownsville ship channel. The new dock includes railroad sidings to improve the intermodal transfer of materials and containers to rail for inland delivery.
- A 2013 TIGER grant to the Capital Metropolitan Transportation Authority of $11,337,989 to support a series of commuter and rail freight enhancements in the Austin area.

Federal Surface Transportation Rail-Related Programs

Federal transportation funding to states is periodically authorized through Federal Surface Transportation Acts. Transportation funding is provided to states through apportionment by formula or discretionary funding for various programs.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was passed into law in July 2012 and authorized funding from July through September 2012 and for FFY 2013 and 2014 (October 1, 2012 through September 30, 2014). The provisions and funding available through MAP-21 have continued through periodic extensions by Congress.

The following is a brief description of rail-eligible programs available through past and current Federal Surface Transportation acts and Texas' participation where applicable.

Highway Safety Improvement Program (HSIP)

This program is a core federal-aid funding program with the goal of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Funding from this program can be set aside for the purpose of reducing the number of fatalities and serious injuries at public highway-railway crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. The federal funding share for this program is 90 percent. Texas receives approximately $15 million annually through this program, which is supplemented with the state-sponsored highway-rail crossing safety funding.

Rail Line Relocation Program

This program provided grants to be awarded for construction projects that improve the route or structure of a rail line for either the purpose of mitigating the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development or

for the lateral or vertical relocation of any portion of the rail line. Funding for this program was last appropriated in FFY 2011.

Texas localities have received the following grants in recent years through this program:

- A grant of $475,000 for East Belt Railroad Grade Crossing Safety Improvements in Houston
- Two grants of $1.0 million each for rehabilitation of the South Orient Railroad
- A grant of $299,423 to rehabilitate an industrial part spur track in the City of Big Spring

Rail Rehabilitation and Improvement Financing (RRIF)

This program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. Direct loans can fund up to 100 percent of a capital project with repayment terms of up to 25 years and interest rates equal to the cost of borrowing to the government.

Eligible borrowers include railroads, state and local governments, government sponsored authorities, corporations, and joint ventures that include at least one railroad.

The Tex-Mex Railroad (now KCS) received a $50 million loan in 2005. The railroad used proceeds from the 25-year loan to upgrade 146 track miles and two yards between Laredo and Corpus Christi, Texas, rehabilitate 26 bridges, construct two and extend one siding, and replace 75,000 ties. It also used proceeds to refinance debt incurred from prior infrastructure improvement projects.

Federal Transit Administration (TA) Capital Investment Grant Program

This program is the primary financial resource for supporting transit capital projects that are locally planned, implemented, and operated. The majority of the projects are fixed-guideway transit projects, meaning they use or occupy a separate right-of-way such as rails, catenaries, or exclusive bus lanes. This includes rapid rail, light rail, streetcar, commuter rail, and bus rapid transit (BRT).

Federal Surface Transportation Programs with Selected Rail Applications

In addition to the above programs, a number of additional programs, although primarily intended for highway use, are eligible for rail projects at the discretion of states and with the approval of the administering federal agency. These programs include the following programs.

National Highway System Program

This program can be utilized to improve designated highway intermodal connectors between the National Highway System (NHS) and intermodal facilities, such as truck-rail transfer facilities. The federal share of NHS funding is 80 percent.

Congestion Mitigation and Air Quality Improvement Program

This program funds transportation projects and programs that improve air quality by reducing transportation-related emissions in non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter. Examples of Congestion Mitigation and Air Quality (CMAQ)-funded rail projects include the construction of intermodal facilities, rail track rehabilitation, diesel engine retrofits and idle-reduction projects in rail yards, and new rail sidings.

CMAQ funds are disbursed to and within a state based on levels of pollution within an area, with the state or the region utilizing the funds to implement projects that reduce congestion or improve air quality. Projects must be included in MPO transportation plans and transportation improvement programs (TIPs) or the current state transportation improvement program (STIP) in areas without an MPO. The federal matching share for these funds is 80 percent.

Surface Transportation Program

Surface Transportation Program (STP) is a general grant program available for improvements on any Federal-Aid highway, bridge, or transit capital project. Eligible rail improvements include lengthening or increasing vertical clearance of bridges, crossing eliminations, and improving intermodal connectors. Project funding decisions are made by states with approval from the FHWA. The federal share for these funds is 80 percent.

Projects of National and Regional Significance

This program can fund highway, bridge, transit and freight rail projects. Program funding ($500 million) is focused on very large projects such as multi-state corridor projects which would likely not be undertaken with individual state formula funds.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

This program provides credit assistance to large-scale projects (over $50 million or one-third of a state's annual federal-aid funds) of regional or national significance that might otherwise be delayed or not constructed because of risk, complexity, or cost. A wide variety of intermodal and rail infrastructure projects are eligible and can include equipment, facilities, track, bridges, yards, buildings, and shops. Eligible recipients for TIFIA funds include state and local governments, transit agencies, railroad companies, special authorities or districts, and private entities. The interest rate for TIFIA loans is the U.S. Treasury rate, and the debt must be repaid within 35 years.

DART received a $120 million TIFIA loan in 2012 for its Dallas Area Rapid Transit Orange Line Extension commuter rail project.

Transportation Alternatives Program

This program, which replaced the SAFETEA-LU Transportation Enhancement Program, offers funding opportunities to expand transportation choices and enhance the transportation experience through 12 eligible activities related to surface transportation. Rail related eligible activities include the rehabilitation of historic transportation buildings or facilities, the preservation of abandoned rail corridors, and the establishment of transportation museums. The federal share of project costs is 80 percent.

Other Federal Programs Available for Rail-Related Funding

In addition to transportation programs available under the Transportation Authorization bill, other programs are administered by federal agencies for which rail-related capital projects are eligible. These programs include:

U.S. Department of Commerce Economic Development Administration

The U.S. Department of Commerce provides Economic Development Administration (EDA) grants for projects in economically distressed industrial sites that promote job creation. Eligible projects must be located within EDA-designated redevelopment areas or economic development centers. Eligible rail projects include railroad spurs and sidings. EDA also provides disaster recovery grants. Grant assistance is available for up to 50 percent of the project, although EDA could provide up to 80 percent for projects in severely depressed areas.

U.S. Department of Agriculture Programs

The U.S. Department of Agriculture (USDA) Community Facility Program and Rural Development Program provide grant or loan funding mechanisms to fund construction, enlargement, extension, or improvement of community facilities providing essential services in rural areas and towns. Grant assistance is available for up to 75 percent of the project cost. Eligible rail-related community facilities include transportation infrastructure for industrial parks and municipal docks.

U.S. Environmental Protection Agency Programs

The U.S. Environmental Protection Agency (EPA) provides funds for Brownfield site cleanup and redevelopment (requires a 20 percent match in funding by the state). These sites may be suitable for rail yards or other rail-related uses.

Railroad Track Maintenance Credit Program

This program was authorized within the Internal Revenue Code in 2005 to provide tax credits to qualified entities for an amount equal to 50 percent of qualified railroad maintenance expenditures on railroad tracks owned or leased by Class II or Class III railroads. The maximum credit amount allowed is $3,500 per mile of track. Although is program expired at the end of 2013, there has been significant interest in extending the program.

2.11.3 *Challenges to State Rail Investment*

TxDOT and other governmental entities in the state which support transportation operations or investments have been successful in maximizing available federal funding for rail projects and leveraging these funds with strategic state and local contributions, as well as those from private railroads, to implement large scale projects through public-private partnerships.

The potential for significant federal rail funding assistance in the near term is limited due to the sunset of PRIIA authorizations in 2013 and the deletion of the MAP-21 legislation's rail title from the final version of the bill, which was passed in 2012. The legislative provisions and authorization levels for intercity passenger service in PRIIA and MAP-21's rail title were intended to continue the intercity passenger and high-speed rail funding initiatives which were provided in 2009 and 2010. No additional appropriations for High Speed Rail improvements have been budgeted since 2010.

TIGER grants are currently dependent on year to year budget appropriations and this discretionary program has generated project applications which far exceed the level of funding available.

Although there is some optimism that rail will fare better in a new surface transportation bill, this possibility faces a major obstacle in the shortfall of the Highway Trust Fund.

The significant reduction of federal funding for rail investment has required states to increasingly fund rail rehabilitation programs from substantially state resources. PRIIA's requirement that states undertake financial responsibility for operating losses on corridor services have also required states to develop financing plans to address the required state share of rail passenger capital and operating costs.

The availability of a dedicated fund to provide financial assistance to state-owned and other freight railroads, as well as to provide required intercity rail passenger subsidies, would remove the uncertainties of prospective state funding sources which currently exist. The 2010 Rail Plan identified potential state rail funding program sources, including: local option transportation funding; value capture for rail investments through various taxes and fees;

tax incentives; revolving loans and railcar taxes. Similar prospective funding sources have been utilized in other states.

The types and criteria of existing state rail assistance programs, as well as funding sources, vary widely from state to state. States providing grant funding to railroads for the purpose of track and bridge rehabilitation, preservation/acquisition, intermodal facilities, and other freight-related facilities provide state shares of project costs which generally range from 50 to 100 percent and may also vary depending on the railroads involved (Class I vs. Class II or Class III railroads) or the program/project type. Aside from transportation use taxes, program revenue sources have included general funds, transportation and lottery bonds, vehicle rental taxes, transportation property lease income, gross retail and use taxes, lottery and casino bonds or taxes, and advertising or lease revenue on state-owned rail lines.

Due to relatively large capital costs involved in rail passenger improvements, expanded services, and annual subsidies, state funding for these purposes are now largely dependent on private investment, which may or may not be supplemented by state general fund appropriations or bonding.

2.12 Rail's Transportation, Economic and Environmental Impacts in Texas

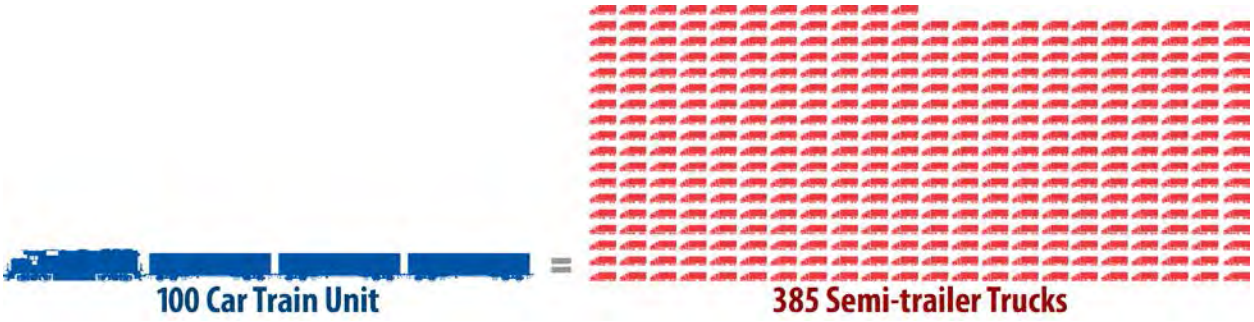
Rail is a major component of freight movement throughout Texas. In 2014, freight rail assets accounted for 20 percent of the total freight tonnage movement and 25 percent of the value of total freight movements. Rail transportation provides low-cost, high-capacity and low environmental impact solutions for the movement of goods, particularly as the travel distance increases. Rail cars have numerous configurations and to accommodate various capacities, trains can consist of more than 100 rail cars.

According to Hofstra University, one rail car typically has a cargo capacity of approximately 100 tons, which equates to a total capacity of 10,000 tons for a 100 car train unit. As illustrated in **Exhibit 2-40**, it would take 385 semi-trailer trucks to carry the same amount of cargo as a 100 car train unit. The benefits of moving freight on the rail system include less congestion on highways, efficient fuel consumption, low greenhouse gas emissions, and an excellent safety record.

AAR uses terminated tons which includes all goods the end in Texas regardless of the products origin. As such, the terminated tons includes both imported tons from other parts of the country and world as well as intrastate rail movements that begin and end within Texas. Similarly, originated tons includes both exports and internal Texas rail movements. In 2012, Texas led the nation in total rail tons terminated (206.6 million tons) and was third in total rail tons originated, with 92.9 million tons. Railroads moved the equivalent of more than 20.7 million truckloads of freight in or through the state. Second only to trucking, Texas rail operators move a significant portion of the state's freight (24 percent of freight tonnage

in 2010). According to the AAR, in 2012, Texas topped the nation in rail industry employment with over 16,826 freight rail employees. AAR, indicates that Texas also ranks first in the nation in wages and retirement payments to current and former freight rail employees in 2012.

Exhibit 2-40: Rail and Truck Capacity Comparison
Equivalent Units



Source: Hofstra University

Significant freight volumes traverse Texas's rail infrastructure annually. Such freight includes finished goods, materials, and supplies. Principal freight rail issues concern the identification of movements most important to Texas, and the options to facilitate/support such movements. Identifying the importance of, and solutions for, freight rail comprises several perspectives, including: volumes (especially compared to capacity), units, and directional movements.

As part of the recent efforts in the development of the Texas Freight Mobility Plan (TFMP) current freight rail volumes for years 2012 and 2013, as reported in the United States Surface Transportation Board (STB) Railroad Waybill Sample database, have been tabulated by major commodity types to understand freight movements. Forecast freight movements for year 2040 are culled from a second source: Transearch® 2010, which is a privately-developed database by IHS/Global Insight.

Commodity Classification – The Standard Transportation Commodity Code (STCC) is a seven-digit numeric code, categorized by 40 commodity groupings, based on physical product information used on shipping documents and published/maintained by the American Association of Railroads (AAR). A hierarchical STCC structure allows for data collapsibility, enabling summarization of commodity information.[1] Although freight movements are tallied at the seven-digit STCC detail, the information summarized herein is at the aggregated two-digit level.

[1] For example, '01' represents 'Farm Products', '011' identifies 'Field Crops,' '0112' indicates 'Raw Cotton', etc., narrowing in specificity to a seven-digit level

Freight Movement Data Sources – The Railroad Waybill Sample and Transearch® are used to estimate current and future freight volumes, respectively.

- Waybill Sample – Based on STCC codes2, the Waybill provides detailed most-recently available years 2012/2013 movement data by commodity. It uses a two-percent stratified sample by the STB Carload Waybill Sample of carload waybills for all rail traffic submitted by rail carriers that terminate 4,500 or more revenue carloads annually.
- Transearch® – Developed by IHS Global Insight, Transearch® is a comprehensive database of North American freight, compiled from various industry, commodity, and proprietary sources. Transearch® combines shipment data of the largest rail and truck freight carriers with public, commercial, and proprietary sources to generate a base year estimate of freight at the county level. Transearch® establishes market-specific production volumes by industry or commodity, drawn from IHS Global Insight's Business Markets Insights (BMI) database, and supplemented by trade association and industry reports, and government-collected data – especially the Input/Output (I/O) tables by the Bureau of Economic Analysis (BEA). Growth rates between Transearch®-reported year 2010 and forecast year 2040 by directional commodity movement are reported herein.

2.12.1 *Recent Freight Rail Volumes and Commodity Flows*

Year 2012 and 2013 Texas rail movements by direction (outbound, inbound, intrastate, and through) and terms (tons and carload units) are derived from the STB Waybill database. Each subsection summarizes rail movements by direction and term, and identifies the top two-digit STCC commodity movements. Summary data are shown graphically for ease of visually identifying important commodity movements and related observations, with the supporting comprehensive data located in the Error! Reference source not found. (Table 1 through Table 10). Although data are compiled and presented for both 2012 and 2013, the focus is on the most-recent 2013 freight rail movements.

Existing Commodity Flow Summary

Texas rail movements in 2013 totaled 403.3 million tons, carried within almost 10.0 million carload units, see Exhibit 2-41. As depicted in Exhibit 2-42, inbound rail is the dominant directional movement by tonnage, comprising almost half of all directions, at 44.9 percent; however, through freight rail is the dominant direction by carload unit terms, at 47.5 percent. Outbound and intrastate movements, combined, are less than either through tonnage or inbound units (the second-largest movement by respective term).

[2] STB WAYBILL designates freight rail movements via two STCC conventions: one includes the 49xxxxx (HAZMAT-related) and 50xxxxx (bulk movements) STCC designation, the alternative translates those HAZMAT- and bulk-related movements into actual product STCC; summary data herein pertains to the non-HAZMAT/non-bulk STCC convention.

Exhibit 2-41: Rail Movements by Direction, 2012 and 2013

Direction	Tons		Units		Tons/Unit Utilization
	Amount	Percent	Amount	Percent	
Year 2012					
Outbound	59,646,993	15.2 %	1,692,677	17.9%	35.2
Inbound	178,940,865	45.5%	2,862,232	30.2%	62.5
Intra	47,379,695	12.1%	568,472	6.0%	83.3
Through	107,196,500	27.3%	4,341,734	45.9%	24.7
Total	**393,164,053**	**100.0%**	**9,465,115**	**100.0%**	**41.5**
Year 2013					
Outbound	60,453,283	15.0%	1,743,044	17.5%	34.7
Inbound	181,058,244	44.9%	2,902,715	29.1%	62.4
Intra	49,830,558	12.4%	587,149	5.9%	84.9
Through	111,909,024	27.8%	4,727,128	47.5%	23.7
Total	**403,251,109**	**100.0%**	**9,960,036**	**100.0%**	**40.5**

Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2012 and 2013

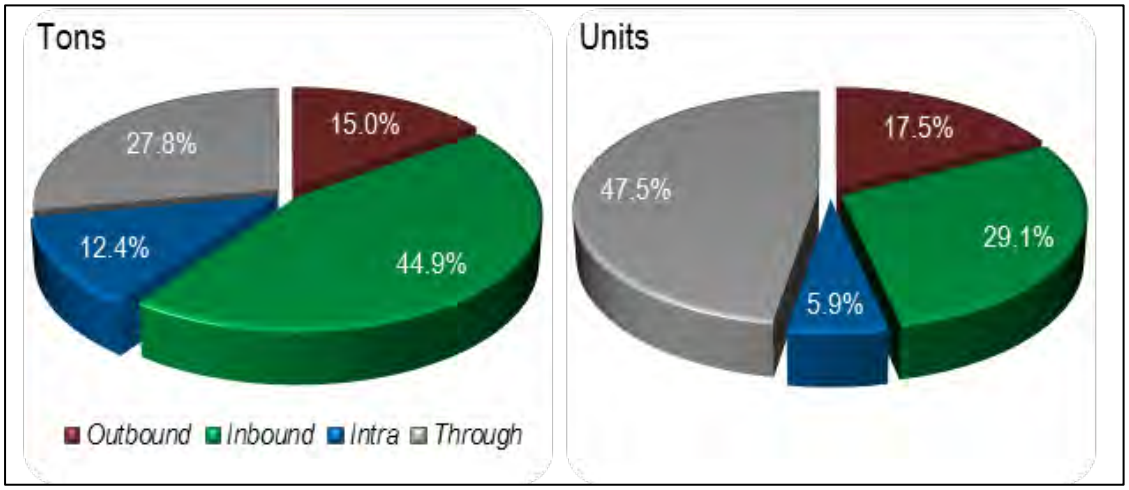


Exhibit 2-42: Rail Movement Share by Direction, 2013

Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Compositionally, the directional movements for freight rail in Texas did not change appreciably between 2012 and 2013; however, the relatively minor compositional changes stem from varying growth rates by direction, as per **Exhibit 2-43**. As depicted, the largest relative growth from 2012 to 2013 transpired within the intrastate and through directions. In all, considering total movements, tonnage increased 2.6 percent, while units increased 5.2 percent from 2012 to 2013, suggesting a slightly less-efficient carload utilization (tons/unit) in 2013 than in 2012.

Exhibit 2-43: Rail Movement Growth by Direction, 2012 to 2013

Direction	2012	2013	% Δ
Tons			
Outbound	59,646,993	60,453,283	1.4%
Inbound	178,940,865	181,058,244	1.2%
Intra	47,379,695	49,830,558	5.2%
Through	107,196,500	111,909,024	4.4%
Total	393,164,053	403,251,109	2.6%
Units			
Outbound	1,692,677	1,743,044	3.0%
Inbound	2,862,232	2,902,715	1.4%
Intra	568,472	587,149	3.3%
Through	4,341,734	4,727,128	8.9%
Total	9,465,115	9,960,036	5.2%

Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2012 and 2013

Major Commodity Movements – **Exhibit 2-44** and **Exhibit 2-45** depict two-digit STCC commodities[3] by direction for Texas freight rail, in terms of tonnage and units, respectively. Supporting data are presented, by direction, in Error! Reference source not found. **Table 3** through **Table 6**, and are further detailed in the following subsections.

In terms of all rail directions combined, the top five commodities by term include:

by Tonnage:

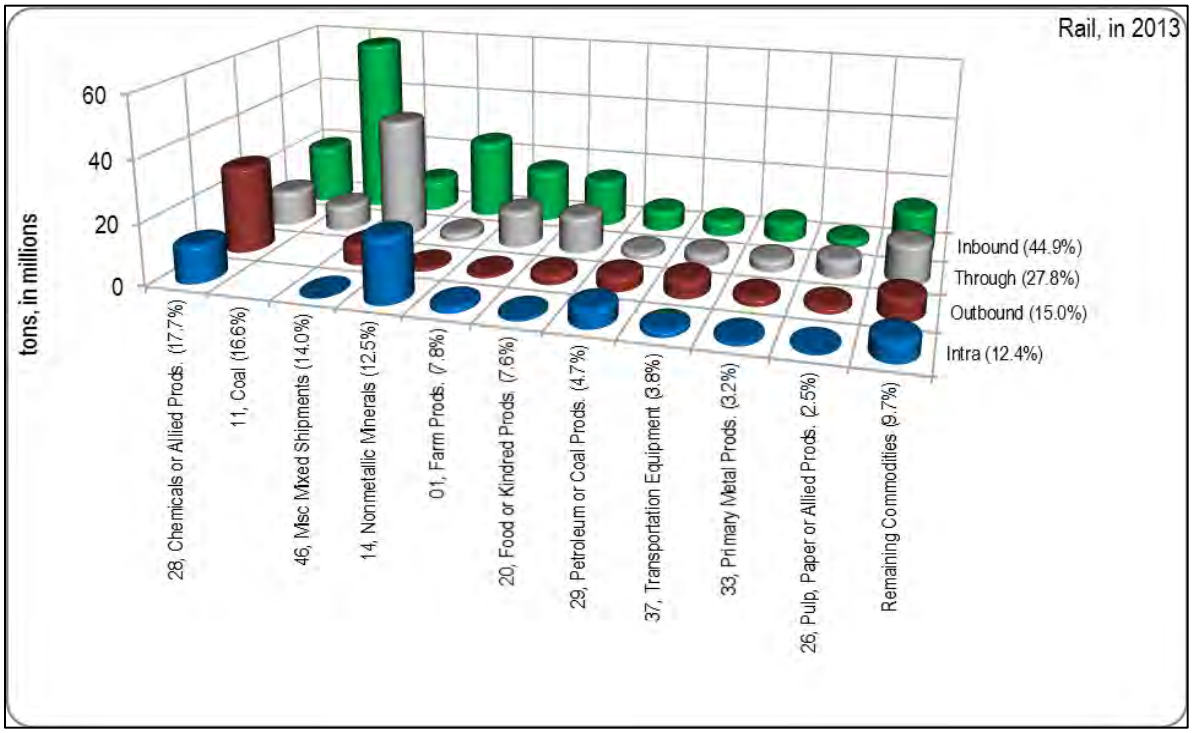
1. Chemicals or Allied Products (71.4 million tons, 17.7 percent of rail total);
2. Coal (66.9 million, 16.6 percent);
3. Miscellaneous Mixed Shipments (56.4 million, 14.0 percent);
4. Nonmetallic Minerals (50.2 million, 12.5 percent); and,
5. Farm Products (31.6 million, 7.8 percent)

by Units:

1. Miscellaneous Mixed Shipments (3,915,080 units, 39.3 percent of rail total);
2. Chemicals or Allied Products (930,350, 9.3 percent);
3. Transportation Equipment (776,796, 7.8 percent);
4. Food or Kindred Products (590,866, 5.9 percent); and,
5. Coal (557,343, 5.6 percent)

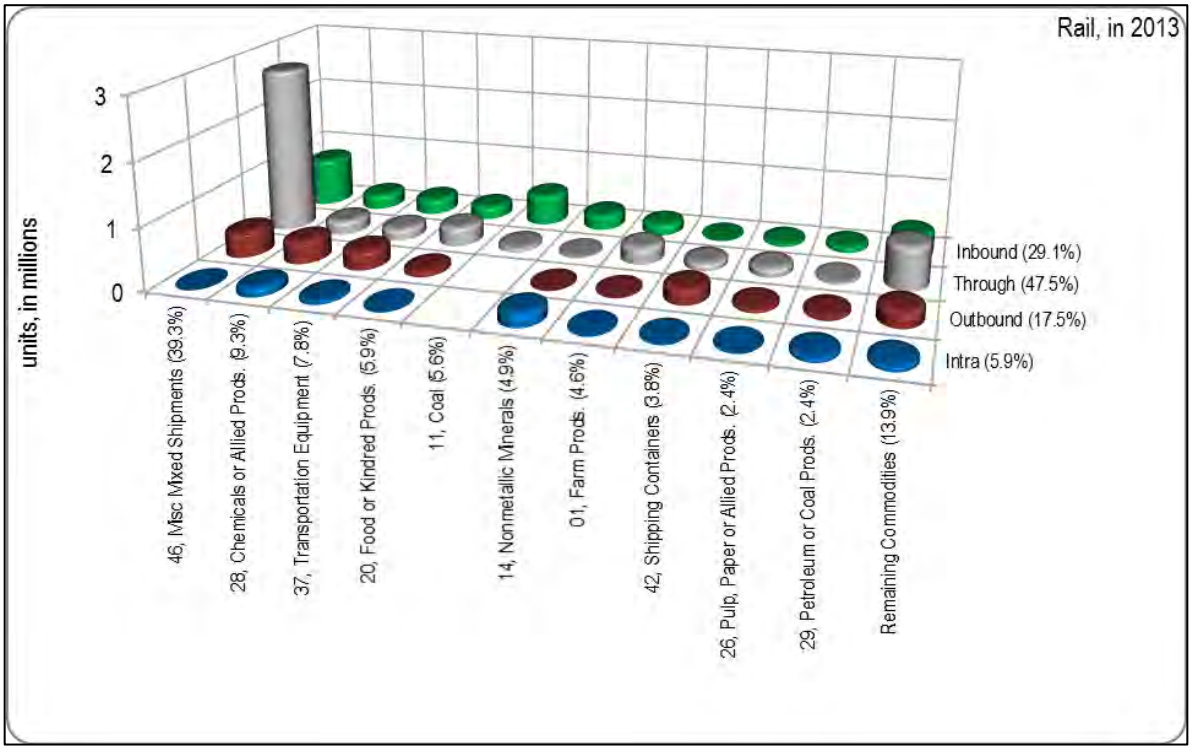
[3] note the numbers preceding the commodity names in the figures pertain to the two-digit STCC codes for such commodities

Exhibit 2-44: Rail Commodity Direction by Tonnage, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-45: Rail Commodity Direction by Unit, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Rail Outbound

Table 3 in the Error! Reference source not found. presents outbound rail commodities from Texas, in 2013, which total 60.5 million tons, via 1.7 million units; top five commodities include:

by Tonnage:

1. Chemicals or Allied Products (28.3 million tons, 46.8 percent of outbound total);
2. Miscellaneous Mixed Shipments (6.5 million, 10.7 percent);
3. Transportation Equipment (5.5 million, 9.1 percent);
4. Petroleum or Coal Products (4.4 million, 7.3 percent); and,
5. Food or Kindred Products (3.0 million, 5.0 percent)

by Units:

1. Miscellaneous Mixed Shipments (405,320 units, 23.3 percent of outbound total);
2. Chemicals or Allied Products (346,883, 19.9 percent);
3. Transportation Equipment (290,942, 16.7 percent);
4. Shipping Containers (237,480, 13.6 percent); and,
5. Food or Kindred Products (79,584, 4.6 percent)

Outbound Tonnage Origin – Major outbound rail tonnages in 2013 are shown by county of origin in Exhibit 2-46 and Exhibit 2-47 (support data are presented inTable 7). Rail movements destined out-of-state are primarily transported from Harris County (16.9 million, 27.9 percent), Tarrant County (4.6 million, 7.7 percent), and Dallas County (3.9 million, 6.5 percent).

Harris County:

1. Chemicals or Allied Products (11.0 million tons, 65.4 percent of outbound county total);
2. Miscellaneous Mixed Shipments (2.2 million, 13.2 percent);
3. Petroleum or Coal Products (1.9 million, 11.1 percent);
4. Primary Metal Products (0.7 million, 4.0 percent); and,
5. Food or Kindred Products (0.2 million, 1.3 percent)

Tarrant County:

1. Miscellaneous Mixed Shipments (2.1 million tons, 44.2 percent of outbound county total);
2. Transportation Equipment (0.6 million, 13.7 percent);
3. Chemicals or Allied Products (0.5 million, 10.3 percent);
4. Shipping Containers (0.3 million, 6.7 percent); and,
5. Pulp, Paper, or Allied Products (0.2 million, 4.9 percent)

Dallas County:

1. Miscellaneous Mixed Shipments (1.7 million tons, 42.7 percent of outbound county total);
2. Shipping Containers (0.4 million, 10.9 percent);
3. Chemicals or Allied Products (0.3 million, 7.9 percent);
4. Pulp, Paper, or Allied Products (0.3 million, 7.8 percent); and,
5. Apparel or Related Products (0.2 million, 6.1 percent)

Outbound Tonnage Destination – Major outbound rail tonnages in 2013 are shown by state destination in **Exhibit 2-48** and **Exhibit 2-49** (support data is presented in Error! Reference source not found. **Table 7**). Rail movements destined out-of-state are primarily transported to Illinois (13.3 million, 22.0 percent), California (12.5 million, 20.7 percent), and Louisiana (8.1 million, 13.5 percent).

Illinois:

1. Chemicals or Allied Products (7.1 million tons, 53.8 percent of outbound state total);
2. Transportation Equipment (2.3 million, 17.4 percent);
3. Miscellaneous Mixed Shipments (1.1 million, 8.2 percent);
4. Petroleum or Coal Products (0.9 million, 6.8 percent); and,
5. Food or Kindred Products (0.7 million, 4.9 percent)

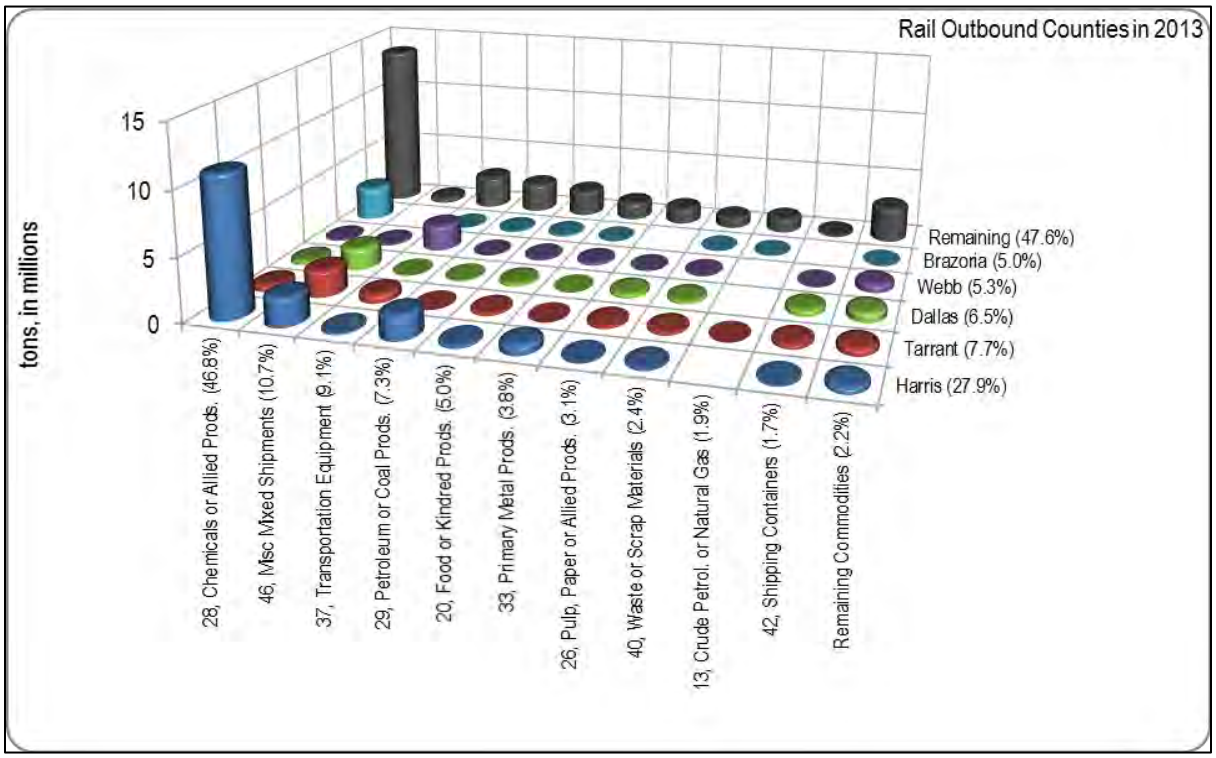
California:

1. Miscellaneous Mixed Shipments (4.6 million tons, 36.5 percent of outbound state total);
2. Chemicals or Allied Products (2.5 million, 19.8 percent);
3. Food or Kindred Products (0.8 million, 6.8 percent);
4. Pulp, Paper, or Allied Products (0.8 million, 6.4 percent); and,
5. Shipping Containers (0.7 million, 6.0 percent)

Louisiana:

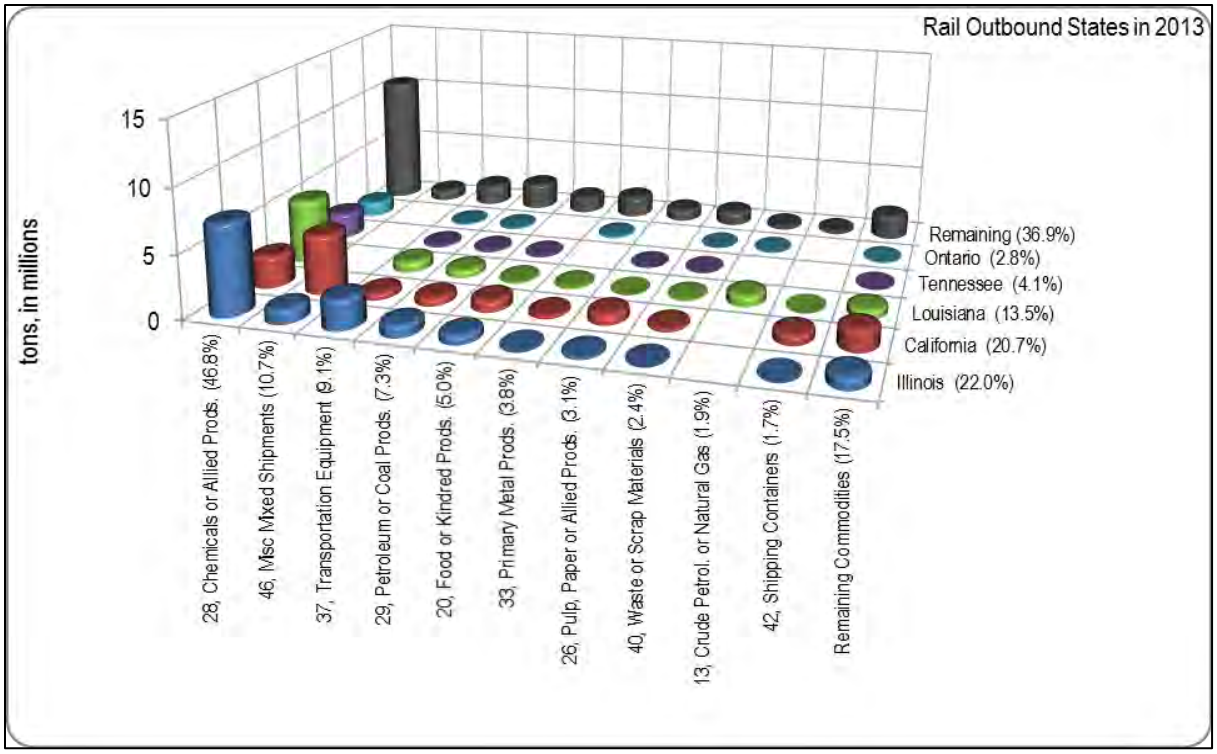
1. Chemicals or Allied Products (5.0 million tons, 61.2 percent of outbound state total);
2. Crude Petroleum or Natural Gas (0.8 million, 9.8 percent);
3. Transportation Equipment (0.8 million, 9.7 percent);
4. Petroleum or Coal Products (0.5 million, 6.6 percent); and,
5. Nonmetallic Minerals (0.5 million, 6.3 percent)

Exhibit 2-46: Rail Outbound Commodity Tonnage by Texas County Origin, 2013



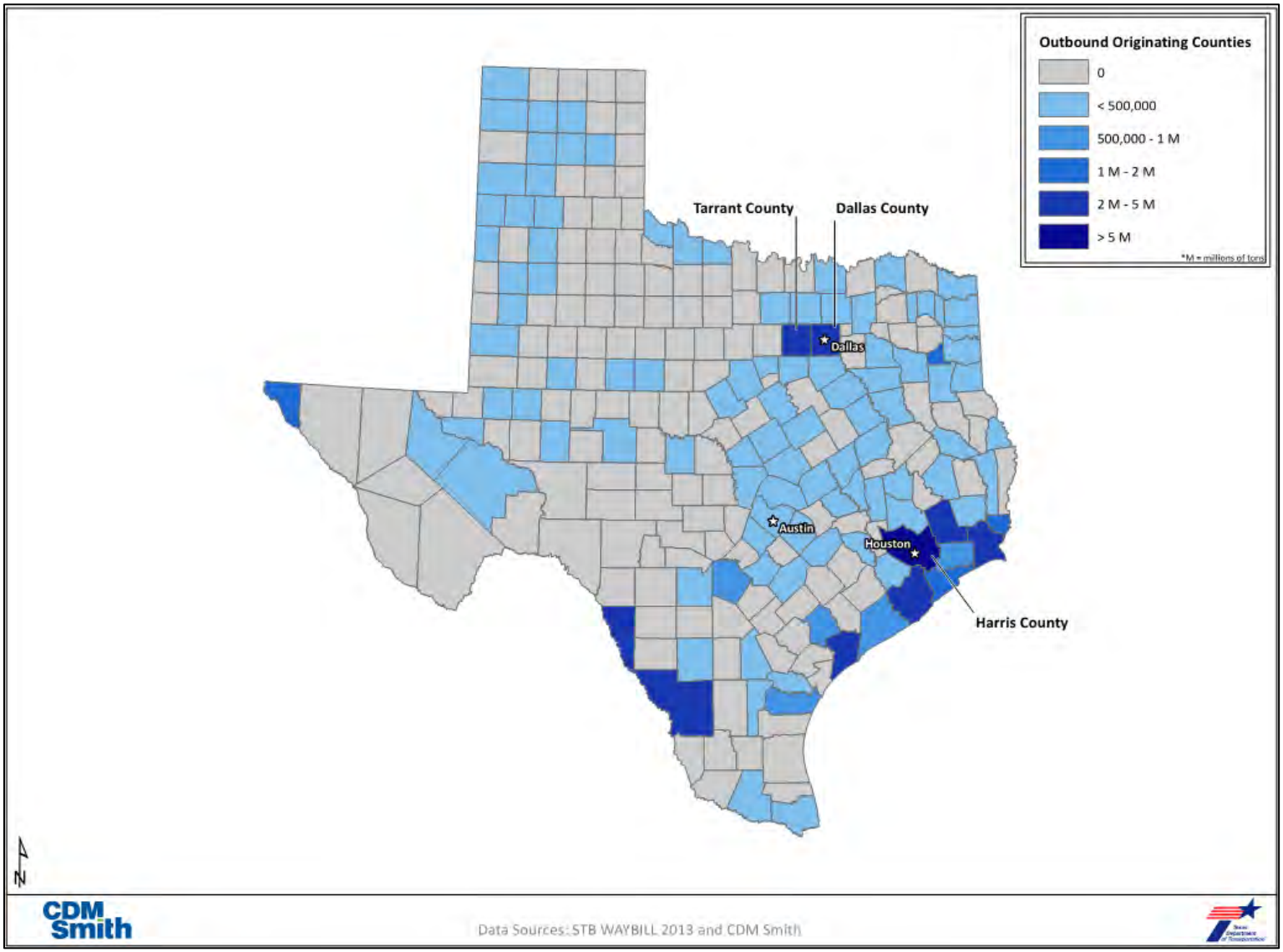
Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-47: Rail Outbound Commodity Tonnage by State Destination, 2013



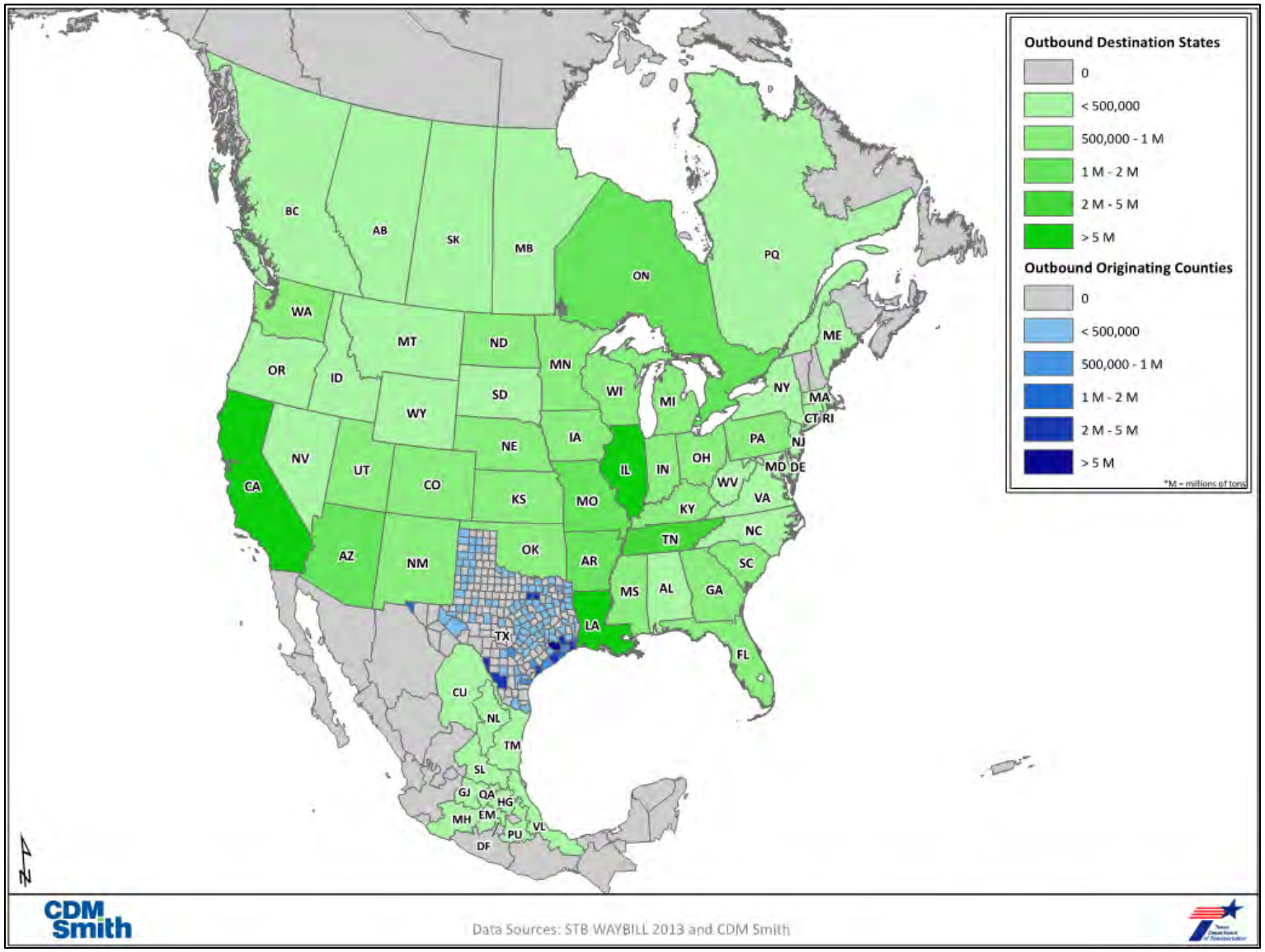
Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-48: Rail Outbound Total Tonnage by Texas County Origin, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-49: Rail Outbound Total Tonnage by State Destination, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Rail Inbound

Table 4 in the Appendix presents inbound rail commodities to Texas, in 2013, which total 181.1 million tons, via 2.9 million units; top five commodities include:

by Tonnage:

1. Coal (58.6 million tons, 32.4 percent of inbound total);
2. Nonmetallic Minerals (25.9 million, 14.3 percent);
3. Chemicals or Allied Products (19.6 million, 10.8 percent);
4. Farm Products (17.3 million, 9.6 percent); and,
5. Food or Kindred Products (15.4 million, 8.5 percent)

by Units:

1. Miscellaneous Mixed Shipments (791,160 units, 27.3 percent of inbound total);
2. Coal (488,589, 16.8 percent);
3. Transportation Equipment (246,821, 8.5 percent);
4. Nonmetallic Minerals (245,642, 8.5 percent); and,
5. Chemicals or Allied Products (232,560, 8.0 percent)

Inbound Tonnage Origin – Major inbound rail tonnages in 2013 are shown by state origin in Exhibit 2-50 and Exhibit 2-51 (support data are presented in Table 8). Rail movements originating out-of-state are primarily transported from Wyoming (60.1 million, 33.2 percent), Illinois (17.8 million, 9.8 percent), and California (11.5 million, 6.3 percent).

Wyoming:

1. Coal (53.9 million tons, 89.7 percent of inbound state total);
2. Chemicals or Allied Products (4.7 million, 7.8 percent);
3. Nonmetallic Minerals (0.5 million, 0.9 percent);
4. Petroleum or Coal Products (0.5 million, 0.8 percent); and,
5. Clay, Concrete, Glass, or Stone (0.4 million, 0.6 percent)

Illinois:

1. Nonmetallic Minerals (3.8 million tons, 21.5 percent of inbound state total);
2. Farm Products (3.7 million, 20.5 percent);
3. Transportation Equipment (2.9 million, 16.0 percent);
4. Food or Kindred Products (1.9 million, 10.6 percent); and,
5. Miscellaneous Mixed Shipments (1.8 million, 10.2 percent)

California:

1. Miscellaneous Mixed Shipments (7.7 million tons, 67.6 percent of inbound state total);
2. Food or Kindred Products (0.9 million, 7.8 percent);
3. Chemicals or Allied Products (0.7 million, 5.8 percent);
4. Transportation Equipment (0.6 million, 4.9 percent); and,
5. Apparel or Related Products (0.2 million, 1.9 percent)

Inbound Tonnage Destination – Major inbound rail tonnages in 2013 are shown by county destination in **Exhibit 2-52** and **Exhibit 2-53**. Rail movements originating out-of-state are primarily transported to Harris County (24.5 million, 13.5 percent), Dallas County (12.2 million, 6.7 percent), and Bexar County (10.2 million, 5.7 percent).

Harris County:

1. Farm Products (5.4 million tons, 22.0 percent of inbound county total);
2. Chemicals or Allied Products (4.7 million, 19.4 percent);
3. Coal (3.2 million, 13.2 percent);
4. Miscellaneous Mixed Shipments (2.8 million, 11.6 percent); and,
5. Primary Metal Products (2.2 million, 9.1 percent)

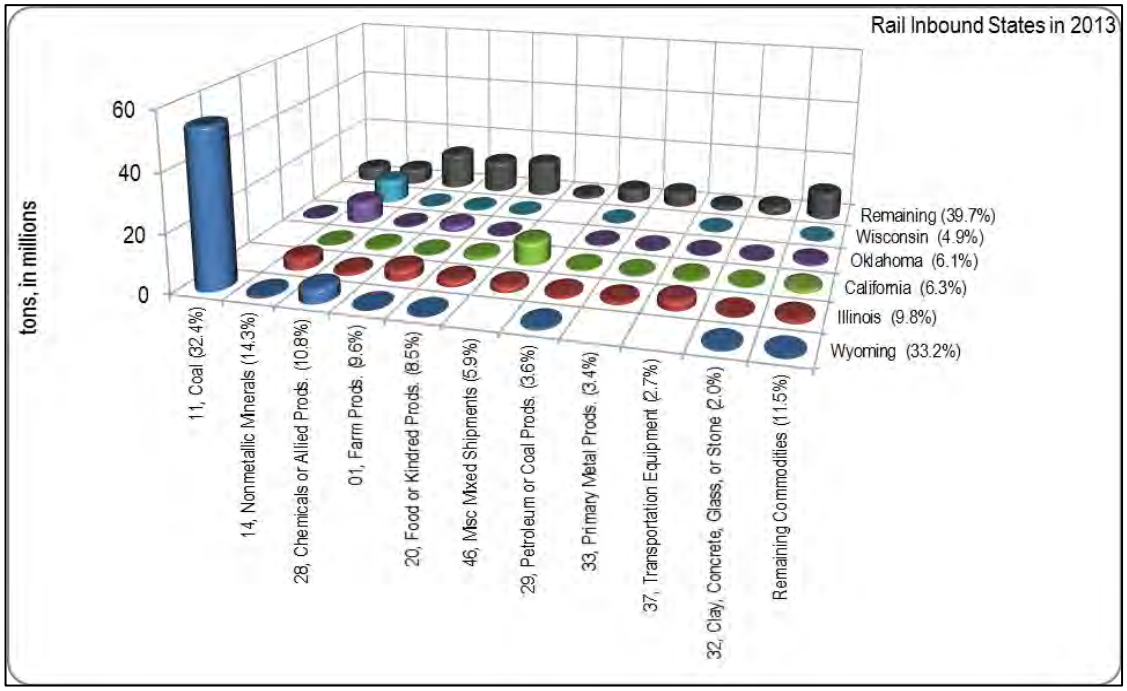
Dallas County:

1. Nonmetallic Minerals (3.3 million tons, 26.7 percent of inbound county total);
2. Miscellaneous Mixed Shipments (3.1 million, 25.7 percent);
3. Food or Kindred Products (1.2 million, 9.8 percent);
4. Chemicals or Allied Products (1.1 million, 8.9 percent); and,
5. Transportation Equipment (0.7 million, 6.0 percent)

Bexar County:

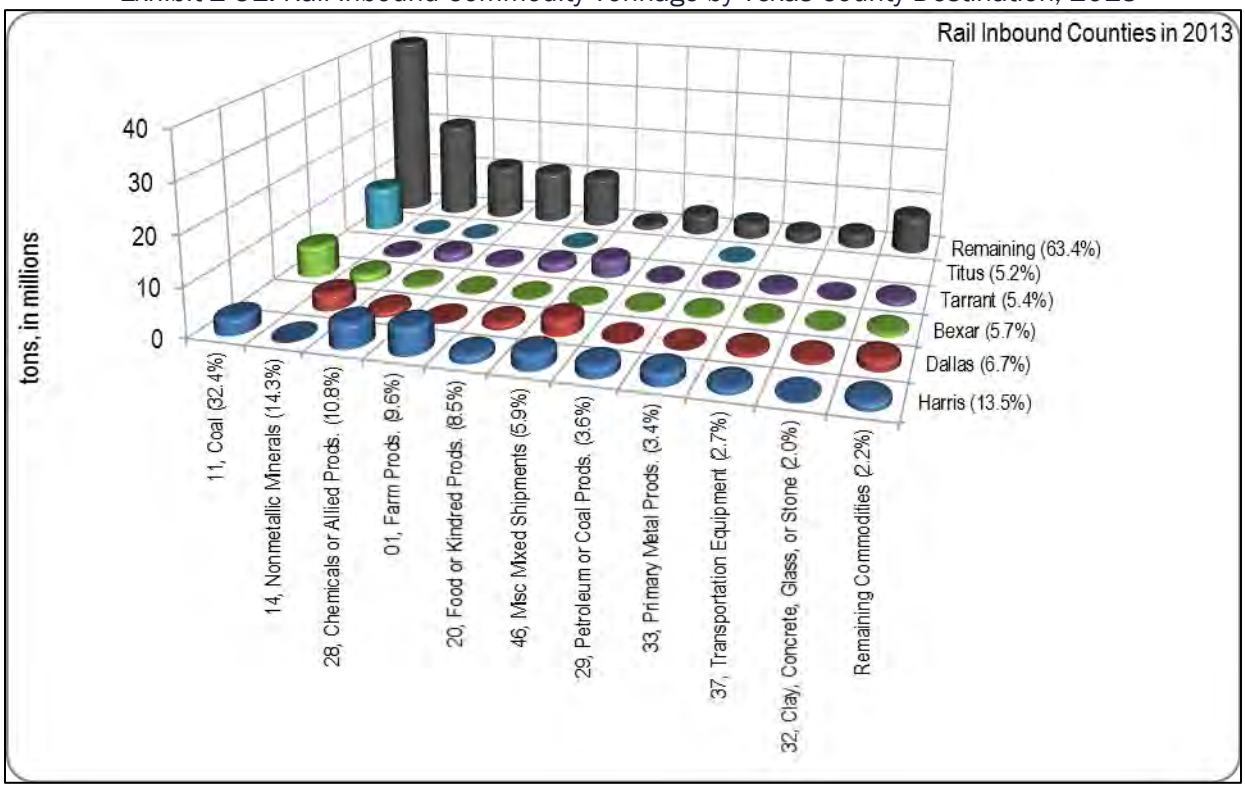
1. Coal (6.4 million tons, 62.7 percent of inbound county total);
2. Nonmetallic Minerals (1.5 million, 15.0 percent);
3. Chemicals or Allied Products (0.5 million, 5.0 percent);
4. Transportation Equipment (0.4 million, 3.6 percent); and,
5. Lumber or Wood Products (0.4 million, 3.4 percent)

Exhibit 2-50: Rail Inbound Commodity Tonnage by State Origin, 2013



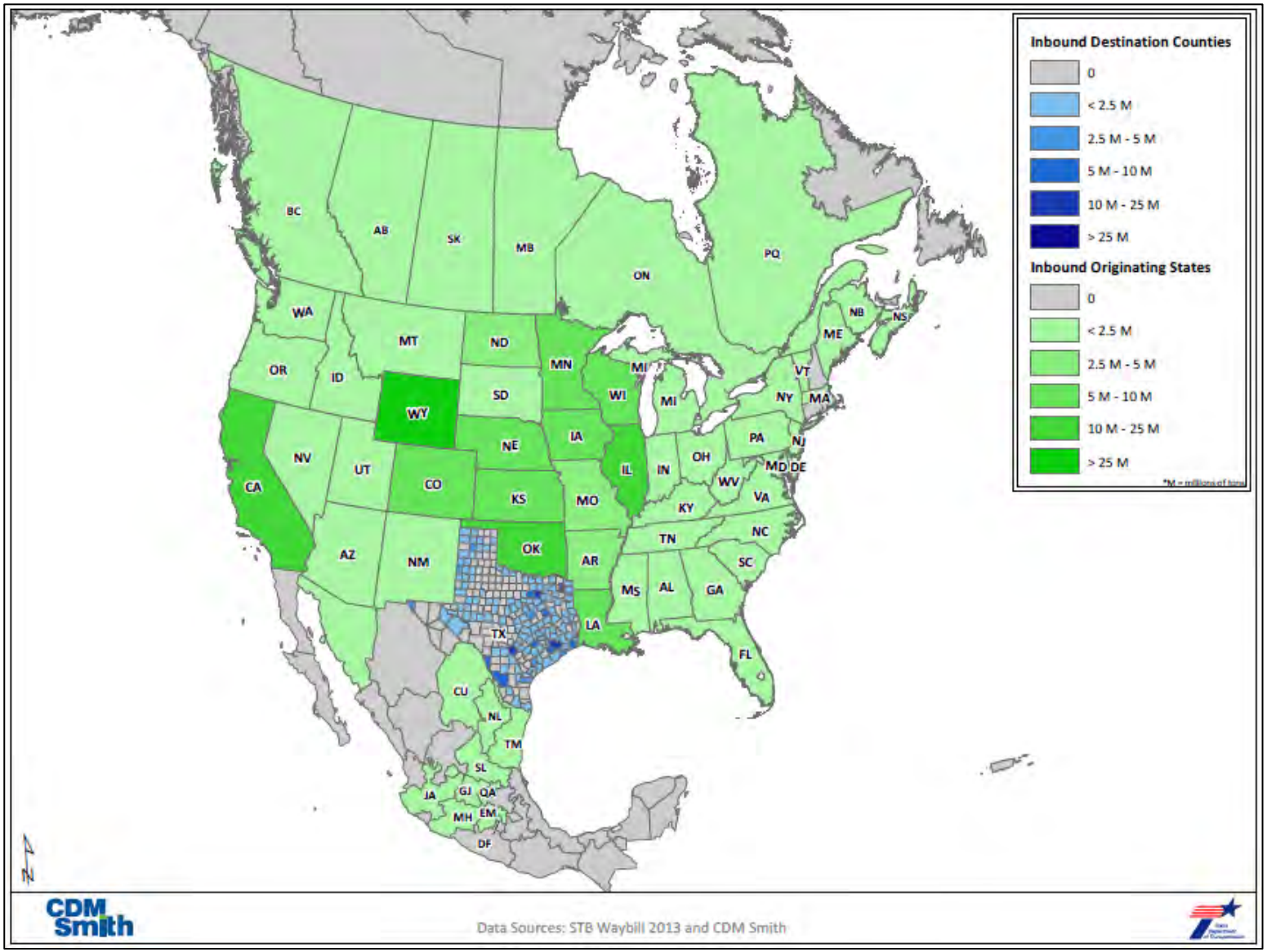
Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-51: Rail Inbound Commodity Tonnage by Texas County Destination, 2013



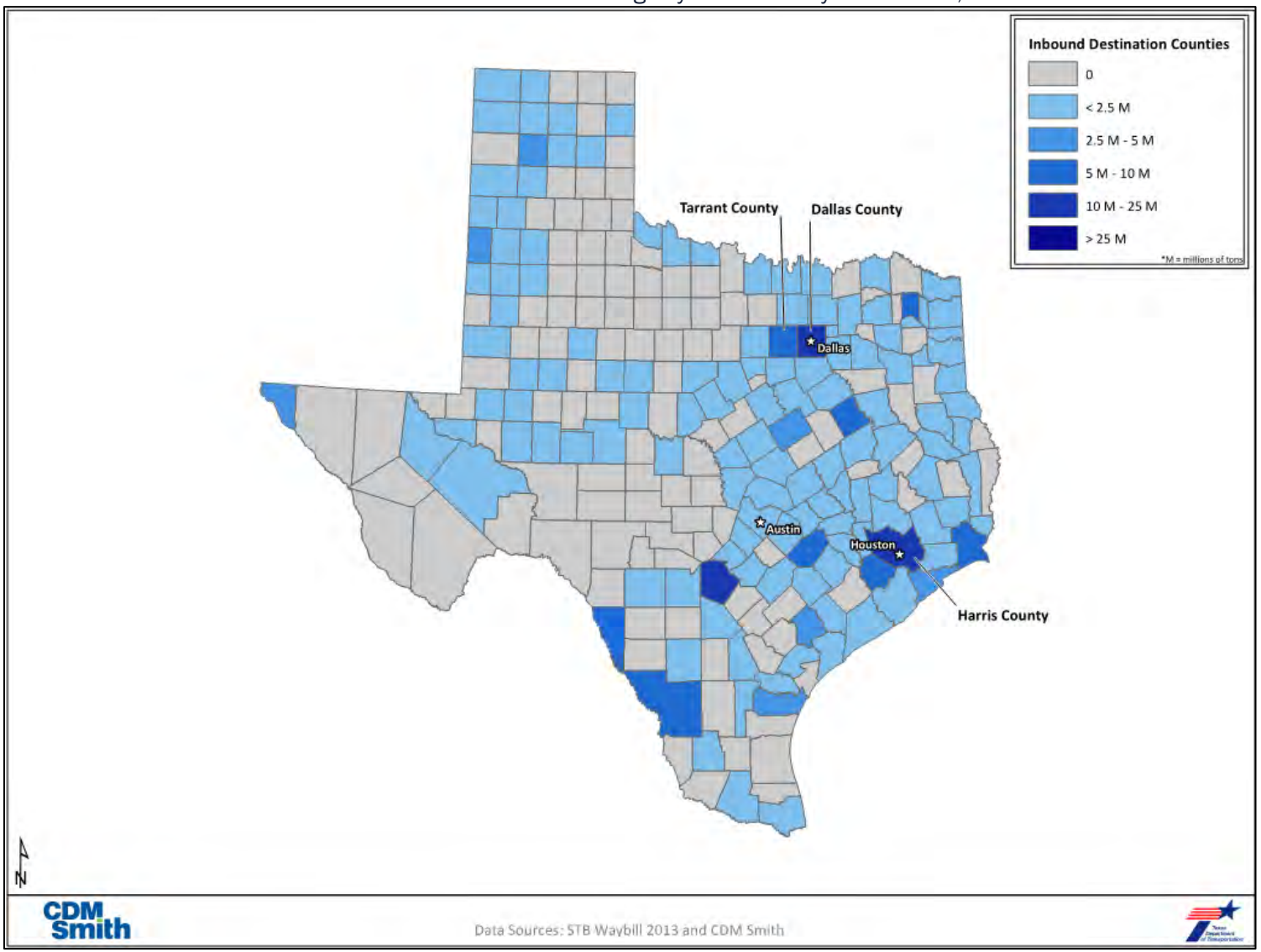
Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-52: Rail Inbound Total Tonnage by State Origin, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Exhibit 2-53: Rail Inbound Total Tonnage by Texas County Destination, 2013



Source: prepared by CDM Smith, based on the STB Waybill Sample data for 2013

Rail Intrastate

Table 5 in the Appendix presents intrastate rail commodities within Texas, in 2013, which total 49.8 million tons, via 587,149 units; top five commodities include:

by Tonnage:

1. Nonmetallic Minerals (20.8 million tons, 41.7 percent of intrastate total);
2. Chemicals or Allied Products (12.1 million, 24.2 percent);
3. Petroleum or Coal Products (5.8 million, 11.7 percent);
4. Clay, Concrete, Glass, or Stone (2.9 million, 5.8 percent); and,
5. Crude Petroleum or Natural Gas (1.7 million, 3.3 percent)

by Units:

1. Nonmetallic Minerals (207,507 units, 35.3 percent of intrastate total);
2. Chemicals or Allied Products (132,923, 22.6 percent);
3. Petroleum or Coal Products (61,732, 10.5 percent);
4. Transportation Equipment (59,409, 10.1 percent); and,
5. Clay, Concrete, Glass, or Stone (28,444, 4.8 percent)

Rail Through

Table 6 in the Appendix. presents through rail commodities moving across Texas, in 2013, which total 111.9 million tons, via 4.7 million units; top five commodities include:

by Tonnage:

1. Miscellaneous Mixed Shipments (39.2 million tons, 35.0 percent of through total);
2. Farm Products (11.8 million, 10.5 percent);
3. Food or Kindred Products (11.8 million, 10.5 percent);
4. Chemicals or Allied Products (11.5 million, 10.2 percent); and,
5. Coal (8.3 million, 7.4 percent)

by Units:

1. Miscellaneous Mixed Shipments (2,711,680 units, 57.4 percent of through total);
2. Food or Kindred Products (301,348, 6.4 percent);
3. Farm Products (262,312, 5.5 percent);
4. Chemicals or Allied Products (217,984, 4.6 percent); and,
5. Transportation Equipment (179,624, 3.8 percent)

As volumes on the rail system increase, congestion could also increase, particularly in urban areas of the state. This increase is primarily due to incompatible land use policies, which inhibit the growth and expansion of private rail infrastructure. Examples of incompatible land use include commercial or residential development adjacent to rail lines/yards and the encroachment of road infrastructure or other facilities onto private railroad property. When this occurs, the ability for private investment into rail growth is hindered physically and politically. Other rail issues include at- grade highway-rail crossings and multimodal connectivity improvements to industrial facilities, which include ports, industrial parks and transloads.

Rail is and will continue to be vital to the economic growth of Texas, and supportive policies and public-private partnerships are needed to support the private sector's ability to make the needed investments into the Texas rail system.

2.12.2 *Demographics and Forecasts of Freight and Passenger Rail Volume*

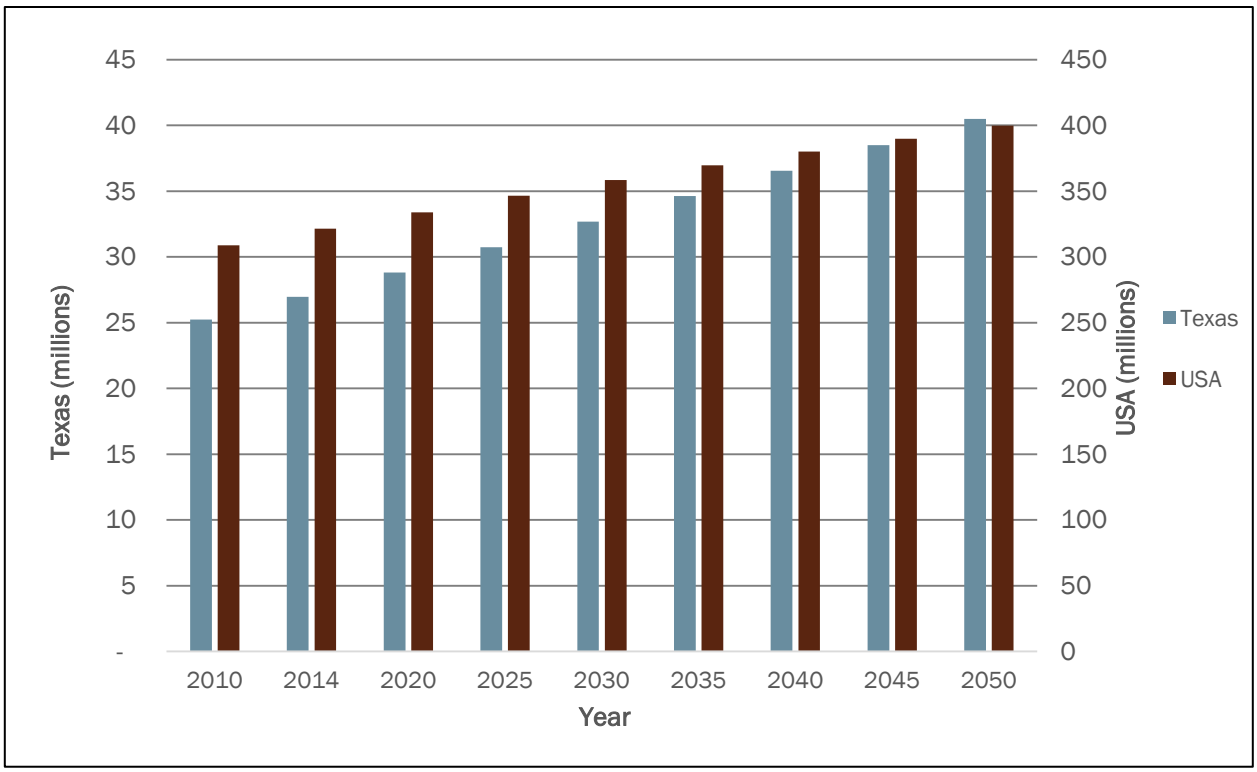
Population

The estimated population for Texas in 2014 was 26,956,958, which ranked 2nd among the U.S. states; only California is larger in terms of population. Over the past four years the state's population has increased by 7.2 percent, compared with a 3.3 percent population growth rate for the U.S. as a whole; this ranks 3rd overall among the states. From 2000 to 2014 Texas grew at the 4th fastest rate in the country, reflecting the incredible growth of the region when compared with other portions of the country.

Overall, Texas's population increased by 29.3 percent from year 2000 to 2014, which is significantly higher than the country's overall 13.3 percent growth in population during the same time period. The state added over six million people to its population during this timeframe, which alone is greater than the populations of 33 states. Census statistics show that Texas and other parts of the West and South lead the country in population growth, with migration higher than other parts of the country. Texas has continued to grow tremendously and at a much higher rate than the country average.

The Texas State Data Center's demographer and the U.S. Census Bureau provide future population projections for public use. Texas's information is provided to year 2050, while the U.S. Census projects to the year 2060. Population projections in five-year increments were used for both the state and country. Based on this information, between 2010 and 2050 the state's population is projected to increase by more than 61 percent, reaching a total of more than 40.5 million people. Growth projections estimate an additional 15 million people to live in Texas by 2050, which would be about 17 percent of the entire country's growth (projected to increase by 91 million people). Compared to the estimated 29.5 percent growth for the United States as a whole, Texas's projected population growth exhibits the expectation that the state will continue to exceed the country in terms of attracting more people and will grow much quicker than the U.S. as a whole. **Exhibit 2-54** shows the projected population estimates for both Texas and the United States.

Exhibit 2-54: Population Estimates



Based on information from the Census Bureau's American FactFinder, which is sourced from information gathered for the American Community Survey (ACS), the median age for the state is 33.8 years, which is significantly younger than the national median age of 37.2 years. Among the state's population over 25 years of age, 81.1 percent graduated from high school and 26.6 percent received a bachelor's degree or higher; both the high school graduation rate and the college graduation rate are substantially below the national averages of 85.7 percent and 28.5 percent, respectively. In fact, Texas has the 2nd-lowest percentage of students who graduated with a high school diploma in the entire country. Texas's working age population (aged 18 to 65 years) was about 62.3 percent of the overall population, which is slightly below the country's 62.9 percent of the population. The state is substantially younger than the rest of the country in general as reflected in the median age, with the working age population showing the fewer number of seniors and elderly people who reside in Texas compared to the U.S. average. As a result, additional consumer goods and commodities will be required to support the growing population which is transported by rail, truck, and other means. In addition, population growth supports intercity rail services.

Employment

The most current wage and salary employment (i.e. base employment) figures indicate that around 15.2 million people were employed in the state as of 2014, based on information from the Bureau of Economic Analysis (BEA). This data excludes farm and nonfarm proprietors' employment information. Using Labor Market & Career Information Department (LMCI) employment growth

projections, by 2020 base employment will increase by about 2.44 million jobs, a 21.3 percent increase when compared to 2012 base employment projection. Using this information and applying actual employment information from the BEA, the state's base employment is projected to increase by around 37 percent to nearly 18.3 million jobs in year 2040. As previously mentioned, this excludes proprietors' employment as defined by the BEA.

Texas's unemployment rate over the past few years has changed substantially as a result of changing regional and national economic conditions. In the past decade unemployment rates ranged from as low as 4.2 percent in July 2007 prior to the recent economic recession and in July 2015, to as high as 8.4 percent in October 2009. Since 2009, rates have gradually dropped from 8.0 percent in August 2010, 7.7 percent in August 2011, 6.5 percent in August 2012, 5.9 percent in August 2013, and 4.9 percent in August 2014. As of July 2015, the seasonally adjusted unemployment rate for the state was 4.2 percent, the lowest it has been since 2007. This rate is noticeably lower than the national average rate of 5.3 percent, which itself has dropped substantially from its recent high of 10.0 percent in October 2009.

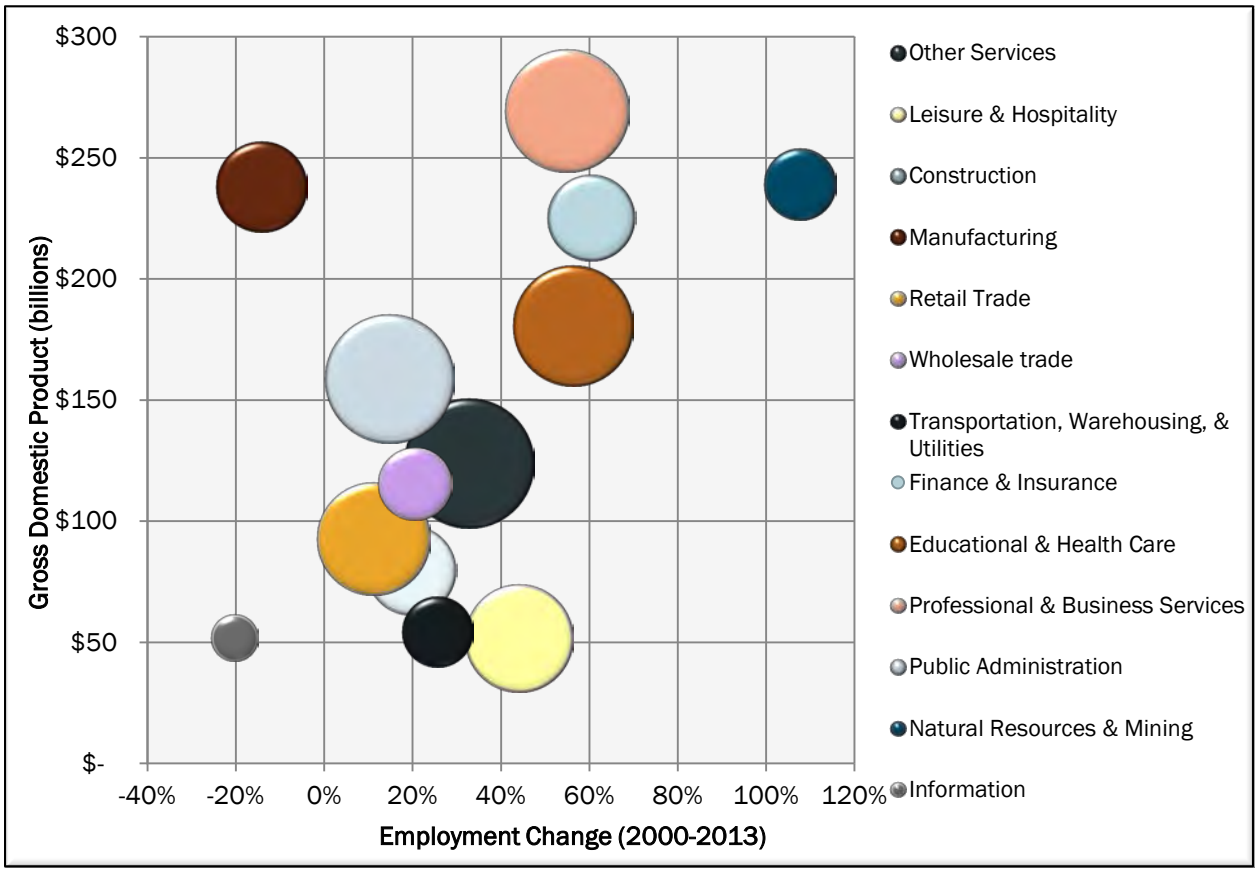
As of 2014, Texas is the headquarters for 54 Fortune 500 companies, ranking it second to New York in terms of number of firms based in that state; notable firms include energy companies like Exxon Mobil, Tesoro, Marathon Oil, and ConocoPhillips, transportation services like the American Airlines Group and Southwest Airlines, and food companies like Whole Foods Market and Dr Pepper Snapple Group. Forbes recently named Texas the best state in the country in terms of economic climate and future job growth; however, recent upheaval in energy prices, a major component of the state's economy, could potentially affect the economy should prices remain low.

However, compared to previous economic recessions, the state's economy is much more diversified and has not seen a responsive increase in unemployment in recent months. Texas's gross domestic product (GDP) as of 2014 ranks 2nd in the country, at around $1.648 trillion dollars; this is approximately 9.5 percent of the entire country's GDP. Companies such as Toyota, Charles Schwab, Apple, and GEICO have continued to increase their economic development in the state through infrastructure and job investments. For example, Toyota recently chose to move their North American headquarters to Plano, following the move of their truck plant to San Antonio over a decade ago. With this more diverse economy, Texas is in better position to withstand and minimize the impacts of future economic downturns.

Exhibit 2-55 below displays the employment change from 2000 and 2013 against the Texas GDP by employment sector in 2014. The graph highlights sectors with the largest impact on the Texas economy and the changes in those sectors recently in terms of available jobs. The size of the bubble for each employment sector represents the number of jobs in that sector compared against all other sectors. According to the BEA, six sectors in the state have more than a million jobs: other services and public administration rank as the top employment sectors for the state, while professional/business services, education and healthcare, retail trade, and leisure and hospitality are closely behind. Of these large job sectors, the professional/business services, education and

healthcare, and leisure/hospitality industries have seen employment growth of greater than 40 percent since 2000; public administration and retail trade employment have grown, albeit at a much slower pace. Out of all industries, natural resources and mining sector jobs have grown by more than 107 percent, while the information sector (which includes industries like publishing and telecommunications) and manufacturing industry have decreased by around 15 to 20 percent. Of the industries in the state recorded by the BEA, four sectors generate nearly 52 percent of the overall state GDP and have the most economic impact for the state, despite some of them being smaller in terms of jobs when compared to other sectors. These four sectors are: the finance and insurance sector, natural resources and mining sector, manufacturing, and professional and business services industries. Note that the majority of sectors in the state are continuing to increase in employment. As a result, additional goods, components, commodities and services will be required to support the growing employment base which is often transported by rail, truck, and other means.

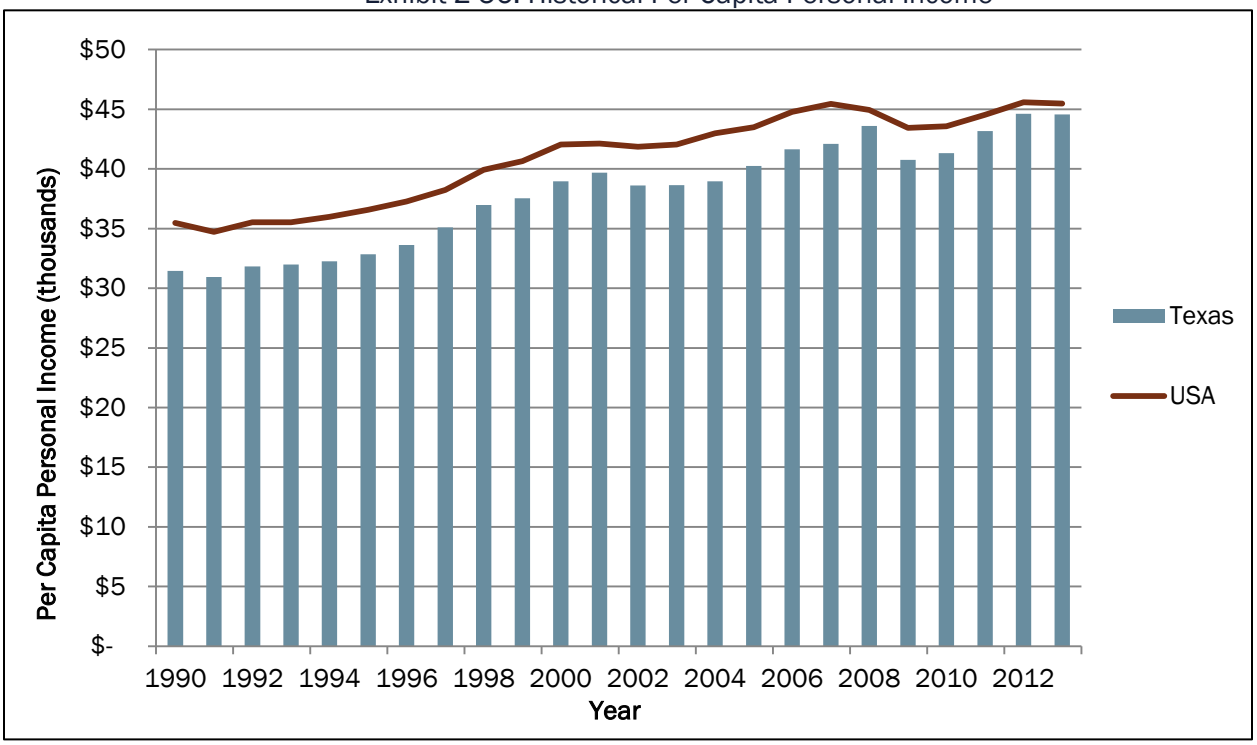
Exhibit 2-55: Employment Growth and GDP by Size of Employment Sector (2014)



Personal Income

Texas's per capita personal income in 2014 was $45,426, which ranked 25th within the United States and District of Columbia; this is about 98.5 percent of the national average ($46,129). In continuous 2014 dollars (adjusted for inflation using the Consumer Price Index) the per capita personal income since 1990 has grown by 44.5 percent, substantially above the national income growth of 30.0 percent. Since 2000, Texas's per capita personal income has continued to increase at a pace well above the national average, with a growth of 16.6 percent, while nationally incomes have grown by about 9.7 percent. The income growth in the past decade in Texas can be attributed to the strong economy, as shown by continued GDP gains and low unemployment rate. Texas's per capita personal income is currently at or around the U.S. personal income average, which is an improvement when compared to historical data, where it has always been slightly below the national average. Historical per capita personal income from 1990 to present day is shown in **Exhibit 2-56** below. An increasing per capital personal income leads to increased consumption of goods and services, which is often transported by rail, truck, and other means.

Exhibit 2-56: Historical Per Capita Personal Income



Freight Rail Volume Forecasts

Freight rail tonnage forecasts for year 2040 were obtained from the IHS Global Insight 2010 TRANSEARCH® database, utilized within the Taxes State Freight Plan. The TRANSEARCH® database provides year 2010 actual volumes and year 2040 forecast volumes by direction and STCC commodity, generally comparable with the STB Waybill data. In the **Appendix**, **Table 9** presents the two-digit STCC commodity average annual growth rates from TRANSEARCH®, and **Table 10** provides the directional commodity tonnage forecasts for 2040.

Summary Forecasts – According to the TRANSEARCH® database, Texas freight rail movements would increase to 764.3 million tons by 2040, at an average annual growth rate of 2.3 percent from 2010; carload units are forecast to grow at a slightly higher average annual rate of 3.5 percent, yielding 25.8 million carload units by 2040. As seen in **Exhibit 2-**, the compound annual growth rate (CAGR) rates suggest a doubling (98.9 percent) of rail freight tons, and a near tripling (183.7 percent) of rail car movements.

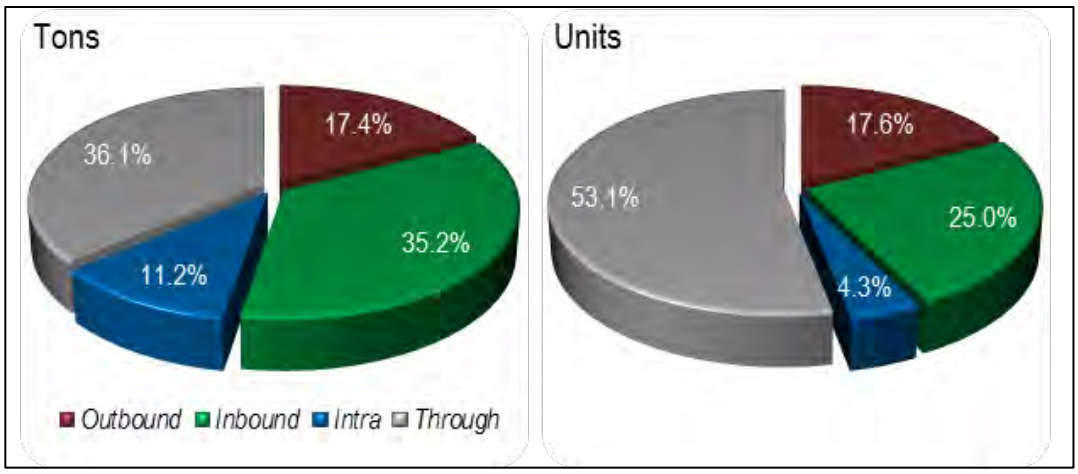
In terms of directional composition, TRANSEARCH® forecasts a relative increase in the share of through movements, as per **Exhibit 2-57** with through movements constituting 36.1 percent of the tonnage movements and 53.1 percent of the carload units (compared to 27.8 percent of tonnage and 47.5 percent of units in year 2013 per **Exhibit 2-58**).

Exhibit 2-57: Rail Movement Forecast by Direction, 2010-2040

Direction	2010	2040	% Δ	CAGR
Tons				
Outbound	57,689,125	133,144,171	130.8%	2.8%
Inbound	175,101,343	269,331,531	53.8%	1.4%
Intra	44,158,835	85,725,629	94.1%	2.2%
Through	107,360,058	276,119,849	157.2%	3.2%
Total	384,309,361	764,321,180	98.9%	2.3%
Units				
Outbound	1,560,506	4,528,319	190.2%	3.6%
Inbound	2,673,326	6,448,971	141.2%	3.0%
Intra	520,452	1,119,241	115.1%	2.6%
Through	4,332,116	13,682,338	215.8%	3.9%
Total	9,086,400	25,778,870	183.7%	3.5%

Source: prepared by CDM Smith, based on TRANSEARCH 2010-'40

Exhibit 2-58: Rail Movement Share by Direction, 2040



Source: prepared by CDM Smith, based on TRANSEARCH 2010-'40

Commodity Growth – As depicted in **Appendix Table 9**, the projected commodity growth by direction ranges from an average annual decline of 5.6 percent (through *Tobacco Products*) to a positive average annual growth of 9.7 percent (through *Instrument, Photo, and Optical Equipment*). STCC

commodity movements by direction for 2040 are summarized and the top 2040 commodity tonnage movements are listed below, and graphically presented in **Exhibit 2-59**:

Outbound

1. Chemicals or Allied Products (51.5 million tons, 38.7 percent of outbound total);
2. Miscellaneous Mixed Shipments (24.6 million, 18.5 percent);
3. Transportation Equipment (15.1 million, 11.4 percent);
4. Waste or Scrap Materials (5.8 million, 4.3 percent); and,
5. Food or Kindred Products (5.1 million, 3.9 percent)

Inbound

1. Farm Products (45.9 million tons, 17.0 percent of inbound total);
2. Miscellaneous Mixed Shipments (39.5 million, 14.7 percent);
3. Coal (36.3 million, 13.5 percent);
4. Chemicals or Allied Products (33.2 million, 12.3 percent); and,
5. Nonmetallic Minerals (30.0 million, 11.1 percent)

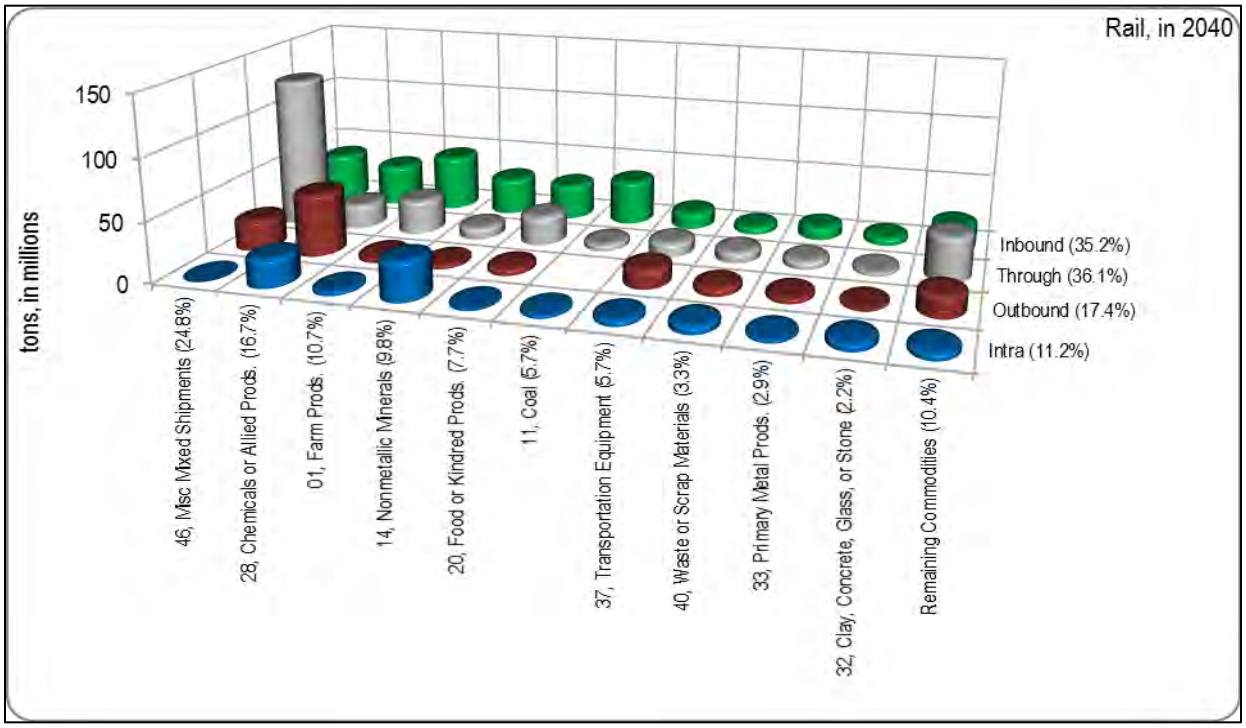
Intrastate

1. Nonmetallic Minerals (32.0 million tons, 37.3 percent of intra total);
2. Chemicals or Allied Products (23.1 million, 26.9 percent);
3. Waste or Scrap Materials (5.9 million, 6.9 percent);
4. Clay, Concrete, Glass, or Stone (5.9 million, 6.9 percent); and,
5. Transportation Equipment (4.4 million, 5.1 percent)

Through

1. Miscellaneous Mixed Shipments (125.6 million tons, 45.5 percent of through total);
2. Farm Products (28.1 million, 10.2 percent);
3. Food or Kindred Products (23.6 million, 8.5 percent);
4. Chemicals or Allied Products (19.8 million, 7.2 percent); and,
5. Transportation Equipment (10.9 million, 3.9 percent)

Exhibit 2-59: Rail Commodity Direction by Tonnage, 2040



Source: prepared by CDM Smith, based on TRANSEARCH 2010-'40

Freight Rail Forecast Summary

Freight rail movements pertaining to Texas comprise a range of commodities moving in different directions (outbound, inbound, intrastate, and through), measured in different terms (tons and carload units), and with varying geographic origins/destinations. These various directional movements, terms, and geographies complicate simple summarization. Nonetheless, the following summary highlights major commodity movements by direction.

Total Movements – A combined total 403.3 million tons of freight moved across Texas rail lines in 2013, transported in almost 10.0 million railcar units, for an average 40.5 tons/carload. According to TRANSEARCH®, that freight rail is projected to increase to 764.3 million tons, carried within 25.8 million carload units by 2040. This reflects doubling of tons (98.9 percent) and a near tripling of units (183.7 percent).

Directional Overview – Commodity movement, and composite terms, vary by direction.

- Inbound – Dominates in terms of tonnage, at 181.1 million in 2013, constituting 45.5 percent of directional freight rail. A significant majority of such inbound freight rail is Coal.
- Through – Dominates in terms of carload units, at 4.7 million, constituting 47.5 percent of directional freight rail in 2013. A significant majority of such through freight comprises Miscellaneous Mixed Shipments (i.e., container traffic originating mostly in the West Coast/California).

Notable Commodity Movements – the following notable commodity movements compares and contrasts the associated tonnage and units, as well as direction.

- Chemicals or Allied Products (STCC 28) – Largest commodity tonnage movements for all directions combined in 2013, at 71.4 million tons, representing 17.7 percent of all commodities traversing the Texas rail infrastructure. A majority of such commodity movements are outbound (28.3 million tons) from Texas, originating primarily from the Houston metropolitan area and destined for Illinois, Louisiana, and California.
- Coal (STCC 11) – Second largest commodity tonnage movement for all directions combined in 2013 (66.9 million tons, 16.6 percent of all rail tonnage), although mostly inbound (58.6 million tons) originating from Wyoming (53.9 million tons) with a majority (over 51 percent of all inbound coal) destined to just four counties: Titus, Fort Bend, Bexar, and Freestone. Inbound coal tonnage to Texas is almost as large as all outbound tonnage for all commodities combined, and larger than all intrastate commodity movements.
- Misc. Mixed Shipments (STCC 46) – Pertains to (mostly) containerized shipments of mixed goods and constitute the third largest commodity tonnage movements at 56.4 million tons, representing 14.0 percent of all freight rail tonnage. A majority of such containerized traffic pertains to through movements, mostly originating from the West Coast/California. Although such containerized traffic is the third largest movement by tonnage, it is the largest commodity movement by carload units at 3.9 million, representing 39.3 percent of all 10.0 million carloads traversing the Texas rail infrastructure; through containers (2.7 million) represent 27.2 percent of all carload movements in the State. Given the absolute geographic size of Texas and the central location between the West and East coasts, it is unsurprising that such miscellaneous mixed shipments through the Lone Star are such a dominate commodity movement on the rail infrastructure.
- Nonmetallic Minerals (STCC 14) – Fourth largest tonnage movement, at 50.2 million tons in 2013, representing 12.5 percent of all tonnage movements. Most nonmetallic mineral movement are inbound, at 25.9 million tons (mostly from Wisconsin, Oklahoma, and Illinois, together 76.2 percent of such inbound commodities) or intrastate, at 20.8 million tons.

International border-crossing movements

Approximately 85 percent of the total inbound rail tonnage crossing from Mexico to Texas included *Petroleum or Coal Products* and *Primary Metal Products*. *Electrical Equipment*, *Transportation Equipment* and *Chemicals or Allied Products* also generated significant tonnage. Top outbound commodity movements included *Petroleum or Coal Products*, at approximately 30 percent of the total outbound rail tonnage crossing from Texas to Mexico. *Chemicals or Allied Products*; *Farm Products*; and *Pulp, Paper or Allied Products* followed with 50 percent of the total outbound rail tonnage crossing from Texas to Mexico.

Passenger Rail Volume Forecasts

Travel Demand – Intercity Rail

The basis for forecasting Amtrak riders at Texas rail stations was to project population growth in Texas counties within a 30-mile radius of stations. Station ridership projections were calculated based upon existing station boardings in 2014 and the future growth rates of each county served by the station, including bordering states. Those stations within 30 miles of a nearby state border had border county populations included in the population station-shed. Station ridership was then weighted based on the overall affected county populations and their respective growth rates out to year 2040.

It is important to note that actual future ridership performance will be based not only on population growth but also by changes in income growth, changes in the number of train frequencies and train schedule times at the station (day vs. night), changes in Amtrak fares vs. other modes, and changes in the quality of Amtrak service (i.e., on-time performance). These projections were based on the assumption that a similar quality and level of train service as of today would continue to be provided into the future for each station.

Population around Texas's Amtrak stations shows growth overall around the state, particularly in the large metropolitan areas, such as the Dallas-Fort Worth Metroplex and areas around Austin and San Antonio.

Exhibit 2-60 shows FY2014 boardings and alightings at Texas's 19 intercity rail stations, a forecast of anticipated passenger rail ridership by station for Year 2040, as well as the projected growth rate at the stations.

Exhibit 2-60: Intercity Ridership Forecast by Station

Intercity Ridership Forecast by Station				
Station	2014	2040	Change 2014-40	Annual Growth
Alpine	4,756	5,694	19.7%	0.7%
Austin	32,206	49,910	55.0%	1.7%
Beaumont	3,412	4,124	20.9%	0.7%
Cleburne	3,322	4,338	30.6%	1.0%
Dallas	49,446	71,476	44.6%	1.4%
Del Rio	2,385	3,191	33.8%	1.1%
El Paso	13,144	17,914	36.3%	1.2%
Fort Worth	126,400	173,802	37.5%	1.2%
Gainesville	7,178	12,039	67.7%	2.0%
Houston	20,108	28,934	43.9%	1.4%
Longview	37,874	46,654	23.2%	0.8%
Marshall	10,184	11,051	8.5%	0.3%
McGregor	4,328	5,798	34.0%	1.1%
Mineola	6,776	8,088	19.4%	0.7%
San Antonio	60,783	83,293	37.0%	1.2%
San Marcos	6,830	10,053	47.2%	1.5%
Sanderson	238	284	19.5%	0.7%
Taylor	4,797	7,158	49.2%	1.6%
Temple	15,378	23,767	54.6%	1.7%
Total	**409,545**	**567,568**	**38.6%**	**1.2%**

Passenger Rail Forecast Summary

The need for passenger rail is anticipated to grow along with the growing population of the services areas shown above. Additional route capacity, station capacity, and perhaps new routes will be needed to meet this future demand.

Chapter 2 – References

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2015 Texas Freight Mobility Plan