



Draft

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Oklahoma Statewide Freight and Passenger Rail Plan

Prepared for:



Oklahoma Department
of Transportation

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Forward

The Oklahoma Statewide Freight and Passenger Rail Plan is the result of a full year of research and study. While the plan meets congressionally-stipulated requirements, it evolved beyond that basic purpose with input from a large cross-section of stakeholders and parties interested in improving rail transportation in the state of Oklahoma. The input was obtained through public forums, a website, targeted group meetings of stakeholders, and interviews.

The public and targeted group meetings were held both locally and regionally to afford interested parties an opportunity to learn about the planning process and to provide their perspectives on rail issues facing the state. Public outreach meetings were held in the following locations:

- Enid
- Lawton
- McAlester
- Oklahoma City
- Tulsa

A workshop for rail stakeholders and an open house for the general public were held at each location.

In-depth interviews and meetings were also held with representatives of the following:

ACOG	Ardmore Industrial Authority
BNSF	Dolese Brothers
Farmrail	Heartland Flyer Coalition
INCOG	McAlester Army Ammunition Depot
Mid-America Industrial Park	State Chamber of Oklahoma
Oklahoma Department of Commerce	Office of the Secretary of Energy
Oklahoma Dept of Agriculture Commodities Group	Oklahoma Dept of Agriculture senior staff
Oklahoma History Museum	Oklahoma State Rail Association
Oklahoma Trucking Association	Port of Catoosa
Port of Muskogee	Representative Morrisette
Tinker Air Force Base	Union Pacific Railroad
WATCO	Wheat Growers Association

The participants at these meetings shared their perspectives on rail problems and needed improvements in the state. In addition, all of the railroads operating in Oklahoma provided surveys detailing their infrastructure and business in the state.

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Executive Summary

Rail Transportation and the State of Oklahoma

Role of Rail Transport in Oklahoma:

Rail transportation comprises both the movement of goods (freight rail) and the movement of people (passenger rail). Freight rail transportation users in Oklahoma are served by three major railroads and 18 short line railroads, each a private corporation. Passenger service in Oklahoma is operated by the quasi-governmental agency, National Railroad Passenger Corporation, known as Amtrak, on lines owned by the freight carrier, BNSF. Oklahoma's only passenger train is the *Heartland Flyer*, running between Oklahoma City and Fort Worth. While operated by Amtrak, the *Flyer* is a state-sponsored train with Oklahoma and Texas participating in its support.

Freight railroads have proven to be vital in maintaining the nation's and the state's economy. The efficiency of steel wheel on steel rail is unmatched by either highway or air transport. This efficiency has been the underpinning that has perpetuated the rail industry through enormous changes in the economy and the competitive environment.

Freight rail brings finished goods and raw materials to Oklahoma's businesses, transports Oklahoma's products to the rest of the nation and the world, moves material between points within the state, and provides a path for traffic passing through. For Oklahoma, the freight rail system has proven valuable to the energy and agricultural industries, and in support of the military.

Purpose of the State Rail Plan:

In 2008, State Rail Plans took on an increased importance when Congress passed the Passenger Rail Investment and Improvement Act (PRIIA). It laid the foundation for an expanded focus on rail planning. The Act requires each state to have an approved State Rail Plan as a condition of receiving rail funding in the future for either passenger or freight improvements. The Act, codified as Chapter 227 of Title 49 of U.S. Code, Section 22705 requires each state rail plan to include the following:

- *Inventory of the existing rail transportation network.*
- *Review of proposed high-speed rail corridors in the state.*
- *Statement of the state's objectives related to rail transportation.*

- *General analysis of rail's economic, transportation and environmental impacts.*
- *Long-range investment program for current and future rail freight and passenger services.*
- *Discussion of public financing issues for rail projects and listing of current and potential rail related funding sources.*
- *Discussion of stakeholder identified rail infrastructure issues.*
- *Review of freight and passenger multimodal rail connections and facilities.*
- *Review of publicly funded rail projects that enhance rail-related safety.*
- *Performance evaluation of passenger rail services.*
- *Compilation of previous high-speed rail reports and studies.*
- *Statement that the State's Rail Plan complies with PRIIA.*

To be eligible for any future federal funds, a state must have the legal, financial, and technical capacity to execute a project. This State Rail Plan provides proof of this ability and will include any proposed projects for which the state may apply for funding. The Oklahoma Statewide Freight and Passenger Rail Plan has been developed to comply with the requirements of PRIIA

The Relationship between the Railroads and the State of Oklahoma:

Oklahoma's railroads are private businesses, and for the most part, operate on privately held property. This is a fundamental difference from much of the world where railroads are public institutions like our highways and commercial airports. The federal government, under the commerce clause of the U.S. Constitution, is responsible for most regulation of the railroad industry, both for safety and, to a much lesser degree than in the past, economic regulation.

The State of Oklahoma, however, does impose certain controls and provides specific powers to railroad corporations. Notable among the powers granted to railroads are: the power to purchase, sell or lease property, and the use of eminent domain for acquisition of right of way. Responsibilities of the railroads under state law include the requirement to fence their rights of way, to operate the railroad in a safe manner, and to remit a gross receipts tax of four percent on the use of freight cars. The gross receipt tax is imposed in lieu of *ad valorem* property taxes. The Oklahoma Department of Transportation has also been granted powers by the legislature to own railroad right of way, to administer the Railroad Maintenance Revolving Fund for the upkeep of state-owned railroad right of way. Revenues from the tax on freight cars and lease payments on the leased line are contributed to the fund. The state has an eight-year

maintenance plan for track and bridge upkeep to ensure that the state-owned lines meet federal standards for safe operation and continue to serve customers on those lines.

The Rail Programs Division of the Oklahoma Department of Transportation was established in 1989 to oversee the state's interests in the 3,599 miles of rail, 428 miles of which were owned by the state at that time. The Rail Programs Division is responsible for acquiring and administering federal and state funds used to support operation of the *Heartland Flyer* passenger service, highway construction projects affecting railroad property, railroad crossing safety improvements, and maintaining the state-owned rail lines. The Division comprises five sections: State Owned Rail Line Management, Safety, Rail Passenger, Construction, and Federal Programs.

Oklahoma's Freight Railroads

The Structure and Routes of Oklahoma's Railroads:

Freight railroads own 140,000 miles of rail line in the U.S. In 2010, rail accounted for 43 percent of goods shipped in the U.S., followed by trucking with 31 percent, and with waterways and pipelines each accounting for 13 percent. Air cargo represents less than one percent of the ton-miles. Nearly all products are transported by rail, including consumer goods, industrial products, agricultural products, and natural resources.

The Surface Transportation Board (STB), which economically regulates the rail industry¹, separates freight railroads into by three categories based on revenue. The three railroad categories are Class I, Class II and Class III:

Class I railroads are the largest railroads and are defined by the STB as railroads with annual revenues exceeding \$398.7 million. The majority of rail-based freight movements occur on Class I railroads operating over 96,000 miles of rail routes. In 2010, the major railroads hauled 1.9 billion tons of freight.

Currently, three of the nation's seven Class I railroads operate in Oklahoma:

- BNSF Railway (BNSF)
- Kansas City Southern Railway (KCS)
- Union Pacific Railroad (UP)

Class III railroads, also called "short lines," are the smallest railroads. Revenues for each of the nation's 592 Class III railroads are less than \$31.9 million annually. The importance of

¹ Safety regulation of the railroads is empowered to the Federal Railroad Administration (FRA).

short lines has grown as these railroads often serve as the initial or final link between Class I railroads and rail customers. Short lines often work together with the Class I railroads to offer shippers a complete transportation solution. Nineteen short line railroads operate in Oklahoma over 927 miles of route.

Class II railroads earn revenues between \$31.9 million and \$398.7 million annually. There are no Class II railroads operating in Oklahoma.

Routes: There are over 3599 route miles of railroad in Oklahoma. In 2010, this ranked Oklahoma 18th in the nation in terms of the total railroad mileage according to the Association of American Railroads (AAR). The three Class I railroads operate 2360 miles² of route in the state.

The State of Oklahoma currently owns 428 miles of railroad. Most of these lines (420 miles) are under lease/purchase arrangements for operation by Class III railroads. The state acquired these lines mostly as the result of liquidation of the Chicago, Rock Island and Pacific Railroad following their bankruptcy, and through abandonments that peaked after the 1980 economic deregulation of the rail industry. Significant numbers of the lease/purchase arrangements are being concluded with the railroads taking title to the properties. With the cash flow from the lease payment dwindling, the state will not have as robust a program that has been operated under the Rail Maintenance Revolving Fund which was the beneficiary of the payments.

Both the BNSF and UP operate north-south routes with significant freight traffic through the central portion of the state. The KCS north-south mainline from Kansas City to Houston passes along the state's eastern border. These north-south routes are vital in connecting ports on the Gulf Coast, and markets in Mexico with the central United States.

The main BNSF east-west trans-continental line from Chicago to California passes through western Oklahoma (through Alva and Woodward). The UP main Chicago to southern California east-west route crosses the panhandle through Guymon. Another former east-west line across the central portion of the state connecting Memphis, Little Rock and Oklahoma City to California has gained recent attention of the Governor's economic task force. Some segments of this former Rock Island line is operated by UP and various short line railroads with other segments inactive.

² There is some overlap in mileages as certain lines are operated by more than one railroad.

Current State of the Industry in Oklahoma:

The railroads are often viewed by the uninformed as a failing, outmoded industry. Nothing could be further from the truth. America's railroads benefitted immensely from the 1980 Staggers Act, which deregulated much of the economic business of the railroads and restored the industry to fiscal health. Before deregulation, the industry was financially reeling from a punitive regulatory system that did not permit adaptation to current market conditions. By 1980, seven major U.S. railroads were in bankruptcy, with one, the Rock Island, terminating all service and liquidating. The Staggers Act changed the railroad's prospects allowing the freedom to negotiate with customers, alter the services offered to match those needed by the customers, and to dispose of unprofitable lines and services.

The three Class I railroads originated 183,238 carloads of freight and terminated 323,442 carloads of freight in Oklahoma in 2010. Due to Oklahoma's location near the middle of the country, the Class I railroads also transport a significant amount of rail freight traffic through the state that has neither an origin nor destination within Oklahoma. A majority of this traffic is either coal from mines in northeast Wyoming to electric utilities in Texas and other southeast destinations, or various containerized goods moving between California ports and the mid-west.

Class I railroads have high volumes of trains per day, ranging in Oklahoma from approximately 10 trains per day on several lines to nearly 60 trains per day on BNSF's Transcon (i.e. trans-continental) route.

The Class III railroads provide rail service to market areas with inadequate volume to be served profitably by the larger railroads. In most instances, the short line railroads were once part of the network of a larger railroad. The short lines serve as the customer service "element" for many rail-served businesses, and provide a collection and distribution network for the Class I railroads, which move the bulk of the rail freight volume in and out of Oklahoma. Train service on short lines may range from "as needed" or "seasonal", up to few trains per day. Short line railroads serve as economic engines in many communities, providing the vital transportation link to the regional, national, and global economies. According to data received from the short line railroads in surveys for this plan, in 2010 the short line railroads operating in Oklahoma originated 69,869 rail carloads and terminated 116,658 carloads within the state.

The Economy and Rail Traffic:

Oklahoma's economy has evolved significantly over the past two decades. The collapse of oil prices in the 1980s and the following slowdown of the state's economy led Oklahoma to become less dependent on its natural resource bases of energy and agriculture. However, in

recent years with the introduction of new technologies (e.g. hydraulic fracturing) and rising prices, natural resources have once again become an important part of the Oklahoma economy.

Key Industry Groups

Energy

According to the Federal Reserve's most recent Beige Book, in the tenth district which includes Oklahoma, the energy sector continued to expand strongly in late 2011, with increases in drilling activity and an optimistic outlook for the future. The price of crude oil remains favorable for drilling and the only constraints the industry faces are shortages of labor and equipment.

Oil and natural gas has been a staple of the Oklahoma state economy for many years. Oil and gas production imposes specific demands on Oklahoma's transportation system. While much of the petroleum and petroleum refining products shipped from Oklahoma are moved by truck or pipeline, rail still has an important role to play. Gas is transmitted almost entirely by pipeline, but the rapid growth in natural gas extraction (as well as oil extraction from the Anadarko fields) both provides opportunities move large drilling and pipeline installation materials to sites throughout the state.

In 2009 the oil and gas sector` contributed \$13.4 billion to Oklahoma's Gross State Product, or approximately 10 percent, and employed 159,800 thousand people.

Green Energy

Green energy sectors, while small, are also of interest. Wind energy is an industry with good growth potential, particularly in the long run. Oklahoma already has a green energy sector. Bergey Wind Power Company in Norman, Oklahoma is one of the world's leading suppliers of wind turbines. Some modern wind turbines are 236 feet tall and have rotor blades that are roughly 82 feet long. Future windmills may reach higher than 328 feet and have blades measuring 164 feet long. Transport of wind turbine equipment will require the movement of overweight and oversized loads, an important capacity issue facing the Oklahoma highway system. The freight railroads are interested in increasing their participation in this economic sector and will provide an alternative to moving these large loads over the highways.

Minerals and Mining

Oklahoma's mining economy has been in decline but remains important. In total, mined minerals contributed only around \$268 million to Oklahoma GSP in 2009 and around about 2,000 jobs in direct mining jobs. Mined minerals include gypsum, granite, limestone,

aggregates, crushed stone, cement sand and gravel, clay, glass sand, salt feldspar, iodine, lime, pumice, and Tripoli (used as an abrasive) .

Construction materials such as, aggregates, crushed stone, sand and gravel, and cement are important products extracted in southern parts of the state. Railroads transport almost 100 percent of broken stone and a quarter of Portland cement.

Fertilizers and Chemicals

Natural gas is used to produce nitrogen fertilizer. Therefore domestic fertilizer production tends to be concentrated in regions rich in natural gas – the Mississippi Delta, the Texas panhandle and Oklahoma. Major fertilizer production facilities in Oklahoma are located in Woodward, Verdigris, and Enid. Fertilizer and chemical production is an important part of the Oklahoma economy contributing \$581 million to real GSP in 2009.

Agriculture

Oklahoma is one of the nation's largest producers of livestock and wheat generating \$5.8 billion of agricultural products in 2007. Over the past decade, the state's agricultural sector has become increasingly diversified. The pork and poultry industries has increased rapidly in recent years, making Oklahoma the nation's second and third largest producers of those commodities.

Grain is the dominant agricultural rail export and import for Oklahoma.

Military

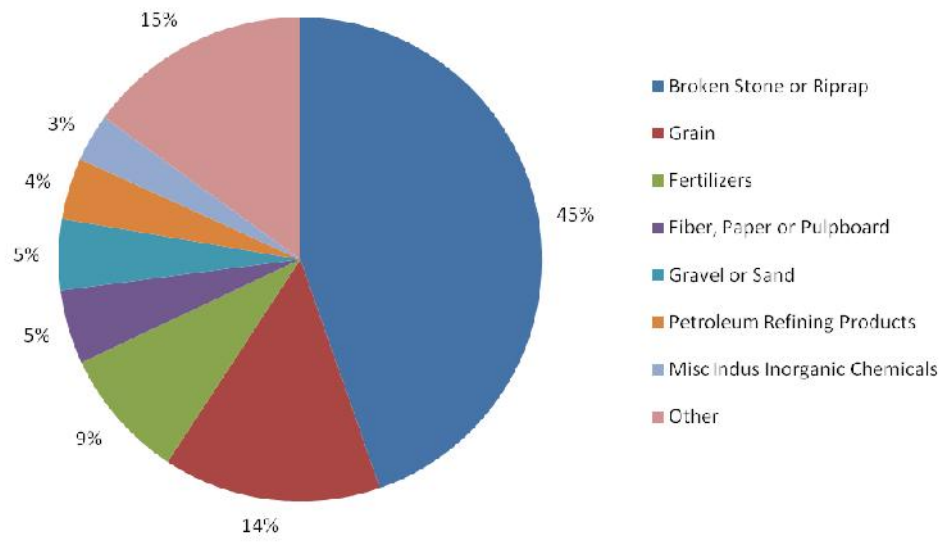
Oklahoma contains five major Department of Defense installations. Both Fort Sill in Lawton and the McAlester Army Ammunition Depot in McAlester regularly use rail service as critical to their missions. The other three installations have discontinued rail service, but they are positioned to re-activate rail service should this decision be made by Military Traffic Management Command (MTMC).

Oklahoma is a part of STRACNET, a function of the Railroads for National Defense. The Strategic Rail Corridor Network (STRACNET) consists of 38,800 miles of rail lines important to national defense and provides service installations whose mission requires rail service. Both Fort Sill and the McAlester Army Ammunition Depot are actively connected to STRACNET, while Vance Air Force Base, Altus Air Force Base, and Tinker Air Force Base all have the capability to reconnect to STRACNET should the need arise.

Freight Multimodal Connectivity

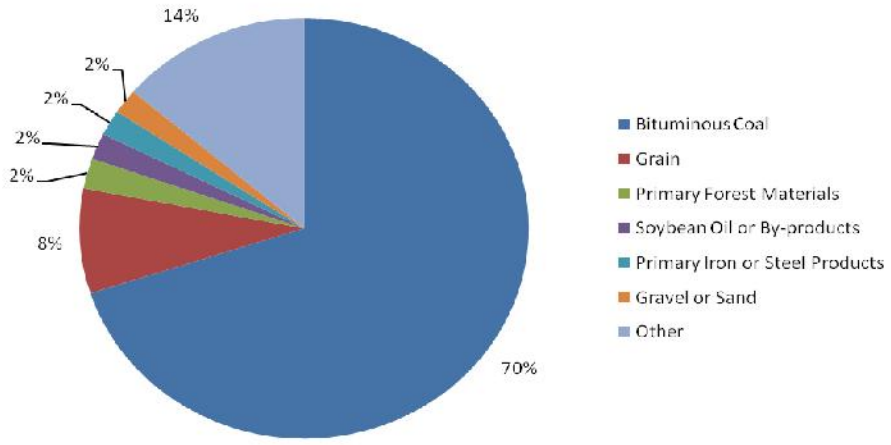
The concept of multi-modalism is the use of two or more transportation modes to move goods efficiently from origin to destination.

Rail Freight Originating in Oklahoma, Commodity Distribution by Commodity (by tons)



Source: WBS 2009

Rail Freight Terminating in Oklahoma, Commodity Distribution (by tons)



Source: WBS 2009

A subset of multi-modalism is intermodal transportation. Intermodal transportation is commonly defined as the movement of goods by rail in trailers or containers on specialized flatcars. The use of containers also opened international markets to intermodal transportation as boxes could be readily exchanged between the rail and ships. The most important development has been the invention of the double-stack freight car as it revolutionized the economics of container transportation.

In 2005, BNSF closed its intermodal terminal near Oklahoma City due to lack of demand. When the BNSF closed the terminal; Oklahoma lost its only container transfer facility. A viable terminal today handles at least 10,000 containers each month. Since then, Oklahoma rail intermodal shippers have had to move containers by truck to terminals in other states. Dallas-Fort Worth, Kansas City, and Denver each have terminals operated by BNSF and Union Pacific.

Several factors determine the success of intermodal terminals. They are important considerations when railroads select locations for new terminals:

- Terminals must be located on the railroad intermodal network
- Terminal volumes must be sufficient to support frequent, long train
- Terminals must be optimally spaced

The immediate development of new intermodal container terminals in Oklahoma is unlikely for the considerations just outlined. It is not necessarily the role of the state to invest in intermodal facilities as that is the role of a railroad or a private investor.

Transloading is a term describing another form of transfer of freight from one mode of transportation to another. Transloading freight occurs because of delivery constraints (i.e. a freight shipper or receiver can only access one mode), or there are financial benefits of switching modes during shipping.

Transload operations involve products shipped either in bulk or as semi-bulk, dimensional cargo.

Grain elevators are a type of transload facility. Grain is delivered to the elevator by truck where it is stored and eventually transferred to covered hopper rail cars. The elevator serves the purpose of consolidating smaller shipments into freight car or train size lots, and also storing grain until demand appears.

At one time, industrial parks were small facilities serving local needs, typically populated by a few industrial companies. While these small parks are still prevalent, there has been increasing interest in larger multimodal facilities providing a range of logistics services. Major industrial parks developing in Oklahoma with multi-modal capabilities include:

- Ardmore Industrial Airpark
- Mid-America Industrial Park
- Clinton-Sherman Industrial Airpark (Oklahoma Spaceport)

The McClellan-Kerr Arkansas River Navigation System (MKARNS) is Oklahoma's primary navigable waterway originating at the Port of Catoosa and flowing southeast connecting to the Mississippi River. MKARNS is 445 miles long and has 18 locks and 10 dams that enable year-round navigation.

The MKARNS can accommodate a tow comprised of eight jumbo barges (one jumbo barge measures 35 feet wide by 195 feet long) plus the towboat. There is an initiative underway to deepen the MKARNS channel from 9 feet to 12 feet from the Mississippi River to the Tulsa Port of Catoosa. The three foot difference would allow a barge to increase its loading capacity by 33 percent. Much of the MKARNS channel is currently 12 feet deep but 75 miles would require dredging at an estimated cost of \$180 million.

Ports in Oklahoma along the MKARNS include:

- Tulsa Port of Catoosa
- Port of Muskogee
- More than 30 private river terminals

Benefits of Rail Transport Accruing to Oklahoma:

The rail industry has had a great impact on the establishment and economic success of Oklahoma. Oklahoma's railroads played a key role in converting the previous frontier into one of the largest energy and agricultural producing regions of the United States. While the rail system has experienced many changes in the last 30 years and has evolved into the 3599 mile network that exists today.

While the diesel-powered locomotives that operate in the state contribute to air and noise pollution, the principal alternative, truck transportation, has a far greater impact on the environment. According to Environmental Protection Agency data for 2009, rail transportation contributed only two percent of the greenhouse gas emissions in the United States. By contrast, heavy-duty trucks contributed 20 percent of transportation greenhouse gas emissions. Rail traffic, measured in ton-miles, was 38 percent greater than truck ton-miles.

Rail transportation is also highly fuel-efficient. According to the Association of American Railroads, the U.S. freight railroads move a ton of freight 484 miles on a gallon of diesel fuel.

This is four times as energy efficient as a truck. Using the 12.8 billion ton-miles that rail traffic originated in Oklahoma in 2007, Oklahoma shippers saved 75 million gallons of fuel using rail transportation.

Rail transportation has an impact is roadway congestion. Nearly 278 million tons of freight moves over Oklahoma's rail network each year. A truck hauling freight between cities typically has an average capacity of 18 tons. If all the rail traffic were to move by truck, Oklahoma's highways would see an additional 15.4 million trucks per year, without considering the return movement of empty trucks.

Railroads in Oklahoma employ approximately 1,770 citizens. The vast majority (84%) work for one of the three Class I railroads in the state. In 2010, the combined payroll of all railroad companies totaled approximately \$115.8 million. Also in Oklahoma that year, the railroads spent \$15.1 million on 'in-state' purchases and \$6 million on capital improvements. This employment and spending by the railroads has not only direct impacts on the Oklahoma economy but also produces indirect and induced impacts. Induced impacts stem from the re-spending of wages earned by workers benefiting from both direct and indirect activity of the industry; e.g. those employed by the railroads directly as well as those employed by companies who provide goods and services to the railroads.

Oklahoma's Passenger Rail

Passenger Services:

For purposes of state rail plans, passenger rail does not include urban systems such as light rail. Passenger rail service is broadly categorized as:

Conventional Intercity Rail Service: These are medium and long distance trains that operate between towns and cities across the country with maximum train speeds of 79 miles per hour. Conventional intercity services operate over lines owned by the freight railroads.

High-speed Intercity Rail Service: Although prevalent in Europe and Asia, currently the only high-speed rail service in the U.S. is on the Northeast Corridor between Washington and Boston. Most of that Corridor is rated at 125 miles per hour with 150 miles per hour over selected segments. High-speed rail services generally require tracks that are separate from slower freight operations both for safety and efficiency.

Commuter Rail: Service normally connects urban cores with suburban locations. The services are heavily concentrated during the morning and evening journey to work periods when travel is the highest. Currently 24 commuter rail services operate in the U.S.

Intercity passenger rail services were once provided by the private railroads. As part of an effort to remedy the financial problems that the railroads were facing in the last half of the 20th century, the federal government relieved the railroads of their passenger service obligations in the early 1970s. In a complex arrangement, Amtrak took over operation of the passenger trains with rights to operate those trains over the tracks of the freight railroads.

Oklahoma Passenger Service:

Passenger rail service in Oklahoma is provided by the *Heartland Flyer* with one train per day in each direction between Oklahoma City and Fort Worth, TX. The service commenced in 1999, following a twenty year absence of passenger service in Oklahoma.

The *Heartland Flyer* makes station stops in Norman, Purcell, Pauls Valley, and Ardmore before serving Gainesville, TX, in addition to Oklahoma City and Fort Worth. Connections can be made in Fort Worth to Amtrak's *Texas Eagle*, which operates between Chicago and Los Angeles via San Antonio. The *Heartland Flyer* carried over 81,000 riders in 2010; this represented an 11 percent increase over 2009. Ridership continued to grow in 2011. The *Heartland Flyer* operates on tracks owned by the BNSF Railway. In 2010, the *Heartland Flyer* won Amtrak's President's Award for its high-quality service.

The *Heartland Flyer* passenger rail operation is funded through two sources—1) an annual line item state appropriation which goes into the Oklahoma Passenger Rail and Tourism Revolving Fund and 2) HB1873, passed in 1994, established a dedicated public transit revolving fund. This passenger rail fund amounted to approximately \$1.2 million.

Commuter and Passenger Service Development:

There are three new intercity and high-speed passenger railroad services under evaluation for Oklahoma. The first would extend the existing *Heartland Flyer* northward to Newton KS to provide a connection to Amtrak's *Southwest Chief* service between Chicago and Los Angeles. A second proposed service would operate in part over the same line as the *Heartland Flyer* between Fort Worth and Newton; however the route would extend to Kansas City. This alternative combined with the *Heartland Flyer* would provide two trains in each direction between Oklahoma City and Fort Worth. Investigation of these potential services is being led by Kansas DOT with ODOT and Texas DOT supporting.

The third proposal being evaluated is a high-speed rail service between Tulsa and Oklahoma City. This line would connect both of Oklahoma's million-person urban areas. Initially studied

in 2001-2002, a preferred high-speed alignment was identified along the Turner Turnpike. ODOT will be initiating additional studies in the near future.

Several other smaller scale initiatives are receiving consideration in Oklahoma to improve the passenger services:

- Overall fixed-guideway transit improvements for Oklahoma City by the Central Oklahoma Transit and Parking Authority (COTPA). This 2005 plan includes the modern streetcar downtown circulator, bus rapid transit and commuter rail:
www.gometro.org/fgp
- Since the 2005 Fixed Guideway Study (note above), further work has been conducted on the modern streetcar downtown circulator. The most recent information on the ongoing planning process can be found at: www.letstalktransit.com
- In coordination with the COTPA studies on fixed guideway transit in the Oklahoma City region, the Association of Central Oklahoma Governments (ACOG) has recently published a comprehensive study for comprehensive intermodal hub to connect the wide variety of planned transportation options on the edge of the downtown district. This report can be downloaded from:
www.acogok.org/Newsroom/Downloads11/hubreport.pdf
- In the Tulsa region, the Indian Nations Council of Governments released its comprehensive transit development plan in October 2011. Entitled 'FastForward,' the final report can be obtained at www.fastforwardplan.org/FinalPlan.aspx

Multimodal Passenger Rail Connectivity:

As with any mass transportation mode, from local transit to the airline industry, passengers must have the ability to reach their final destination with a degree of convenience. Consequently, the presence of "last mile" alternatives is critical to the success of intercity or high-speed passenger rail services.

At the Fort Worth end of the *Heartland Flyer* route, a number of connections are available for transportation around Fort Worth, and the Trinity Railway Express provides a connector to Dallas and its well-developed public transportation network. Current connections in Oklahoma are more limited, although the Oklahoma City transit system can be accessed from near the station.

The initiatives outlined in the section above could be instrumental in providing convenient connections, and if properly coordinated, provide superior service to Oklahoma's travelers.

Current Railroad Development Initiatives

Freight Railroad and Short Line Development:

Great Plains Freight Rail Project - Kansas DOT, on behalf of the South Kansas and Oklahoma Railroad, received a TIGER funding for the construction of a new yard and rail line improvements, which will permit the operation of heavier freight cars at higher speeds. Part of the improvement project is located in Oklahoma.

Oklahoma Freight Rail Upgrade Project - Oklahoma DOT received TIGER funding for the upgrade of the rail line serving the Anadarko Basin. The improvements will expand the capacity of the line and permit higher speeds for trains serving the Anadarko Basin oil fields

Passenger Rail Development:

Oklahoma City Amtrak Station Access Improvement - ODOT is improving access to the former Santa Fe Railroad station in downtown Oklahoma City. The project, funded through a FY 2010 FRA HSIPR³ Construction Grant, will include the installation of a power switch and new rail line to provide the *Heartland Flyer* in-and-out access to the station.

Tulsa-Oklahoma City High-Speed Rail Corridor Investment Plan - With funding received from an FY 2010 FRA HSIPR planning grant, ODOT will be developing a federally mandated High-Speed Rail Corridor Investment Plan for a new service between Tulsa and Oklahoma City. The investment plan will comprise an updated service development plan and documentation required to comply with National Environmental Policy Act requirements. At the conclusion of the plan development, the project can enter the design phase.

Service Development Plan for Expanded Passenger Rail Service: Fort Worth-Oklahoma City-Kansas City - ODOT is participating in the preparation of a passenger rail service development plan evaluating the investment required to expand passenger rail service in the region. Two alternatives are under consideration: extension of existing *Heartland Flyer* service from Oklahoma City to Newton, Kansas to connect with Amtrak's Los Angeles-Chicago *Southwest Chief* and the introduction of a new train operating between Fort Worth and Kansas City.

South Central HSIPR Corridor Study: Oklahoma City to South Texas - An FY 2010 FRA HSIPR planning grant was awarded to Texas DOT to develop a plan for high-speed passenger rail service from the Mexican border to Oklahoma City with the direction to examine initially the Fort Worth-Oklahoma City segment. Texas DOT recently issued a request for consulting services.

³ High-Speed and Intercity Passenger Rail

Future of Oklahoma Rail Transport

Strategic Initiatives:

Outreach meetings and stakeholder interviews identified strategic initiatives that should be considered by ODOT in its rail programs. These initiatives fell into several categories:

- Communication and Education
- Economic Development
- Funding
- Infrastructure/System Improvements
- Legislative
- Passenger Rail Service
- Safety
- Studies

The following initiatives are designed to move ODOT from a position of preserving rail service to one of industry growth in the state. As with many states, Oklahoma is facing several strategic challenges:

- The need to support and promote rational growth of the short line industry and passenger rail service in the state
- The need to find new sources of funds to replace lease revenues lost as rail lines owned by the state revert to the rail operators as part of the lease-purchase program
- The need to exploit the economic and public benefits of rail transportation
- The need to inform the public of the benefits of rail transportation

Communication and Education

Continue Developing Effective Relationships Between ODOT and the Freight Railroads:

Maximize the efficiency of the state's rail network and the public and private investments made in that network by continuing to have regular and effective dialogue and communication between ODOT and the railroads through the Oklahoma Railroad Association and other venues. The railroads have requested development of a mutual forum to keep them current on proposed future highway projects with rail infrastructure impacts. This cooperative effort would enhance planning efforts, and it would lead to more efficient project coordination.

Use the State Rail Plan as a Platform for the Continuation of a Rail Information Program:

As ODOT continues to be active in rail planning and other related programs, the need to educate the public on the benefits of rail transportation will increase. General public education information campaigns should build off the plan.

Better Inform the Public on Rail Policies and Requirements:

The public would benefit from a better understanding of ODOT activities and programs such as the rail line acquisition program and its ongoing passenger rail service development.

Incorporate Passenger Rail Stations into the Oklahoma Official State Travel Map:

Add notations for passenger rail station locations to the state's travel map that is distributed to motorists and other travelers.

Initiate a State Rail Workshop:

Convene a workshop on a recurring basis with relevant state agencies such as the Departments of Transportation, Agriculture, and Commerce along with representatives of the MPOs, the rail industry, and major shippers to discuss current rail issues affecting Oklahoma.

Establish Regular Rail Forums Between Shippers and Railroads:

Improving relationships and communication between railroads and shippers would enhance the economy of the state. Such events would allow participants to better understand opportunities and issues related to existing and emerging markets as well as rail service issues and infrastructure needs faced by both the railroads and the shippers.

Continue Partnering with Adjacent States Regarding Rail Passenger Service:

Continue to meet on a regular basis with Kansas, Texas and Missouri DOTs, a practice started with the preparation of the Fort Worth-Oklahoma City-Kansas City passenger rail service development plan, to create a regional base of support to enhance existing rail passenger services and create a regional passenger rail vision for the future which includes regional extensions of existing rail passenger services.

Economic Development

Integrate Rail into Oklahoma's Economic Development Process:

ODOT should coordinate with the Governor's Task Force on Economic Development and Job Creation in regard to implementing the rail-related recommendations in that Task Force's report entitled "Bold Ideas for Oklahoma".

Leverage the Railroads Connections with Mexico to Stimulate Business with Mexico:

The North American Free Trade Act (NAFTA) and subsequent related legislation, has opened up numerous new business opportunities with Mexico. Oklahoma should explore the potential for creating new business alliances with Mexico that would benefit both Oklahoma shippers and producers but also its short line and Class I railroads.

Promote Rail-Served Industries, Industrial Parks, and Transload Facilities at Strategic Locations:

The need to establish more rail-served industrial parks was a theme at the Workshop/Open House meetings around the state. They would not only generate new rail business for the short line and Class I railroads but would also generate additional economic development for Oklahoma's economy.

ODOT and the Department of Commerce should conduct a workshop on freight rail transportation and invite short line and Class I railroads, regional economic development agencies, Oklahoma Chamber of Commerce, and other stakeholders.

Should funding be available, the ODOT railroad assistance program should be expanded to include transload and transfer facilities.

Integrate Land Use and Transportation Planning:

ODOT should provide leadership in the integration of freight and passenger transportation and land use planning at local, regional, and state levels with both governments and businesses.

Establish a Trackside Land Preservation Education Program:

ODOT and Commerce would work with local economic development agencies to preserve trackside for rail-dependent industrial use

Establish "Industrial Rail Access" Program:

There is a need for funding for rail spurs and industrial rail leads connecting Oklahoma's industrial properties to the Oklahoma rail network. The state should explore the creation of an industrial rail access program and sources of funding for the program.

Monitor and Promote Opportunities for Development of an Intermodal Terminal in Oklahoma:

Although conditions today are not favorable to the development of an intermodal container terminal in the state, the future may be different. The recent interest by the railroads in short haul domestic containerization may provide a future opportunity for a new terminal strategically located in Oklahoma

Partner with the Waterways Advisory Board to Implement Recommendations of “Oklahoma’s Intermodal Capacity Study” and to Encourage Increased Transportation of Commodities by Both Rail and Water:

Develop strategies with the DOT’s Waterways Advisory Board and the ports at Catoosa and Muskogee to increase transportation of commodities and goods by rail and waterway, to increase access to both waterways and railways, and to take advantage of the efficiencies of these two modes of transport and relieve Oklahoma’s highways of unnecessary heavy truck traffic.

Funding

Explore and Analyze Innovative Funding and Financing Alternatives, Including Public-Private-Partnerships:

The transfer of state-owned rail properties to rail operators as part of the state’s lease/purchase program will reduce revenues for rail improvements. ODOT will need to assess current approaches to infrastructure funding to compensate for reduced availability of resources.

Continue to Pursue Regional Approaches to Secure Federal Rail Related Funding:

ODOT should explore multi-state regional initiatives for obtaining federal funding for both freight and passenger rail related projects.

Explore Development of Innovative Local Funding Mechanisms such as the Port Authority Concept:

Oklahoma should explore what is required for the creation of local authorities such as Kansas Port Authorities that can issue bonds for rail development.

Educate Stakeholders on Existing Rail Funding Programs and Processes:

Educate rail stakeholders on the processes for applying for rail related grants/loans, including TIGER, Community Development Block Grants (CDBG) and Section 108 loans.

Infrastructure and System Improvements

Support Increasing Freight Rail Speeds Where Supported by Business:

Increasing permitted speeds on short lines serves to both increase capacity and reduce operating costs. This should be done where warranted to support traffic growth.

Continue to Support the Development of Emerging Industries to Strengthen Oklahoma's Economy:

Provide the capacity in the state's rail network to allow for the use of the rail network in the development of emerging industries such as the Bakken Shale and wind energy.

Support the Upgrading Short Line Rail Lines to accommodate 286,000 Pound Rail Cars:

As with most states, the short line railroad industry in Oklahoma faces the issue of keeping its infrastructure on par with its larger counterparts, the Class I railroads. Currently, the Class I railroads maintain a minimum standardized railcar weighing 286,000 pounds loaded, commonly known as "286 cars." For railroads with bridges, structures or rail that are not rated for these heavier loads, they are limited to shipping 263,000 pound rail cars or loading 286,000 pound cars 23,000 pounds short of their full capacity. This can place limits on their ability to interchange with Class I railroads, and maximize their business potential. It is important that Oklahoma's short line industry be able to maintain their infrastructure at the heavier 286k classification.

Although the short lines provided ODOT with basic 286k infrastructure data during the development of the Rail Plan, additional analysis is needed in Oklahoma to fully determine the costs and magnitude of the issue the short lines face in bringing all of their lines up to the 286,000 pound standard.

Create a Rail Corridor Preservation Program:

Continue to preserve abandoned rail lines for future use, even in those instances where the tracks have been removed or salvaged.

Legislative

Continue to Promote Legislative Action to Enable Public Private Partnership (P3)

Opportunities:

Current state law in Oklahoma does not permit public funding in private corporations or businesses. Legislative changes need to continue to be pursued and implemented to provide other funding alternatives.

Passenger Rail Service

Continue Supporting Oklahoma City as a Multimodal Hub:

Facilitate institutional arrangements that would enable Oklahoma City to become a coordinated multi-modal passenger rail hub: *Heartland Flyer*, additional proposed intercity rail services, new proposed commuter rail services, proposed high-speed rail, intercity bus service, as well as local transit services serving the Oklahoma City metropolitan area.

Develop Strategies with the Oklahoma City Area MPO to Enhance the Connectivity of Passenger Rail Options:

Strategies should address the development of selected commuter rail lines which would include linking the downtown area to the Will Rogers World Airport.

Evaluate Potential Enhancements to Existing Passenger Rail Services on an Ongoing Basis:

Evaluate the potential for other rail passenger operators other than Amtrak for the *Heartland Flyer* and other new proposed rail passenger services. Also, evaluate potential state-ownership of rail passenger equipment.

Safety

Partner with the Railroads to Enhance Safety:

Specific elements of this effort could include developing plans to contact ODOT in the event of an emergency and when conducting EMS field training.

Studies

Periodically, Perform an Analysis of Oklahoma's Rail Network to Identify Future Connectivity Gaps Based on Changing Freight Patterns:

Periodically re-evaluate the rail freight network in Oklahoma to identify potential gaps in freight service due to issues such as abandonments or lines taken out of service. The analysis should take into consideration emerging freight economic sectors and distribution patterns.

Conduct a Grain Supply Chain Study to Determine Future Multimodal Needs:

Conduct a study, in cooperation with the Oklahoma Department of Agriculture, to evaluate the future supply chain requirements of the agriculture industry. The study should consider changes in grain distribution, future railroad service practices, freight car supply, storage capacity, and modal connectivity.

Prepare and Disseminate a GIS-based Statewide Rail Database:

Create a publicly accessible GIS and web-based railroad inventory which includes items such as ROW ownership, weight of rail, 286,000 # load capability, etc.

Develop an Unused Rail Siding Inventory:

In conjunction with the Department of Commerce, develop an inventory of all unused rail sidings and industrial leads in the state. This information would be valuable to economic development in identifying sites and locations for potential rail-served businesses in the state.

Projects:

A number of rail infrastructure improvement projects for the State of Oklahoma have been identified through submittals from Class I and short line railroads, as well as identifying potential passenger rail operations projects including both intercity and commuter rail. At present, Oklahoma DOT does not have adequate resources to fund all of the major capital improvement projects compiled.

Funding:

State Funding:

State rail funding in Oklahoma is collected from several sources and deposited into the Railroad Maintenance Revolving Fund (RMRF). This fund is then utilized for projects on Oklahoma's state-owned rail system. Major revenue sources for the fund are highlighted below.

Oklahoma Freight Car Tax:

This fund, composed of an annual 4 percent tax on freight rail car revenues, yields a nearly constant annual income, as its rate has not been changed since its inception in 1978.

Lease Agreements:

ODOT Rail Programs Division receives annual lease and operations payments from seven separate short line rail operators.

At this time, almost all of the state-owned rail line is under lease and in operation.

Right-of-Way Sales:

ODOT occasionally sells portions of land deemed as excess to its needs, and some of these sales are former rail rights-of-way. There are situations where sales are generated as a result of a mature lease-purchase agreement. Recently, ODOT sold a former rail segment known as the Guthrie to Fairmont Line following exhaustive efforts to return the rail line to

active use. These sales are very infrequent and do not constitute any significant amount of annual funding.

Federal Funding:

Passenger Rail Improvement and Investment Act (PRIIA):

PRIIA was enacted in October 2008 and provided for the reauthorization of the National Railroad Passenger Corporation (Amtrak) and tasked Amtrak, the U.S. Department of Transportation (USDOT), the Federal Railroad Administration, individual states, and other stakeholders with improving operations, facilities, and service. PRIIA authorizes over \$13 billion between 2009 and 2013 and promotes the development of new and improved intercity rail passenger services, state-sponsored corridors throughout the United States, as well as the development of high-speed rail corridors.

PRIIA established three new competitive grant programs for funding high-speed intercity passenger rail improvements:

- Intercity Passenger Rail Service Corridor Capital Assistance Program
- High-speed Rail Corridor Development Program
- Congestion Grants

ODOT has received three FRA HSIPR grants, providing matching planning and capital funds towards the state's effort to improve and expand its passenger rail service. These funds are being used to complete planning and environmental studies for the proposed high-speed rail route from Tulsa to Oklahoma City, to complete the state's Oklahoma Freight and Passenger Rail Plan, and to improve infrastructure at Oklahoma City's Santa Fe Depot related to operation of the *Heartland Flyer*.

Section 130 Highway-Rail Grade Crossing Program:

Section 130 provides federal support to projects in an effort to reduce the incidence of accidents, injuries, and fatalities at public rail-highway crossings. States may utilize funds to improve the safety of railroad crossings, including installing or upgrading warning devices, eliminating at-grade crossings through grade separation, or consolidating or closing at-grade crossings. The federal share for these funds is 90 percent, with the remaining 10 percent to be provided by local matching funds.

Rail Line Relocation and Improvement Capital Grant Program:

This program authorizes funding for the purpose of providing financial assistance for local rail line and improvement projects. Any construction project that improves the route or structure of a rail line and 1) involves a lateral or vertical relocation of any portion of the rail line, or 2) is carried out for the purpose of mitigating the adverse affects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development, is eligible.

Congestion Mitigation and Air Quality (CMAQ) Improvement Program:

CMAQ 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 CMAQ-funded rail projects include intermodal facilities, track rehabilitation, diesel engine retrofits, idle-reduction projects, and new rail sidings.

Surface Transportation Program:

This is a grant program available for improvement of any Federal-Aid highway, bridge, or transit capital project. The program is meant to provide flexible funding to be used by states and localities. Eligible rail improvements include lengthening or increasing vertical clearance of bridges, eliminating crossings, or improving intermodal connectors.

Rail and Fixed Guideway Modernization:

This transit capital investment program (49 U.S.C. 5309) provides capital assistance for new rail systems (New Starts/Small Starts program), bus systems (Bus and Bus Related Equipment and Facilities program), and modernization of existing rail systems (Fixed Guideway Modernization program). Funding can be used for a variety of purposes including the following:

- Purchase and rehabilitation of rolling stock, track, line equipment, structures, signals and communications
- Development of power equipment and substations
- Construction of passenger stations and terminals
- Purchases of security equipment and systems
- Construction of maintenance facilities
- Operational support equipment including computer hardware and software
- System extensions
- Preventive maintenance

Transportation and Community and System Preservation (TCSP) Pilot Program:

TCSP provides funding for initiatives including planning and implementing grants; performing research to investigate and address the relationships between transportation, community, and system preservation; and identifying private sector-based initiatives.

Transportation Enhancement Program:

Enhancement funds are available to strengthen the cultural, aesthetic, and environmental aspects of the nation's transportation system. Eligible projects include the rehabilitation of historic transportation facilities and the preservation of abandoned rail corridors. A number of environmental preservation, scenic beautification, and historic preservation projects would also qualify.



1. Background

Although a critical element in the development of Oklahoma and the West, the U.S. rail system suffered a significant decline. Excessive regulation coupled with significant government investment in the national highway system hurt the rail industry. Following several decades of decline, the rail industry is experiencing resurgence. Having become a significant driver of economic growth, the U.S. freight railroads are leaders in the world. Interest is also increasing in passenger rail with Amtrak experiencing a steady growth in ridership.

The State of Oklahoma has been involved in rail transportation since the mid-1970s. The state's participation increased in 1978 with the Oklahoma legislature's passing of the "Railroad Rehabilitation Act." This legislation established the Railroad Maintenance Revolving Fund, the principal source of funding for maintaining and rehabilitating state-owned rail lines.

Periodically, The State of Oklahoma has prepared a state rail plan, detailing the current state of rail transportation in the state and outlining the state's future participation in rail transportation. Many other states actively participate in rail planning also. The passage of the Passenger Rail improvement and Investment Act of 2008 (PRIIA) has made the preparation of a state rail plan necessary for participation in certain federal funding. State plans have evolved since the 1970s. This Oklahoma Statewide Freight and Passenger Rail Plan is the first Oklahoma plan to be prepared under these new requirements.

States have been developing rail plans since the 1970s as shown below:

- 1970s – Plans focused on federal funding (Local Rail Service Assistance Program) to support rail freight service on lines subject to abandonment. The other focus of these early rail plans was on state-funded Amtrak routes.
- Late 1980s – Early 1990s – Plans focused on funding from a new federal program, Local Rail Freight Assistance Act (LRFA), which continued assistance to improve light freight traffic density lines subject to abandonment.
- 1990s – 2008 - Plans focused more on state investments and linking rail to the federal multi-modal planning efforts of the federal surface transportation re-authorization legislation.
- 2008 – Passenger Rail Investment and Improvement Act (PRIIA) – Legislation mandated updating state rail plans and f developing a National Rail Plan. It also authorized \$3.7 billion for high-speed and intercity passenger service, and rail congestion mitigation.



- 2009 – American Recovery and Reinvestment Act (ARRA) – This provided an additional \$8.0 billion for high-speed and intercity rail corridors and created the \$1.5 billion Transportation Investments Generating Economic Recovery (TIGER) grants program.
- 2010 – Appropriation under the federal Surface Transportation Program of \$50 million for state planning studies and an additional \$2.5 billion for high-speed rail corridors.

In 2008, state rail plans took on increased importance when Congress passed the Passenger Rail Investment and Improvement Act (PRIIA). While the primary purpose of the act was to provide for improving passenger rail service in the United States, it also laid the foundation for an expanded focus on rail planning. The act requires each state to have an approved state rail plan as a condition of receiving future rail funding for either passenger or freight improvements. The act, codified as Chapter 227 of Title 49 of U.S. Code, Section 22705 requires each state rail plan to include the following:

- *Inventory of the existing rail transportation network.*
- *Statement of the state's objectives related to rail transportation.*
- *General analysis of rail's economic, transportation and environmental impacts.*
- *Long-range investment program for current and future rail freight and passenger services.*
- *Discussion of public financing issues for rail projects and listing of current and potential rail related funding sources.*
- *Discussion of stakeholder identified rail infrastructure issues.*
- *Review of freight and passenger intermodal rail connections and facilities.*
- *Review of publicly funded rail projects that enhance rail-related safety.*
- *Performance evaluation of passenger rail services.*
- *Compilation of previous high-speed rail reports and studies and a comprehensive review of a state's high-speed rail corridor(s) when present.*
- *Statement that the state's rail plan complies with PRIIA.*

To be eligible for any future federal funds, a state must have the legal, financial, and technical capacity to carry out a project. The state rail plan will provide proof of this ability and will include any proposed projects for which the state may apply for funding.



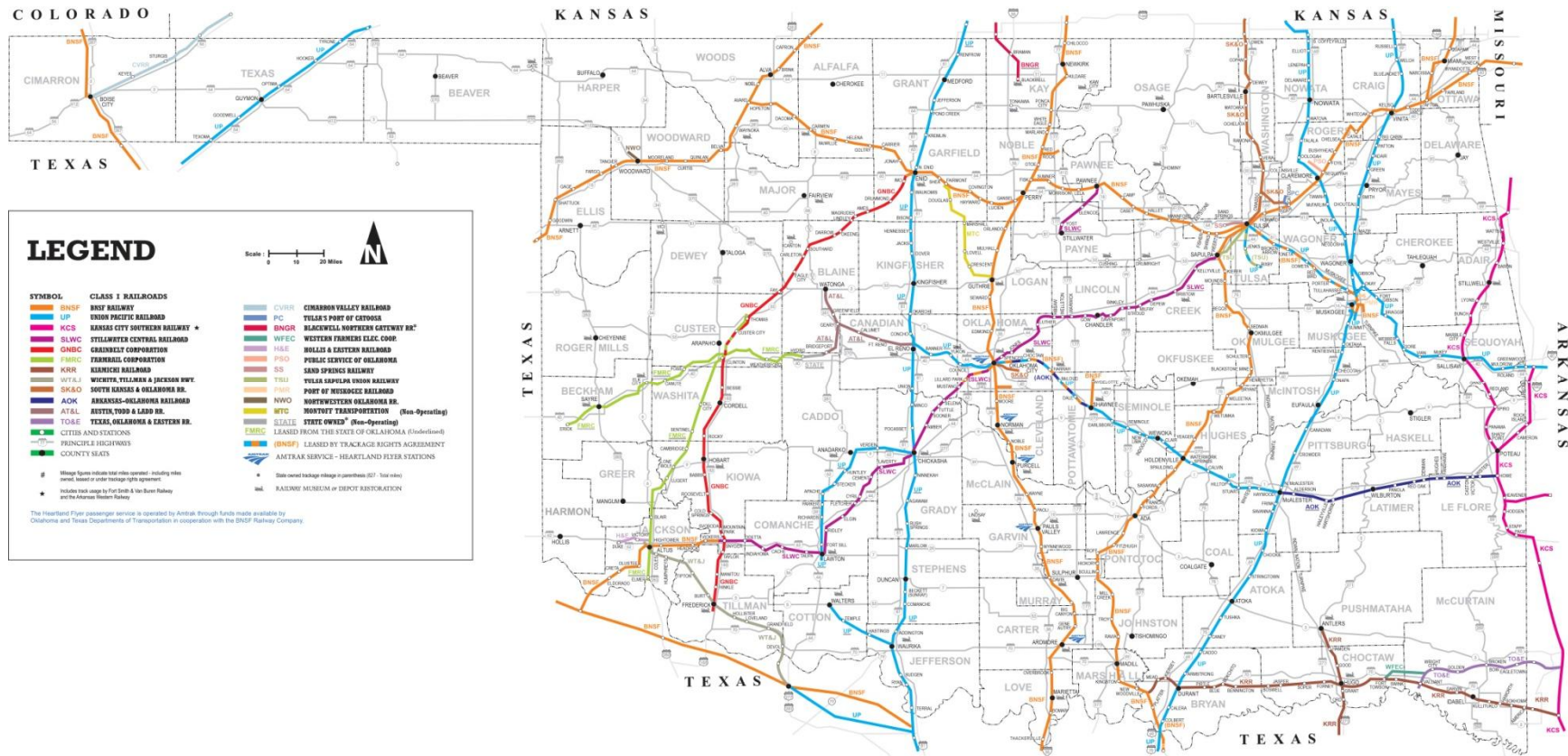
The Oklahoma Statewide Freight and Passenger Rail Plan has been developed to comply with PRIIA. In addition to meeting the requirements, the plan and planning process is to have the following additional purposes:

- *Educates the public on the importance of freight and passenger rail transportation to the economy of Oklahoma, the welfare of the state's communities, and its environment.*
- *Synthesizes the perspectives of the public, State of Oklahoma government agencies, local governments and planning agencies, shippers, Class I and short line rail carriers, and other stakeholders and interested parties.*
- *Sets forth State freight and passenger rail transportation policy.*
- *Presents priorities and strategies to enhance freight and passenger rail service beneficial to the public.*
- *Advances a rail improvement plan that serves as the basis for federal and state funding of rail infrastructure and service investments.*

The Oklahoma Statewide Freight and Passenger Rail Plan has been developed to ensure that the benefits of freight and passenger rail are balanced as Oklahoma plans for the future. The rail plan will comprise the railroad element of the state's next long- range multi-modal transportation plan.



Figure 1-1: Oklahoma 2011-2012 State Railroad Map





2. Railroad Industry Background

Rail transportation comprises both the movement of goods (freight rail) and the movement of people (passenger rail). Until 1971 with the formation of Amtrak, railroad companies operated both freight rail and passenger rail services. To preserve intercity passenger rail service in the U.S., the federal government created Amtrak. The railroad companies had been losing money for decades on their passenger services and sought relief from the regulations requiring provision of those services. Amtrak provided that relief. Today, two parallel rail systems operate with Amtrak providing service on lines owned by the freight railroads throughout the country other than the northeast where Amtrak owns the lines over which it operates. In addition to Amtrak, commuter rail services operate in many metropolitan areas.

2.1 Freight Rail

The freight rail industry plays a critical role in the country's economic well-being. Freight railroads own 140,000 miles of rail line in the U.S. In 2010, rail accounted for 43 percent of goods tonnage shipped in the U.S., followed by trucking with 31 percent, and with waterways and pipelines each accounting for 13 percent. Air cargo represents less than one percent of the tonnage. Nearly all products types are transported by rail including consumer goods, industrial products, agricultural products, and natural resources.

The Surface Transportation Board⁴ (STB), which regulates the rail industry, separates freight railroads into three categories, based primarily on revenue. The three railroad categories are Class I, Class II and Class III:

Class I railroads are the nation's larger railroads. Class I railroads are defined by the STB as railroads with annual revenues exceeding \$398.7 million.⁵ The majority of rail-based freight movements occur on Class I railroads operating over 96,000 miles of rail routes. In 2010, the major railroads hauled 1.9 billion tons of freight.

Currently, there are seven Class I railroads operating in the United States:

- BNSF Railway
- CSX Transportation

⁴ The Surface Transportation Board regulates business and economic matter of the railroad industry. Safety regulation is the responsibility of the Federal Railroad Administration.

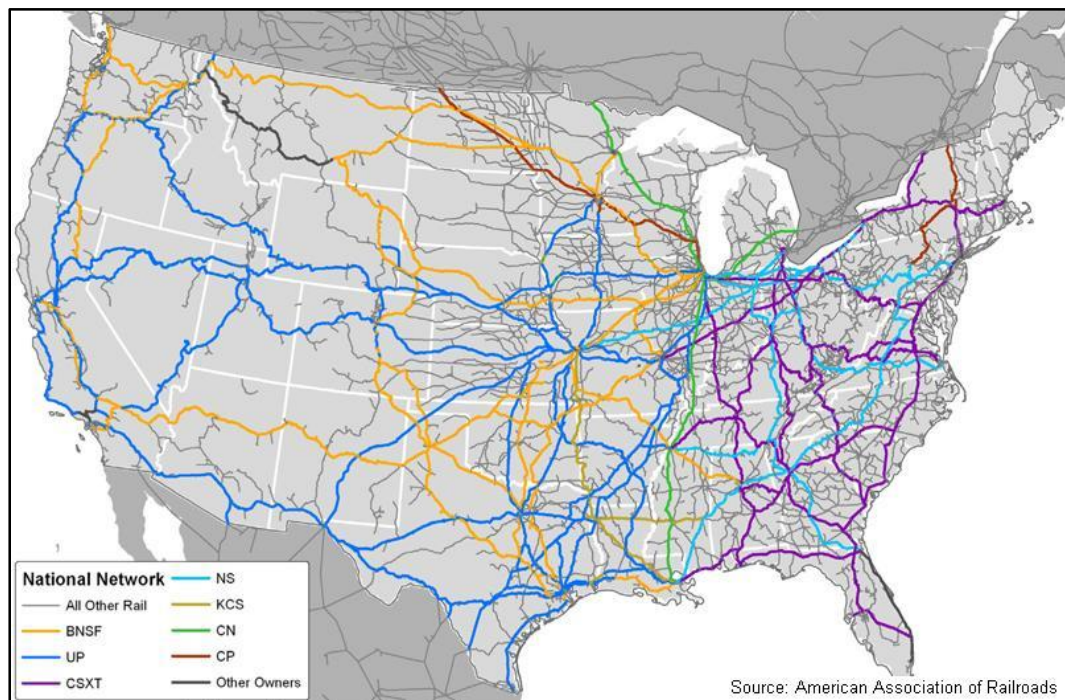
⁵ American Association of Railroads, *Class I Railroad Statistics*, Nov. 2011. Revenue levels defining the STB railroad classes are adjusted for inflation annually. Figures given are for 2011.



- Canadian National Railway
- Canadian Pacific
- Kansas City Southern
- Norfolk Southern
- Union Pacific

Three of the Class I railroads operate in Oklahoma: BNSF Railway Company (BNSF), Kansas City Southern Railway Company (KCS), and Union Pacific Railroad (UP).

Figure 2-1: U.S. Class I Railroads



Class II railroads are commonly called regional railroads and are smaller in revenue and network than Class I railroads. Class II railroads have revenues between \$31.9 million and \$398.7 million. According to the American Association of Railroads, there are 12 Class II railroads in operation in the U.S. but none in Oklahoma.

Class III railroads - also called "short lines" are the smallest railroads. Many are former lines of the larger railroads that were sold because they were unprofitable to the larger operators. Revenues for each of the nearly 592 Class III railroads are less than \$31.9 million



annually. The importance of short lines has grown as these railroads often serve as the initial or final link between Class I railroads and rail customers. Short lines often work together with the Class I railroads to offer shippers a complete transportation solution. Eighteen short line railroads operate in Oklahoma:⁶

- Stillwater Central Railroad
- Grainbelt Corporation
- Farmrail Corporation
- Kiamichi Railroad
- Wichita, Tillman & Jackson Railway
- South Kansas & Oklahoma Railroad
- Arkansas-Oklahoma Railroad
- Austin, Todd & Ladd Railroad
- Texas, Oklahoma & Eastern Railroad
- Cimarron Valley Railroad
- Tulsa Port of Catoosa
- Blackwell Northern Gateway Railroad
- Western Farmers Electric Cooperative
- Public Service of Oklahoma
- Sand Springs Railway
- Tulsa Sapulpa Union Railway
- Port of Muskogee Railroad
- Northwestern Oklahoma Railroad

Types of Services

Freight rail services are categorized as follows:

1. Bulk train services: For commodities such as coal, sand, gravel, grain, and other merchandise and materials moved by unit trains. Unit trains are a set of railcars all

⁶ American Association of Railroads, *Class I Railroad Statistics*, Nov. 2011.



carrying the same commodity from one origin point to one destination point in full trainload quantities. Other bulk products moved by rail include barley, oats, animal feed, wood pellets, and auto parts, but rarely in unit trains.

2. Auto train services: Unit trains for assembled automobiles, trucks, vans and other vehicles on stacked rail cars.
3. General merchandise train services: A general freight train service with trains comprising various freight car types from multiple origins to multiple destinations. The freight cars include boxcars, tank cars, and open gondola cars among several. These trains can transport products that move in unit trains, but principally haul non-unit train commodities.
4. Intermodal train services: This service is for commodities that move in containers or in trailers on flat cars. These trains move between major terminals where the containers are transferred between rail cars and trucks, or rail cars and ships. Unlike other service types where the railroad picks up or delivers freight cars directly to customers, intermodal shipments begin or end by truck.

Rail freight volume and capacity utilization data can serve as a gauge of economic activity. In general, the volume goods moved by train is a good indicator for future economic conditions as raw materials are moved to factories or consumer goods are delivered to warehouses.

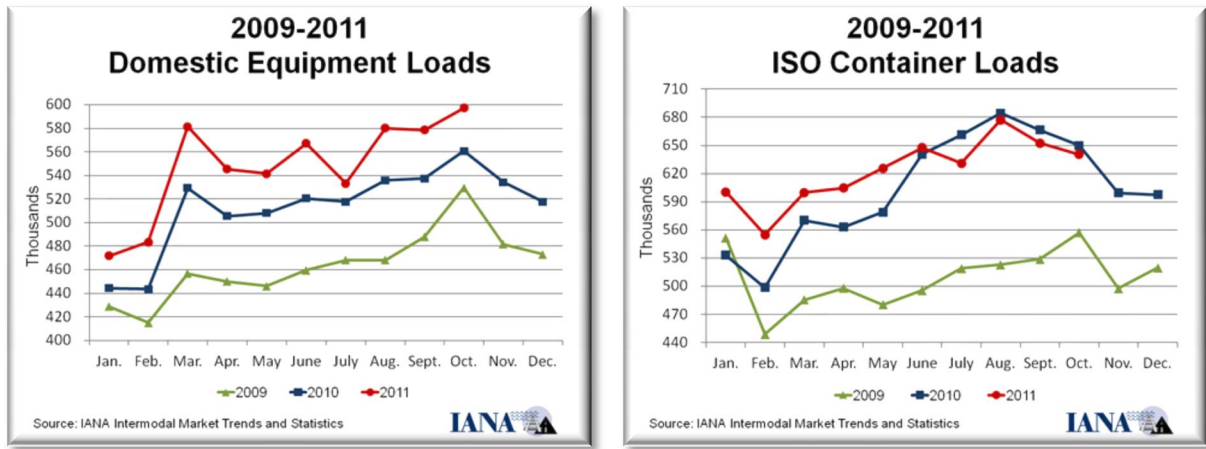
Importance of Intermodal Train Services

The intermodal business segment has become the railroads' growth area. Since 1980, intermodal freight traffic has more than tripled. The principal enabler of intermodal growth has been the "double-stack" freight car, flat cars permitting the stacking of one container on another. This results in a freight train with a carrying capacity operating at nearly same cost as a train with half the capacity. The cost savings afforded by this technology have encouraged railroads to invest heavily in the removal of height restrictions such as low bridges and other obstructions along their lines to expand the use of double-stack intermodal trains.

Products from China and other Pacific Rim countries accounted for most of the historic intermodal growth. However, recently, a considerable shift of domestic truck shipments to intermodal has been occurring due to improved handling and technology. The figure below shows the recent shift to domestic intermodal.



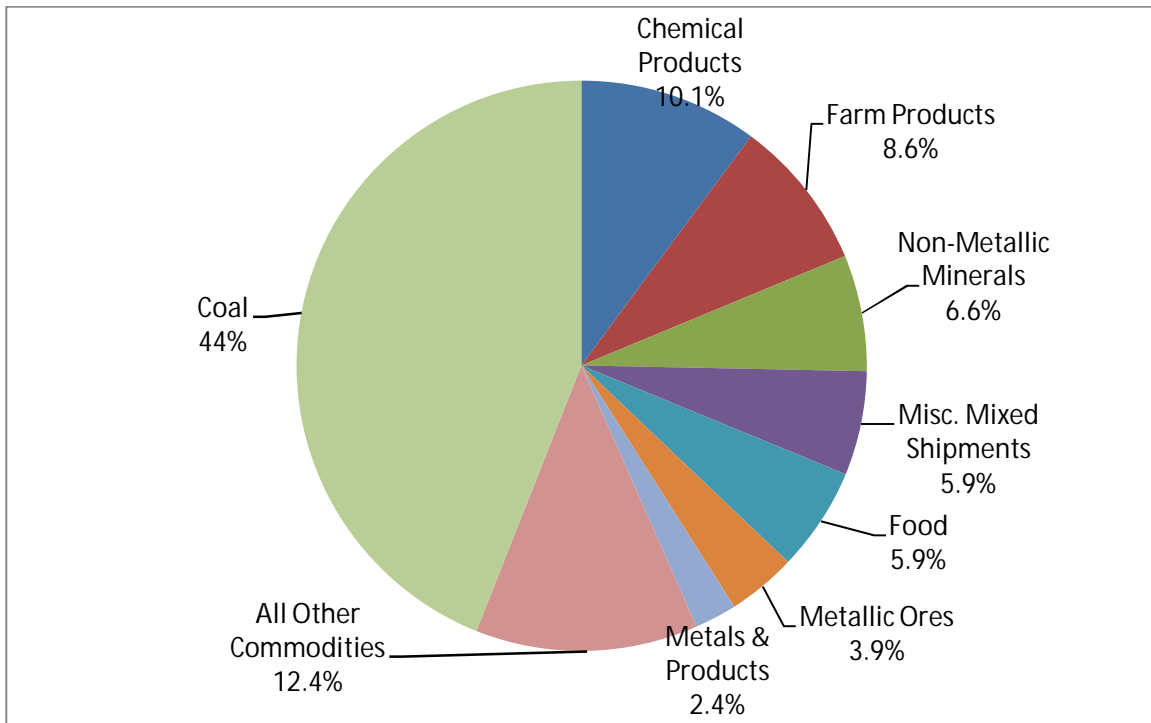
Figure 2-2: Intermodal Traffic Composition⁷



Commodity Moved by Rail

Figure 2-3 shows the share of goods moved by Class I railroads in 2010.

Figure 2-3: U.S. Rail Freight Commodity Mix (tonnage)



⁷ ISO Containers are standard international containers of standardized size for stacking on ships.



The most significant single commodity carried by U.S. railroads is coal. In terms of tonnage, coal movements comprise approximately 44 percent of all commodities moved by rail in the United States. Coal remains the primary means of electricity generation though its share has dropped consistently as natural gas continues to increase. Coal exports, however, are on pace to exceed levels not seen since the early 1990s.

2.2 Passenger Rail

For purposes of the state rail plan, passenger rail operations do not include urban systems such as light rail or trolley. Passenger rail service is broadly categorized as conventional intercity passenger rail service, high-speed intercity passenger rail service and commuter rail service.

1. Conventional intercity rail service: These are medium and long distance trains that operate between towns and cities across the country with maximum train speeds of 79 miles per hour. Amtrak is the operator, providing service on over 30 routes (See Figure 2-4). Conventional intercity services operate over lines owned by the freight railroads.
2. High-speed intercity rail service: Although prevalent in Europe and Asia where some trains operate in excess of 220 miles per hour, currently the only high-speed rail service in the U.S. is on the Northeast Corridor between Washington and Boston. Most of the Corridor is rated at 125 miles per hour with speed limits of up to 150 miles per hour over selected segments. High-speed rail services require tracks that are separate from the slower freight operations to prevent interference.
3. Commuter rail: Service normally connects urban cores with suburban locations. The services are heavily concentrated during the morning and evening journey to work periods when travel is the highest.

High-Speed Rail Expansion

The U.S. Department of Transportation has been working with states to plan, fund, and develop high-speed rail services. This usually requires the construction of new track to ensure segregation from freight rail traffic. Since 1991, the Federal Railroad Administration identified eleven high-speed rail corridors, positioning them for Federal funding. The Tulsa-Oklahoma City-Dallas corridor was officially designated as a high-speed rail corridor in 2000. It is known as the South Central Corridor. Figure 2-5 shows the corridors.



Figure 2-4: Amtrak Route System



Figure 2-5: U.S. High-Speed Rail Corridors





Passenger Rail in Oklahoma

The Oklahoma-funded *Heartland Flyer* provides passenger rail service in Oklahoma which Amtrak operates. Amtrak operates one train per day in each direction between Oklahoma City and Ft. Worth, TX. The *Heartland Flyer* makes station stops in Norman, Purcell, Pauls Valley, and Ardmore before serving Gainesville, TX, in addition to Oklahoma City and Fort Worth. Connections can be made in Fort Worth to Amtrak's *Texas Eagle*, which operates between Chicago and Los Angeles via San Antonio. According to Amtrak, the *Heartland Flyer* carried over 81,000 riders in 2010; this represented an 11 percent increase over 2009. The *Heartland Flyer* operates on tracks owned by the BNSF Railway. In 2010, the *Heartland Flyer* won Amtrak's President's Award for its service.

Future Passenger Rail in Oklahoma

Three passenger railroad corridors are under evaluation for Oklahoma. Extension and expansion of the existing *Heartland Flyer* is being examined, as is service between Oklahoma City and Tulsa. The Oklahoma Department of Transportation (ODOT) and the Kansas Department of Transportation (KDOT) just completed a Service Development Plan looking at expansion of the *Flyer* from OKC to Newton, Kansas, as well as a new stand-alone daytime service between Kansas City and Fort Worth via OKC. The Texas Department of Transportation (TxDOT), in coordination with ODOT and KDOT, will soon begin a study looking at the corridor from OKC to southern Texas which will include examination of expanding the *Heartland Flyer* with a second frequency as well as performance improvements. And lastly, ODOT will soon begin development of a Service Development Plan and an Environmental Impact Statement for the corridor from OKC to Tulsa. This line would connect both of Oklahoma's million-person urban areas. Initially studied in 2001-2002, a preferred high-speed alignment was identified along the Turner Turnpike. ODOT will be initiating additional studies in the near future.



3. Oklahoma Freight Railroads

The State of Oklahoma has a freight rail network that serves as a key state economic driver moving a wide variety of products that either are produced or consumed in the State as well as move through the state. Its freight railroads are integral to the national and regional rail system.

This section of the Statewide Freight and Passenger Rail Plan is an inventory of the freight railroads that operate within and through the state. Oklahoma has 21 railroad companies that provide freight rail service over 3,599 miles of railroad. In 2010, this ranked Oklahoma 18th in the nation in terms of the total railroad mileage⁸.

The State of Oklahoma itself owns 428 miles of railroad.⁹ These lines are leased for operation by the state to Class III railroads.

3.1 Class I Railroads

The three Class I railroads in the state are the BNSF Railway Company (BNSF), which operates 1,037 route-miles in the state, Union Pacific Railroad (UP) with 1173 route-miles, and Kansas City Southern Railway Company (KCS) with 150 miles of route. These three railroads combined originated 183,238 carloads of freight and terminated 323,442 carloads of freight in Oklahoma in 2010¹⁰. Because of Oklahoma's location near the middle of the country, the Class I railroads also transport a significant amount of rail freight traffic through the state that has neither an origin nor destination within Oklahoma. A majority of this traffic is either coal from mines in northeast Wyoming to electric utilities in Texas and other southeast destinations, or various goods moving between California ports and the mid-west.

Class I railroads have high volumes of trains per day, ranging in Oklahoma from approximately 10 trains per day on several Class I lines to nearly 60 trains per day on BNSF's Transcon (i.e. transcontinental) route.

BNSF Railway

The BNSF operates the largest number of route-miles in the state, and is also one of the largest rail networks in North America. BNSF owns approximately 23,000 miles of track and

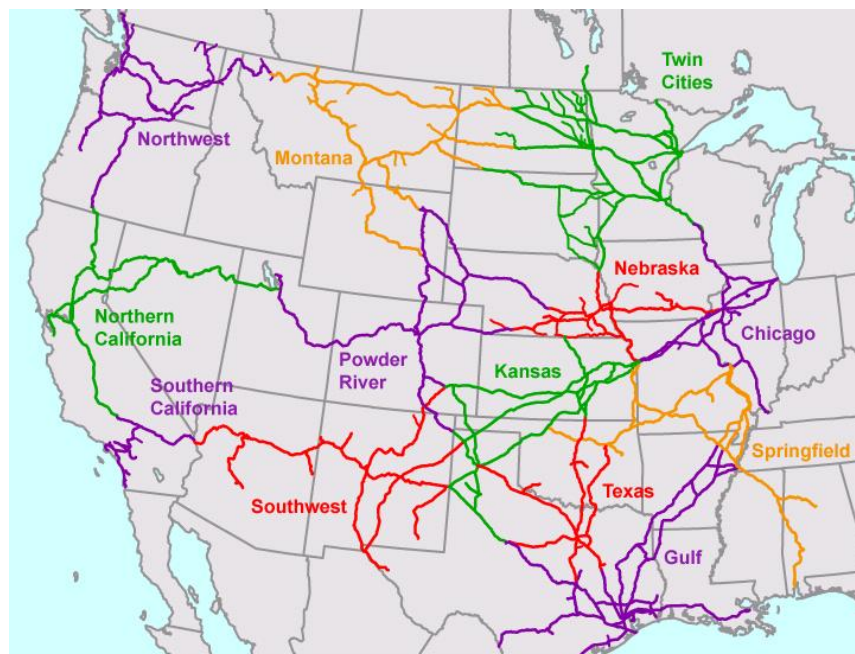
⁸ Association of American Railroads (AAR)

¹⁰ Association of American Railroads



additionally operates over approximately 9,000 miles of trackage rights on lines owned by other railroads throughout 28 states and two Canadian provinces. Through connections with railroads operating east of the Mississippi River, in Canada, and in Mexico, industries located on BNSF in Oklahoma can ship products to or receive products from any market in North America. Its connections to the Pacific Coast and Gulf of Mexico seaports, links Oklahoma to economic centers throughout the world. Figure 3-1 shows the BNSF national rail system.

Figure 3-1: BNSF Rail System

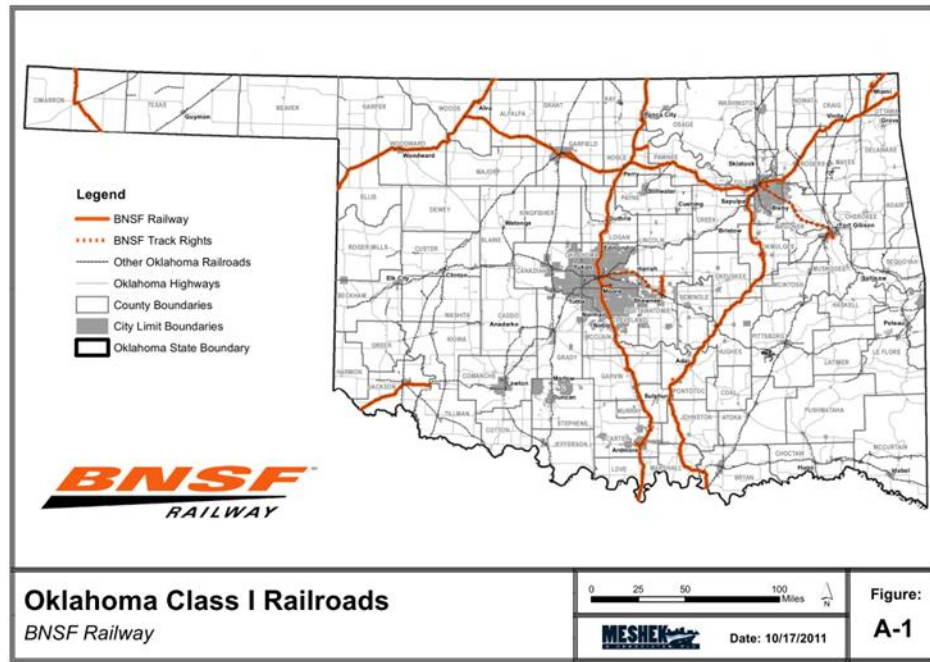


Source: BNSF Railway

BNSF owns 1,037 miles of Oklahoma rail routes and operates over another 372 miles owned by other railroads giving it the most extensive rail network in the state. BNSF operates over two primary corridors in Oklahoma. The Transcon operating between Chicago and California traverses the northwest corner of the state and the MidCon, which operates between the Canada and the Gulf Coast, generally follows or parallels the I-35 corridor through Oklahoma. Another through route traverses Oklahoma from Kansas City to Dallas- Ft. Worth; an east/west route through Oklahoma connects Springfield Missouri to the Transcon at Avard, OK. In all, BNSF moved 3.5 million carloads of freight over these routes in Oklahoma in 2010, most of them passing through the state. Figure 3-2 depicts the BNSF route network in Oklahoma.



Figure 3-2: BNSF Oklahoma Rail Network



Union Pacific Railroad

UP operates in 23 states, owning over 26,000 routes miles of track and additionally operates over another 6,000 miles of trackage rights. Like its western competitor BNSF, UP also provides service throughout North America through the connecting railroads. UP owns Mexico's largest railroad, Ferromex.

The Union Pacific Railroad (UP) operates the second largest network the state with 1,173 route miles in three primary corridors. The Golden State Route, operating between Chicago and California through Kansas City, traverses the Oklahoma panhandle. The former Missouri Pacific and KATY lines in the eastern portion of the state connect the Kansas City area and Texas, Mexico and destinations in the southeast. An additional north/south route connects Wichita, KS to Fort Worth, TX.

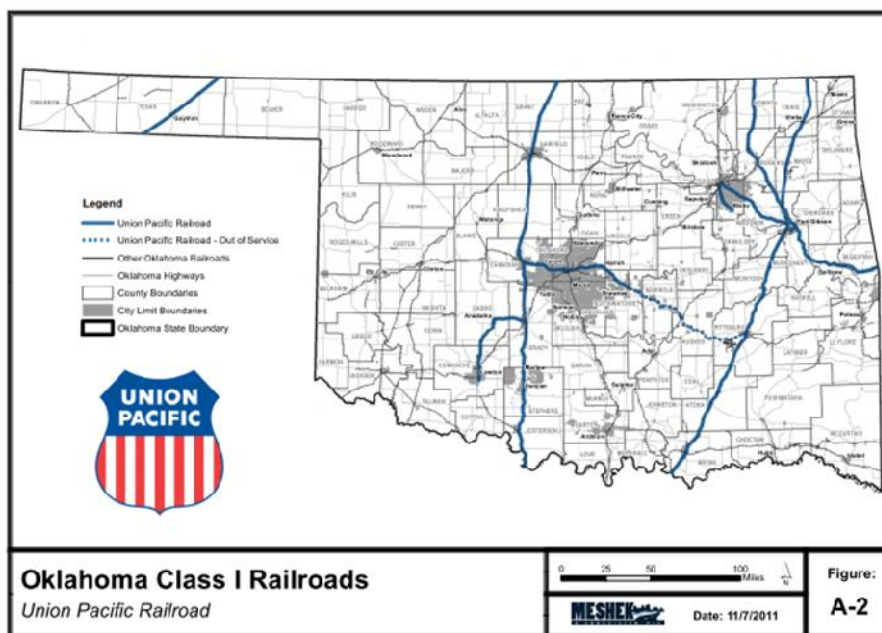


Figure 3-3: Union Pacific Rail System



Source: Union Pacific Railroad

Figure 3-4: Union Pacific Oklahoma Rail Network





Kansas City Southern Railroad

The Kansas City Southern rail network is made of the Kansas City Southern Railroad (KCS) and two railroads operating outside of the United States: the Kansas City Southern de Mexico and the Panama Canal Railway Company. The KCS also owns and operates the Texas Mexican Railroad in Texas. KCS operates in 10 states, owning approximately 2,600 miles of track and additionally operates over 600 miles of track age rights.

Figure 3-5: KCS Rail System

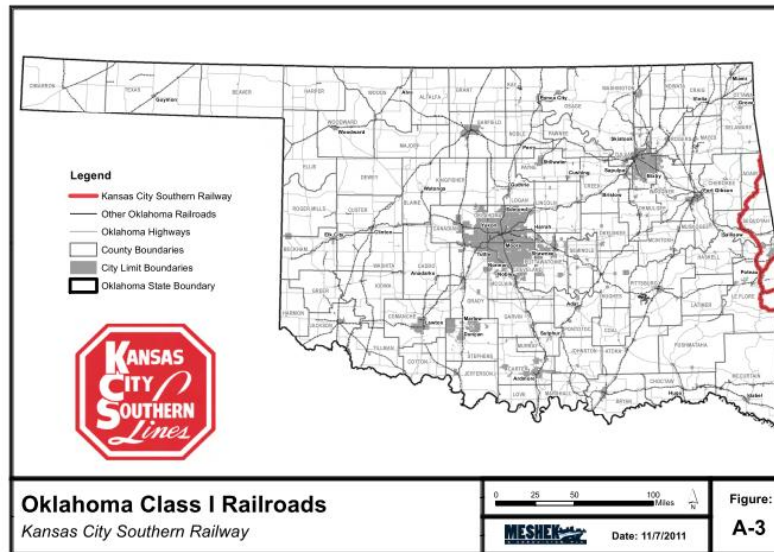


KCS owns 150 miles of track in eastern Oklahoma. KCS serves the central and southern United States, and has the shortest route between Kansas City and the Gulf of Mexico.

KCS' operations in Oklahoma are primarily overhead shipments of coal and feed products traveling between the Kansas City area and destination in Texas and Mexico. KCS originates and terminates approximately 20,000 total carloads per year in the state of Oklahoma. The route is the north/south mainline of the KCS through Arkansas, which enters into Oklahoma near Watts, OK and exits the state near Page.



Figure 3-6: KCS Oklahoma Rail Network



3.2 Class III Railroads

The primary purpose of Class III railroads, also commonly referred to as short line railroads, is to provide rail service to market areas with inadequate volume to be served profitably by the larger railroads. In most instances, the short line railroads were once part of the network of a larger railroad. The short lines serve as the customer service “element” of many rail served businesses, and serves as a “collector” network for the Class I railroads which move the bulk of the rail freight volume in and through Oklahoma. Train volumes on short lines may range from “as needed” or “seasonal”, up to six trains per day. Short line railroads serve as economic engines in many communities, providing the vital transportation link to the regional, national, and global economies. According to data received from the short line railroads in surveys for this plan, in 2010 the short line railroads operating in Oklahoma originated 69,869 rail carloads and terminated 116,658 carloads within the state.

3.3 Role of the State of Oklahoma

The State of Oklahoma stepped in and assisted in saving many rail lines from being abandoned and dismantled in the 1980s after several Class I railroads were declared bankrupt. The Chicago, Rock Island and Pacific Railroad Company (CRIP) discontinued service in late 1979. In 1980 and 1981, the Oklahoma legislature appropriated \$12 million and \$10 million respectively,



to be invested in the Oklahoma rail system. The State of Oklahoma acquired nearly 500 miles of railroads from the CRIP and Missouri-Kansas-Texas Railroad Company (MKT) in 1981 – 1983. To this date, the state continues to own track and leases the majority of these tracks to Class III railroads in order to have continued rail service for many Oklahoma communities and businesses.

3.4 Railroad Profiles

Profiles for Oklahoma’s railroads are listed on the following pages. The Class I railroads are listed first; followed by the Class III railroads. “Route Miles” is the number of combined miles owned, leased or under trackage rights agreements. This information was provided by the railroad companies.



Railroad Profile

BNSF Railway (BNSF)

For more than a century, BNSF Railway Company (BNSF) has played an important role in Oklahoma’s economy. As the state’s primary freight rail transporter, BNSF links Oklahoma’s agricultural industry to markets around the world.

Annually, BNSF moves more than 39,000 carloads of wheat, soybeans, corn, and other agricultural products from Oklahoma to facilities around the country for domestic use and to ports for export abroad. Also, BNSF helps Oklahoma farmers expand their markets by providing a vital transportation link for the state’s emerging ethanol industry.

As a national leader in intermodal transportation (truck trailers and containers), BNSF delivers a wide variety of consumer products, packaged goods, paper products, mail, clothes, appliances, electronics, and automobiles to Oklahoma retailers and businesses through the ports BNSF serves on the West Coast and the Gulf of Mexico.

BNSF delivers cleaner-burning Power River Basin coal from Wyoming and Montana to provide the energy that helps power the Oklahoma economy, as well as lumber and other building materials from the Northwest and the Southeast to satisfy construction demands throughout the state, and fertilizer from facilities around the country to feed crops on the Oklahoma plains.

In all, BNSF moves more than 3.5 million carloads of freight in Oklahoma annually.

Since, 2008, BNSF has been instrumental in locating 18 new or expanded facilities in Oklahoma, creating more than 300 jobs and nearly \$60 million in investments. Projects include Koch Nitrogen Fertilizer in Enid, Farmers Coop Association in Eldorado, and Base Industries in Tulsa.

Track Data

Route Miles	1037
Miles of Trackage Rights –	372
Miles of Abandoned Track (since 2007) –	1.54
Miles of Out-of-Service Track –	None
Non-286,000 lb Rail Structures –	None

Economic Data

2010 Employees (in Oklahoma) -	975
2010 Annual Payroll –	\$ 64,766,809
2010 In-State Purchases -	\$ 106,600,000
2010 Capital Improvements Spending (in Oklahoma) –	Not Available

Rail Cars Originated in OK

2007 –	Not Available
2008 –	Not Available
2009 –	Not Available
2010 –	127,727

Rail Cars Terminated in OK

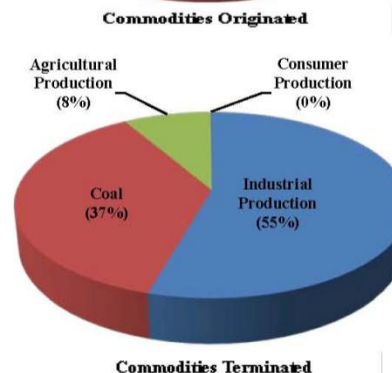
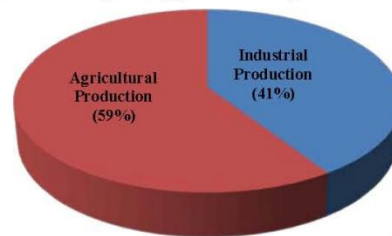
2007 –	Not Available
2008 –	Not Available
2009 –	Not Available
2010 –	153,937

Oklahoma Top Commodities Originated (By Volume)

Agricultural Production –	39,378 Cars
Industrial Production –	88,349 Cars

Oklahoma Top Commodities Terminated (By Volume)

Coal –	83,807 Cars
Industrial Production -	57,043 Cars
Agricultural Production –	12,912 Cars
Consumer Production –	175 Cars





Railroad Profile

Kansas City Southern Railway (KCS)

KCS owns 150 miles of track in eastern Oklahoma. KCS serves the central and southern United States, and has the shortest route between Kansas City and the Gulf of Mexico. KCS also has the second largest rail hub in the country in Kansas City. KCS' North American rail holdings and strategic alliances are the primary components of a NAFTA Railway system, linking the commercial and industrial centers of the U.S., Mexico and Canada.

KCS is the smallest and second-oldest (founded in 1887) Class I Railroad Company operating in the United States today. KCS also owns and indirectly operates Kansas City Southern de Mexico (KCSM) in the central and northeastern states of Mexico, and is the only Class I Railroad to own any track both inside and outside of Mexico's boundaries.

Track Data

Route Miles	150
Miles of Trackage Rights –	1
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail –	None
Non-286,000 lb Rail Structures –	None

Economic Data

2010 Employees (in Oklahoma) -	172
2010 Annual Payroll –	\$ 9,954,587
2010 In-State Purchases -	Not Available
2010 Capital Improvements Spending (in Oklahoma) -	\$ 17,000,000

Rail Cars Originated in OK

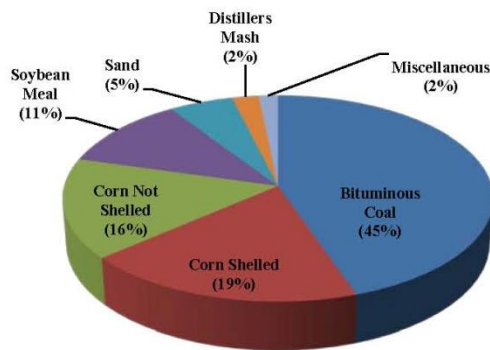
2007 –	4,535
2008 –	4,446
2009 –	3,326
2010 –	2,472

Rail Cars Terminated in OK

2007 –	16,563
2008 –	17,993
2009 –	16,711
2010 –	194,687

Oklahoma Top Commodities Originated (By Volume)

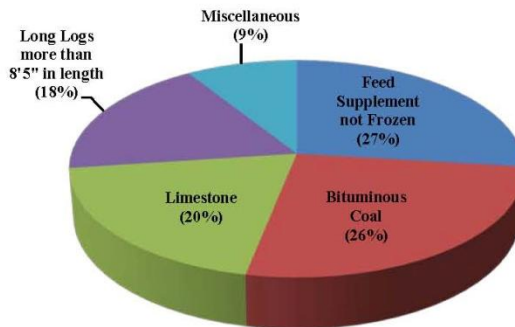
Feed Supplement not Frozen –	666 Carloads
Bituminous Coal –	649 Carloads
Limestone –	488 Carloads
Long Logs more than 8'5" in length –	448 Carloads
Miscellaneous –	223 Carloads



Commodities Originated

Oklahoma Top Commodities Terminated (By Volume)

Bituminous Coal –	8,713 Carloads
Corn Shelled -	3,678 Carloads
Corn Not Shelled –	3,064 Carloads
Soybean Meal –	2,198 Carloads
Sand –	1,059 Carloads
Distillers Mash –	441 Carloads
Miscellaneous –	316 Carloads



Commodities Terminated



Railroad Profile



Union Pacific Railroad (UP)

Union Pacific Railroad (UP) was incorporated in 1862 and currently owns and operates track in 23 U.S. states. Oklahoma is a vital link in Union Pacific's north-south corridor between the Midwest and the Gulf Coast. Grain bound for export moves through the state as well as coal bound for southern power plants. Union Pacific also ships Oklahoma wheat, cement and aggregates out of the state. Wagoner is the crossroads for Union Pacific trains in Oklahoma; nearly all the north-south traffic funnels through the city.

Another UP north-south line in western Oklahoma serves Enid, El Reno and Duncan. It connects Kansas wheat producers to the Texas ports. Muskogee, Tulsa, Oklahoma City, Chickasha, Enid and McAlester are home to switch yards and facilities.

The railroad has one of the most diversified commodity mixes in the industry, including chemicals, coal, food and food products, forest products, grain and grain products, intermodal, metals and minerals, and automobiles and parts.

Track Data

Route Miles	1,173
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	78
Non-286,000 lb Rail Structures –	None

Economic Data

2010 Employees (in Oklahoma) -	334
2010 Annual Payroll –	\$ 30,200,000
2010 In-State Purchases -	\$106,600,000
2010 Capital Improvements Spending (in Oklahoma) -	\$ 44,300,000

Rail Cars Originated in OK

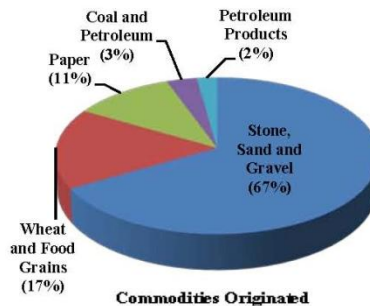
2007 – 75,583
2008 – 75,135
2009 – 50,698
2010 – 53,039

Rail Cars Terminated in OK

2007 – 211,338
2008 – 214,119
2009 – 152,360
2010 – 150,037

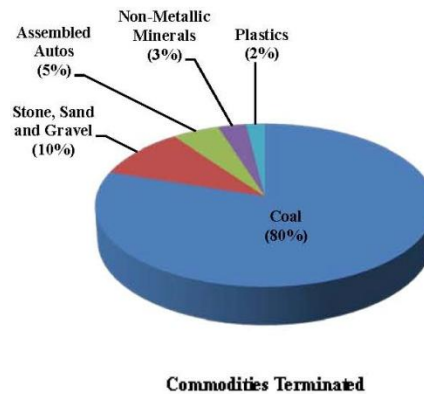
Oklahoma Top Commodities Originated (By Volume)

Stone Sand and Gravel –	31,823 Cars
Wheat and Food Grains –	7,956 Cars
Paper –	5,304 Cars
Coal and Petroleum –	1,591 Cars
Petroleum Products –	1,061 Cars



Oklahoma Top Commodities Terminated (By Volume)

Coal –	120,030 Cars
Stone Sand and Gravel –	15,003 Cars
Assembled Autos –	7,502 Cars
Non-Metallic Minerals –	4,501 Cars
Plastics –	3,000 Cars



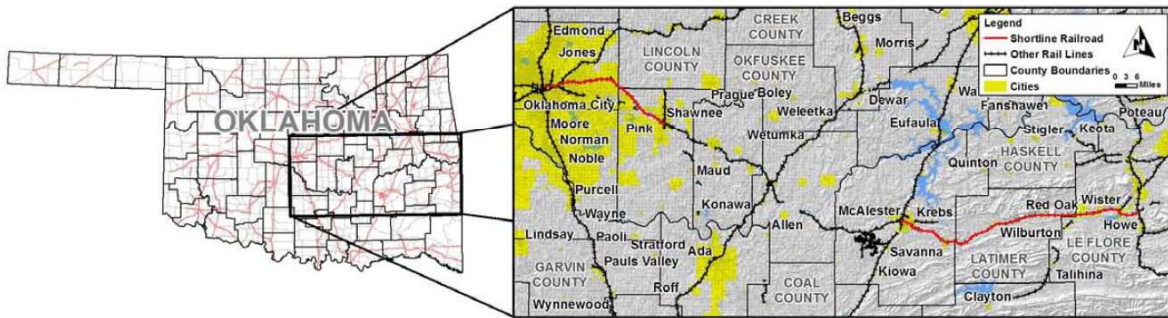


Railroad Profile



Arkansas – Oklahoma Railroad Company (AOK)

Arkansas – Oklahoma Railroad Company is a family owned and operated Class III railroad serving customers along a 118-mile corridor between Howe, OK to McAlester, OK and Shawnee, OK to Midwest City, OK. The key commodities received are wheat, corn, oats, corn soy milk, feed ingredients, frac sand, ceramic proppant, auto’s plastic resin pellets, drilling fluid products, hydrochloric acid, lumber, and hydro processing catalyst. The key commodities that are shipped are coal, aggregate, and decorative stone. The AOK can accommodate unit pipe trains at Midwest City, OK, McAlester, OK and Wister, OK.



Track Data

Route Miles	118
Miles of Trackage Rights –	36
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	0
Weight of Rail – MP 482-458 is 112# continuous welded rail	
MP 458-455 is 110# continuous welded rail	
MP 455-446 is 112# continuous welded rail	
MP 372-361 is 110# jointed rail	
MP 361-327 is 112# jointed rail	
MP 327-308 is 90# jointed rail	
MP 308-295 is 110# jointed rail	

Economic Data

2010 Employees (in Oklahoma) -	45
2010 Annual Payroll -	\$1,125,000
2010 In-State Purchases -	\$2,100,000
2010 Capital Improvements Spending (in Oklahoma) -	\$450,000

Non-286,000 lb Rail Structures – All bridges rated 263K

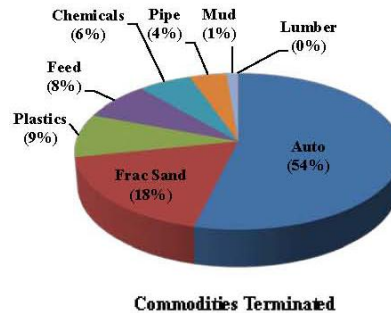
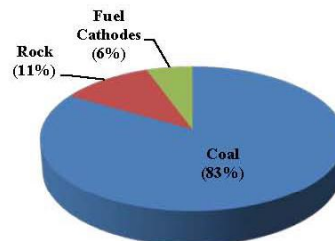
<u>Rail Cars Originated in OK</u>	<u>Rail Cars Terminated in OK</u>
2007 – 3,200	2007 – 7,500
2008 – 3,500	2008 – 7,900
2009 – 4,500	2009 – 8,200
2010 – 5,000	2010 – 9,000

Oklahoma Top Commodities Originated (By Volume)

Coal –	75,000 Tons
Rock –	10,000 Tons
Fuel Cathodes –	5,000 Tons

Oklahoma Top Commodities Terminated (By Volume)

Auto –	450,000 Tons
Frac Sand –	150,000 Tons
Plastics –	75,000 Tons
Feed –	65,000 Tons
Chemicals –	50,000 Tons
Pipe –	35,000 Tons
Mud –	10,000 Tons
Lumber –	1,000 Tons



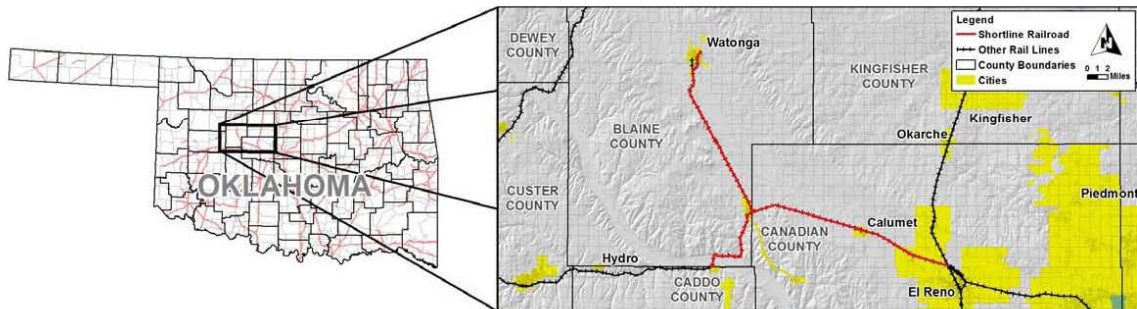


Railroad Profile



AT&L Railroad (AT&L)

The AT&L Railroad was started in May 1985 by the Wheeler Brothers Grain Company operating about 49 miles of former Chicago, Rock Island and Pacific Railroad track in Oklahoma. It replaced the North Central Oklahoma Railway who operated the track between 1983 and 1985. The AT&L is based in Watonga, Oklahoma. AT&L operates freight service from Watonga, Oklahoma to Geary to El Reno, Oklahoma 39.7 miles and 9.6 miles through Geary, Oklahoma to Bridgeport, Oklahoma. The line transports grain, fertilizer and agricultural products.



Track Data

Route Miles	47
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	1.5
Weight of Rail – Watonga to El Reno	
MP 0-8.5	80#
MP 8.5-17	90#
MP 17-28	100#
MP 28-39	112#

Non-286,000 lb Rail Structures – None

Economic Data

2010 Employees (in Oklahoma) -	6
2010 Annual Payroll -	\$222,966
2010 In-State Purchases -	\$242,470
2010 Capital Improvements Spending (in Oklahoma) -	\$794,453

Rail Cars Originated in OK

2007 – 2,394
2008 – 4,010
2009 – 1,553
2010 – 2,275

Rail Cars Terminated in OK

2007 – 40
2008 – 43
2009 – 17
2010 – 10

Oklahoma Top Commodities Originated (By Volume)

Wheat – 227,500 Tons

Oklahoma Top Commodities Terminated (By Volume)

Fertilizer – 10,000 Tons

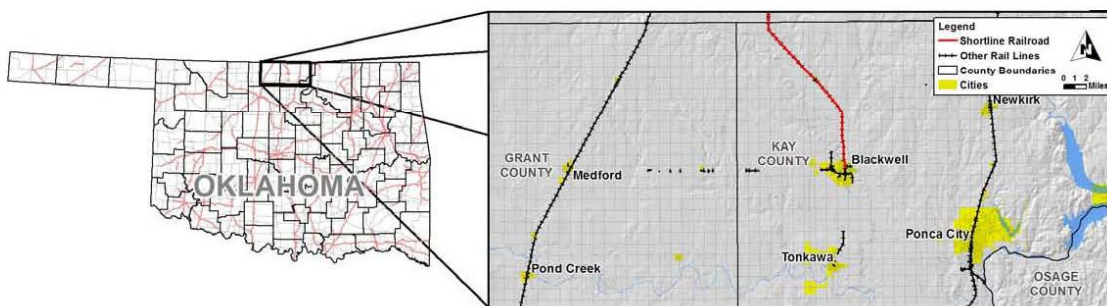


Railroad Profile



Blackwell Northern Gateway Railroad (BNGR)

Owned by the Blackwell Industrial Authority (BIA) and Oklahoma Department of Transportation (ODOT), this line is operated by US Rail Partners, Ltd. The line serves the Blackwell Industrial Park at its south end and connections are made at Wellington, KS with BNSF Railway and Union Pacific. Blackwell Northern Gateway Railroad (BNGR) provides transloading opportunities thru US Rail Partners Logistics Services. Located centrally between Wichita, KS and Tulsa and Oklahoma City, OK, this location provides an ideal central distribution point for products destined for all three population centers.



Track Data

Route Miles	18
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	18
Weight of Rail –	predominately 85#
Non-286,000 lb Rail Structures – Trestles at the following milepost:	0.1, 7.4, 7.7, 9.4, 14.0, 15.5, 18.4, 19.1, 19.3, 19.6, 19.9, 20.1, 21.9, 24.9, 25.6, 26.0, 26.3, 26.8, 27.1, 27.8, 28.1, 28.9, 29.9, 30.4, 30.7, 33.1, 33.6, 124.5

Economic Data

2010 Employees (in Oklahoma) -	6
2010 Annual Payroll –	Not provided
2010 In-State Purchases -	None
2010 Capital Improvements Spending (in Oklahoma and Kansas) -	\$150,000

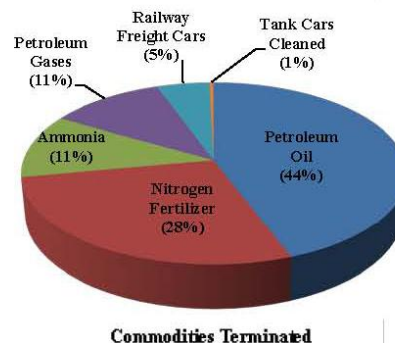
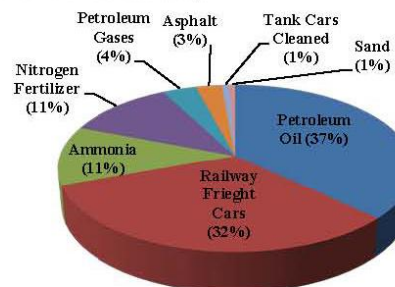
<u>Rail Cars Originated in OK</u>	<u>Rail Cars Terminated in OK</u>
2007 – 114	2007 – 178
2008 – 113	2008 – 357
2009 – 393	2009 – 521
2010 – 344	2010 – 202

Oklahoma Top Commodities Originated (By Volume)

Petroleum Oil –	7,969 Tons
Railway Freight Cars –	6,923 Tons
Ammonia –	2,486 Tons
Nitrogen Fertilizer –	2,443 Tons
Petroleum Gases –	772 Tons
Elevated Temp. Liquid (Asphalt) –	584 Tons
Tank Cars Cleaned –	167 Tons
Sand –	132 Tons

Oklahoma Top Commodities Terminated (By Volume)

Petroleum Oil –	3,912 Tons
Nitrogen Fertilizer –	2,443 Tons
Ammonia –	994 Tons
Petroleum Gases –	984 Tons
Railway Freight Cars –	452 Tons
Tank Cars Cleared –	36 Tons



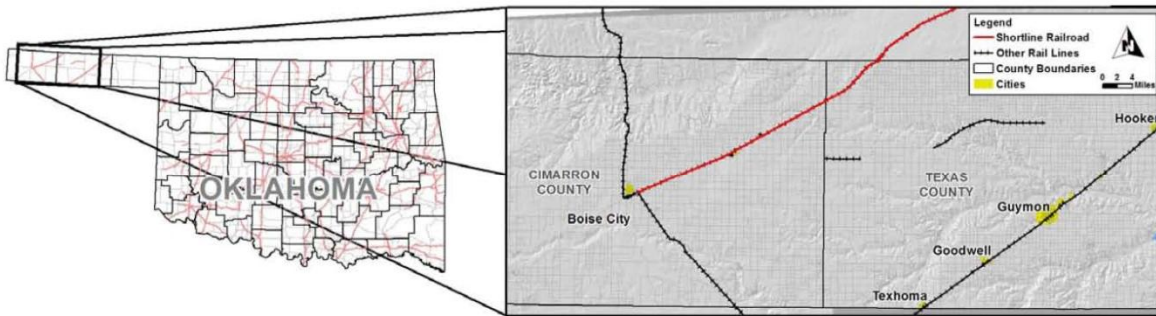


Railroad Profile



Cimarron Valley Railroad (CVR)

The Cimarron Valley Railroad is based in Satanta, Kansas, and consists of the former Santa Fe C.V. and Manter Subdivisions (Dodge City, KS – Boise City, OK and Satanta to Springfield, CO, respectively). The railroad operates a total of 254 miles of track; traffic is mostly grain and agricultural, but the company handles some chemical and general merchandise traffic as well. CVR began operation in February 1996.



Track Data

Route Miles	35
Miles of Trackage Rights –	5
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	0
Weight of Rail –	MP 120-MP 155-90#
Non-286,000 lb Rail Structures –	0

Economic Data

2010 Employees (in Oklahoma) -	0
2010 Annual Payroll –	\$0
2010 In-State Purchases -	\$2,500
2010 Capital Improvements Spending (in Oklahoma) -	\$30,000

Rail Cars Originated in OK

2007 – 30
2008 – 60
2009 – 45
2010 – 107

Rail Cars Terminated in OK

2007 – 6
2008 – 8
2009 – 5
2010 – 5

Oklahoma Top Commodities Originated (By Volume)

Wheat – 13,910 Tons

Oklahoma Top Commodities Terminated (By Volume)

Fertilizer – 650 Tons

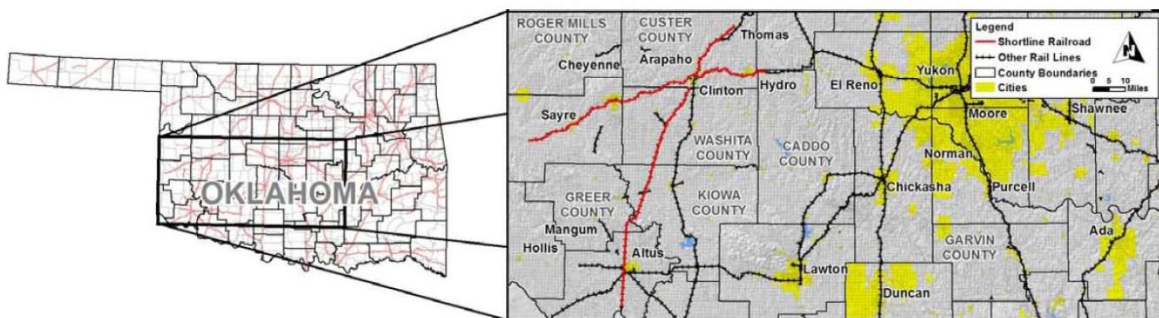


Railroad Profile



Farmrail (FMRC)

Farmrail Corporation (FMRC) began operation in 1981 and became a wholly owned subsidiary of Farmrail System, Inc., an employee-owned holding company, in 1987. It is the lessee-manager of 161 miles of main line owned by Oklahoma Department of Transportation serving six rural counties in western Oklahoma and connects with other railroads at Clinton, Frederick and Altus. Principal commodities handled are winter wheat, crushed stone, oilfield supplies, and petroleum products. Service is coordinated with affiliated carrier GNBC, with which personnel, equipment and facilities are shared.



Track Data

Route Miles	161
Miles of Trackage Rights – (over GNBC, Ewing-Foley)	12.7
Miles of Abandoned Track	None
Miles of Out-of-Service Track	20.4
Weight of Rail – MP 562.0-MP 629.0 – 100# (Weatherford-Sayre)	
MP 399.0-MP 479.9- 70# (Clinton-Elmer)	

Economic Data

2010 Employees (in Oklahoma) –	22
2010 Annual Payroll –	\$ 704,752
2010 In-State Purchases -	\$2,360,116
2010 Capital Improvements Spending (in Oklahoma) -	\$ 205,993

Non-286,000 lb Rail Structures – One of 110 bridges has a verified rating for 286,000#; the rating for track and other structures is 268,000#.

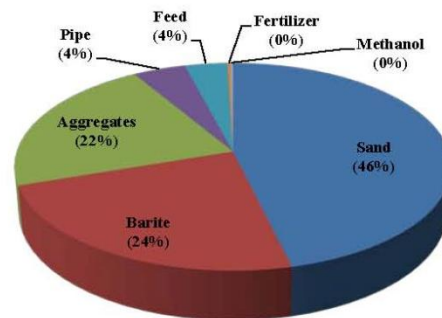
<u>Rail Cars Originated in OK</u>	<u>Rail Cars Terminated in OK</u>
2007 – 1,472	2007 – 3,672
2008 – 1,804	2008 – 3,774
2009 – 496	2009 – 2,887
2010 – 1,357	2010 – 5,210

Oklahoma Top Commodities Originated (By Volume)

Wheat – 160,000 Tons

Oklahoma Top Commodities Terminated (By Volume)

Sand – 229,600 Tons
 Barite – 117,100 Tons
 Aggregates – 107,400 Tons
 Pipe – 22,200 Tons
 Feed – 18,100 Tons
 Fertilizer – 1,300 Tons
 Methanol – 1,000 Tons



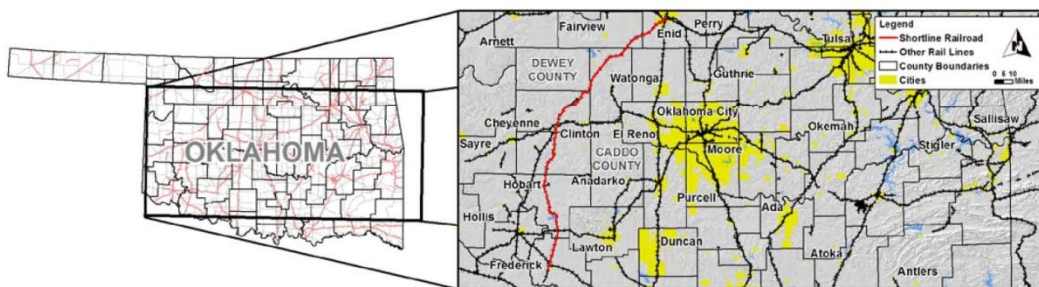
Commodities Terminated



Railroad Profile

Grainbelt (GNBC)

Grainbelt Corporation (GNBC) began operation in 1987 as a wholly owned subsidiary of Farmrail System, Inc., an employee-owned railroad holding company. It operates 176 miles of main line acquired from a predecessor of BNSF Railway Company serving eight rural counties in western Oklahoma and connects with other railroads at Enid, Clinton, Snyder and Altus. GNBC also has 25 miles of trackage rights in Oklahoma to facilitate connections with BNSF. Principal commodities handled are oilfield supplies, winter wheat, crushed stone, gypsum products, feed ingredients, agricultural chemicals, and petroleum products. Service is coordinated with affiliated carrier FMRC, with which personnel, equipment and facilities are shared.



Track Data

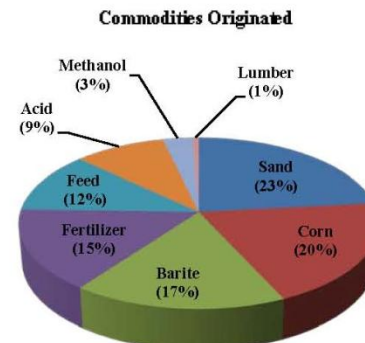
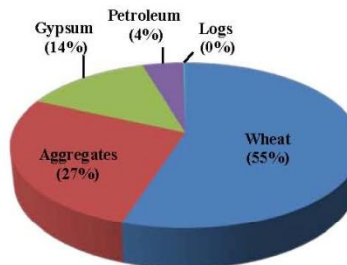
Route Miles	176
Miles of Trackage Rights –	25
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail –	MP 588.3-MP 666.2- 90# (Enid-Foley)

- MP 666.2-MP 681.0-115# (Foley-Ewing)
- MP 681.0-MP 733.0- 90# (Ewing-Roosevelt)
- MP 733.0-MP 738.5-100# (Roosevelt-Mountain Park)
- MP 738.5-MP 764.0- 90# (Mountain Park-Frederick)

Non-286,000 lb Rail Structures – Six of 100 bridges are rated for 286,000# (based on engineering assessment); the rating for track and other structures is 268,000#.

Economic Data

2010 Employees (in Oklahoma) –	30
2010 Annual Payroll –	\$ 936,791
2010 In-State Purchases -	\$3,829,072
2010 Capital Improvements Spending (in Oklahoma) -	\$ 648,610



Rail Cars Originated in OK

2007 –	5,772
2008 –	7,194
2009 –	3,214
2010 –	2,713

Rail Cars Terminated in OK

2007 –	3,023
2008 –	2,429
2009 –	2,109
2010 –	2,740

Oklahoma Top Commodities Originated (By Volume)

Wheat –	221,800 Tons
Aggregates –	107,400 Tons
Gypsum –	55,100 Tons
Petroleum –	17,900 Tons
Logs –	800 Tons

Oklahoma Top Commodities Terminated (By Volume)

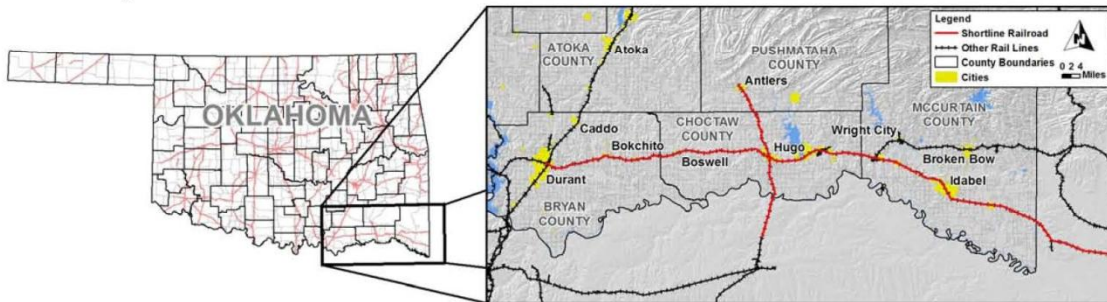
Sand –	63,900 Tons
Corn –	54,300 Tons
Barite –	45,400 Tons
Fertilizer –	42,200 Tons
Feed –	31,500 Tons
Acid –	25,600 Tons
Methanol –	8,400 Tons
Lumber –	1,700 Tons



Railroad Profile

Kiamichi Railroad (KRR)

The Kiamichi Railroad Company is a Class III short-line railroad headquartered in Hugo, Oklahoma. KRR operates two lines totaling 231 miles which intersect in Hugo, as well as maintaining trackage rights on an additional 45 miles of track. The main line (186 miles) runs from Hope, Arkansas (where it interchanges with Union Pacific Railroad) to Lakeside, Oklahoma, then along 20 miles of BNSF Railway trackage rights to a BNSF interchange point at Madill, Oklahoma. Along this line, KRR interchanges with Union Pacific at Durant, Oklahoma, with Kansas City Southern Railway at Ashdown, Arkansas, and with De Queen and Eastern Railroad via Texas, Oklahoma and Eastern Railroad at Valliant, Oklahoma. A 40-mile branch line runs from Antlers, Oklahoma to Paris, Texas. KRR traffic generally consists of coal, lumber, paper, glass, cement, pulpwood, stone and food products.



Track Data

Route Miles	158
Miles of Trackage Rights –	20
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	2
Weight of Rail – MP 620.2 – 702 generally	115#
MP 702.2 – 805.5 generally	90#
MP 541.6 – 581.5 generally	90#

Non-286,000 lb Rail Structures – MP-702.2 – 805.5
MP-541.6 – 581.5

Rail Cars Originated in OK Rail Cars Terminated in OK

2007 – 12,600	2007 – 40,159
2008 – 14,000	2008 – 38,927
2009 – 10,200	2009 – 31,646
2010 – 10,450	2010 – 30,766

Oklahoma Top Commodities Originated (By Volume)

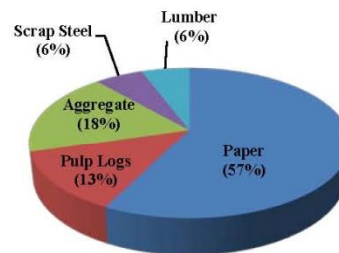
Paper –	600,000 Tons
Pulp Logs –	135,000 Tons
Aggregate –	190,000 Tons
Scrap Steel –	60,000 Tons
Lumber –	60,000 Tons

Oklahoma Top Commodities Terminated (By Volume)

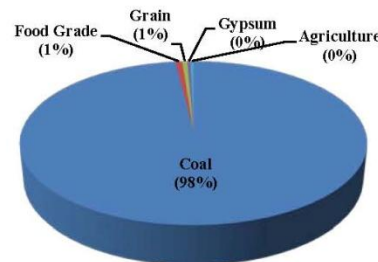
Coal –	1,600,000 Tons
Food Grade –	120,000 Tons
Grain –	90,000 Tons
Gypsum –	60,000 Tons
Agriculture –	50,000 Tons

Economic Data

2010 Employees (in Oklahoma) -	57
2010 Annual Payroll –	\$3,500,000
2010 In-State Purchases -	\$4,000,000
2010 Capital Improvements Spending (in Oklahoma) -	\$2,500,000



Commodities Originated



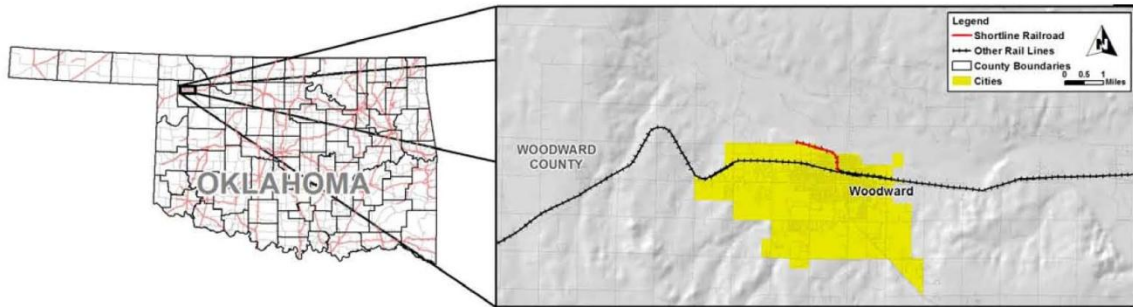
Commodities Terminated



Railroad Profile

Northwestern Oklahoma (NOKL)

Based in Woodward, the Northwestern Oklahoma Railroad connects with the BNSF. Its major customer is a car rebuilding facility located in Woodward. The railroad owns a sizeable car fleet and its cars can be found operating on class ones, regionals, and other shortlines throughout North America. The railroad's only locomotive is a 65-ton GE center-cab switcher. The NOKL operates 5 miles of trackage in Oklahoma.



Track Data

Route Miles	5
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail –	combination of 136# continuous welded rail and 90# and 110# jointed rail.

Non-286,000 lb Rail Structures – **None**

Economic Data

2010 Employees (in Oklahoma) -	3
2010 Annual Payroll –	Not Available
2010 In-State Purchases –	Not Available
2010 Capital Improvements Spending (in Oklahoma) –	Not Available

Rail Cars Originated in OK

2007 –	0
2008 –	0
2009 –	0
2010 –	0

Rail Cars Terminated in OK

2007 –	450
2008 –	493
2009 –	88
2010 –	1,330

Oklahoma Top Commodities Originated (By Volume)

Oklahoma Top Commodities Terminated (By Volume)

(Tons Not Available)

- Sand
- Pipe
- Cement
- Bentonite

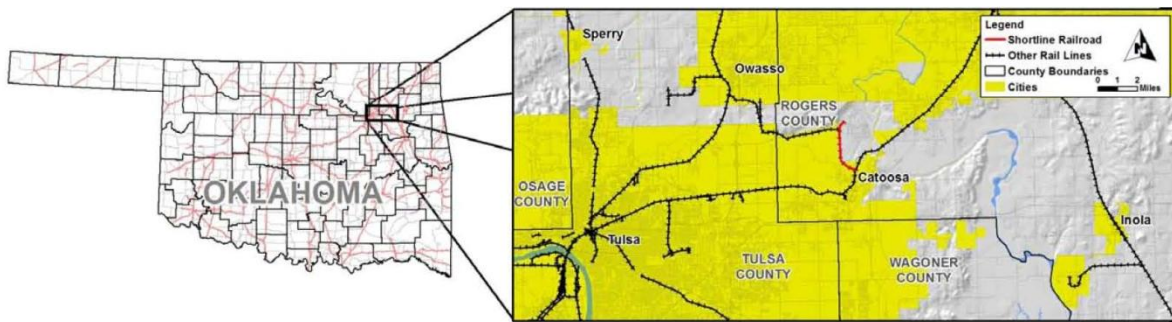


Railroad Profile



Tulsa's Port of Catoosa (PC)

The Port is served by both of the remaining Western Class I Carriers, the BNSF (direct) and the U.P. via a short-line switch on the South Kansas and Oklahoma Railroad. The South Kansas and Oklahoma is a Class III with an extensive network in both Kansas and Oklahoma. Rail service is usually booked with the origin carrier who typically provides the cars. The Port is a scheduled service point for all three carriers. Rail transit times for most bulk and break-bulk cargo are roughly equal to barge within 750 miles and are days shorter beyond 1000 miles.



Track Data

Route Miles	16
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	0
Weight of Rail –	
Non-286,000 lb Rail Structures –	0

Economic Data

2010 Employees (in Oklahoma) -	4
2010 Annual Payroll –	\$200,000 - \$250,000
2010 In-State Purchases -	\$0
2010 Capital Improvements Spending (in Oklahoma) -	\$0

Rail Cars Switched in OK

2006 – Est. @ 13,000

Oklahoma Top Commodities (By Volume)

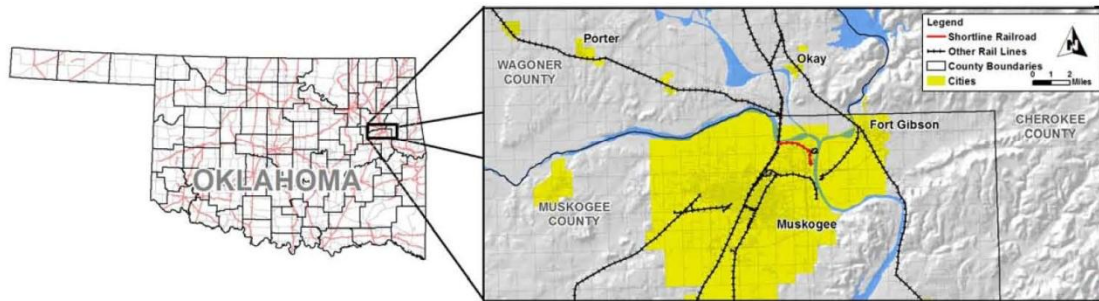
Not Available



Railroad Profile

Port of Muskogee Railroad (PMR)

The Port of Muskogee is a full-service facility that offers easy access to rail, truck, and barge transportation. Its inland location along the McClelland-Kerr Navigational system allows freight to be transported to the Gulf Coast and around the world via the Arkansas and Mississippi Rivers. The Port of Muskogee has a rail marshalling yard and an internal track system that is within the Muskogee switching limits of the Union Pacific Railroad. The port railroad switches cars within the Port for the mainline railroad. Multiple switches are provided to businesses within the Port on an as needed basis.



Track Data

Route Miles	4.5
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail –	Not Available
Non-286,000 lb Rail Structures –	None

Economic Data

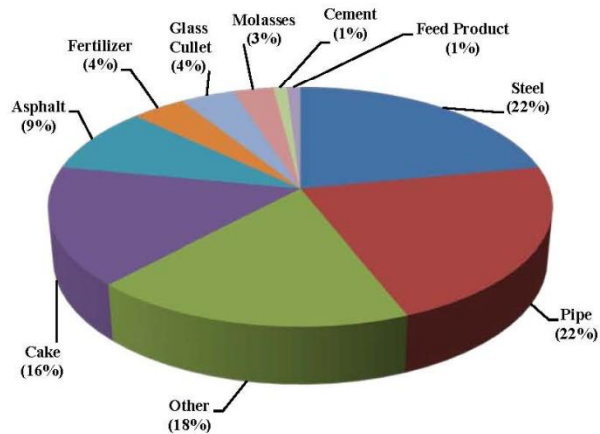
2010 Employees (in Oklahoma) -	0
2010 Annual Payroll –	\$0
2010 In-State Purchases -	\$0
2010 Capital Improvements Spending (in Oklahoma) -	\$0

Rail Cars Switched in OK

2007 –	3,500 (Est.)
2008 –	4,000 (Est.)
2009 –	2,100 (Est.)
2010 –	3,425

Oklahoma Top Commodities Originated (By Volume)

Steel –	68,325 (Estimated Tons)
Pipe –	68,325 (Estimated Tons)
Other –	55,000 (Estimated Tons)
Cake –	49,700 (Estimated Tons)
Asphalt –	27,950 (Estimated Tons)
Fertilizer –	12,425 (Estimated Tons)
Glass Cullet –	12,425 (Estimated Tons)
Molasses –	9,325 (Estimated Tons)
Cement –	3,100 (Estimated Tons)
Feed Product –	3,100 (Estimated Tons)

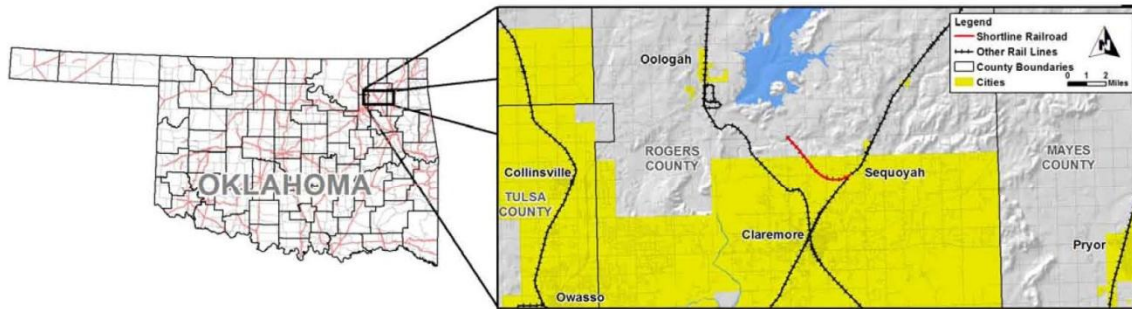




Railroad Profile

Public Service of Oklahoma (PSO)

Northeastern Station is a coal and gas fueled power-generating station in the Public Service Company of Oklahoma (PSO) subsidiary, which includes six generating facilities located in Oklahoma. This site is located in Rogers County near Oologah, Oklahoma.



Track Data

Route Miles	10
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	Inactive
Weight of Rail –	132#
Non-286,000 lb Rail Structures –	0

Economic Data

2010 Employees (in Oklahoma) –	0
2010 Annual Payroll –	\$0
2010 In-State Purchases -	\$0
2010 Capital Improvements Spending (in Oklahoma) -	\$0

Rail Cars Originated in OK Rail Cars Terminated in OK

2007 – 0	2007 – 0
2008 – 0	2008 – 0
2009 – 0	2009 – 0
2010 – 0	2010 – 0

Oklahoma Top Commodities Originated (By Volume)

None

Oklahoma Top Commodities Terminated (By Volume)

Coal

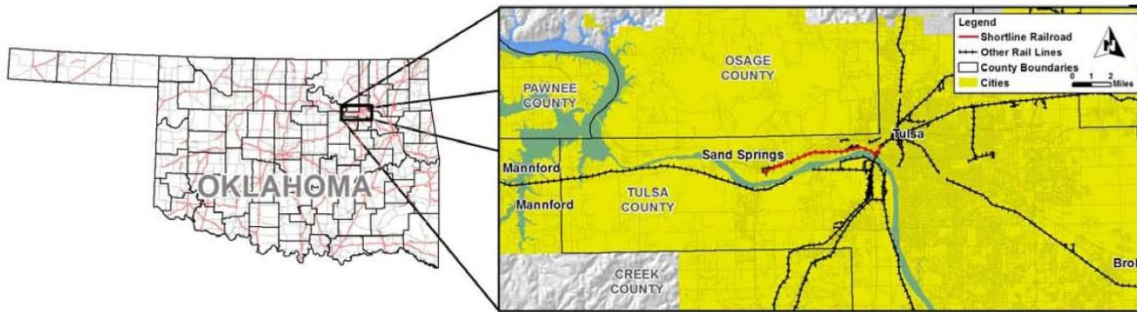


Railroad Profile



Sand Springs Railway (SS)

The Sand Springs Railway is a class III railroad operating in Oklahoma. It provides freight rail service between Sand Springs and Tulsa over a 20-mile route. The company primarily hauls steel, pulp, scrap iron, scrap paper, petroleum products, plastic, and lumber. It interchanges with the Union Pacific Railroad, BNSF Railway and the South Kansas & Oklahoma Railroad.



Track Data

Route Miles	20
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	2
Weight of Rail –	
Adams – 65 th St.:	133#
65 th – 33 rd St.:	90#
33 rd –New Block Park:	90#
New Block Pk –	
Tulsa BNSF Intchg:	110#
Morrow Rd. to HWY. 97:	90#
Yard Tracks: 90, 75 and 110#	

Economic Data

2010 Employees (in Oklahoma) -	10
2010 Annual Payroll –	\$900,000
2010 In-State Purchases -	None
2010 Capital Improvements Spending (in Oklahoma) -	\$28,000,000

Non-286,000 lb Rail Structures – None

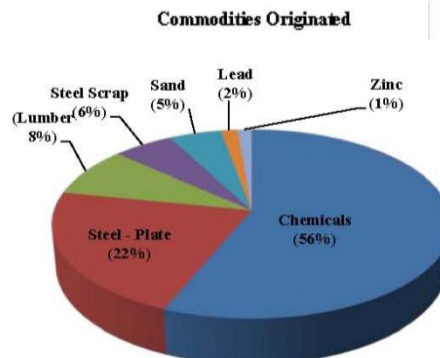
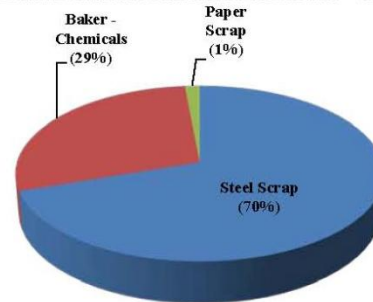
<u>Rail Cars Originated in OK</u>	<u>Rail Cars Terminated in OK</u>
2007 – 3,900	2007 – 5,250
2008 – 3,400	2008 – 5,000
2009 – 1,600	2009 – 2,050
2010 – 1,650	2010 – 2,000

Oklahoma Top Commodities Originated (By Volume)

Steel Scrap –	85,000 Tons
Baker - Chemicals –	35,000 Tons
Paper Scrap –	1,800 Tons

Oklahoma Top Commodities Terminated (By Volume)

Chemicals –	100,000 Tons
Steel-Plate –	39,000 Tons
Lumber –	15,000 Tons
Steel Scrap –	10,000 Tons
Sand –	8,700 Tons
Lead –	2,800 Tons
Zinc –	2,300 Tons

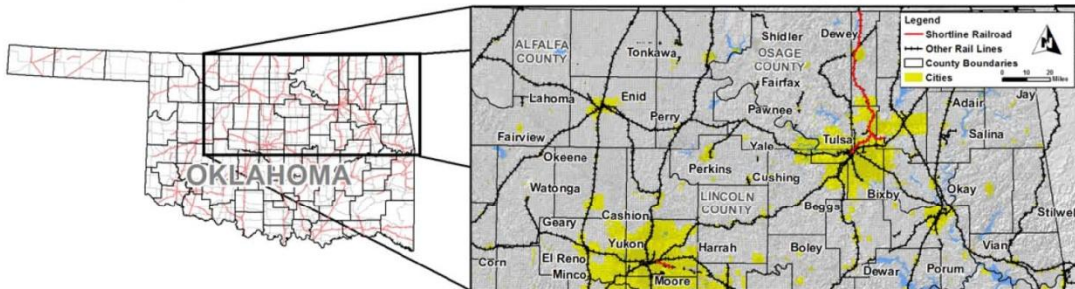




Railroad Profile

South Kansas & Oklahoma Railroad (SK&O)

The SK&O operates freight service from a connection with BNSF and UP at Tulsa, OK North 147 miles to Iola, KS, and from Chanute to Winfield (BNSF) and Wellington (BNSF, UP), KS, 129 miles. A third line runs from Cherryvale (BNSF) to a connection with UP and the affiliated Southeast Kansas Railroad at Coffeyville, KS, 18.7 miles. SK&O also serves the Tulsa Port Authority via an 8-mile branch from Owasso, OK to the Port of Catoosa. Traffic includes grain, flour, cement and aggregates.



Track Data

Route Miles	67
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail – 157.2-165.5	90#
0-42.1A	90#
42.1A-50.9A	131#
50.9A-67A	90#
67A-71.3A	112#
71.3A-71.9A	90#
71.9A-76.1A	112#
76.1A-87.9A	90#
87.9A-88.1A	110#
88.1A-89.7A	90#
89.7A-90.1A	110#
90.1A-90.3A	90#

Economic Data

2010 Employees (in Oklahoma) -	16
2010 Annual Payroll –	\$618,576
2010 In-State Purchases -	None
2010 Capital Improvements Spending (in Oklahoma) -	\$254,184

Non-286,000 lb Rail Structures – Tulsa Sub MP 157.2 to 165.5 and 0 to 90.3 263,000#.

Rail Cars Originated in OK

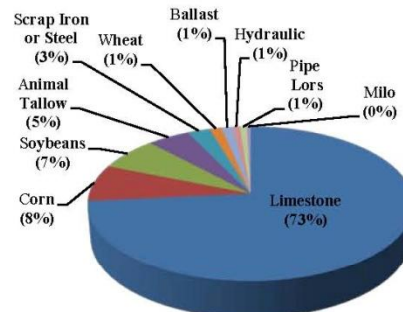
2007 – 1940	2007 – 4843
2008 – 2742	2008 – 5030
2009 – 2718	2009 – 3939
2010 – 3329	2010 – 4100

Oklahoma Top Commodities Originated (By Volume)

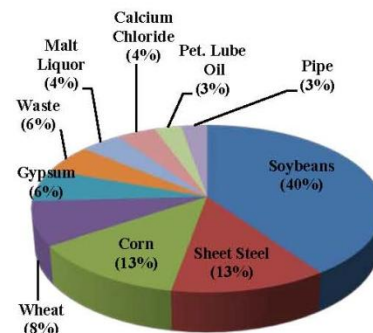
Limestone-	277,469 Tons	Wheat-	5,179 Tons
Corn-	28,918 Tons	Ballast-	4,731 Tons
Soybeans-	25,952 Tons	Hydraulic-	3,143 Tons
Animal Tallow-	18,012 Tons	Pipe Iors-	2,864 Tons
Scrap Iron or Steel-	9,623 Tons	Milo-	1,666 Tons

Oklahoma Top Commodities Terminated (By Volume)

Soybeans-	177,084 Tons	Waste-	24,332 Tons
Sheet Steel-	55,650 Tons	Malt Liquor-	18,897 Tons
Corn-	56,380 Tons	Calcium Chloride-	18,202 Tons
Wheat-	37,426 Tons	Pet. Lube Oil-	12,434 Tons
Gypsum-	27,896 Tons	Pipe-	12,046 Tons



Commodities Originated



Commodities Terminated

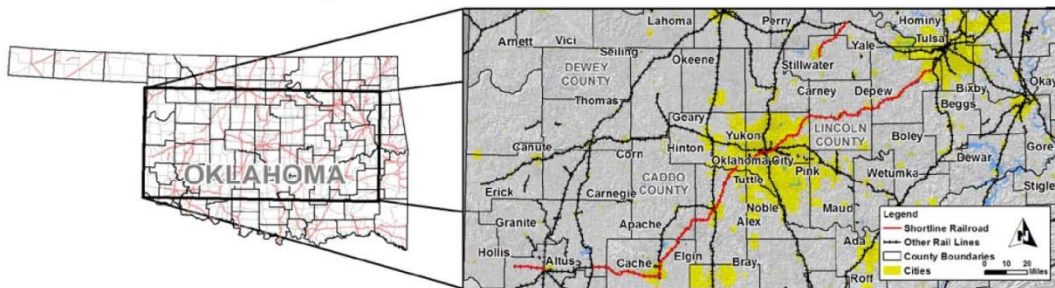


Railroad Profile



Stillwater Central Railroad (SLWC)

Stillwater Central Railroad is a shortline railroad operating in Oklahoma. A subsidiary of the Watco Companies, the SLWC operates over 275 miles of track in the state from Sapulpa through Oklahoma City (state owned track) through Lawton to Snyder and has trackage rights over BNSF from Sapulpa to Tulsa, and from Snyder to Altus. SLWC also operates the former Hollis & Eastern from Altus to Hollis. SLWC operates a branch from Stillwater to a connection with BNSF at Pawnee. Primary business is handling mined, mineral, and industrial products.



Track Data

Route Miles	240
Miles of Trackage Rights -	42
Miles of Abandoned Track (since 2007) -	0
Miles of Out-of-Service Track -	0
Weight of Rail - 1.0 - 14.2	90#
	438.9 - 540.0
	115#
	541.2 - 542.9
	136#
	542.9 - 558.0
	112#
	558.0 - 560.0
	132#
	560.0 - 668.7
	112#

Economic Data

2010 Employees (in Oklahoma) -	58
2010 Annual Payroll -	\$1,756,499
2010 In-State Purchases -	\$1,299
2010 Capital Improvements Spending (in Oklahoma) -	\$731,923

Non-286,000 lb Rail Structures - Per the completion of the 2011 capital year all of the Sooner and Lawton Sub will be 286,000# rail. The Cowboy sub will remain 263,000#. The Duke sub is 263,000#.

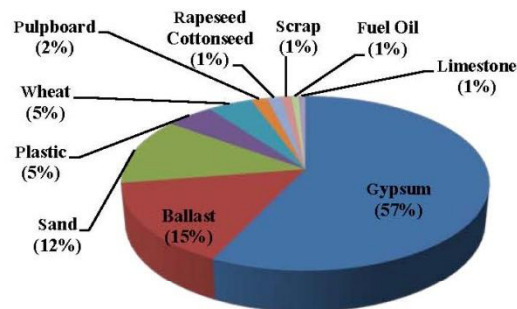
Rail Cars Originated in OK	Rail Cars Terminated in OK
2007 - 11,779	2007 - 28,315
2008 - 12,005	2008 - 32,465
2009 - 7,512	2009 - 23,737
2010 - 8,669	2010 - 42,536

Oklahoma Top Commodities Originated (By Volume)

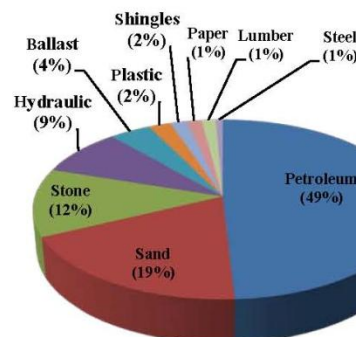
Gypsum - 469,510 Tons	Rapeseed/Cottonseed - 11,707 Tons
Ballast - 125,780 Tons	Scrap - 9,018 Tons
Sand - 102,740 Tons	Fuel Oil - 5,867 Tons
Plastic - 39,838 Tons	Limestone - 5,703 Tons
Wheat - 37,719 Tons	
Pulpboard - 13,532 Tons	

Oklahoma Top Commodities Terminated (By Volume)

Petroleum - 1,510,795 Tons	Shingles - 50,086 Tons
Sand - 574,823 Tons	Paper - 45,465 Tons
Stone - 377,910 Tons	Lumber - 42,447 Tons
Hydraulic - 260,807 Tons	Steel - 21,126 Tons
Ballast - 124,536 Tons	
Plastic - 67,366 Tons	



Commodities Originated



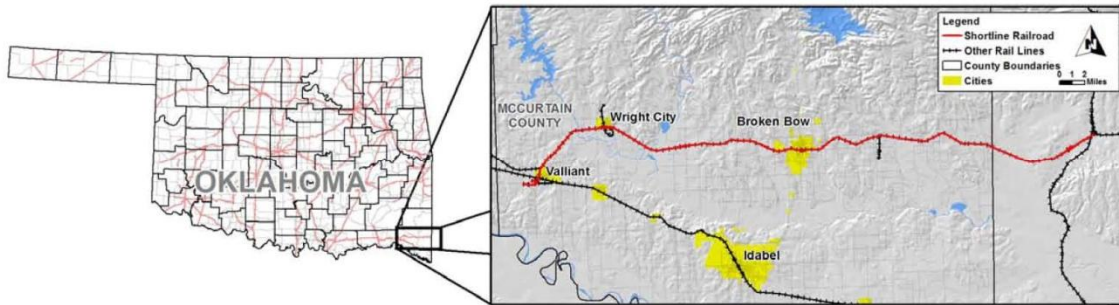
Commodities Terminated



Railroad Profile

Texas, Oklahoma & Eastern Railroad (TO&E)

The company was incorporated October 21, 1910, and opened from Valliant to Broken Bow (24.5 miles) on July 15, 1911. The final 15.3 miles from Broken Bow to West Line, AR opened in 1921. Passenger service ended in 1948. In 2011, the DQE was purchased by Patriot Rail from Weyerhaeuser. TO&E operates in conjunction with the DeQueen & Eastern Railroad (DQE) from a connection with DQE at West Line, AR to a connection with the Kiamichi Railroad at Valliant, OK (39.8 miles). Traffic consists of forest products, gypsum board, grain and paper.



Track Data

Route Miles	41
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	0
Weight of Rail –	MP 0-27.05: 112-115#
	MP 27-28.27: 100#
	MP 28.27-28.6: 115#
	MP 28.6-29.4: 100#
	MP 29.4-31.1: 115#
	MP 31.1-33.8: 100#
	MP 33.8-34.3: 115#
	MP 34.3-35.3: 100#
	MP 35.3-41: 115#
Non-286,000 lb Rail Structures –	0

Economic Data

2010 Employees (in Oklahoma) -	12
2010 Annual Payroll –	Not Available
2010 In-State Purchases –	Not Available
2010 Capital Improvements Spending (in Oklahoma) –	Not Available

Rail Cars Originated in OK

2007 – Not Available
2008 – Not Available
2009 – 11,501
2010 – 13,635

Rail Cars Terminated in OK

2007 – Not Available
2008 – Not Available
2009 – 10,765
2010 – 16,097

Oklahoma Top Commodities Originated (By Volume)

- Container Board –
- Oriented Strand Board –
- Aggregate -

Oklahoma Top Commodities Terminated (By Volume)

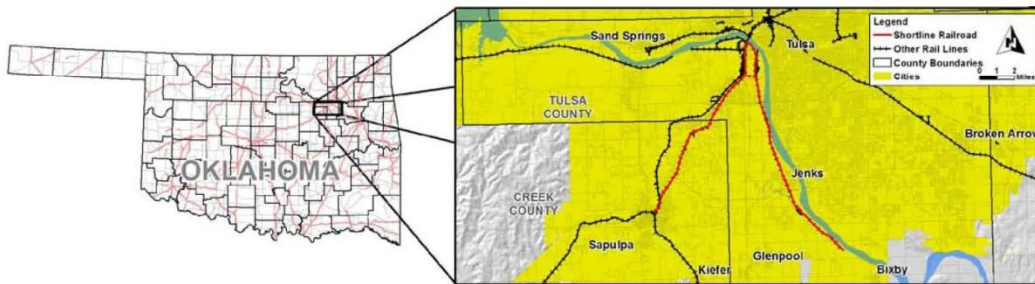
- Wood Chips (fiber) –
- Wasterpaper –
- Chemicals –
- Grain –
- Chips -



Railroad Profile

Tulsa-Sapulpa Union Railway (TSU)

The Tulsa-Sapulpa Union Railway Co. (TSU) is a small Oklahoma shortline railway that operates between Sapulpa and Tulsa, Oklahoma. It is one of Oklahoma's oldest operating railroads with origins dating back to 1907. The railroad operates trackage between Tulsa and Sapulpa serving St. Gobain Glass Plant, Prescor Inc., Greenbay Packaging Inc., Atlantis Plastics, CG Martin Company and Technotherm Corporation. The railway also operates trackage between Tulsa and Jenks, Oklahoma on behalf of Union Pacific Railroad (UP). This trackage serves Sinclair Oil Refinery, Kentube, Word Industries, Pepsi Cola Co., and Kimberly Clark Corporation. TSU has a direct connection with the Union Pacific in Tulsa, and BNSF railroad in Sapulpa, serving customers throughout the Tulsa Metropolitan area.



Track Data

Route Miles	23
Miles of Trackage Rights –	13
Miles of Abandoned Track (since 2007) –	None
Miles of Out-of-Service Track –	None
Weight of Rail – Predominately 75-90#; some up to 115#	
Non-286,000 lb Rail Structures – All is 263K	

Economic Data

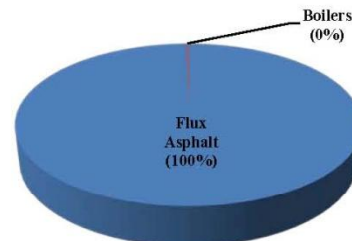
2010 Employees (in Oklahoma) -	8
2010 Annual Payroll –	\$394,566
2010 In-State Purchases -	None
2010 Capital Improvements Spending (in Oklahoma) -	\$328,019

Rail Cars Originated in OK Rail Cars Terminated in OK

2007 – 1,815	2007 – 4,090
2008 – 2,521	2008 – 4,449
2009 – 1,339	2009 – 3,960
2010 – 949	2010 – 3,906

Oklahoma Top Commodities Originated (By Volume)

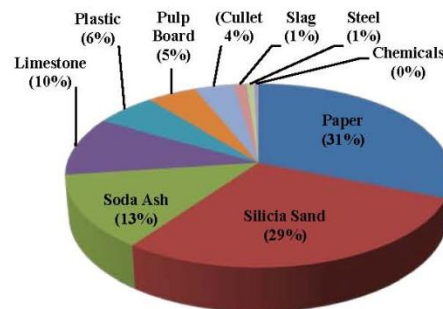
Flux Asphalt –	71,000 Tons
Boilers –	160 Tons



Commodities Originated

Oklahoma Top Commodities Terminated (By Volume)

Paper –	116,466 Tons
Silica Sand –	107,613 Tons
Soda Ash –	48,755 Tons
Limestone –	38,548 Tons
Plastic –	21,938 Tons
Pulp Board –	17,763 Tons
Cullet –	14,112 Tons
Slag –	4,794 Tons



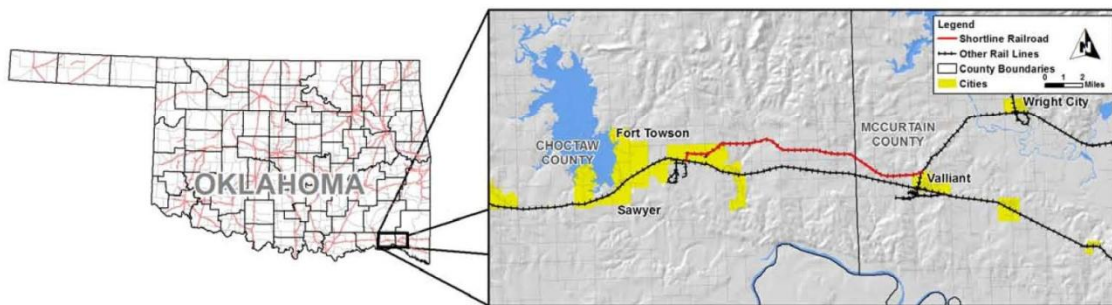
Commodities Terminated



Railroad Profile

WFEC Railroad Company (WFEC)

WFEC Railroad Company exists to assist in the transportation of coal to one of WFEC's electric generating plants near Fort Towson, OK. All operations and maintenance of the railroad are contracted out to private contractors. The railroad has 14 miles of track in Oklahoma and does not own or operate any locomotives or railcars.



Track Data

Route Miles	14.1
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	0
Weight of Rail –	136# rail
Non-286,000 lb Rail Structures –	0

Economic Data

2010 Employees (in Oklahoma) -	0
2010 Annual Payroll –	\$0
2010 In-State Purchases -	\$73,000
2010 Capital Improvements Spending (in Oklahoma) -	\$0

Rail Cars Originated in OK

2007 –	0
2008 –	0
2009 –	0
2010 –	0

Rail Cars Terminated in OK

2007 –	0
2008 –	0
2009 –	0
2010 –	0

Oklahoma Top Commodities (By Volume)

None

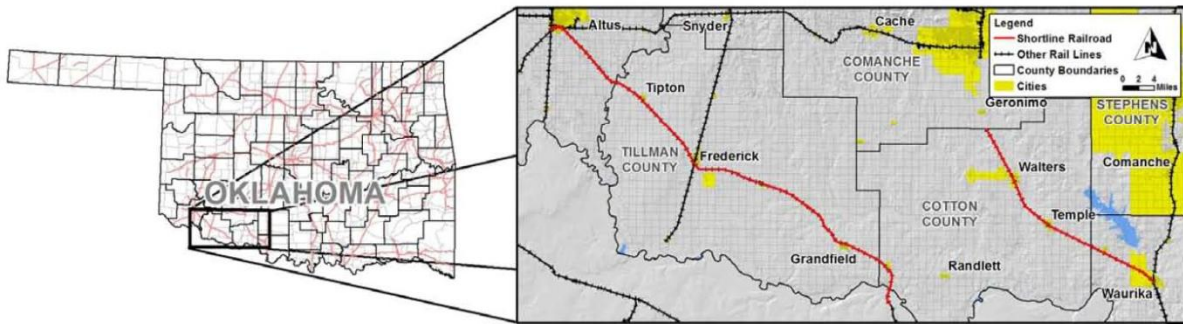


Railroad Profile



Wichita, Tillman & Jackson Railway (WT&J)

WT&J operates freight service from a connection with BNSF (and UP via trackage rights over BNSF) at Wichita Falls, TX to a connection with BNSF and Farmrail at Altus, OK (77.6 miles). Another connection is made with Grainbelt at Frederick, OK. A second disconnected line runs from a connection with UP at Waurika, OK to Walters, OK (24 miles). Traffic includes grain, fertilizer, gypsum board, sand, soda ash and chemicals used in glass manufacturing.



Track Data

Route Miles	85
Miles of Trackage Rights –	0
Miles of Abandoned Track (since 2007) –	0
Miles of Out-of-Service Track –	24
Weight of Rail – MP 17.54-19.0: 90#	
MP 19.00-26.7: 85#	
MP 26.07-78.6: 90#	

Non-286,000 lb Rail Structures – Bridge 76.1 (28 ft. Timber)
 Bridge 52.4 (78 ft. Timber)

All Southbound traffic from OK to Intchg. @ Wichita Falls passes over 4 timber structures in TX rated at 263k & 12.2 miles 85# rail.

Rail Cars Originated in OK

2007 – 2,283, incl. 1,012 bridged cars	2007 – 36
2008 – 1,560, incl. 478 bridged cars	2008 – 149, incl. 138 bridged cars
2009 – 1,469, incl. 482 bridged cars	2009 – 96, incl. 61 bridged cars
2010 – 3,073, incl. 1,496 bridged cars	2010 – 91, incl. 78 bridged cars

Rail Cars Terminated in OK

Oklahoma Top Commodities Originated (By Volume)

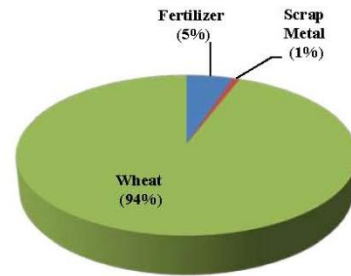
Wheat –	289,200 Tons
Scrap Metal –	2,400 Tons
Fertilizer –	15,700 Tons

Oklahoma Top Commodities Terminated (By Volume)

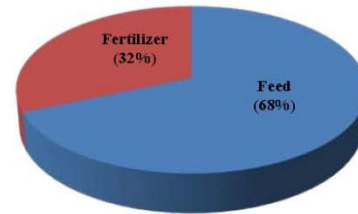
Feed –	6,300 Tons
Fertilizer –	2,900 Tons

Economic Data

2010 Employees (in Oklahoma) -	8
2010 Annual Payroll –	Not Available
2010 In-State Purchases -	\$454,480
2010 Capital Improvements Spending (in Oklahoma) -	\$572,360



Commodities Originated



Commodities Terminated



4. History of Railroad Development in Oklahoma

Railroads have long played a significant role in Oklahoma's development. By the time of the "Land Run of 1889," the state's railroad network had begun to develop. After the Civil War, the Missouri-Kansas-Texas Railroad, known as the Katy, laid the first rails in Oklahoma in 1870, completing a north-south line to Denison, TX in late 1872. A railroad network has been meeting the demand for transportation in the state for over 100 years with a brief absence of passenger rail in the 1980s and 1990s. A majority of today's highways and roadways in the state lie adjacent to existing or abandoned railroad corridors.

The advent of the Interstate Highway System in the mid-1950s changed the way Americans traveled. The automobile began to replace passenger rail as a preferred mode of long distance travel for a majority of Americans. Commercial air travel also hastened the demise of long distance passenger rail service. The extensive network of passenger trains that served Oklahoma in the 1950s had largely disappeared by the 1970s. As passenger rail declined in popularity, the private railroad companies focused almost entirely on freight.

The creation of the National Rail Passenger Corporation (Amtrak) in 1971 signaled the end of most passenger service in Oklahoma. Passenger services were eliminated, other than the Amtrak route between Chicago, Kansas City, Wichita, Oklahoma City, Fort Worth and Houston. Amtrak terminated this service in 1979. The States of Oklahoma and Texas reestablished passenger service between Oklahoma City and Fort Worth in 1999 with the operation of the *Heartland Flyer*.

The Class I railroads continue to transport the largest share of rail freight in Oklahoma. Rail moves much of the movement of bulk commodities in Oklahoma.

More recently, the development of intermodal freight operations with trains of containers has grown. These trains carry standard shipping containers either 40, 48 or 53 foot long, stacked on two levels on special freight cars. Large numbers of these trains are seen on the BNSF Transcon corridor, the east-west rail line connecting California ports with Chicago and eastern rail lines, and on the connecting line through Enid, Perry, Tulsa, and on to Memphis and points in the southeast.

The railroad, more than any other institution, has been responsible for the building of communities and industry throughout U.S. history. Oklahoma was no exception. Virtually all the major cities established in the latter half of the 19th century in the U.S. were located where a railroad line crossed a river. Water and transportation are perhaps the two most important elements needed by a community. Before there were pipelines, nearness to rivers was the



source of a community's water, and the train was the most effective means of transportation, especially for long distance travel or goods movement. Oklahoma City and Tulsa developed by having both water and railroads.

4.1 The Early Years – Development of Oklahoma’s Rail Network

Until the mid-19th Century, railroads were not allowed to cross Indian Territory. However, following the Civil War, permits were issued to railroad companies to cross Indian lands. While the Katy line passed through the eastern part of the Territory in the early 1870s, the first railroad allowed through the Unassigned Lands of Central Oklahoma¹¹ was the Atchison, Topeka and Santa Fe Railway, or the Santa Fe Railroad. The Santa Fe was chartered in Kansas in 1859 but construction actually started in 1868. The Santa Fe reached the future site of Oklahoma City in 1887. That line was initially part of the Southern Kansas Railroad, wholly owned by the Santa Fe. Oklahoma construction started in 1885 and was completed to Purcell in 1887. The Southern Kansas also built the rail line from Kiowa KS through Woodward to Amarillo TX in 1887 (now part of the BNSF Transcon).

At the time of the “Land Run of 1889”, the new Choctaw Line, later part of the Chicago, Rock Island and Pacific Railroad, the “Rock Island Line”, was approaching Oklahoma City from the east, from Little Rock and Memphis. Since Oklahoma City was also located on the north-south Santa Fe line, which was the only means of long distance goods transportation in the region, it became the trade center for nearby towns to its east and west. In 1890, the Chicago, Kansas and Nebraska Railroad line (after 1891 owned by the Rock Island), being constructed between Kansas and Texas, reached El Reno. In 1892, the Choctaw Coal and Railway Company (also later acquired by the Rock Island) completed a line from El Reno to Oklahoma City. This was followed by various company expansions and acquisitions, and El Reno become the crossroads of the main north-south and east-west lines of the Rock Island system including a line west to Amarillo and connecting with the Southern Pacific at Santa Rosa, NM. Another key Rock Island line between Kansas City and the Southern Pacific at Santa Rosa passed through the Oklahoma panhandle at Guymon.

During the same period, the St. Louis-San Francisco Railway, the “Frisco,” was building a line from Joplin Missouri to Tulsa. Local Oklahoma City developers formed the St. Louis and Oklahoma City Railroad to extend to Sapulpa connecting with the Frisco and bringing a third line to Oklahoma City. Thus, the Frisco came to Oklahoma City in 1898. At that time,

¹¹ The Unassigned Lands were a several county areas in central Oklahoma that had not been assigned to any native tribe by treaty. In 1889, these lands were opened to settlement and were the objective of the “Oklahoma Land Rush.”



Oklahoma City became the only community in the state with three railroad lines and became the state's principal distribution center. Two more rail lines were to follow, the Missouri-Kansas-Texas Railroad in 1902, and the Oklahoma City and Western in 1903.

The Katy actually laid its first rails in Oklahoma in 1870, reaching Vinita in 1872. In the early 1900s, the Katy connected Shreveport, Louisiana, San Antonio, Texas; and Tulsa and Oklahoma City, Oklahoma. Through aggressive expansion, the Katy developed a 3,865-mile system extending from St. Louis and Kansas City to Galveston and San Antonio on its north-south axis and east-west from Shreveport to the Oklahoma panhandle. The Katy main line passed through Vinita, Muskogee and McAlester enroute from Kansas City and St. Louis to Dallas and Fort Worth.

The Atlantic & Pacific Railroad, which subsequently became part of the Frisco, reached Vinita in 1871. It was extended to Tulsa in 1881-1882 and reached Sapulpa in 1886. It was not until the St. Louis & Oklahoma City Railroad Company built from Sapulpa to Oklahoma City in 1898, that the Atlantic & Pacific enjoyed adequate revenue.

Santa Fe's main line entered the state just south of Arkansas City, KS and passed through Ponca City, Perry, and Guthrie into Oklahoma City, then south to Fort Worth. This line is still in use today as a main line of BNSF, successor to the Santa Fe, and is the route of the *Heartland Flyer* between Oklahoma City and Fort Worth. An alternative main line was constructed between 1900 and 1904 from Newkirk, located on the original main line, through Cushing and Shawnee to Pauls Valley, where it rejoined the original main line. The alternative line through Cushing is no longer in operation except for eight miles between Shawnee and Aydelotte.

The Santa Fe network in the state filled out as numerous branches, chiefly promoted by nominally independent companies, were added. Two important railroads were the Kansas, Oklahoma Central and Southwestern, absorbed by the Santa Fe in 1900 (currently operated by the South Kansas & Oklahoma Railroad), with a line from Owen to Owasso and Tulsa, and the Oklahoma Central, with trackage from Lehigh to Chickasha by way of Ada and Purcell. The latter at one time was a principal east-west route but operations ceased in 1942.

In the Panhandle, the Southern Kansas Railway of Texas, in 1914 renamed Panhandle and Santa Fe, built several lines around Boise City with connections into Kansas and Texas, but the Santa Fe operated the lines from the beginning. The Kansas City, Mexico and Orient, with its line from Waldron (Kansas) through Fairview, Clinton, and Altus (Oklahoma) into Texas became part of the Santa Fe in 1928.

Eventually, a dense network of Santa Fe main and branch lines covered Oklahoma. Altogether, some 1500 miles connected most of the oil fields with markets throughout the country and provided transportation for agriculture and industry. Most of the Santa Fe main lines are still in



use today with only the old Eastern Oklahoma line, Newkirk-Shawnee-Pauls Valley, and the Oklahoma Central lines having been abandoned, along with some other branches. In 1997, the Santa Fe merged with the Burlington Northern Railroad to form the Burlington Northern Santa Fe system (now BNSF), which also includes the former St. Louis-San Francisco Railway (Frisco).

The St. Louis-San Francisco Railway also contributed to Oklahoma's development. It operated an extensive route network that was permitted throughout the entire state and built when Oklahoma was still Indian Territory. Oil was discovered adjacent to the Frisco line in 1907 and the Frisco rails reached many important oil fields.

Another independent rail line was constructed from Sapulpa, Oklahoma to Denison, Texas in the late 1890s. This line was almost 200 miles in length, with a little more than 190 miles located in Oklahoma. The line and equipment and other property became part of the Frisco in 1901.

Many other rail lines started operations in Oklahoma, contributing to the state's early development. The Oklahoma City & Western Railroad Company, an Oklahoma corporation, together with the Oklahoma City & Texas Railroad Company, a Texas corporation, built the line from the end of track of the former St. Louis & Oklahoma City Railroad Company, at Oklahoma City, to Quanah, Texas. Approximately 175 miles of this road was in Oklahoma.

The Arkansas Valley & Western Railway Company, incorporated in Oklahoma Territory in 1902, constructed a line connecting West Tulsa to the Santa Fe at Avard in 1904. The Blackwell, Enid & Southwestern Railway Company, incorporated in 1900, constructed the railroad from Blackwell through Enid to Red River north of Vernon, Texas. The Ozark & Cherokee Central Railway Company, an Arkansas corporation, constructed a railroad from Fayetteville, Arkansas, to Muskogee, completed in 1903. In 1895 the Kansas City, Pittsburg and Gulf, predecessor to today's Kansas City Southern Railway, constructed a line through the eastern part of the Indian Territory along the Missouri and Arkansas borders.

4.2 Reshaping of Oklahoma's Railroads

As noted in the "Railroads of Oklahoma," by Preston George and Sylvan Wood, first published in 1943 and reprinted by the Oklahoma Department of Transportation in the 1970s, "the network of railroads in Oklahoma was virtually completed during the 37-year period between 1870 and 1907." Many smaller branch lines were abandoned in the subsequent decades, but the major changes in the nation's rail network began in the 1970s with major mergers and line abandonments. Key events during the last decades of the 20th century affecting these mergers and abandonments include:



1956: Federal-Aid Highway Act of 1956 signed into law on June 29 for the construction of 41,000 miles of interstate highways over a 20-year period. This national highway network had immense adverse economic consequences for the nation's railroads. Rail traffic had been declining since World War II and the interstate system further contributed to the reduction in rail shipping and use of passenger trains.

1968: In January, the nation's two largest railroads blanketing the Northeast and Midwest, the Pennsylvania and New York Central, merged to become Penn Central Transportation Company.

1970: The Chicago Burlington & Quincy; Northern Pacific; Great Northern; and Spokane Portland & Seattle railroads merged to form the Burlington Northern (BN) Railway in March. In June, Penn Central went into bankruptcy, the largest business failure in the United States at that time, affecting the entire rail industry. By 1976, Penn Central was one of seven major northeast and mid-west railroads in bankruptcy.

1971: On May 1, Amtrak (the National Railroad Passenger Corporation) took over operation of most intercity passenger trains from the freight railroads in a stopgap to keep trains running across Penn Central and other bankrupt carriers until the service could be ended or sold.

1974-80: Development of the Powder River Basin (PRB) in northeastern Wyoming into the largest coal source in the U.S. provided western railroads with expanded business opportunities. The Chicago & North Western Railway gained access to the PRB in 1984 and was eventually acquired by Union Pacific.

1975: The effect of bankruptcies on the major railroads reached Oklahoma with the Chicago, Rock Island & Pacific Railroad's filing for bankruptcy protection in February. The Rock Island served Oklahoma on a north-south route from Wichita to Fort Worth through El Reno, and an east-west route from Memphis to New Mexico, connecting to California.

1980: The Rock Island shut down at the end of March, and was later liquidated. Freight service on the previous Rock Island route was reinstated with the purchase of its lines by the State of Oklahoma and lease to Union Pacific under a purchase-lease agreement.

The Staggers Rail Act of 1980¹², signed into law by President Carter on October 14, deregulated the American railroad industry, replacing the regulatory structure that existed since the 1887 Interstate Commerce Act. This landmark legislation was one of three major Acts passed in a two-year period culminating the transport regulation reform effort begun

¹² The act was named for Congressman Harley Staggers (D-WV), who chaired the House Interstate and Foreign Commerce Committee



in 1971, during the Nixon Administration.¹³ The rail act was meant to restore the nation's freight rail network to economic health following the wave of industry bankruptcies.

1982: Missouri Pacific Railroad and Western Pacific Railroad were merged into the Union Pacific. Although operations were integrated, the legal consolidation of Missouri Pacific with the Union Pacific was not complete until 1997 due to outstanding bonds.

1988: The Southern Pacific was acquired by the Denver & Rio Grande Western retaining the name Southern Pacific. The "Rio Grande" was a regional railroad operating across the Rockies in Colorado and Utah.

1995: Burlington Northern and Santa Fe merged to become the Burlington Northern Santa Fe Railway Company (later renamed BNSF).

1996: Union Pacific acquired the Southern Pacific. The Union Pacific-Southern Pacific transaction essentially completed the restructuring of the railroads west of the Mississippi River. Today the BNSF and the Union Pacific provide service throughout the West.

4.3 Role of Oklahoma DOT in Rail Restructuring

In response to the increasing number of rail line abandonments in the 1970s and early 1980s, the State of Oklahoma acquired several rail lines threatened with abandonment. The state recognized the need to preserve branch lines that were important to Oklahoma's commerce. Oklahoma DOT initially acquired over 600 miles of rail lines with some \$22 million in state funds. As revenues developed from the leases of these initial purchases, the state made additional acquisitions. Oklahoma now owns 428 miles of rail lines. Currently, all but less than eight miles are in service with five different operators.

One of the important acquired group rail lines are the former north-south Rock Island main line between Kansas and Texas, the branch line between El Reno and Oklahoma City and the branch line north of Lawton. These lines were subsequently leased to the Union Pacific through a lease-purchase arrangement with final payment made to the state in October 2011. The line is now fully owned by Union Pacific and has become an integral part of its network. The former lease revenues were a major source of the funding for ODOT's program to upgrade other short lines. Subsequently, total lease revenues are now greatly reduced.

Funding for state-owned line maintenance comes from the Oklahoma Railroad Maintenance Revolving Fund established by Railroad Rehabilitation Act of 1978.

¹³ The other two acts were the Airline Deregulation Act (1978) and the Motor Carrier Regulatory Reform and Modernization Act (1980).



Revenues from a tax on freight cars and lease payments on the line are contributed to the fund. The state has an eight-year maintenance plan for track and bridge upkeep to address the basic needs of the state-owned lines to meet federal standards for safe operation and continued service.

With BNSF operating two parallel east-west lines in Oklahoma City as a consequence of merger (the former Frisco line passing through Oklahoma City's Union Station and the Packingtown Lead (aka - the Stockyards Spur south of the Oklahoma River), ODOT recognized that rebuilding the I-40 Crosstown Freeway provided an ideal opportunity to consolidate operations and eliminate several street-level crossings through downtown. When completed, the Crosstown project will permit the removal of the deteriorating elevated highway structure through downtown Oklahoma City, and provide BNSF and Union Pacific with new facilities related to further consolidating and streamlining railroad operations in Oklahoma City. This joint development of a railroad and highway corridor is an example of a cooperative transportation project that can serve as a beneficial model in the future. This project has been instrumental in the recent transformation of Oklahoma City.



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5. Rail Transportation’s Role in the Oklahoma Transportation Network

This section describes the role that railroads play in Oklahoma land transportation network. It outlines the role of freight rail in transporting products in the state and the role of passenger rail in moving people.

5.1 The Role of Freight Rail in the Oklahoma Transportation Network

The rail industry has had a great impact on the establishment and economic success of Oklahoma. Oklahoma’s railroads played a key role in converting the previous frontier into one of the largest energy and agricultural producing regions of the United States. While the Oklahoma rail system, like most states, has experienced many changes in the last 30 years as it has evolved into the 3,599 mile network that exists today.

The Oklahoma freight system is multimodal comprising highway, air, and water transportation as well as rail. In addition, the system includes the connector facilities that make the efficient transfer of freight between modes possible. Table 5-1 describes the Oklahoma freight network.

Table 5-1: Oklahoma Transportation Infrastructure

Type of Infrastructure	Miles/Number
All public roads	112,634 miles
Interstate	930 miles
Class I railroad trackage	2,360 miles (2011)
Class III railroad trackage	1239 miles (2011)
Inland waterways	150 miles
Public use airports	8 certificated for air carrier operations

Source: Bureau of Transportation Statistics

Oklahoma’s freight rail system is expected to continue to play a leading role in maintaining its leadership position in the energy and agriculture sectors of the US economy. The railroads in the state provide essential goods movement services that are strategically connected to other



modes. Improving the rail system productivity is critical to keeping Oklahoma a significant economic force.

Oklahoma's central location within the United States results in the state's being a "bridge" for freight moving across the country. Notwithstanding that position, Oklahoma's economy produces and consumes significant amounts of goods, much of it by rail. Table 5-2 shows the modal shares of freight originating and terminating in Oklahoma.

Table 5-2: Oklahoma Freight Mode Shares 2007 (000 tons)

Mode	Within		Outbound		Inbound	
	Weight	Percent	Weight	Percent	Weight	Percent
Truck	136,614	87.11%	49,106	43.21%	38,516	35.59%
Rail	2,819	1.80%	18,179	16.00%	30,597	28.28%
Water	0	0.00%	124	0.11%	1,441	1.26%
Air (include truck-air)	0	0.00%	9	0.01%	9	0.01%
Multiple modes & mail	1,267	0.81%	6,043	5.32%	4,215	3.90%
Pipeline	15,182	9.68%	39,546	34.80%	32,534	30.07%
Other and unknown	952	0.61%	625	0.55%	895	0.81%
	156,834	100.00%	113,632	100.00%	108,208	100.00%

Source: FHWA

Rail transportation plays a major role in moving products produced or consumed in the state. Its lesser role in transporting freight within the state is attributable to freight distances that are too short to make rail a cost effective alternative.

The state's central location in the United States emphasizes the importance of the need to work in partnership with its neighboring states relative to future improvements to moving freight within and through the state.

5.2 The Role of Passenger Rail in the Oklahoma Transportation Network

Recent Development of Passenger Rail Service

Following the Second World War, national transportation policy emphasized a two-mode transportation system based on highways and aviation. America's relationship with its railroads



was forged by forces that are very different than those that fostered our roads and airports, and even our waterway transport systems.

The railroad's exploitive market behavior toward farmers in the late 1800s created a situation that would haunt the industry for nearly a century. Several western states, known as the "Granger"¹⁴ states, enacted laws regulating the business practices of the railroads. These laws were overturned under the commerce clause of the United States constitution but were replaced by the passage of the Interstate Commerce Act of 1887. Regulation of the railroads by the Interstate Commerce Commission lasted until 1980 when the Staggers Act deregulated the railroad business. This regulation of the railroad's rates and tariffs constituted America's unique relationship with the railroad industry.

The railroad's passenger services were regulated along with its freight business. The passenger business had grown before and through the Second World War, with the railroads being instrumental in moving troops about the country and ultimately to their points of embarkation for the overseas battles. After the war, the situation changed dramatically. As a result of the wartime demands, the rail infrastructure and equipment were distressed and in need of maintenance and reinvestment. However, business dwindled and the needed capital was not forthcoming in the quantities needed.

Before the war, competition from air travel was minor and some of the railroads even participated by offering long-distance plane and train services where passengers flew by day and slept on the train at night. At war's end, large numbers of military transport aircraft were made available at surplus prices for conversion to passenger airliners¹⁵. This permitted passenger airlines be established with inexpensive aircraft flying to a network of military-built airports throughout the country.

Possibly of greater consequence were the improvements to the highway system. Based on the observations of Germany's Autobahns by General Dwight Eisenhower, the interstate highway system was established and provides fast, nonstop automobile travel. The interstate highways also fostered the move of freight from rail to the highways, darkening the railroad's revenue picture.

In spite of the new competition faced by the railroad's passenger services, passenger trains were required to operate regardless of their profitability. This situation festered until the late 1960s when passenger service losses threatened the financial viability of the entire rail industry. In response, Congress passed the Rail Passenger Service Act of 1970. The act

¹⁴ The National Grange of the Order of Patrons of Husbandry, or simply, 'The Grange,' was formed in 1867. The Grange advocated for rural agricultural interests and was instrumental in the regulation of the railroads.

¹⁵ Particularly the Douglas C-47, which was built in large numbers for military use and is easily converted to its civilian counterpart, the DC-3.



established the National Railroad Passenger Corporation, known as Amtrak. Railroad participation in Amtrak was voluntary but permitted the railroad company to relieve themselves of their passenger service obligations.

The Amtrak business arrangements with the volunteer railroads were based on the following principles:

- In exchange for capital stock in Amtrak, the railroad transferred title to their passenger train equipment to Amtrak.
- The railroad granted to Amtrak the right to operate passenger trains on any tracks in their system.
- The railroad was granted relief from their passenger service obligations.
- Amtrak paid the railroad the incremental cost of maintaining their lines over which Amtrak operated. The costs covered where those required to keep the freight tracks up to passenger track standards.
- The railroad was indemnified for most liability arising out of passenger operations.

Oklahoma Passenger Rail Service

Amtrak commenced operating on May 1, 1971. Passenger train operations in Oklahoma prior to the formation of Amtrak can be found in Section 11.1. From the commencement of Amtrak until October 9, 1979, Oklahoma's sole remaining passenger train was the *Texas Chief*, renamed the *Lone Star* on March 15, 1974. The train operated on the tracks of the Atchison, Topeka, and Santa Fe Railway Company ("Santa Fe") between Chicago and Houston. Congressional action required Amtrak to rationalize their system in 1979 by removing the least financially viable trains from their schedule, and as a result, the *Lone Star* was terminated. Oklahoma was without any passenger rail service until 1999 when the *Heartland Flyer* began operations.

Passenger rail service in Oklahoma has a limited role in its transportation system. The *Heartland Flyer* operates between Oklahoma City and Fort Worth, Texas daily with intermediate stops in Oklahoma at Norman, Purcell, Pauls Valley and Ardmore. The southbound section departs Oklahoma City at 8:25 AM, and the northbound section departs Fort Worth in the dinner hour, arriving at Oklahoma City at 9:39 PM. A convenient connection to Amtrak's Chicago to San Antonio and Los Angeles *Texas Eagle* is available at Fort Worth.

The *Heartland Flyer* is co-sponsored by the states of Texas and Oklahoma and sanctioned by Amtrak under Section 403(b) of the Rail Passenger Service Act of 1970. Section 403(b) provides a mechanism for a state, regional or local entity to establish a passenger rail service using local



funds but benefiting from the operating authorities granted to Amtrak under the law.

Oklahoma has chosen to be an active investor in its train service, paying close attention to the service quality since its inception on June 14, 1999. The state's stewardship has resulted in the award of the Amtrak President's Award for outstanding service, and has also resulted in a trend of growing ridership over the past decade. (A more complete description of the *Heartland Flyer* is provided in Section 11.3.)

, The emerging trend nationally toward regional train system growth is exemplified by the service. Several states, California, North Carolina, and New York being notable, have developed successful, multiple daily departure trains serving their constituents. These services utilize the performance characteristics of passenger trains in markets where they are well-matched and competitive. Long-distance travel is dominated by the airlines but recent trends have the airlines reducing or eliminating shorter routes and even cutting back on their fleets of regional jets, which were only recently acquired. The airline cuts are due to the increasing cost of fuel and the amount consumed during the climb to cruise altitude. Fuel consumption on short flights and non-revenue time spent on the ground reduces profitability when compared to long-distance flights.

The substitution of trains for short-haul air travel has not taken universal hold in the United States as it has in other parts of the world. France's famed TGV trains serve Paris' Charles de Gaulle airport directly. London's Heathrow, Gatwick, Stansted, and Luton airports have direct train service, as do many others in Europe and Asia. Several American airports have rail connections but with the exceptions of Newark Liberty and Baltimore's Thurgood Marshall Airport, Burbank's Bob Hope Airport and Anchorage International, the connections are to local transit or commuter rail systems.

America's transportation policies tend to cast each mode of transport into their own "silo." Highways, transit, aviation, and waterways have their own funding mechanisms and funding of improvements rarely crosses these lines. Although multi-mode solutions are often discussed and planned, the boundaries set by the funding mechanisms impede their implementation. Because of the unique and often contentious relationship between the federal government and the railroad industry, public funding for rail has always been comparatively limited. Transit and commuter rail do receive funding through the Federal Transit Administration but intercity rail funds have mostly been restricted to Amtrak.

In 2009, the Obama Administration announced plans to develop high-speed intercity rail with the goal of serving 80 percent of the American population within 25 years. An initial funding package of \$8,000 million was made available through the American Recovery and Reinvestment Act (ARRA), plus an additional \$2,500 million through transportation appropriations. Largely resulting from budgetary restraints following the 2008 recession,



further funding has not been forthcoming. The various states, including Oklahoma, continue to plan commuter, intercity and high-speed rail improvements assuming that funding will resume when better economic times return.

Oklahoma's two largest metropolitan areas, Oklahoma City and Tulsa, provide an attractive market for intercity rail transport. The 110-mile distance separating OKC and Tulsa, is well served by rail technology. Both cities also plan to build commuter rail serving their suburban areas. These cities, with these improvements, fit a model where rail travel characteristics are competitive with other modes on both the convenience and economic scales. Sections 12.4 and 12.5 provide more information on future rail transportation plans.



6. Impacts of Rail Transportation

Both freight and passenger rail transportation in Oklahoma has significant impacts on the state's industries and the public. This chapter outlines the impacts on the environment, energy consumption, and the overall quality of life. Chapter 7 describes the impact of the rail industry to Oklahoma's economy.

6.1 Impact on the Environment

While the diesel-powered locomotives operating in the state contribute to air and noise pollution, the principal alternative, truck transportation, has a far greater adverse impact on the economy. According to the U.S. Environmental Protection Agency data for 2009, rail transportation contributed only two percent of the greenhouse gas emissions in the United States. By contrast, heavy-duty trucks contributed 20 percent of transportation greenhouse gas emissions. Rail traffic, measured in ton-miles, was 38 percent greater than truck ton-miles.

Figure 6-1: Source of Greenhouse Gas Emissions

U.S. Greenhouse Gas Emissions By Economic Sector: 2009			U.S. Greenhouse Gas Emissions from Transportation: 2009		
Economic Sector	Tg CO2 Eq.	% of Total	Economic Sector	Tg CO2 Eq.	% of Transp. Total
Electric. generation	2,193.0	33.1%	Trucking	365.6	20.4%
Residential	360.1	5.4%	Freight Railroads	37.2	2.1%
Industry	1,322.7	19.9%	Waterborne Freight	13.5	0.8%
Agriculture	490.0	7.4%	Pipelines	35.2	2.0%
Transportation	1,812.4	27.3%	Aircraft	127.8	7.1%
Commercial	409.5	6.2%	Recreational Boats	16.9	0.9%
U.S. Territories	45.5	0.7%	Passenger Railroads	6.0	0.3%
Total	6,633.2	100.0%	Cars, Light Trucks, Motorcycles	1,180.6	65.8%
			Buses	11.2	0.6%
				1,794.0	100.0%

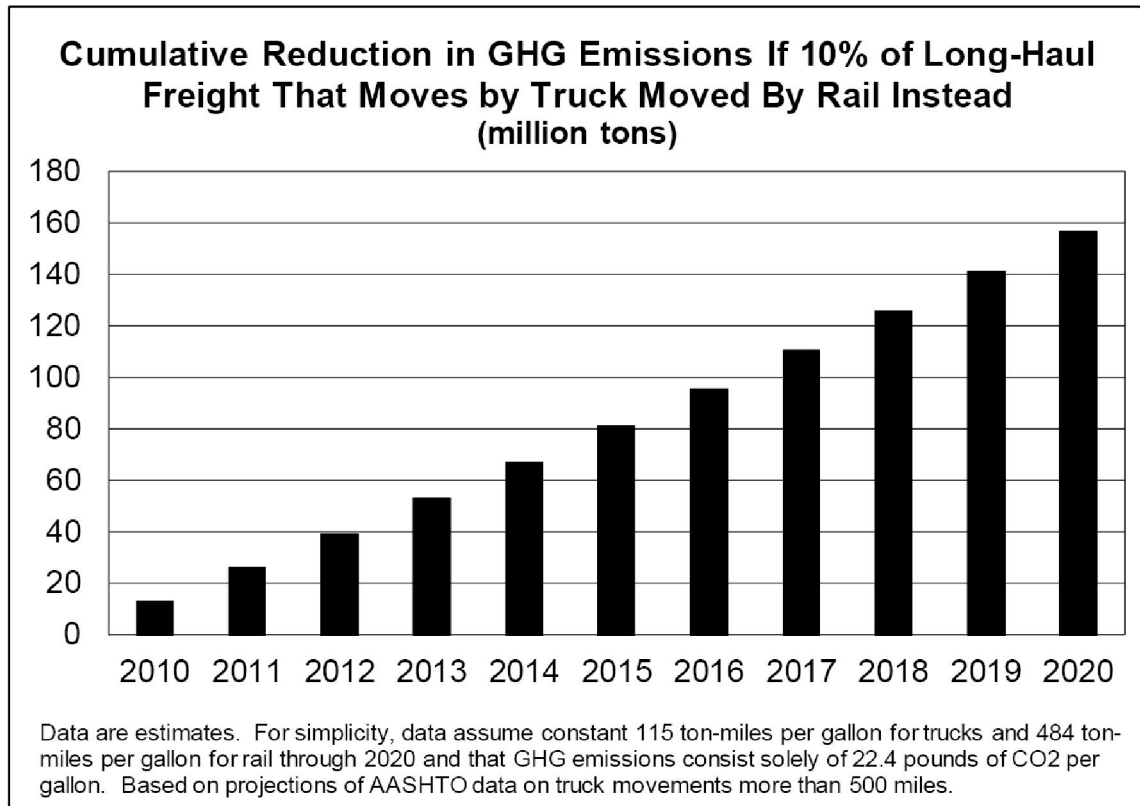
Data are in teragrams of CO2 equivalents.

Source: EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009*, Tables ES-7, A-111, and A-112. Totals for "transportation" in the two tables do not match because the table on the left includes emissions from sources considered to be transportation but not considered to be passenger or freight (e.g., lubricants).



Figure 6-2 provides another perspective on the efficiency of rail transportation. It shows the cumulative benefit of shifting freight from trucks to rail, in this case the impact of a 10 percent diversion.

Figure 6-2: Impact of Rail on Greenhouse Gases



Source: Association of American Railroads

Although data are not available to readily calculate the exact benefits of rail transportation to the Oklahoma environment, the importance can be quantitatively demonstrated. In 2007, rail freight originating in Oklahoma measured 12.8 billion ton miles as it moved to destinations throughout North America. Those rail shipments produced 394,000 tons of carbon dioxide emissions.¹⁶ If rail transportation were not available, those same shipments would have generated 1.1 million tons of emitted carbon dioxide, nearly three times the level of greenhouse gas pollutants produced by rail.

Comparable ton-mileage data are not available for freight rail traffic destined or passing through the state. However, with rail tonnage terminating nearly double the originating tonnage and an additional 229 million tons passing through the state, the reduction in emissions is significant, more than ten times the tonnage originated.

¹⁶ CSX Transportation Emissions Calculator



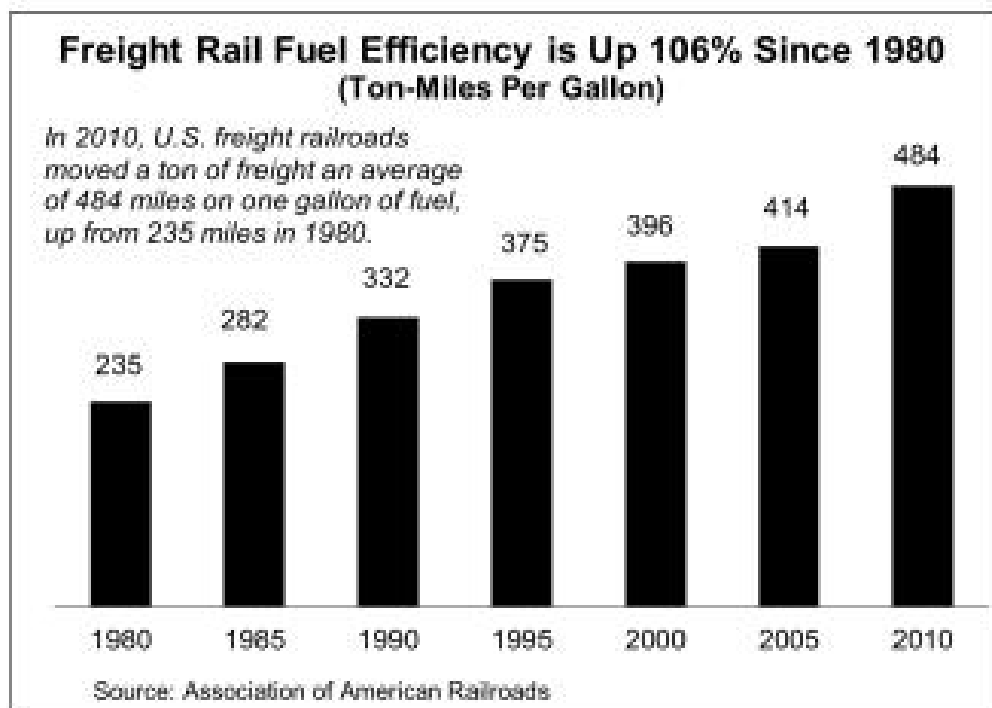
The railroads are also focusing on reducing other forms of pollutants. Advances in locomotive technology have produced new locomotives that meet the most stringent EPA standards for nitrous oxide and particulate matter emissions. Locomotives now emit 67 percent less nitrous oxide and 50 percent less particulate matter than they did 10 years ago.

The railroads are also participants in EPA's SmartWay Transport partnership. The partnership includes freight carriers and shippers who are targeting reducing emissions.

6.2 Energy Impacts

Rail transportation has become increasingly fuel-efficient more than doubling its capability to move freight on a gallon of fuel from thirty years ago, as shown in Figure 6-3. The US freight railroads moved a ton of freight 484 miles on a gallon of diesel fuel in 2010 up from 235 miles in 1980. According to the AAR, this is four times as energy efficient as a truck.

Figure 6-3: Rail Fuel Efficiency Trend



Using the 12.8 billion ton-miles that rail traffic originated in Oklahoma in 2007, Oklahoma shippers saved 75 million gallons of fuel using rail transportation. As with the reduced emissions, even greater fuel savings can be assumed for inbound freight consumed by Oklahoma's residents and industries



The railroads have been focused on reducing fuel consumption as it is a significant cost of operations and greater efficiencies improve the railroads' competitive position with respect to trucks.¹⁷ The railroads have taken a number of initiatives:

- Increased the carrying capacity of rail cars and increased the number of cars in a train through a combination of technology and infrastructure improvements. Train productivity has increased 61 percent over 1980. Freight cars can now transport up to 140 tons with some trains exceeding 250 freight cars.
- The use of energy efficient locomotive technology.
- The application of computer technology to control operations that maximizes fuel efficiency of a single train and the fuel efficiency of the network by controlling train schedules. The technology also is designed to reduce delays in train operations, thus benefiting the railroads' customers.
- Reduced idling of locomotives. Technology is being used to turn off locomotive power when conditions permit.
- The adoption of distributed power, a practice where locomotives are positioned in the middle of trains, controlled by technology in the front locomotive. This practice reduces required horsepower and permits operation of longer trains.

6.3 Quality of Life Impacts

One important area that rail transportation has an impact is roadway congestion. Nearly 278 million tons of freight is transported over Oklahoma's rail network each year. A truck hauling freight between cities typically has an average capacity of 18 tons. If all the rail traffic were to move by truck, Oklahoma's highways would see an additional 42,300 trucks each day, 15.4 million trucks per year, without considering the movement of empty trucks.

¹⁷ Association of American Railroads, "Freight Railroads Help Reduce Greenhouse Gas emissions" November 2011.



7. Relationship of Oklahoma's Freight Rail System to the Oklahoma Economy

This section describes the impacts of rail transportation on Oklahoma and how Oklahoma's economy is affected by freight mobility. The key questions it addresses are:

- What are Oklahoma's top rail transportation dependent industry sectors?
- What is the economic geography of major rail dependent industry sectors within Oklahoma; where are these industries distributed geographically?
- What role does rail play in the supply chain for these industry sectors?
- What is the contribution of rail dependent sectors to the Oklahoma economy?
- What do freight railroads contribute directly to the Oklahoma economy, in terms of employment, in-state purchases, and indirect and induced economic impacts?

7.1 Defining and Measuring Freight Rail Importance

Rail freight importance for Oklahoma's industries may be measured in a number of ways:

- In economic terms, by how much is spent on transportation as a share of the total output of industries
- By the value of goods "exported" to the rest of the U.S. and the world on freight rail from Oklahoma
- By the volume and value of goods shipped by rail and other freight modes

Economic Measurement of Freight Transportation Importance

Describing overall freight transportation dependency, the U.S. Department of Transportation and Bureau of Economic Analysis' (BEA) Transportation Satellite Account (TSA) database provides national data on the per dollar amount of industrial output that is spent on transporting each industry's product.¹⁸ Unfortunately, TSA data are relatively outdated, having been developed in the 1990s. Since then, technologies, logistics practices, and industry structures have changed greatly. However, the TSA accounts continue to provide valuable information about freight dependencies of different industry sectors.

¹⁸ http://www.bea.gov/industry/tourism_data.htm



According to TSA data, the industries with the greatest shares of direct transport requirements of industry output are natural resources and mining (21%), manufacturing (36%), and information (17%). This means, for example, that to produce one dollar of output, the mining industry requires 21 cents in transportation output. Of those, natural resources and mining rely heavily on rail, whereas manufacturing tends to use truck and information relies on air.

The TSA data, shows that in-house transportation (i.e., transportation services that take place within non-transportation industries, such as proprietary fleets owned by major retail chains) and for-hire transportation generated \$121.5 billion and \$191.6 billion of value added¹⁹, respectively. Together, this accounted for about five percent of U.S. Gross Domestic Product (GDP) in 1992.

From a value added perspective, Figure 7-1 summarizes the transportation share of industry output by the major “two-digit industry sectors” as defined by the North American Industry Classification System (NAICS). NAICS codes have been developed from Standard Industrial Classification Codes to harmonize industry definitions among the U.S., Canada, and other countries participating in the NAICS accounting protocols.

At an aggregate level, agriculture products, construction, and manufacturing are the most transport-dependent sectors. For example, transportation services contribute 14.2 percent to the value added for the agriculture, forestry, and fisheries sector – that is, transportation adds about 14 percent to the value of all products sent to market by agriculture, forestry, and fishing enterprises.

Of the key industries in Oklahoma (in terms of contribution to Gross State Product GSP)²⁰, agriculture and mining have the largest transportation value-added component (i.e., 14 cents and eight cents for each \$1 increase in demand, respectively).

Table 7-1 disaggregates further the two-digit sector dependencies by mode. As shown, trucking, which includes both “motor freight” and “in-house transportation,” comprises by far

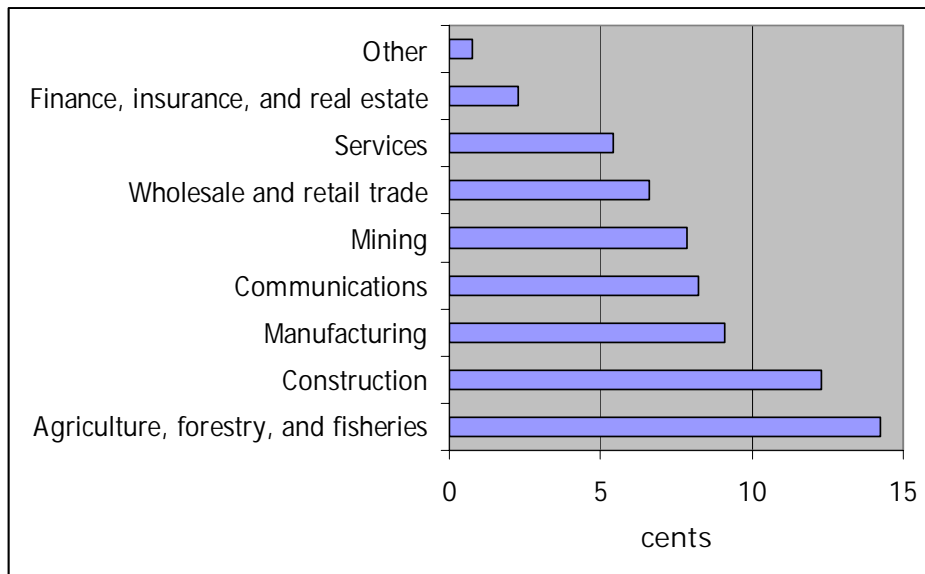
¹⁹ Value-Added for an industry is the gross receipts of the firms in that industry minus the purchase of intermediate goods and services used. Output on the other hand simply represents the value of industry production, and does not remove costs faced by the industry.

²⁰ GSP measures the value of all goods and services produced in a state in a given year using the prices prevailing in that year, while real GSP is the value of all goods and services expressed in the prices of the base year. In evaluating the state economy over a period of time, real GSP is often used instead of GSP. This is because GSP can over-estimate the growth of the economy—the general increase in prices overtime (inflation) can cause GSP to increase even if the volume of the state’s goods and services produced remains unchanged. Real GSP growth is adjusted for inflation and thus a more accurate measure of how much the economy has grown in terms of output over a given period of time.



the largest share of transportation's contribution to value added of any mode, followed by railroads.

Figure 7-1: Transportation Contribution to Value Added by Major Two-digit Industry in cents per value added²¹



Volume as a Measure of Freight Rail Importance

Generally, low-value commodities are moved in large volumes by the lower cost rail or barge modes, while the higher value products are generally moved by truck and/or long distance rail. - They are usually containerized over longer distances and are generally being moved to or from a port or major inter-modal transfer facility. The high value-added goods or perishable commodities are also moved by truck to and from airports where they are shipped as air cargo.

In 2009, 18.4 million tons of rail freight originated from Oklahoma. Of the rail freight originating in Oklahoma 7.2 million tons (45%) were broken stone or riprap, 2.3 million tons (14%) were grain and 1.4 million tons (9%) were fertilizer. These three commodities alone account for almost 70 percent of all rail freight that originated in Oklahoma (see Figure 7-2).

²¹ Total requirements, direct and indirect, per dollar of delivery to final demand, at producers' prices



Table 7-1: TSA Transportation Requirements for Major Goods Moving Industries Two-digit Level, by Mode (Cents per Dollar of Final Demand; excludes non-freight-oriented sectors, such as finance, insurance, and real estate)²²

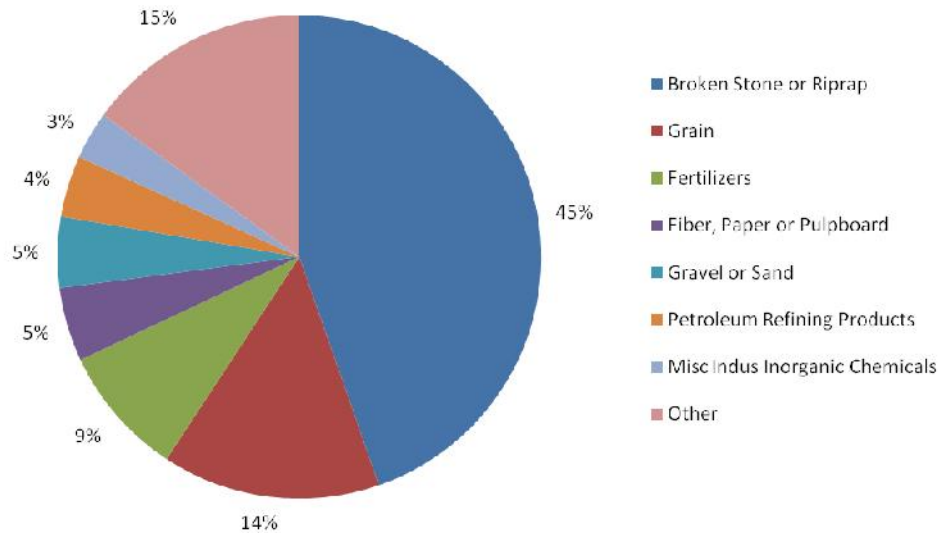
	Agriculture, forestry, and fisheries	Mining	Construction	Manufacturing	Communications and utilities	Wholesale and retail trade
Railroads	0.011	0.010	0.006	0.010	0.013	0.002
Motor freight transportation and warehousing	0.033	0.017	0.032	0.035	0.039	0.009
Water transportation	0.004	0.004	0.002	0.003	0.003	0.001
Air transportation	0.006	0.005	0.005	0.008	0.005	0.006
Pipelines, freight forwarders, and related services	0.004	0.002	0.003	0.006	0.004	0.002
State and local passenger transit	0.001	0.001	0.001	0.001	0.001	0.0002
In-house transportation	0.085	0.038	0.073	0.027	0.016	0.046
TOTAL TRANSPORTATION	0.14230	0.07853	0.12286	0.09078	0.08242	0.06605

In the same year, 36.1 million tons were shipped to Oklahoma. Of the rail freight terminating in Oklahoma, 22.2 million tons were coal, making up 70 percent of all rail freight shipped into the state (See Figure 7-3).

²² Example for every \$1 of final goods sold by the Agriculture, Forestry, and Fisheries Industries they spent \$0.011 on railroad transportation.

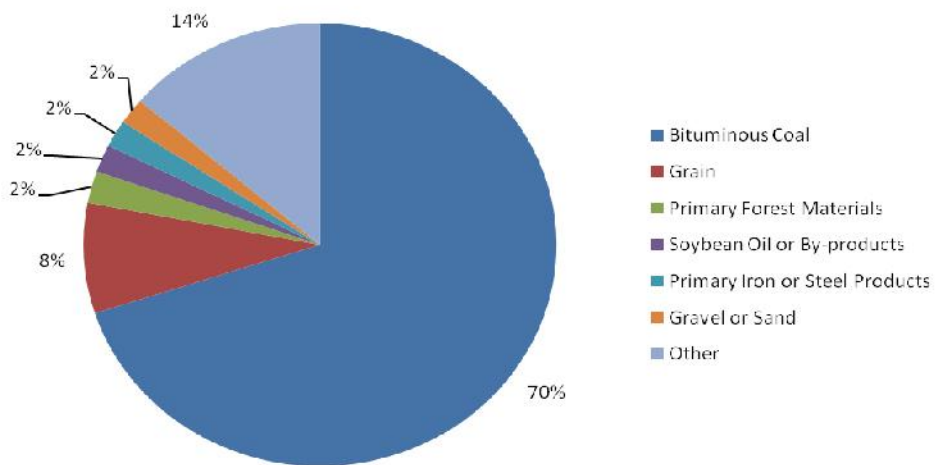


Figure 7-2: Rail Freight Originating in Oklahoma, Commodity Distribution by Commodity (by tons)



Source: WBS 2009

Figure 7-3: Rail Freight Terminating in Oklahoma, Commodity Distribution (by tons)



Source: WBS 2009



7.2 Oklahoma's Economy and Key Industry Groups

Oklahoma's economy has evolved significantly over the past two decades. The collapse of oil prices in the 1980s and the following slowdown of the state's economy have led Oklahoma to try to become less dependent on its natural resource bases of energy and agriculture. However, in recent years with the introduction of new technologies (e.g. hydraulic fracturing) and rising prices, natural resources have once again become an important part of the Oklahoma economy.

Overview of Oklahoma Economy

Gross State Product

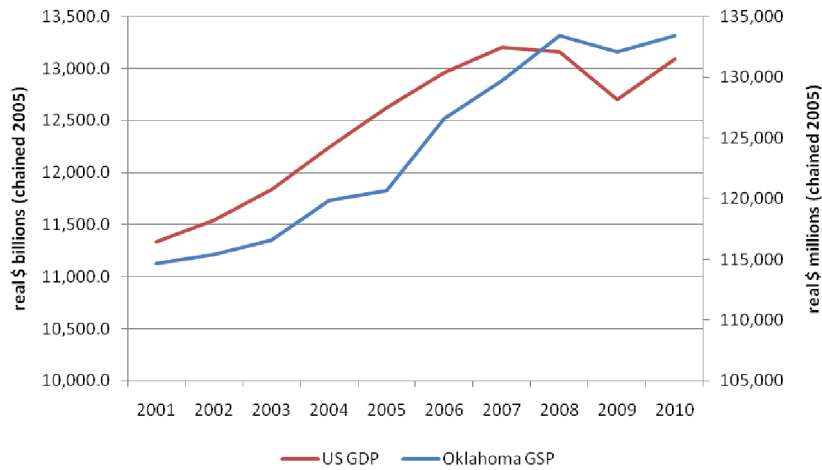
In 2010, the real Gross State Product (GSP) of Oklahoma was \$133 billion (chained 2005 dollars²³) accounting for one percent of U.S. real Gross Domestic Product (GDP). The largest contributors in 2010 to Oklahoma's real GSP in order were government (17.5%), manufacturing (11.3%), mining (10.9%), real estate (9.9%), retail trade (6.7%), health services (6.7%), and wholesale trade (5.5%). The state's real GSP increased at a compound annual growth rate (CAGR) of 1.9 percent from 2000 to 2010 outpaced the nation's GDP growth of 1.56 percent over this same period. (See Figure 7-4)

The U.S. Bureau of Economic Analysis (BEA) maintains a national database on economic contributions of various industries, by state, to Real Gross State Product (GSP). Statistics for Oklahoma's transportation-intensive industries are shown in Table 7-2. Together these sectors typically account for around 15 percent of Oklahoma's real GSP. Oil and gas extraction, which accounted for 10.2 percent of Oklahoma's 2010 GSP, is by far the one with the greatest economic impact on the state's economy. Further, as a share of state GDP the oil and gas industry increased its share of Oklahoma's real GSP by 1.6 percent between 2008 and 2009. Finally, over the past few years not only has the percent that oil and gas has contributed to Oklahoma's GSP increased, so has its dollar contribution (in real terms) again in contrast with the other sectors in this report (See Figure 7-5).

²³ Chained dollars is a method of adjusting real dollar amounts for inflation. The difference between chained dollars and the previous measure, constant dollars, is that while the latter is weighted by a constant basket of goods and services, chained dollars are weighted by a basket that changes from year to year so as to more accurately reflect spending. The basket is an average of the basket for successive pairs of years. The technique is so named because the second number in a pair of successive years becomes the first in the next pair. The result is a "chain" of weights and averages. The advantage of using the chained-dollar measure is that it is more closely related to any given period covered and is therefore subject to less distortion over time



Figure 7-4: U.S. GDP & Oklahoma Gross State Product (real \$ millions chained 2005)



Source: U.S. Bureau of Economic Analysis

Table 7-2: Industry Contribution to Real Gross State Product

Industry	Percent of Real GSP			
	2006	2007	2008	2009
Oil and gas extraction	8.6%	8.8%	7.6%	10.2%
Transportation and Warehousing	3.3%	3.4%	3.4%	2.9%
Military	2.2%	2.1%	2.0%	2.2%
Agriculture, forestry, fishing, and hunting	1.5%	1.2%	1.3%	1.0%
Mining	0.2%	0.2%	0.2%	0.2%
	15.7%	15.6%	14.5%	16.4%

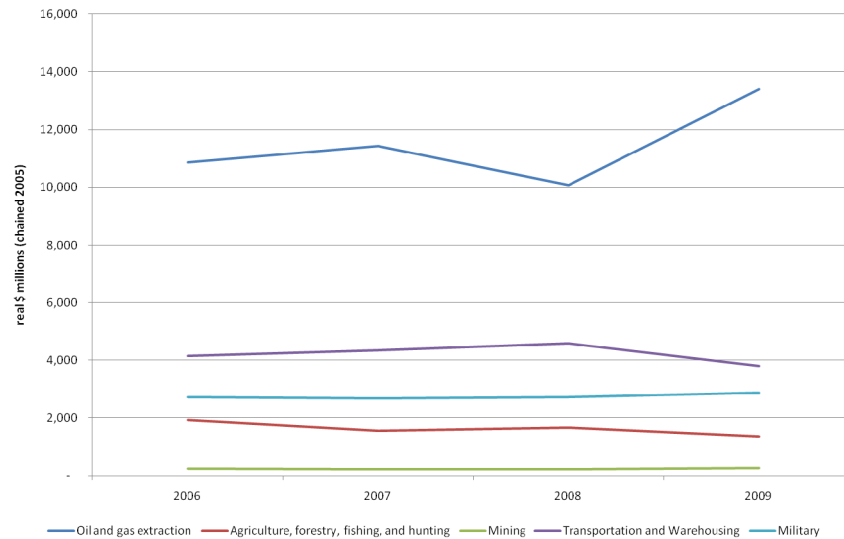
Source: Bureau of Economic Analysis

Employment

According to the U.S. Bureau of Labor Statistics (BLS), total non-farm employment in the State of Oklahoma has increased at a compounded annual growth rate of (CAGR) of 0.2 percent from 2001 to 2010, outpacing the U.S. nationwide CAGR of -0.2 percent over the same time. High oil prices and the expansion of the mining sector are partly responsible the state’s higher employment growth, as are the state’s expansion of its service sectors. (See Figure 7-6)



Figure 7-5: Contribution to Real GSP by Freight Rail Dependent Industries



Source: U.S. Bureau of Economic Analysis

In 2010, 1.5 million individuals were employed in non-farm sectors in Oklahoma. The largest employer is government, followed by trade, transportation & utilities, education & health services and professional and business services.

In general, the economy of the “West South Central Division” of the U.S., which includes Texas, Oklahoma, Arkansas, and Louisiana, has done well measured by employment. Over the last two phases of the employment cycle,²⁴ it ranked first in the nation, both losing relatively fewer jobs than other regions and gaining disproportionately more. While this region accounted for 11 percent of the nation’s employment before the recession, of jobs lost nationally only 7 percent were located within this area, and post recession has captured 19.1 percent of the total national private sector job gains as of June 2011. While much of this trend has been driven by Texas, Oklahoma has followed a similar pattern in terms of job gains, most of which have come from manufacturing and energy related activities.²⁵

Oklahoma’s relative good fortune in terms of employment generation during what has been an uneven recovery can also be seen by its ranking in the top ten states in three different measures of job recovery. In fact, the best performing states (including Oklahoma) are oil-producing states and have benefited from high oil prices. (See Figure 7-7)

²⁴ Employment cycle -- refers to economy-wide fluctuations in employment corresponding to fluctuations in production or economic activity over several months or years. These fluctuations occur around a long-term growth trend, and typically involve shifts over time between periods of relatively rapid economic growth (an expansion or boom) and periods of relative stagnation (contraction or recession).

²⁵ <http://policy.rutgers.edu/reports/rrr/rrrsept11.pdf>

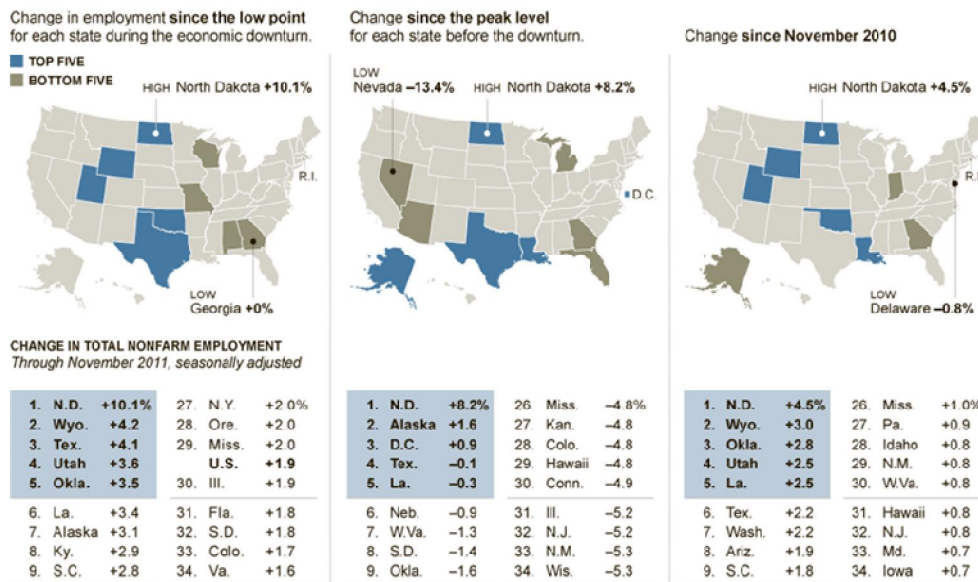


Figure 7-6: Employment Trends, U.S. and Oklahoma



Source: U.S. Bureau of Labor Statistic

Figure 7-7: Changes in Employment over the Last Recession



Source NY Times²⁶

²⁶ http://www.nytimes.com/2011/12/24/business/economy/job-recovery-among-the-states-is-uneven.html?_r=1



7.3 Key Industry Groups

Energy

Energy has been a strong economic driver in this region. According to the Federal Reserve’s most recent Beige Book, in the tenth district which includes Oklahoma, the energy sector continued to expand strongly in October and early November 2011, with almost all respondents reporting an increase in drilling activity and an optimistic outlook for the future. The price of crude oil remains favorable for drilling and the only constraints the industry faces are shortages of labor and equipment. This is despite the fact that during this period overall the district’s economy has only grown moderately.²⁷

Oil and Natural Gas

Oil and natural gas have been a staple of the Oklahoma state economy for many years. Historical “boom periods” have helped to drive the state’s economy beginning in the 1920s and this continues through to today. However, the boom and bust nature of oil and gas has made it an uncertain and potentially unpredictable economic driver. Petroleum and gas are found in almost every county of Oklahoma but the best pools have been around Tulsa, Seminole, Oklahoma, Healdton, Kingfisher, and Osage counties. Oil and gas production imposes specific demands on Oklahoma’s transportation system. While much of the petroleum and petroleum refining products that is shipped from Oklahoma is moved by truck or pipeline, rail still has an important role to play. Gas is transmitted almost entirely by pipeline, but the rapid growth in natural gas extraction (as well as oil extraction from the Anadarko fields) both provides substantial potential opportunities as well as places demands on the rail system; demands such as the need to move large drilling and pipeline installation materials to sites throughout the state to the locations where both oil and gas extraction are rapidly expanding in scope.

In 2009 the oil and gas sector` contributed \$13.4 billion to Oklahoma’s Gross State Product, or approximately 10 percent, and employed 159,800 thousand people.

Table 7-3: Oil and Gas Contribution to OK Real GSP (Millions of Chained 2005 \$)

Industry	2006	2007	2008	2009
Oil and gas extraction	10,853	11,441	10,078	13,416

Source: U.S. Bureau of Economic Analysis

²⁷ <http://www.federalreserve.gov/fomc/beigebook/2011/20111130/fullreport20111130.pdf>



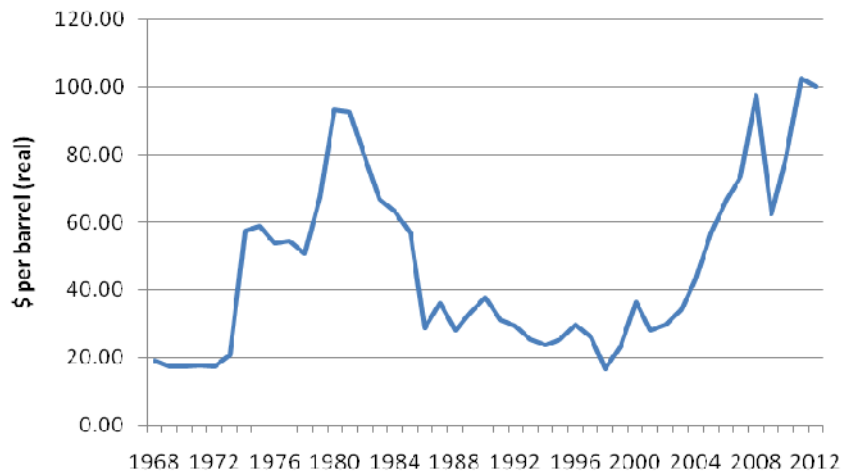
Table 7-4: Oil and Gas Employment (Thousands)

Industry	2006	2007	2008	2009	2010
Oil and Gas	134.5	146.2	160.5	159.8	158.9

Source: U.S. Bureau of Labor and Statistics

Current elevated prices for petroleum (See Figure 7-8) and petroleum products as well as new technologies for extracting these deposits (e.g. hydraulic fracturing)²⁸ have resulted in previously unprofitable ventures becoming attractive prospects. In Oklahoma, this has meant more activity in the Anadarko Basin as well as more oil coming in from the Bakken Shale deposits in Montana, North Dakota, and Saskatchewan.

Figure 7-8: Crude Oil Prices (real \$, CPI adjusted 1982-1984 base)



Source: U.S. EIA Short-Term Energy Outlook, November 2011

Sources at ODOT have stated that approximately 200,000 barrels of oil per day could be obtained from the Anadarko Basin. However, currently no pipelines and only one rail line serve the basin. Additionally a portion of this track is rated as "Excepted Track"²⁹ and can only

²⁸ Urbina, Ian, "Drilling Down Series", New York Times, June 29, 2011

²⁹ The lowest category of federal track safety regulations.



support limited movement (five-car limit on hazardous commodities) at less than 10mph and carrying less than optimal weight.³⁰ This greatly limits the current flow of oil out of the basin.

A TIGER III grant was recently awarded for improvements to this Farmrail line. The entire length will be able to accommodate higher train speeds, and capacity will be increased. Upgrading the Farmrail line will be completed in six to nine months. This short time frame is partly why improving the Farmrail line is preferred to building a pipeline.

Operation of this line has a direct benefit to the state. The line is owned by the state and leased to Farmrail. Ten percent of Farmrail's revenue from this line is turned over to the state as lease payments. This is an important revenue source to ODOT as lease revenues from other state owned lines diminish as they revert to railroad ownership under the lease/purchase agreements. Farmrail also operates through Sayre, where there are already five companies that are or will shortly be using rail to transport oil and two companies receiving hydraulic fracturing sand.

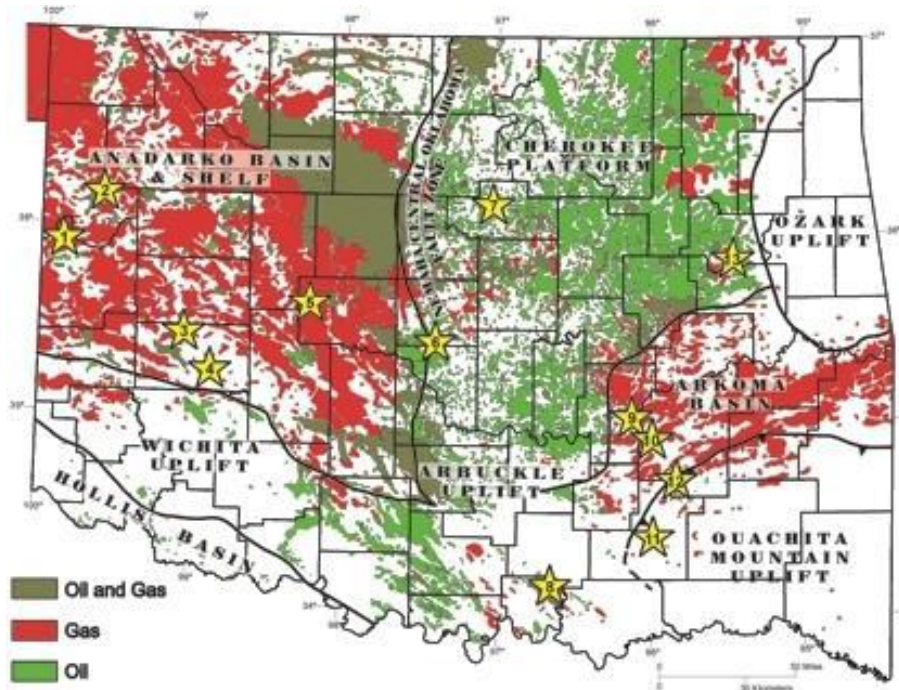
An increasingly important opportunity for rail companies to transport oil is the moving of petroleum products from the Bakken Shale deposits. Stroud, Oklahoma has become a delivery point for oil transported from the Bakken Shale deposits. Rail has become important to the movement of this oil because of pipeline capacity constraints. The oil is first moved by BNSF unit tank trains and then interchanged with a short line, Stillwater Central. It delivers the oil to Stroud. Once in Stroud the oil is piped to Cushing, which does not have rail service. WATCO, owner of the Stillwater Central, and Kinder Morgan have a joint venture to construct and operate a new transfer terminal to increase rail-pipeline transfer capacity.

Outbound pipeline capacity at Cushing is significantly constrained resulting in a build-up of inventories depressing oil prices. In response to this, some oil producers are now sending oil from the Bakken Shale region by rail straight to the Gulf of Mexico, where prices are higher. To make Cushing oil more competitive, plans are being made to reverse the flow on one of the five lines, the Seaway pipeline that feed Cushing from the Gulf of Mexico. Once it is reversed, the line is expected to be able to ship an initial 150,000 barrels of oil per day from Cushing to the Houston area – away from the oversupplied Midwest -- as early as the second quarter of 2012.

³⁰ TIGER Sayre Grant Application
http://www.okladot.state.ok.us/tiger/tiger_2011_sayre/pdfs/tiger_2011_sayre_apps_final.pdf



Figure 7-9: Oil and Gas Deposits across Oklahoma



Oklahoma Geological Survey, Shale-Shaker March-April 2009

Green Energy

Green energy sectors, while small, are also of interest to this plan. Wind energy for example is an industry with good growth potential, particularly in the long run. Oklahoma already has a green energy sector. The Edmund-based Oklahoma Municipal Power Authority's (OMPA) wind turbines, at the Oklahoma Wind Energy Center northeast of Woodward, provide power for the OMPA electric grid; and the Bergey Wind Power Company in Norman, Oklahoma is the world's leading supplier of wind turbines. Virtually the entire western half of Oklahoma (west of I-35) has the potential of substantial wind generating capacity, with the greatest potential just east of the panhandle. This contributed to Oklahoma's ranking of 8th among the states for its wind generating potential.³¹ Some modern wind turbines are 236 feet tall and have rotor blade that are roughly 82 feet long. Future windmills may reach higher than 328 feet and have blades measuring 164 feet long. Transport of wind turbine parts, such as towers and blades, will require the movement of overweight and oversized loads, an important capacity issue facing the Oklahoma highway system. ODOT has programs to increase the heights over low bridges and improve its overweight and over height permitting process. Regardless, the freight railroads are

³¹ *An Assessment of the Available Windy Land Area and Wind Energy Potential in the Contiguous United States*, Pacific Northwest Laboratory, 1991.



interested in increasing their participation in this economic sector and will provide an alternative to moving these large loads over the highways.

Minerals and Mining (excluding Oil & Natural Gas)

Oklahoma’s mining economy (not including oil and gas) has been in decline but remains important to selected parts of the state. In total, mined minerals contributed only around \$268 million (real 2005 chained) to Oklahoma GSP in 2009 and around about 2,000 jobs in direct mining jobs (see Table 7-5 and Table 7-6). Mined minerals include gypsum, granite, limestone, aggregates, crushed stone, cement sand and gravel, clay, glass sand, salt feldspar, iodine, lime, pumice, Tripoli (used as an abrasive), and coal.

The most shipped commodities in this category are 1) coal, and 2) the granular construction materials (aggregate, crushed stone, sand and gravel). Out of state coal is shipped to Oklahoma for transloading onto barges bound for the Gulf region.

Table 7-5: Mining and Minerals Contribution to OK Real GSP (Millions of Chained 2005 \$)

Industry	2006	2007	2008	2009
Mining	238	216	232	268

Source: U.S. Bureau of Economic Analysis

Table 7-6: Mining and Minerals Employment (Thousands)

Industry	2006	2007	2008	2009	2010
Mining	2,256	2,409	2,359	2,083	1,958

Source: U.S. Bureau of Labor and Statistics

Aggregates, Crushed Stone, Sand, and Gravel

Construction materials such as, aggregates, crushed stone, sand and gravel, and cement are important products extracted in southern parts of the state, such as Ardmore and Durant. Railroads transport almost 100 percent of broken stone and a quarter of Portland cement. Rail is the most efficient means of transporting these materials over distances greater than 300 miles where it has a cost advantage over trucks. The use of rail transportation eliminates significant truck traffic from the state’s highway system, thus avoiding potential bottlenecks.



Fertilizers and Chemicals

Natural gas is the major source of energy used to produce nitrogen fertilizer. Therefore domestic fertilizer production tends to be concentrated in regions rich in natural gas – the Mississippi Delta, the Texas panhandle and Oklahoma. Major fertilizer production facilities in Oklahoma are located in Woodward, Verdigris, and Enid. Fertilizer and chemical production is an important part of the Oklahoma economy contributing \$581 million (real 2005 chained \$) to real GSP in 2009.

Table 7-7: Chemical Production's Contribution to Oklahoma's Real GSP (Millions of Chained 2005 \$)

Industry	2006	2007	2008	2009
Chemical Production	446	633	679	581

Source: U.S. Bureau of Economic Analysis

Oklahoma's fertilizer output is by and large destined for other mid-west states. Kansas, Nebraska, and Colorado are all significant recipients of Oklahoma-produced fertilizer.

Agriculture

Oklahoma is one of the nation's largest producers of livestock and wheat; it generated \$5.8 billion of agricultural products in 2007.³² Over the past decade, the state's agricultural sector has become increasingly diversified. While it has historically been dominated by wheat and cattle production, the pork and poultry industries have increased rapidly in recent years, making Oklahoma the nation's second and third largest producers of the respective commodities.

The 2007 National Agriculture Statistics Survey found there were approximately 86,500 farms in Oklahoma, a slight increase over 1997 when 84,000 farms were in operation. Similarly, farm acreage over this time has remained relatively unchanged. Despite the relative stability of the size of Oklahoma agriculture, the industry as a whole has been changing in terms of structure. It has been shifting away from small independent farming to large corporate-based farming. In addition to the directly owned and operated agribusiness enterprises, many small farms contract with large agribusiness firms and can therefore be viewed as virtual extensions of these enterprises.

³² United States Department of Agriculture, National Agriculture Statistics Services 2007 Census



Grain is the dominant agricultural rail export and import for Oklahoma and thus this report focuses on it over other agricultural products. To understand the role that rail plays in grain movement it is important to understand grain's supply chain.

Grain Supply Chain

The grain supply chain is made up of three distinct links: elevators, milling and baking. The grain elevators serve two purposes. Firstly they act as a central location or mechanism for accumulating and combining the wheat production of multiple farmers; second they provide storage since wheat is a seasonal commodity. Overtime there have been dramatic changes to U. S. grain transportation, much of which has been driven by changes in the rail industry: abandonment of rail lines serving the agriculture hinterlands, adoption of multiple railcar grain rates encouraging large shipment sizes, energy considerations and other technological advancements. The result has to put pressure on elevators to attain greater and greater levels of efficiency.³³ For example, BNSF began offering incentives to customers who were able to ship in "trainload" quantities and for loading and releasing the empty cars of dedicated grain trains or "shuttles" quickly. This has led some grain elevators in turn to invest in additional grain handling capacity to meet shuttle rate performance requirements set forth by BNSF. This places non-shuttle elevators at a disadvantage, and increasingly such elevators have gone out of business as they are no longer able to compete.³⁴ Figure 7-10 is a map of shuttle train loading facilities and routes in Oklahoma.

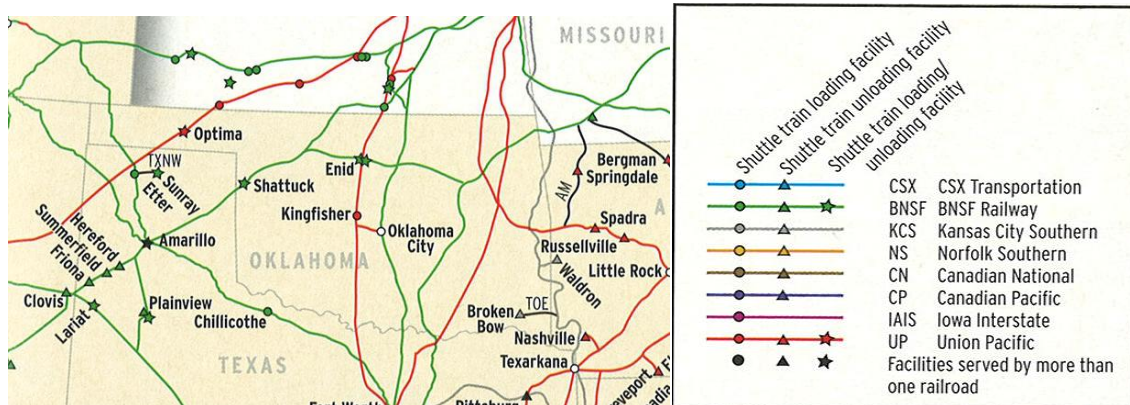
The next link in the wheat supply chain is milling, which is the process of grinding and sifting wheat into flour for baked goods and mill feeds, which is sold as animal feed. Because of changes in rail transportation, new mills have in general been built near population centers, whereas historically mills were located near wheat growing areas. Two technological innovations drove this shift. The first innovation was the introduction of multiple car or "unit train" technology that provided transportation cost incentive to ship larger quantities at a given time. As bakers do not typically require large amounts of flour nor do they wish to hold large amounts in inventory. The result is that large quantities of wheat are shipped to mills located near areas with high demand for flour. The second innovation was the enhanced hopper car that reduced the costs of bulk wheat shipments. Similar to grain elevators the number of U.S. mills has decreased over the years. Mill ownership has shifted from single plant firms that were family owned and managed to large multi-plant corporations that often have agribusiness interests other than milling.

³³ Barber, Jason, Titus, and Matthew, 'Structure of the U.S. Wheat Supply Chain', UGPTI Staff Paper No. 131 December 1995.

³⁴ Blaszk, Michael, "Your Next Meal Starts Here, Grains Special", Trains Magazine, April 2009



Figure 7-10: Oklahoma Grain Shuttles by Rail Line



Source: Trains Magazine, April 2009³⁵

The next part of the supply chain is baking. However, rail has little to no role once the wheat reaches this stage for two reasons: first, as previously discussed, mills are now located close to the demand for flour and second, the outputs of this stage are often perishable and ill suited to rail travel.

Rail Traffic

Agricultural traffic is a significant contributor to freight rail revenues. According to annual reports by the seven major North American railroads, even though agricultural products only comprised nine percent of all revenue trains, they accounted for 13 percent of total revenues, and the curve is trending upward. The reason for this is that railroads have found more efficient ways to move products such as grain. They did this by moving towards the same model they use when shipping coal, by running dedicated unit trains from origin to destination and back.

Farm products and food/kinred products are among the top five commodities shipped to/from/within Oklahoma and are projected to remain in the top five through 2020. Grain is the largest category of farm products by weight shipped from Oklahoma (4.8 million tons); 90 percent of Oklahoma’s grain exports are carried by rail. While grain was exported to all domestic regions, the primary destinations include Texas, Colorado Kansas, and Nebraska. Currently the majority of Oklahoma’s agriculture products are commodity like products such as grain, meaning little of it is perishable. Thus, these products can be shipped via rail without the risking spoilage or the high costs of shipping frozen items.

³⁵ Blaszak, Michael, “Your Next Meal Starts Here, Grains Special”, Trains Magazine, April 2009



If Oklahoma moves into value-added food processing, less rail transport will be used and there will be more reliance on trucks. Value-added food processing produces goods of higher value than raw agricultural products. For some time, most of the value-added products produced from Oklahoma farm produce has been processed outside the state. A switch to higher value-added and/or perishable foods will require a shift toward the more expensive but time reliable trucks. Increasingly efficient supply chain systems, including efficient truck distribution systems and even potentially air transport of highly perishable or high cost specialty food items could come more to the fore.

Military

Department of Defense Installations

Oklahoma contains five major U.S. Department of Defense (DOD) installations as shown in Figure 7-11. These installations are currently divided into two categories: those with active rail connections and those with inactive rail connections. Currently, both Fort Sill in Lawton, and the McAlester Army Ammunition Depot in McAlester regularly use rail service as a critical part of their missions. The other three installations, all air force bases, have discontinued rail service, but they are positioned to re-activate rail service should this decision be made by Military Traffic Management Command (MTMC). As discussed below, transportation connectivity issues for the Department of Defense are made by study units within the military command structure and are not at the discretion of ODOT.

McAlester Army Ammunition Depot: this facility in McAlester, Oklahoma relies on freight rail service to assure its mission critical performance objectives are met, and it currently operates in conjunction with Union Pacific Railroad service with a direct connection to a UP mainline. This facility has a second point of rail connectivity on its north border, but presently this rail line is out of service. The facility has stated it would like to see this section of railroad placed back into service to give them a backup connection to the rail network. Depot operations are conducted on rail lines as the means of transport and a unit at the depot is responsible for upkeep of the rail facilities.

Fort Sill: Fort Sill, in Lawton, Oklahoma, has a direct connection to both the Union Pacific Railroad and the Stillwater Central Railroad. They actively utilize freight rail, and they recently completed the installation of a wye³⁶ facility on the base that has greatly enhanced their rail mobility.

³⁶ Wye tracks are configurations that permit a train to be turned around and travel in the opposite direction.



Tinker Air Force Base: Tinker AFB in Oklahoma City is located at the end of a state-owned rail line that allows for possible introduction of commuter rail service. Tinker AFB also recently took on a lease for the former General Motors Plant that contains extensive rail infrastructure and direct connection to the BNSF north-south mainline track through Oklahoma. The protection of these out-of-service rail lines is recommended to assure future capacity needs can be met at this location.

Vance Air Force Base: Vance AFB in Enid, Oklahoma has discontinued its rail service to their installation, but it is adjacent to multiple active railroads including BNSF, UP, and the Grainbelt Railroad. ODOT recommends protection of the track on the base and the rail lines feeding this installation to assure future mobility and capacity needs can be met should transportation changes be needed.

Altus Air Force Base: Altus AFB in Altus, Oklahoma has discontinued its rail service to their installation, and as with Tinker and Vance, ODOT recommends protection of the rail lines feeding these installations to assure future mobility and capacity needs can be met should future transportation changes be needed.

Oklahoma is a fixed part of STRACNET, a function of the Railroads for National Defense. Both Fort Sill and the McAlester Army Ammunition Depot are actively connected to STRACNET, while Vance Air Force Base, Altus Air Force Base, and Tinker Air Force Base all have the capability to reconnect to STRACNET should the need arise.

Under its Railroads and Highways for National Defense Program, DOD, with the support of the Department of Transportation (DOT), ensures the nation's rail and highway infrastructure can support defense emergencies. The Strategic Rail Corridor Network (STRACNET) consists of 38,800 miles of rail lines important to national defense and provides service to 193 defense installations whose mission requires rail service.

The military places heavy and direct reliance on railroads to integrate bases and connect installations to predominantly maritime ports of embarkation. Mainlines, connectors, and clearance lines must all combine to support movement of heavy and/or oversized equipment. To ensure that military needs are factored into railroad industry decisions that may affect national defense, the DOD relies on the MTMC. In this capacity, MTMC identifies facilities of the railroad infrastructure important to national defense, informs the commercial and civil sectors of Defense needs, and encourages the retention and upkeep of railroad assets vital to support military movements.



In addition to identifying key lines and facilities, MTMC also conducts analysis of potential railroad industry construction, mergers, bankruptcies, and abandonments to determine how any of these actions may affect DOD mobility capabilities. Since 1976, MTMC has reviewed more than 2,100 abandonments affecting 33,000 miles of track, as well as eight bankruptcies affecting one-third of the nation's railroad network. MTMC analysis and reviews are the main source of DOD input to the railroad industry in attempts to preclude the loss of a critical facilities or track sections essential to effective movement of heavy military lift requirements.

The Railroads for National Defense Program (RND) ensures the readiness capability of the national railroad network to support defense deployment and peacetime needs. The Program works to integrate defense rail needs into civil sector planning affecting the nation's railroad system.

Military Traffic Management Command's Transportation Engineering Agency (MTMCTEA) works with state DOTs and other stakeholders to protect railroad infrastructure. Among these stakeholders are the American Association of Railroads (AAR), the Surface Transportation Board (STB), the American Railway Engineering and Maintenance of Way Association (AREMA), the Railway Industrial Clearance Association (RICA), the FRA, and individual railroad companies.

The Federal Railroad Administration (FRA) has defined a core rail system known as Principal Railroad Lines. These rail lines have the following attributes: Amtrak service; National defense essential; or annual freight volumes exceeding 20 million gross ton-miles per mile (MGTM/M). An advantage of the Strategic Rail Corridor Network (STRACNET) over other transport modes is the ability of these lines to transport oversize (high/wide) loads.

7.4 Freight Rail Employment, Earnings, and Multiplier Effects

Oklahoma is served by 21 companies that provide freight rail service to the state. These companies employ approximately 1,770 Oklahomans, the vast majority of which (84%) work for one of the three Class I railroads in the state: BNSF (55%), Union Pacific (19%), and Kansas City Southern Railway (10%). In 2010, the combined payroll of all 21 companies totaled approximately \$115.8 million; that year they also spent roughly \$15.1 on "in-state" purchases and \$6 million on capital improvements within Oklahoma. This employment and spending by the railroads has not only direct impacts on the Oklahoma economy but also produces indirect and induced impacts. Induced impacts stem from the re-spending of wages earned by workers benefiting from both direct and indirect activity of the industry; e.g. those employed by the railroads directly as well as those employed by companies who provide goods and services to the railroads. For example, an employee of the railroad receives a salary that they then use to make purchases, pay bills etc. and this further contributed to the Oklahoma economy. Thus,



the direct employment/payroll, spending, and investment by the freight railroad industry in Oklahoma are conservative estimates of the contribution of freight rail industry to the state's economy.

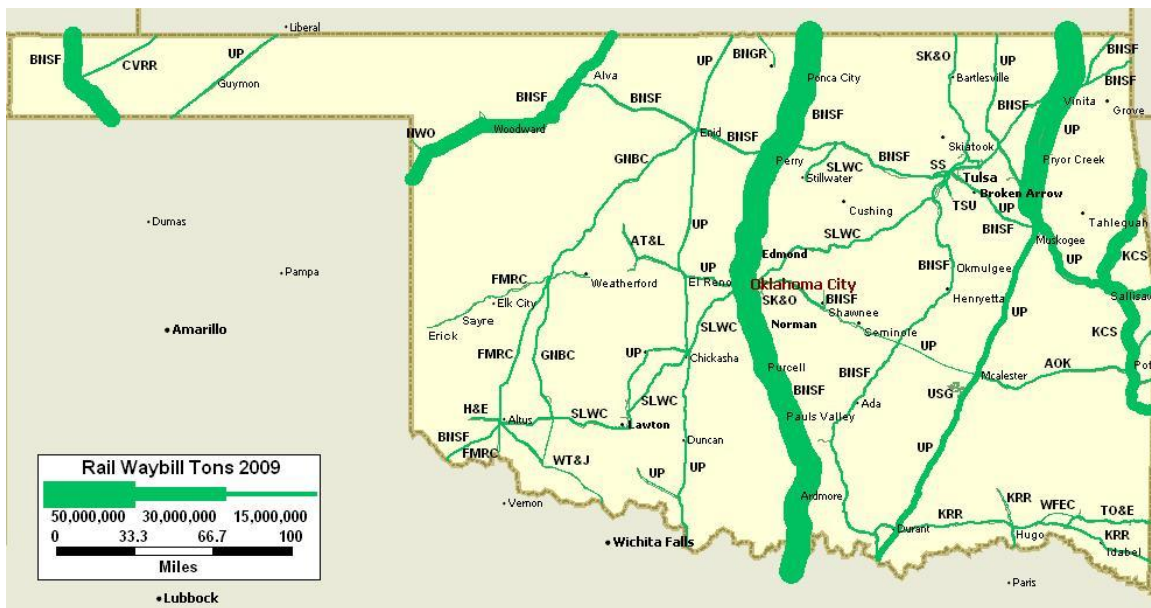
7.5 Oklahoma Rail Commodity Flows

Oklahoma's rail network carries a wide variety of products critical to the state and the national economy. This section describes the Oklahoma rail traffic base and the rail network from the perspective of key freight rail commodities. Data presented in this section are drawn from the 2009 Surface Transportation Board (STB) Rail Waybill Sample for the State of Oklahoma. This database is a stratified sample of rail shipments compiled by the STB.

Overview of Oklahoma's Freight Rail Traffic Flows

In 2009, over 278 million tons and over 46 million carloads of rail freight moved through the Oklahoma rail network. Figure 7-12 depicts the concentrations of rail traffic on the various lines.

Figure 7-12: Rail Traffic Flows on Oklahoma's Rail Network



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



A mapping of rail flows in Oklahoma shows most rail traffic in the state moves in a north-south direction over five Class I mainlines:

1. BNSF lines in the far western part of the state through Boise City, part of the BNSF route between the Powder River Basin and Texas;
2. BNSF west-central Oklahoma line through Woodward/Alva, part of the east-west Transcon
3. BNSF line through Oklahoma City, the former Santa Fe line between Kansas City and Fort Worth which is part of the MidCon traffic lane
4. UP mainline in eastern Oklahoma through Muskogee/Durant, the former Katy line Kansas City to Dallas
5. KCS mainline in far eastern Oklahoma through Sallisaw connecting Kansas City and the Gulf ports.

Some of the east-west intermodal³⁷ traffic on the BNSF Transcon also uses the route through Tulsa to reach destinations in Memphis and Birmingham.

A vast majority of this freight is "through" traffic that neither originated nor terminated in Oklahoma. This traffic is predominately coal, grain, and intermodal containers or trailers. Together these commodities make up over 65 percent of the states through rail traffic (Table 7-8).

Table 7-8: Rail Traffic in Oklahoma by Traffic Type

Direction	Tons (Thousands)	Percent	Units (Thousands)	Percent
Through	229,043	82%	4,905	91%
Inbound	31,704	11%	297	6%
Outbound	16,006	6%	165	3%
Local	1,636	1%	17	0%
Total	278,389	100%	5,384	100%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

³⁷ Intermodal traffic consists of shipping containers or highway trailers. The goods shipped can vary greatly but tend toward high-value goods such as manufactured products.



Table 7-9: Oklahoma Rail Traffic – Through Traffic Commodity Mix

STCC	Commodity	Thousand Tons	Percent Total
11 21	Bituminous Coal	92,337	40.3%
46 11	Fak Shipments	29,859	13.0%
01 13	Grain	28,128	12.3%
28 18	Misc Industrial Organic Chemicals	6,002	2.6%
01 14	Oil Kernels, Nuts or Seeds	5,324	2.3%
28 21	Plastic Mater or Synth Fibres	5,258	2.3%
28 12	Potassium or Sodium Compound	5,023	2.2%
20 92	Soybean Oil or By-products	5,002	2.2%
20 46	Wet Corn Milling or Milo	3,808	1.7%
20 42	Prepared or Canned Feed	3,628	1.6%
	Other	44,675	19.5%
	Total Tons	229,043	100.0%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

Inbound, Outbound, and Local Oklahoma Freight Rail Flows

Almost 20 percent of Oklahoma's rail traffic, approximately 49 million tons, either originates or terminates within the state. Unlike "through" (also termed "overhead") rail freight, which simply passes through the state, this traffic is both driven by and has a direct impact on Oklahoma's economy. Originating rail traffic reflects the production sectors of the economy. Terminating traffic meets the demands of the state's consumers as well as feeds the state's industries. Almost two thirds of the non-through traffic terminates in Oklahoma, making it a consumer of rail shipped products (Table 7-10). The remaining one-third of the non-through traffic originates with Oklahoma products.

Table 7-10: Oklahoma Rail Traffic Categories – Excludes Overhead Traffic

Direction	Tons	
	(thousands)	%
Inbound	31,704	64%
Outbound	16,006	32%
Local	1,636	3%
Total	49,345	100%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Table 7-11 shows the top ten rail inbound rail commodities, which account for more than 90 percent of the state’s inbound rail traffic. Coal and grain constitute almost 80 percent of the state's rail terminations.

Table 7-11: Oklahoma Inbound Rail Traffic – Commodity Mix

STCC	Commodity	Thousand Tons	Percent Total
11 21	Bituminous Coal	22,194	70.0%
01 13	Grain	2,545	8.0%
24 11	Primary Forest Materials	736	2.3%
20 92	Soybean Oil or By-products	641	2.0%
33 12	Primary Iron or Steel Products	621	2.0%
14 41	Gravel or Sand	607	1.9%
28 21	Plastic Mater or Synth Fibres	460	1.5%
13 11	Crude Petroleum	426	1.3%
24 21	Lumber or Dimension Stock	284	0.9%
28 12	Potassium or Sodium Compound	281	0.9%
	All Other	2,910	9.2%
	Total Tons	31,704	100.0%

Source:

2009 Surface Transportation Board (STB) Rail Waybill Sample

Given that the traffic statistics are for 2009, most traffic numbers are lower resulting from the economic conditions following the recent recession. The petroleum volume is understated because of its increasing importance resulting from crude petroleum being shipped into Oklahoma from the Dakotas. It is only recently has a significant volume of oil been shipped by rail into Oklahoma for transfer to pipeline.

Rail shipments originating in Oklahoma are more diversified than terminations. Table 7-12 shows the top ten originating rail commodities in Oklahoma by 4-digit STCC³⁸ code. Although the leading ten commodities account for 90 percent of outbound rail tonnage as with inbound traffic, greater diversification among the principal ten rail-transported products exists with stone, grain, and fertilizers being the leading commodities. Stone shipments alone constitute 45 percent of all originations. Combined with grain and fertilizer, these three commodities make up almost 70 percent of all rail tons originating in Oklahoma.

³⁸ Standard Transportation Commodity Code



Table 7-12: Oklahoma Outbound Rail Traffic – Commodity Mix

STCC	Commodity	Thousand Tons	Percent Total
14 21	Broken Stone or Riprap	7,148	44.7%
01 13	Grain	2,334	14.6%
28 71	Fertilizers	1,401	8.8%
26 31	Fiber, Paper or Pulpboard	791	4.9%
14 41	Gravel or Sand	758	4.7%
29 11	Petroleum Refining Products	658	4.1%
28 19	Misc Indus Inorganic Chemicals	510	3.2%
14 91	Misc Nonmetallic Minerals, Nec	277	1.7%
29 91	Misc Coal or Petroleum Products	260	1.6%
40 21	Metal Scrap or Tailings	225	1.4%
		1,643	10.3%
	Total Tons	16,006	100.0%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

Table 7-13 shows major "local" rail commodities in Oklahoma (i.e. rail shipments both originating and terminating within the state). Local Oklahoma rail traffic is primarily bulk stone, gravel, and cement, which are heavier commodities that can move competitively by rail over short distances

Table 7-13: Oklahoma Local Rail Traffic – Commodity Mix

STCC	Commodity	Thousand Tons	Percent Total
14 21	Broken Stone or Riprap	979	59.9%
14 41	Gravel or Sand	288	17.6%
32 41	Portland Cement	130	8.0%
29 91	Misc Coal or Petroleum Products	56	3.4%
28 71	Fertilizers	44	2.7%
29 11	Petroleum Refining Products	38	2.3%
01 13	Grain	25	1.5%
24 11	Primary Forest Materials	23	1.4%
32 95	Nonmetal Minerals, Processed	15	0.9%
33 12	Primary Iron or Steel Products	8	0.5%
28 19	Misc Indus Inorganic Chemicals	7	0.4%
26 31	Fiber, Paper or Pulpboard	5	0.3%
37 42	Railroad Cars	4	0.3%
20 85	Distilled or Blended Liquors	4	0.2%
40 29	Misc Waste or Scrap	3	0.2%
28 18	Misc Industrial Organic Chemicals	3	0.2%
26 11	Pulp or Pulp Mill Products	3	0.2%
	Total Tons	1,636	100.0%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



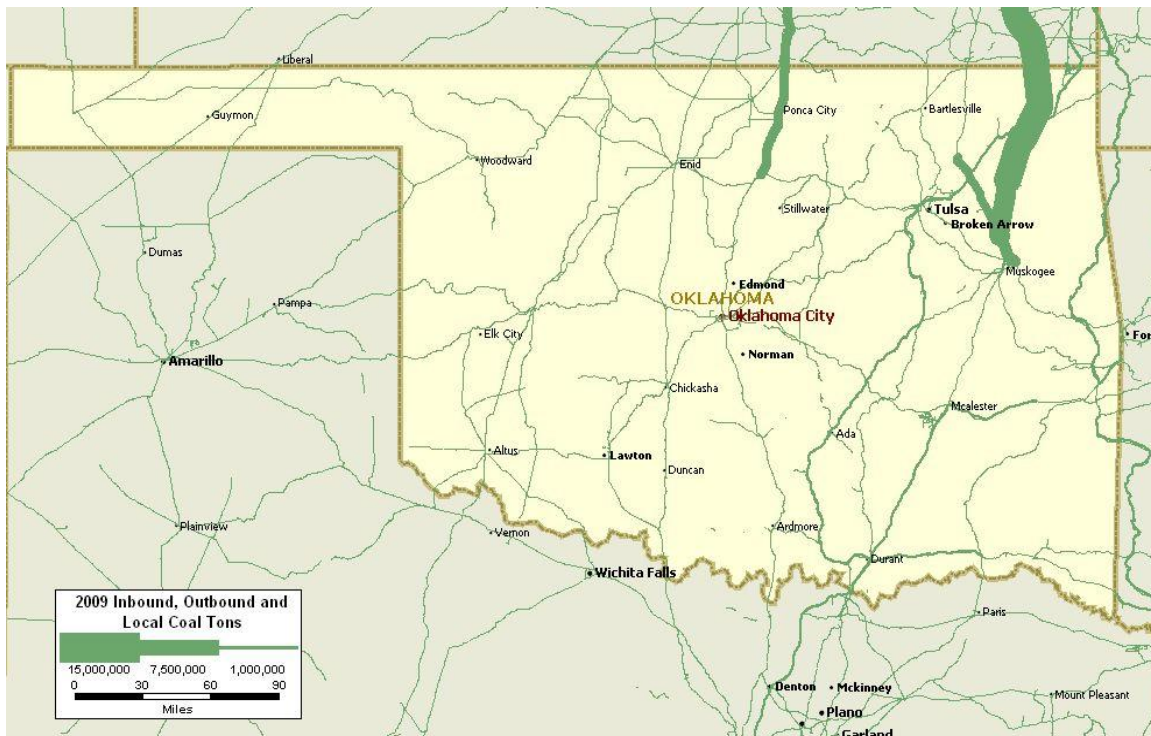
Oklahoma's Rail Commodity Networks

Oklahoma's rail traffic is primarily composed of five major commodities: coal, grain stone, petroleum, and fertilizers. Eighty percent of the state's originating or terminating rail traffic is in one of these five commodity categories.

Coal

Coal is produced in Oklahoma but not in large quantities. In 2010, 1.4 million tons of bituminous coal was mined in seven counties of eastern Oklahoma. Consequently, most coal traffic moving in the state is from out of state mines. Much is overhead traffic passing through the state to other destinations. Some terminates in the state. Figure 7-13 shows the flow of this traffic over the Oklahoma rail network. Flows are concentrated along the eastern Oklahoma UPRR mainline to coal burning utility plants near Muskogee. Not surprisingly, the majority of coal traffic originates in the producing regions of Colorado and the Wyoming Powder River Basin. (Figure 7-14).

Figure 7-13: Coal Rail Traffic Flows on Oklahoma's Rail Network



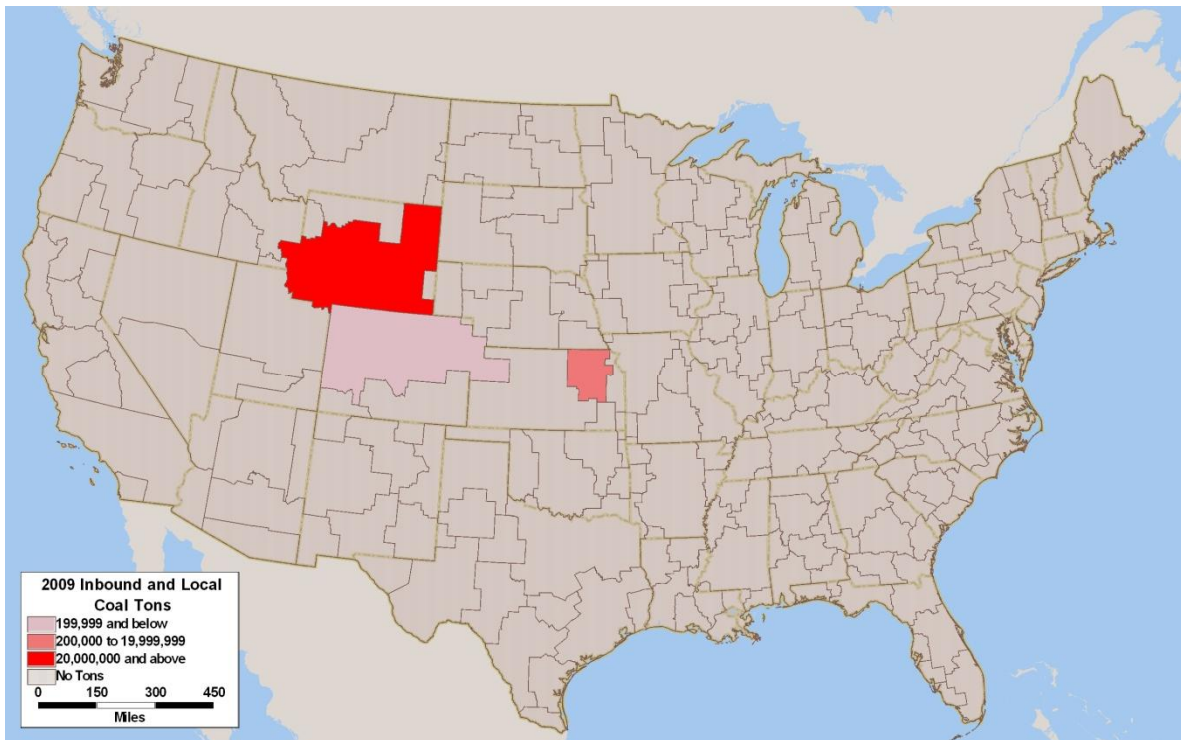
Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Stone

Stone, gravel, and sand (STCC codes 1421 and 1441) are the major outbound and local rail commodities in Oklahoma, constituting half of all state rail originations. Figure 7-15 shows the Oklahoma rail network for these products. The major stone flow in Oklahoma is south from Atoka on the UP mainline to Texas. The principal movement of stone is in southeast Oklahoma. Other flows include movements between Tulsa and Johnson County on BNSF as well as UP movements between Tulsa/El Reno and Comanche County north of Lawton. As Figure 7-16 shows, most Oklahoma stone shipments are local or regional short-haul shipments. They terminate either within the state or in neighboring states, primarily Texas, Colorado, and Kansas. As a low value product with many sources throughout the United States, shipping distances are short to keep delivery costs low.

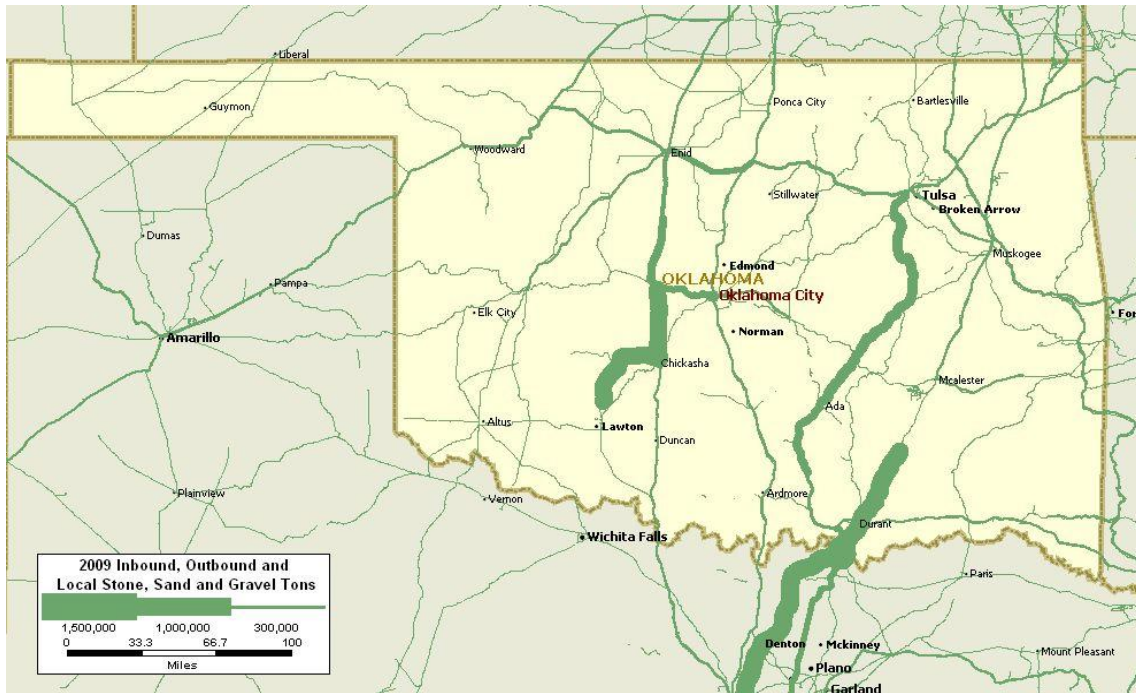
Figure 7-14: BEA Origins of Oklahoma's Inbound Rail Coal Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

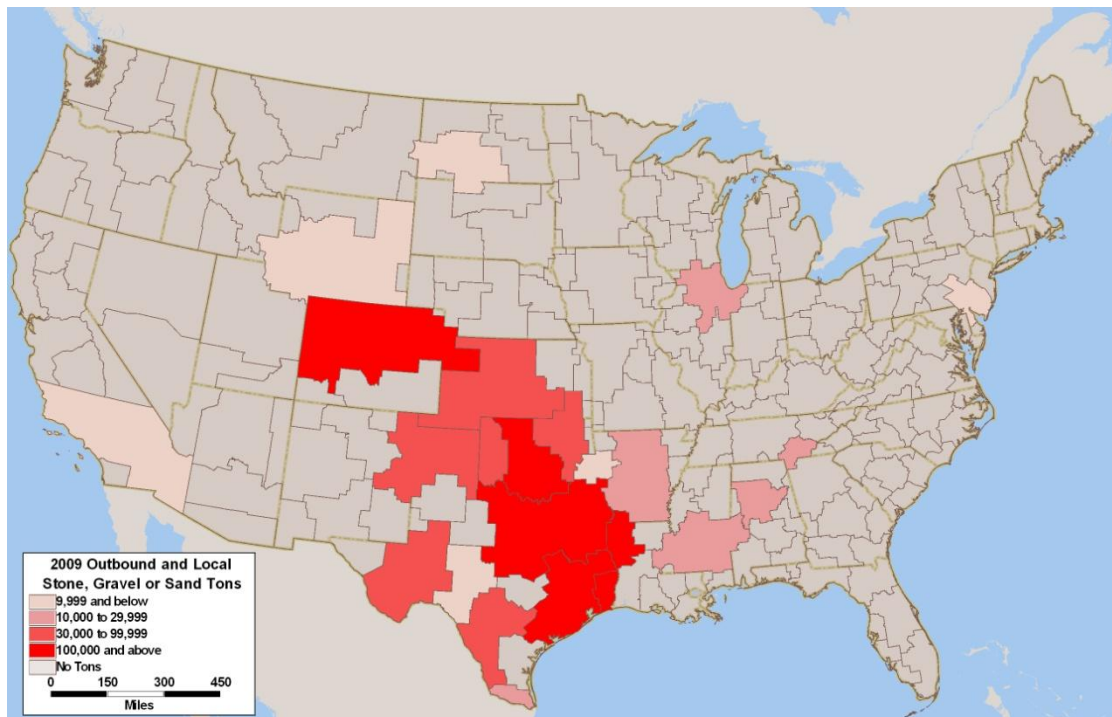


Figure 7-15: Stone Rail Traffic Flows on Oklahoma's Rail Network



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

Figure 7-16: BEA Terminations of Oklahoma's Outbound Stone, Gravel, and Sand Rail Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Grain

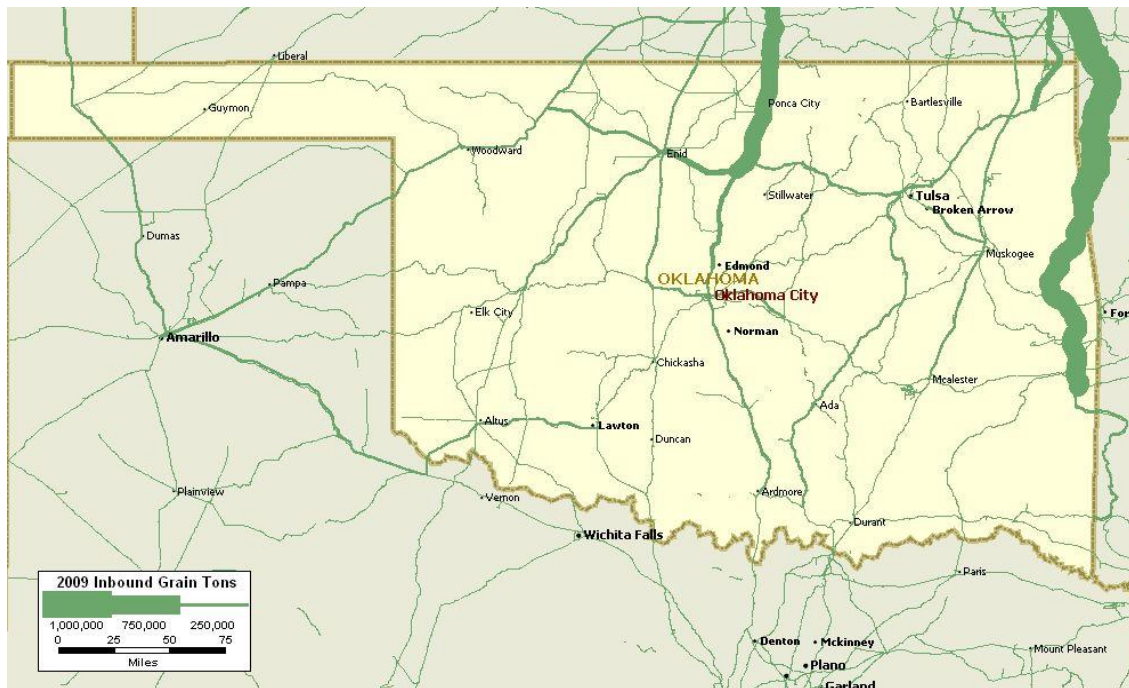
Grain rail shipments in Oklahoma move in and out of the state in equal volumes: 2.5 million tons terminated in the state in 2009 while 2.3 million tons originated in Oklahoma. The characteristics of these flows differ markedly between inbound and outbound. Over 70 percent of Oklahoma's inbound grain is corn (Table 7-14) which travels primarily on the KCS mainline in eastern Oklahoma to Le Flore County or on the BNSF mainline in central Oklahoma to the Perry area (Figure 7-17). Originations of these grain movements to Oklahoma are fairly concentrated in only seven BEA's (Figure 7-18), particularly eastern Kansas and longer-haul shipments from Louisiana and Mississippi.

Table 7-14: Inbound Rail Grain Volume in Oklahoma by Type of Grain

STCC5	Commodity	Thousands Tons	%
01 132	Corn	1,821	72%
01 133	Oats	27	1%
01 137	Wheat	693	27%
01 139	Grain, NEC	4	0%
	Total Inbound Grain	2,545	100%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

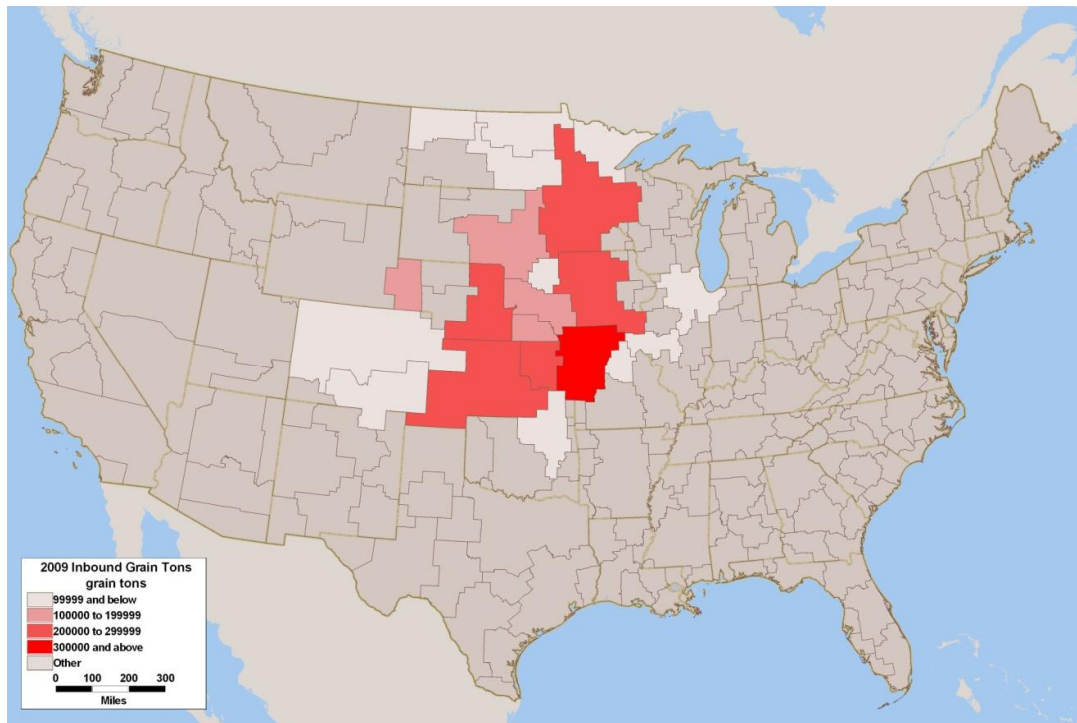
Figure 7-17: Inbound Grain Rail Traffic Flows on Oklahoma's Rail Network



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Figure 7-18: BEA Origins of Oklahoma Inbound Rail Grain Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

Outbound grain from Oklahoma is almost exclusively wheat (Table 7-15). Destinations for this traffic are reasonably evenly distributed throughout west of the Mississippi River. Major outbound lanes in Oklahoma are shipments from Garfield County (Enid) on BNSF mainline in central Oklahoma south to Texas. A secondary outbound flow is movements from Jackson County (Altus) on BNSF to Texas (Figure 7-19). Destination BEA's (Figure 7-20) are primarily short-haul moves in neighboring states north of Oklahoma, including Kansas, and Nebraska, and south to northern Texas. Longer-haul destinations are in California and Washington, presumably for export.

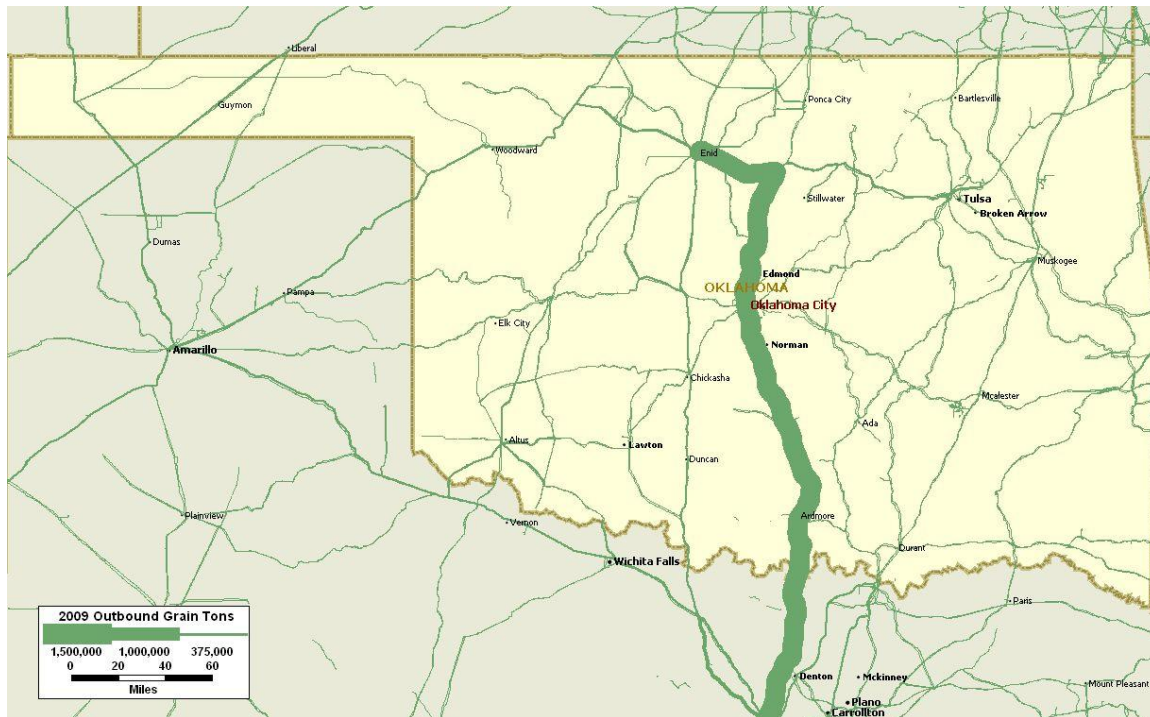
Table 7-15: Outbound Rail Grain Volume in Oklahoma by Type of Grain

STCC5	Commodity	Thousands Tons	%
01 132	Corn	10	0%
01 136	Sorghum Grains	142	6%
01 137	Wheat	2,182	93%
	Total Outbound Grain	2,334	100%

Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Figure 7-19: Outbound Grain Rail Traffic Flows on Oklahoma's Rail Network



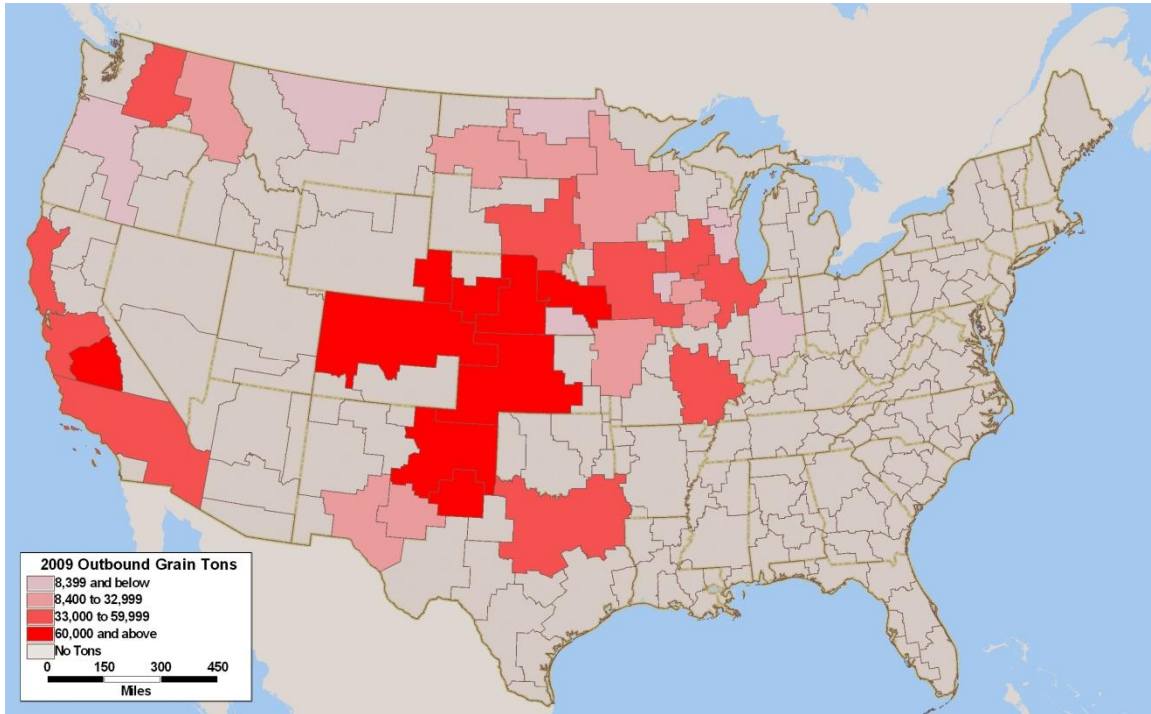
Source:
2009
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Waybill
Sample

Fertilizer

Fertilizer is Oklahoma's third largest outbound rail commodity with over 1.4 million tons shipped in 2009. Unlike the state's other commodities, fertilizer shipments flow primarily east and west through the northern part of the state between Woodward, Enid, and Tulsa and the border to Missouri (Figure 7-21). Rail destinations of fertilizer from Oklahoma exhibit a similar pattern as outbound grain (Figure 7-22), scattered throughout the mid-western and western United States. They are primarily short-haul destinations in Amarillo and nearby states north of Oklahoma: Kansas, Colorado, and Nebraska. Longer haul shipments also go to California and Washington.

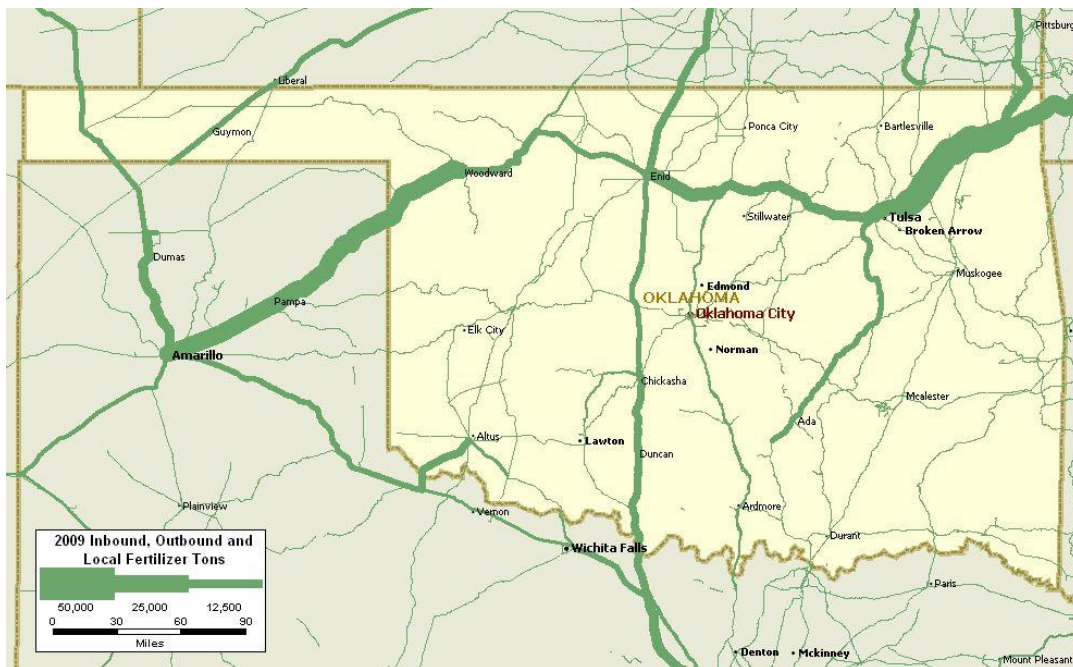


Figure 7-20: BEA Terminations of Oklahoma's Outbound Rail Grain Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

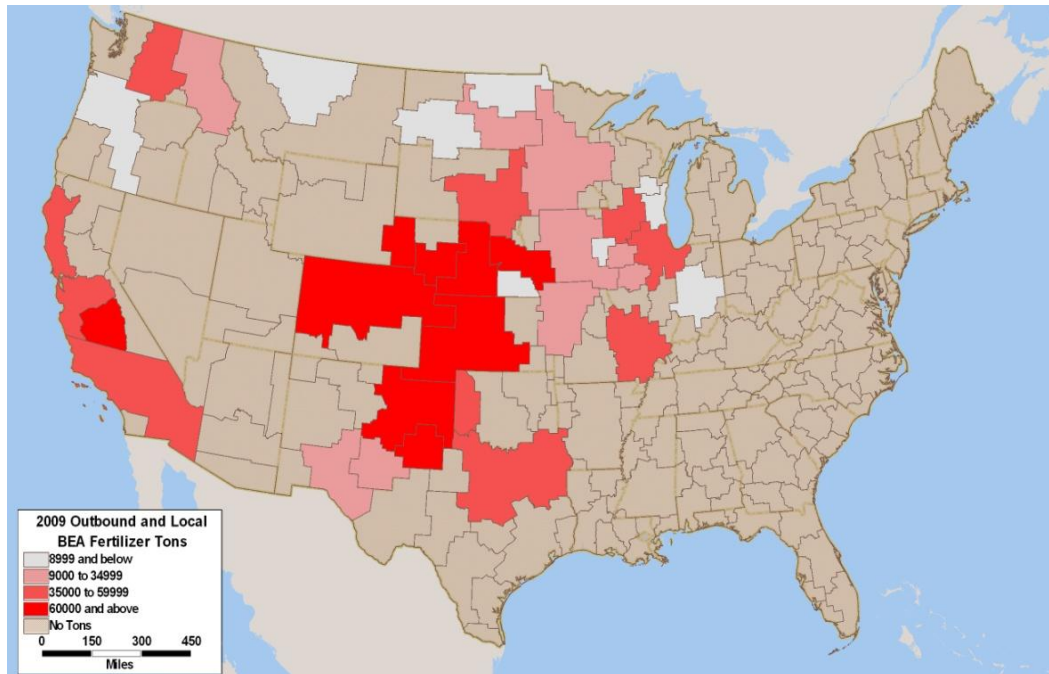
Figure 7-21: Fertilizer Rail Traffic Flows on Oklahoma's Rail Network



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample



Figure 7-22: BEA Terminations of Oklahoma Rail Fertilizer Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

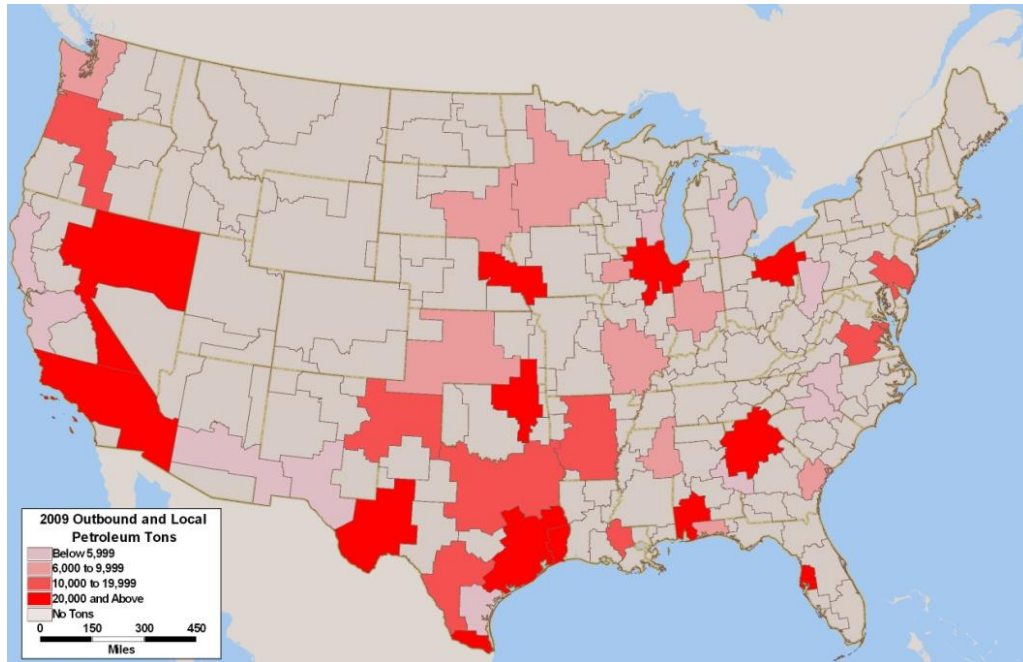
Petroleum

Petroleum is one of Oklahoma's major outbound rail commodities with over 700,000 tons shipped from the state in 2009. These movements are highly scattered throughout the country with major BEA terminations being Houston, Atlanta, Cleveland, Mobile, Tampa, Omaha, and northern Nevada (Figure 7-23).

No picture of inbound oil shipments is presented in this report due to the surge in oil shipments terminating in the state being a very recent phenomenon. The significant volume of oil to be extracted from the Bakken formation and the development of additional unloading capacity in Oklahoma will create a significant inflow of oil to the state. Although starting slow, greater volumes of Oklahoma-produced Anadarko Basin oil will increase once the rail facilities serving the area are refurbished.



Figure 7-23: BEA Terminations of Oklahoma's Rail Petroleum Traffic



Source: 2009 Surface Transportation Board (STB) Rail Waybill Sample

Intermodal

Since Oklahoma does not currently have an intermodal container/trailer transfer facility; all reported intermodal traffic is pass-through. Intermodal traffic is the second largest type of lading traveling through Oklahoma by rail. Most of this traffic moves on the BNSF Transcon line through Woodward and over the Avarad subdivision line to Tulsa and beyond to Memphis and Birmingham. (Figure 7-24).

Summary

Most rail traffic in Oklahoma, over 80 percent, is "through" or overhead traffic that neither originates nor terminates in the state. This traffic is predominately coal, intermodal, and grain. Rail shipments that begin or end in Oklahoma are primarily coal, grain, and stone aggregates. These are traditional, heavy-loading, bulk rail commodities that primarily move locally or regionally between neighboring states. Grain in particular is balanced between outbound (wheat) and inbound loads of corn.



8. Overview of Oklahoma Rail Legislation

Oklahoma statutes that include provisions for current railroad related activities date back to some of the earliest laws on record in Oklahoma, including the law recognizing foreign corporations operating in Oklahoma before statehood. The majority of the initial legislation pertaining to railroads in Oklahoma relates to the definition of a railroad corporation, the powers granted those corporations, rules regarding the acquisition and use of lands in Oklahoma, and operating practices or requirements to help safeguard Oklahoma residents and property.

8.1 Oklahoma Rail Legislation History

Title 66 of the Oklahoma Statutes governs railroads and their operations in Oklahoma. A history of its important provisions is summarized in this section. Table 8-1 outlines early Oklahoma laws addressing significant railroad issues:

Primary issues addressed in the initial legislation included the establishing railroads as entities with “perpetual succession” and the members of the board listed as the “primary” contacts for any legal matters or affairs. These laws also outlined the powers granted to railroad corporations, including the right to extend routes into Oklahoma lands, acquire property for the construction of railroad infrastructure through “eminent domain”, the empowerment of railroad corporations to lease or sell infrastructure or property and the responsibilities of the railroad to ensure safe operation within the state. The primary operating requirements of the initial legislation focused on the installation and maintenance of adequate fencing necessary to safeguard livestock from train operations. Early legislation also outlined the amount of right-of-way by limiting the allowable maximum width adjacent to the centerline of railroad alignment that the railway could obtain for the installation of rail infrastructure, stations, depot grounds and other rail facilities reasonably necessary to accomplish the corporation's objectives.



Table 8-1: Oklahoma Laws Governing Railroads – Early Legislation

Law	Date	Revision	Description	Provisions
os-66-1	1910	none	Articles and Certifications	Requires RR companies to provide articles of incorporation
os-66-7	1910	1997	Powers of Oklahoma RR corporations	Powers of incorporated RR operators
os-66-51	1910	none	Power to enter lands for construction	Provides access and eminent domain
os-66-63	1910	none	RR rights regarding use of municipal right of way	Rules for the use of public roadways by RR companies near RR right of way
os-66-128	1910	none	Roadway crossings	Requires RR to construct / maintain roadway crossings
os-66-143	1910	none	Rights of adjacent landowners	Empowers adjacent landowners to improve RR fencing as necessary
os-66-144	1910	none	Failure to fence	Assigns liability for incidents resulting from railroads failure to fence
os-66-145	1910	none	Fencing requirements	Requires RR to construct fencing
os-66-146	1910	none	Notice to fence	Requires RR to construct fencing on frontage property within 60 days where given notice
os-66-147	1910	none	Fencing penalty	Requires RR to construct or reimburse cost for fencing
os-66-161	1910	none	Extension of route into Oklahoma	Requires RR to provide route to Oklahoma Corporation Commission(OCC) prior to extending route into Oklahoma
os-66-164	1910	none	Domestication of foreign corporations	Recognized RR corporations operating in OK before statehood
os-66-184	1910	none	Leasing or Selling	Empowers RR to lease or sell infrastructure or property

The next notable category of Oklahoma legislation related to railroad operations are laws initiated during the late 1930s focusing on tax collection from railroad corporations including the tax liability associated with freight cars. These laws require railroad corporations to pay four percent of the amount constituting the gross revenue for freight car operations in the state for each and every freight car so used, rented or leased. These laws include the requirements for each railroad corporation to collect freight car taxes on privately-owned rail cars operated over their infrastructure within Oklahoma. Those tax collection requirements include provisions for the payment, collection and record keeping associated with privately owned rail



car collections, and the payment period in which the railroads are required to make the final payment to the State annually.

Oklahoma Highway Commission (now ODOT) to construct or install, or to order the company owning a railroad crossing a highway to install warning devices. The requirements also call for on-going maintenance of the devices. The devices are installed where deemed appropriate.

These requirements resulted in the development of Highway/Rail Grade Crossing Safety Programs coordinated today. The funding for Highway/Rail Grade Crossing Safety Improvement has predominantly been provided by the Federal highway Administration (FHWA) through various safety funding provisions in a number of highway funding bills over the past three decades. Regardless of various highway funding bill amendments to the appropriation requirements for safety funds. ODOT has continued to require a minimum ten percent match for grade crossing signal improvements, with the match for active warning device installations placed on state highways normally paid from the "Railroad Maintenance Revolving Fund".

Another notable requirement implemented in 1937 through O S Statutes, Chapter 66 Section 125a, Railroads - Highway Crossings - Safety Devices was the requirement of the

The next category of laws was enacted in the 1970s predominantly for the construction of roadway/highway improvements on railroad right-of-way. This also established ODOT as the "Department" responsible for the coordination of railroad improvements throughout the state.



Table 8-2: Oklahoma Laws Governing Railroads – 1937-1963 Legislation

Law	Date	Revised	Description	Provisions	Requirement	Schedule	Key Elements
os-66-125a	1937	none	Railroad Highway Crossing Safety	Requires public authority to coordinate construction & maintenance of safety devices	Construction & Maintenance of Highway-Rail Crossing Signals	eff. 5/25/1937	Initiation of RR Safety Program in Oklahoma
os-68-2201	1939	1965	Definitions	Definitions for Tax collections	Defines "Gross Revenue", "Railroad Company" and "Freight Car"	Annually assessed	Assessed for RR private property in lieu of ad valorem tax
os-68-2204	1939	1994	Disposition of Taxes Collected	Taxes collected via Section 2201 to be credited to the (RMRF)	Established Railroad Maintenance Revolving Fund (RMRF)	Annually assessed	Provision of matching funds for RR Safety Improvement
os-68-2206	1939	1994	Tax Liability	Requires RR to withhold 4% of gross revenue for corporate and privately owned rail freight car operation in Oklahoma	Annual tax collected by RR for freight car operation assessed on 12/31	Tax collected to be reported by 4/1	Funding source for (RMRF)
os-68-2207	1939	1994	Determination of Tax	Requires RR to prepare annual tax statements and remit tax	Funds to Railroad Revolving Maintenance Fund after 30-days of no protest	Assessed by 12/31 Reported by 4/1	Provides 30-day protest period
os-68-1404	1963	1999	Exemptions	Establishes Tax exemptions for railroad personal property	RR Exemption from ad valorem Tax	Coal Cars Exempt 1/1/1991	Exemption for coal transport



Table 8-3: Oklahoma Laws Governing Railroads – 1968-1976 Legislation

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-69-1722	1968	1998	Rules for condemnation of RR property by Highway Dept	Rules for condemnation of RR property associated with overpass construction	Must provide plans to RR for review	RR has 30 days to review	RR over/under-pass construction
os-66-304	1971	1978 1980 1981 1997 1998 1999	Powers and duties	Empowerments and provisions for the "Railroad Revitalization Act"	ODOT freight rail operation & management requirements	6/1/1981	Authorizes ODOT to acquire, operate and maintain RR right of way
os-66-306	1971	1998	Essential government functions	Declares powers of "Railroad Revitalization Act" essential	Laws 1998, c. 376, § 3	eff. 11/1/1998	recites os-51-155
os-66-308	1971	1998	Contract rules requiring lowest bid	Requires compliance with "Competitive Bidding Act of 1974"	RR projects utilize lowest competitive bid	eff. 4/10/1978	
os-69-4008	1976	1993	Establishes duties of ODOT	Abolition of Dept of Highway, Highway Safety Coordination Committee and RR Maintenance Authority	ODOT established	7/1/1993	Responsibility for rail issues assigned to ODOT



Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-69-4013	1976	none	Limitation of Jurisdiction	Defines the limit of ODOT jurisdictional authority	Defines OCC jurisdiction	n/a	Denotes regional, port, airport and local entity authority

Other notable provisions included in these laws were the initial legislation that would ultimately be revised to become the "Railroad Revitalization Act." One law specifically defined the limits of ODOT's jurisdiction as it relates to railroad operations in the state.

The period between 1978 and 1988 included legislation that would ultimately empower ODOT to acquire, construct, reconstruct, repair, replace, operate and maintain railroad rights-of-way and provide a funding source for rail related improvements. The Railroad Revitalization Act and legislation enacted to establish the Railroad Revolving Maintenance Fund are those leading to development of the state-owned property programs currently administered through the Rail Programs Division of ODOT.

Table 8-4: Oklahoma Laws Governing Railroads – 1978-1988 Legislation

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-66-302.1	1978	1998	Citation	Official name for "Railroad Revitalization Act"	Laws 1978, c. 164, § 1, emerg.	eff. 4/10/1978	In conjunction with 68-2204
os-66-303	1978	1998	Definitions	Definitions for "Railroad Revitalization Act"	Designates ODOT for RR coordination	Defines owner and income	Defines Intermodal transportation
os-66-309	1978	1981	Establishes RMRF fund	Provisions for "Railroad Maintenance Revolving Fund "	os-68-2201	6/1/1981	Funds for (RMRF)



Oklahoma Statewide Freight and Passenger Rail Plan

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-69-4016	1980	none	Prohibition of contributions	Prohibits contributions, gifts, etc. to certain railroads or other entities	Prohibits subsidy's for private entities	n/a	Prohibits subsidizing non government entities
os-66-304.1	1980	none	State Supreme Court Ruling	Determines the constitutionality of the "Railroad Revitalization Act"	Laws 1981, c. 214, § 2, emerg.	eff. 6/1/1981	Oklahoma Supreme Court Ruling
os-68-2352	1971	1976,78, 80,81,83, 85,86,87, 88,89,90, 91,96,99, 02,03,05, 07,08	1981 Amendment of General Revenue Fund (GRF)	Adoption of S.B. 59, 1981 amended GRF to include appropriations for the purchase of railroad right of way	Appropriated State Highway Construction and Maintenance Funds toward the purchase of Rock Island right of way	Signed 6/26/1981 ended 7/1/1982	Unused appropriations to revert back to the State Highway Maintenance Fund on 7/1/1982
os-66-65	1981	1991	Rules for purchasing abandoned RR right of way	Provides prioritization of purchase rights for RR property	Priority- RR, Adjacent Business, State DOT, Federal, Local	Provides 1 year for priority purchase	Adjacent land owner must wait 1 year
os-68-2805	1988	1992	Provisions for tax	Establishes tax to be collected in lieu of ad valorem tax	os-68-2202	1/1/1992	Freight car tax
os-68-2859	1988	1997	Duties, power and authority	Duties, power and authority of "State Board of Equalization"	Assess non ad valorem RR tax	1/1/1997	Empowerment to assess taxes exempt from ad valorem taxation



Some of the most influential legislation enacted in this period established the prioritization of entities to which existing rail infrastructure in danger of being abandoned could be sold. That legislation provided a minimum of a one year waiting period before adjacent land owners were eligible for the purchase of any adjoining rail property for reversion back to farm land. The prioritization schedule provided railroads and government entities the right of first refusal for the purchase and utilization of existing railroad infrastructure. Additional refinements were also established for the collection of the "freight car" tax equivalent to four percent of gross revenues for freight car operation in lieu of ad valorem taxes on railroad personal property.

The most recent Oklahoma laws enacted deal predominantly with funding or passenger rail service improvements. The initial funding for the Oklahoma Tourism and Passenger Rail Act came from provisions included in the Taxpayer Relief Act of 1997 that focused on implementing Amtrak service for states without passenger rail service. Most of the 1990s legislation was focused on the implementation and continued service of the *Heartland Flyer*, with the exception of the 1999 revision of the "Railroad Revitalization Act" which firmly established the procedures for the Rail Programs Division State-owned Rail Programs allowing ODOT to acquire, operate and maintain railroad infrastructure located in Oklahoma.

Table 8-5: Oklahoma Laws Governing Railroads – 1991-1999 Legislation

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-68-504	1991	1993, 94,96	Apportionment	Engrossed H.B. 1078 and Engrossed Senate Amendments appropriating 4% of State Transportation Fund to contract RR passenger service	Funding for HF Operations 1991-1996 repealed by "OTPRR" fund legislation	Repealed 1996	Provided \$850,000 annually for HF service
os-66-321	1996	2005	Citation	Official name for "Oklahoma Tourism and Passenger Rail Act"	Added by laws 1996, c. 255, § 1	7/1/1996	Passenger rail funding "OTPR" Act



Oklahoma Statewide Freight and Passenger Rail Plan

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-66-322	1996	2005	Purpose	Purpose of the "Oklahoma Tourism and Passenger Rail Act"	Establish passenger rail, enhance tourism	7/1/1996	Empowerment for support of passenger rail
os-66-323	1996	2005	Definitions	Definitions for "Oklahoma Tourism and Passenger Rail Act"	Designates ODOT	1/1/1996	Defines Passenger Rail Service
os-66-324	1996	none	Powers and duties	Empowerment of the "Oklahoma Tourism and Passenger Rail Act"	Powers and duties of ODOT	1/1/1996	Passenger rail service improvements
os-66-325	1996	2001	Established OTPRR fund	Provisions for "Oklahoma Tourism and Passenger Rail Revolving Fund"	Funding for passenger rail service	1/1/1996 1/1/2001	Ref.- Intercity Passenger Rail Trust Fund Act of 1995
os-66-304	1971	1978, 80,81, 97,98 ,99	Powers and duties	Empowerments and provisions for "Railroad Revitalization Act"	ODOT freight rail operation & management requirements	7/1/1999	Authorize ODOT to acquire, operate and maintain RR right of way
os-66-304.1	1980	none	State Supreme Court ruling	Determines the constitutionality of the "Railroad Revitalization Act"	Laws 1981, c. 214, § 2, emerg.	eff. 6/1/1981	Oklahoma Supreme Court Ruling



Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-66-326	1999	none	Citation	Official name for "Interstate Midwest Regional Passenger Rail Compact"	Added by Laws 1999, c. 70, § 1, emerg.	eff. 4/7/1999	Enters Oklahoma into Regional Passenger Rail Compact

Other notable provisions included Oklahoma’s entrance into the “Interstate Midwest Regional Passenger Rail Compact.” This organization promotes regional passenger rail development in mid-western states and identifies the duties of the Oklahoma Transportation Commission with regard to passenger rail improvements.

The most recent Oklahoma rail laws enacted continue to deal predominantly with funding for passenger as well as freight rail service. Long term funding for the *Heartland Flyer* passenger rail service was identified in the “Rebuilding Oklahoma Access and Driver Safety Fund”. Freight rail operators within the state were provided the opportunity to borrow funding through the “Railroad Rehabilitation Loan Program” which would allow repayable loans to be distributed from the Railroad Maintenance Revolving Fund and to obtain tax credits toward railroad rehabilitation or replacement costs through the Railroad Modernization Act.



Table 8-6: Oklahoma Laws Governing Railroads – Recent Legislation

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-66-326	1999	none	Citation	Official name for "Interstate Midwest Regional Passenger Rail Compact"	Added by Laws 1999, c. 70, § 1, emerg.	eff. 4/7/1999	Enters Oklahoma into Regional Passenger Rail Compact
os-66-328	1999	none	Powers and duties	Duties of the Transportation Commission for Passenger Rail Improvements	Make Passenger Rail Improvements a reality for the region	4/7/1999	Liaison with Amtrak, FRA, HSGTA, and other regions
os-66-309.1	2002	none	Railroad Rehabilitation Act	"Short title" for the "Railroad Rehabilitation Act"	Added by Laws 2002, c. 297, § 3, emerg	eff. 5/22/2002	
os-66-309.2	2002	none	Definitions	Definitions for "Railroad Rehabilitation Act"	Added by Laws 2002, c. 297, § 3, emerg	eff. 5/22/2002	Defines "Qualified Railroad Entity & Rehabilitation"
os-66-309.3	2002	none	Powers and duties	Provisions and terms for railroad rehabilitation loan program	Annual amount to be <50% of RMRF balance	Loan by 11/1/2002, ODOT 120 days to implement	10-year duration, maximum of \$5-million aggregate total
os-47-1104	1985	2007	Amendment of Vehicle License & Registration Act	Adoption of H.B. 1176, 2005 amending General Revenue Fund (GRF) to fund from vehicle title fees	Appropriated \$850,000 million/year for HF operation	Signed 6/23/2006 eff. 7/1/2007	Appropriations for rail passenger service "OTPRR" fund



Oklahoma Statewide Freight and Passenger Rail Plan

Law	Date	Revision	Description	Provisions	Requirements	Schedule	Key Elements
os-68-2352	1971	1976,78,80,81,83,85,86,87,88,89,90,91,96,99,02,03,05,07,08	Amendment of GRF appropriations	H.B. 1078, 2010 amends GRF to include "new" designated appropriations for rail passenger service	Currently appropriates \$2 million/year for Oklahoma's portion of HF operating costs	Signed 6/9/2005 eff. 7/1/2008	Appropriations for rail passenger service "ROADS" fund that repealed previous funding from os-68-504, 1991
os-68-2357.103	2005	None	Railroad Modernization Act	"Short title" for the "Railroad Modernization Act of 2005"	Added by Laws 2005, c. 413, § 7, pertaining to taxes levied by os-68-2355	eff. 11/1/2006 ends 7/1/2012	Modified tax credit for RR reconstruction or replacement (11/1/2006 to 7/1/2010)
os-68-2357.104	2005	2010	Railroad Modernization Act	Limits for tax credits associated with the "Railroad Modernization Act of 2005"	No credit for improvements after 7/1/2010 Ends 7/1/2012	eff. 11/1/2006 ends 7/1/2012	Tax credits limited to Class "II" and Class "III" operators
os-69-1521	2005	2010	Establishes the "ROADS" fund	Provisions for the "Rebuilding Oklahoma Access and Driver Safety Fund" (from H.B. 1078, 2010)	Appropriates \$2 million per year for HF operation	Fund budgeted 6/30/2006	References General Fund Appropriation os-68-2352



8.2 Public Private Partnership Law

One of the state's primary hurdles to additional railroad investment is the prohibition of direct private investment in public projects. Prohibited by state law, the exclusion of private funding precludes the state from participating in an increasingly popular form of funding, public-private-partnerships, commonly known as P3s. A P3 seeks to link a mix of public and private funding to the benefits that accrue to each sector. Rail investments benefit both the private rail carrier and the public through improved mobility, reduced energy consumption, reduced emissions, or by stimulating economic development. Currently several legislative initiatives are being taken to remedy this situation and provide opportunities for private investment.



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9. Oklahoma Department of Transportation Rail Programs

9.1 Rail Programs Division

The Rail Programs Division of ODOT was established in 1989 to oversee the state's 3,599 miles of rail, 428 miles of which are owned by the state. It is responsible for acquiring and administering federal and state funds used to support operation of the *Heartland Flyer* passenger service, highway construction projects affecting railroad property, railroad crossing safety improvements, and maintaining the state-owned rail lines. The division comprises five sections: State-owned Rail Line Management, Safety, Rail Passenger, Construction, and Federal Programs.

State-owned Rail Line Management Section

In 1978, the Oklahoma State Legislature passed the "Railroad Revitalization Act." This Act specified powers and duties of ODOT to address state rail issues. ODOT was authorized and empowered to acquire, construct, repair, operate, and maintain railroad rights-of-way and trackage on feasible and economically sound railroad routes.

This section oversees the state-owned rail properties and their selected operators, which includes direct responsibility of the rights-of-way, operator contract compliance, property inspections, and all easement/license/lease reviews, and maintains the lease agreements between the state and the operators. It also completes yearly inspections for proper maintenance and administers state funds for the upkeep of these properties. ODOT had successfully leased 98 percent of the lines it owns to Class III operators.

Safety Section

Oklahoma has 3,852 railroad-highway grade crossings with one-third equipped with active warning devices with either pedestal mounted flashers, gates, cantilevered signals, or any combination of the three. The remaining two-thirds of these crossings are controlled by passive devices such as warning signs.



Each state receives annual federal funding for improving of grade railroad crossings with active warning devices. The FRA has devised a system called the "Priority Index Ranking" to determine which crossings are the leading candidates for funding. The Rail Programs Division Safety Section manages the crossing improvements priorities in Oklahoma. It also manages the FRA Crossing Corridor program, which provides funding for upgrades to remaining crossings in corridors where selected grade crossings are closed.

The most recent highway-rail crossing inventory data collected for the State of Oklahoma in 2009 indicates that Oklahoma currently has 4,318 crossings that are open to the public including 533 or 12 percent that are grade separated locations, 1404 or 33 percent with some type of active warning devices, and 2,381 or 55 percent with passive warning devices.

Rail Passenger Section

The Rail Programs Division oversees the passenger rail operations in the state, namely the *Heartland Flyer*. It works with Amtrak to ensure quality service. It also administers the funding provided to Amtrak for provision of the service.

Construction Section

The Construction Section of the Rail Programs Division coordinates state rail construction activity. It is responsible for reviewing the scope of a railroad's involvement, developing required agreements with the railroads to permit contractor access to railroad property and ensuring that insurance requirements are met. It oversees projects through to completion and final inspection.

Federal Programs Section

The division's Federal Programs Section is to identify and secure funding available for rail improvements. It assures that ODOT is fully compliant and integrated with all Federal rail funding initiatives. It prepares all funding applications and develops the business cases supporting the applications. The section also keeps ODOT staff informed of national rail policy and priorities to position Oklahoma as a benefactor of the policies.



9.2 ODOT Highway-Rail Crossing Inventory and Project Management Tools

Oklahoma continues to experience reductions in crossing incidents with the crossing fatalities averaging 18 per year in the 1980s being reduced to an average of 11 per year over the past decade. Injuries at railroad crossings have also experienced significant reductions, from an average of 83 injuries per year in the 1980s to 32 injuries per year over the past decade.

The reduction in collisions and fatalities at highway-rail crossings can most likely be attributed to a reduction in the overall number of crossings throughout the state as well as the installation of gates and flashing lights at a significant number of crossings. From a national perspective the FRA's Office of Safety Analysis, indicates that the U.S. has approximately 139,862 public grade crossings. Of those active public crossings, less than half (approximately 50,132) have gates, 23,215 have flashing lights, and 1,248 have highway traffic signals, wigwags³⁹, and bells.

The FHWA requires each state to develop and implement a Highway Safety Improvement Program (HSIP) that consists of three components: planning, implementation, and evaluation. The process for improving safety and operations at highway-railroad grade crossings consists of the same three components and may be considered part of a state's HSIP. Federal policy requires the planning component to consist of a process for:

- Collecting and maintaining a record of collision, traffic, and highway data, that includes information for highway-rail grade crossings and the characteristics of both highway and train traffic.
- Analyzing available data to identify highway locations, sections, and elements determined to be hazardous on the basis of collision history or collision potential.
- Conducting engineering studies of hazardous locations, sections, and elements to develop highway safety improvement projects.
- Establishing priorities for implementing highway safety improvement projects. The implementation component consists of a process for programming and implementing safety improvements. The evaluation component consists of a process for determining the effect that safety improvements have in reducing the number and severity of collisions and potential collisions.

A 1996 USDOT Grade Crossing Safety Task Force study identified a lack of quality data on grade crossings as an impediment to developing and managing necessary crossing safety improvement programs. Railroad, state, and local officials recommended the development and

³⁹ A wigwag is a rare antique but effective crossing warning device consisting of a light swinging on a pendulum. A few are still in use.



maintenance of improved databases, including increased availability to state and local agencies as well as the private sector.

Beginning with a statewide inventory of public crossings in 1993, the ODOT Rail Programs Division has taken a national leadership role in collecting crossing data and utilizing the data to support safety project decisions. ODOT is maintaining a leadership role for developing data with its latest statewide railroad crossing inventory and corresponding project management system.

9.3 OK.RAIL System

The ODOT Rail Programs Division's Rail Assessment, Inventory, and Location (OK.RAIL) system represents the culmination of a massive collaborative effort to update information and improve the project management tools used to address engineering and safety issues at railroad crossings. ODOT, in collaboration with the FHWA and Oklahoma railroads, has developed a comprehensive inventory of all railroad crossings in the state, along with a groundbreaking suite of GIS-enabled applications that greatly increase ODOT's effectiveness in administering the appropriation of federal funds for railroad crossing safety improvements. The OK.RAIL system includes a map-based, field data collection application (OK.FieldRAIL), a centralized SQL Server database, and a web-enabled inventory management system (OK.RAIL).

ODOT maintains records for over 6,000 public and private railroad crossings across the state. An update of existing public crossing information was conducted using field crews equipped with state-of-the-art data collection technology, including ruggedized touch screen laptops, wireless digital cameras, and Bluetooth GPS units. Using the OK.FieldRAIL database installed on the field laptops, crews used GPS and built-in maps to navigate to crossings, where they collected inventory data, as well as GPS location data, digital photographs, and measurements of any sight distance obstructions identified at passive crossing locations. The crossing data, including digital photographs, automatically synchronized to the central database on a nightly basis when the field laptops were connected to the internet.

Data collected through the field inventory is viewed and managed within OK.RAIL, a GIS-based data management system that provides the ODOT staff with rich, up-to-date data on all crossings in the state. It also includes mapping, searching, and reporting capabilities that have drastically increased the Rail Programs Division's efficiency in coordinating safety project activities. OK.RAIL Features include:

- Inventory data viewing, editing, and QA/QC functionality
- Powerful searching and reporting



- Printing and exporting (including export to FRA format)
- Digital photo uploading and viewing
- Fully integrated GIS map
- External links to commercial mapping systems (such as Google maps and Virtual Earth)
- Comprehensive project tracking and document control
- Prioritization of safety expenditures at crossings considered the most critical based on crossing controls, traffic volumes, and safety data that includes historical crash data.

The OK.RAIL Safety module draws from state and federal crash records to provide a history of collisions at each crossing, and utilizes this information in conjunction with traffic and inventory data to calculate crossing priority rankings utilized for the safety improvements. ODOT utilizes these rankings to select crossings to hold diagnostic team inspections that include participation from the railroads, FHWA, and local entities with jurisdictional authority for the roadway. After the project locations have been identified, the Projects module helps track the progress of each individual project from inception to completion. The result of this process is that federal funding for grade crossing improvements are spent more effectively at crossings with characteristics deemed most critical, thereby increasing crossing safety throughout Oklahoma.

OK.RAIL Measure of Effectiveness

The effectiveness of the OK.RAIL system continues to be measured based on:

- Further reductions of crashes and fatalities in Oklahoma,
- Provision of vastly improved resources for supporting the decisions of the ODOT Rail Programs Division staff as well as their local and federal counterparts, and
- Further collaboration between stakeholders involved in railroad crossing safety projects

OK.RAIL formalizes and automates the recommended federal algorithm for evaluating crossings and prioritizing improvements based on a prediction of anticipated accident frequency for each location. Additionally, the database enhances the ODOT's ability to track safety improvement projects as well as the appropriation of safety funds allocated to those improvements, thereby helping to ensure the continued efficient use of federal safety funds. The analytical methods used to rank the crossings in order of priority for improvement/upgrade are based on the FRA Accident Prediction Model. The resulting rankings are used to identify crossing locations to be included in the safety program each year. These programs are coordinated on an annual basis in conjunction with the FHWA, local entities and the railroads to implement safety



improvements at high-priority crossings. These improvements include crossing elimination, the upgrade of existing active warning devices, the upgrade of safety devices to meet minimum requirements (e.g., crossbucks, advanced warning signs, pavement markings) and the installation of active warning devices at priority locations with only passive warning devices.

OK.RAIL has significantly increased the resources readily available to the Rail Programs Division to review and update crossing inventory information as well as track ongoing or completed safety improvements. In addition to providing a rich data set of information on each crossing, that includes crossing controls, collision history, traffic volumes, and digital photographs, the database allows ODOT staff quick and easy access to all aspects of the data. The database includes interactive GIS maps of crossings that allow the crossings to be symbolized based on a variety of criteria. These powerful searching and reporting capabilities allow Rail Programs Division staff to analyze and understand the status of railroad crossings better. Once a crossing is identified for potential improvements, ODOT works with the stakeholders to diagnose needed upgrades, secure funding, and coordinate project logistics. OK.RAIL supports these efforts by identifying the prioritized list of crossings to be improved, providing a rich data set of existing conditions, and allowing safety projects to be closely tracked throughout the project life cycle.

OK.RAIL Innovative Methods

Data Collection

OK.RAIL utilizes innovative techniques for a number of activities, and has significantly modernized the tools and procedures utilized for collecting, managing, analyzing, and reporting rail crossing data. Prior to the implementation of the field data collection, the database was preloaded with the crossing locations and controls inventory from FRA as well as previous field data collected by ODOT. The crossing locations and crossing status were utilized to develop field data collection activities and scheduling. These procedures included sectioning the State into regions and assigning crossings to specific field crew in order to minimize travel and increase data collection efficiency.

During field data collection, the field data collection crews utilized an interactive map that tracked the crew's location via GPS to assist them in the navigation to the next crossing on the assigned list. Upon arrival at a crossing, the data collection tool automatically identified the location of the crossing via the GPS unit. The data collection team filled out electronic forms for the crossing inventory information and utilized a digital camera to obtain photographs of the crossing from multiple perspectives, as well as a photo of the crossing identification number posted at the crossing. These digital photographs were transmitted wirelessly back to the data



collection tool, tagged with the crossing number and crew-selected captions prior to being uploaded into the database for each crossing. Automated quality control checks were used to validate the new data and alert the crews of potential data problems prior to them leaving the crossing. These innovative data collection techniques significantly increased data quality and increased data collection efficiency by identifying potential data problems while the crews were at the crossing during the inventory.

Data Synchronization

Another innovation of the OK.RAIL system is the use of daily data synchronization between individual field crews and a central database. OK.FieldRAIL uses a portable copy of the central database, allowing field crews to collect information in the field without an internet connection. When the field machines are connected to the internet, the field laptop synchronizes with the central database, uploading field data collected since the last synchronization was performed (including all digital photos), as well as downloading new data and photo thumbnails collected by all of the other data collection crews during the same time period. Through the synchronization process, the field data can be reviewed by project managers within hours of the data being collected in the field, and missing or incorrect data can be discovered and resolved before crews move on to another region of the State. Regular synchronization also helped ensure that no overlapping data collection efforts occurred and allowed ODOT to review as well as utilize the data soon after collection. The progress of each crew could also be tracked daily through built-in GIS mapping system, helping managers to identify inefficient methods or teams.

Search and Mapping

Innovations in the OK.RAIL management system include powerful search and mapping capabilities that have transformed the Rail Program Division safety program by providing the ability to investigate, understand, and report pertinent information for railroad crossings throughout the State, much more efficiently. Printable crossing reports allow Rail Programs Division staff to review crossing information prior to a field visit or stakeholder meeting. The Project Tracking module compiles project status information and any associated documentation in one easy-to-access system. These capabilities provide Division staff with a summary of the overall status of the safety program as well as the ability to drill down to an individual project data or documentation related to each individual location. Finally, the Safety module provides Division staff unprecedented access to safety information, that includes a searchable database of all recorded collisions at each individual crossing, and a prioritization ranking management tool that provides prioritization calculations,, records decisions regarding crossing diagnostics, identifies locations eligible for safety funding, and assists in the development of "new" project activities to be included in the safety program.



Efficient Use of Resources

The OK.RAIL system has allowed the ODOT Rail Programs Division to coordinate safety related improvements more efficiently by providing automated tools for the coordination of numerous time-consuming tasks. Expensive visits to crossings for review of existing information have been reduced through the availability of high-resolution photographs and comprehensive inventory data, as well as reliable location data. GPS locations combined with maps and aerial photography provide a comprehensive view of the geometry of the crossing as well as any nearby roadway infrastructure that might impact operations at the crossing. OK.RAIL also provides an automated output of crossing data in the FRA standard format, providing for the more efficient and accurate upload of updated crossing information into the FRA database.

9.4 School Bus Inventory Data

Potentially hazardous situations or location characteristics that could impair a school bus operator's ability to process an adequate amount of information for safe operation along the route has been provided below. These potential driving hazards were selected because the mere existence of these conditions could result in serious consequences. While other potentially hazardous situations or location characteristics could develop at any time (i.e., a tree falling across a roadway, water over a roadway, icy conditions, the malfunction of a traffic control signal or highway-rail active warning device), this list represents an attempt to define fixed conditions that have been deemed a driving hazard. The list is also limited to hazardous situations/locations that are anticipated to be encountered during the normal operation of a school bus, and not during loading and unloading operations. For each hazard potentially encountered along a school bus route, a list of factors or situations contributing to the cause of a hazard has been provided. It is important to remember that this list is not "all-inclusive." State and local school districts may encounter factors and/or situations that may not have previously been experienced or are not considered a "common" enough to occurrence to be included in the table, but should nonetheless be deemed potentially hazardous. Following is information collected as part of the school bus inventory:

Highway-Rail Grade Crossings

- Number of tracks/number of lanes
- Visual obstructions (vertical/horizontal) impairing the operators interpretation of the type of intersection and/or travel speed of trains/motor vehicles
- ADT/trains per day
- Presence/absence of highway-rail active warning devices



- Unique characteristics of the crossing, including type of train operations (mainline, switching), type of warning devices (cantilevered, gated), adjacent roadway intersection(s)
- Presence/absence of traffic signals/signs, highway-rail passive/active warning devices, advanced warning devices/signs, preemption or interconnection between traffic signals and railroad active warning devices
- Length of the queuing area(s) before and after the tracks
- Anticipated traffic conditions at various times during the day (peak hour queuing)
- Roadway design/geometrics/operating conditions near the grade crossing, (roadway operating speeds, skew, proximity of adjacent roadway intersections, surface conditions)

Hazardous Intersections and Roadways

- High-frequency crash locations as defined by state transportation and/or law-enforcement officials
- Non-controlled intersections
- Curves, intersections or grades with limited sight distance(s)
- Areas with no shoulders (impediment of stopping/collision avoidance)
- Visibility of traffic control signals (vertical/horizontal sight distance)
- Coordination of traffic control signals with other traffic control signals or preemption/interconnection with highway-rail active warning devices

Bridges, Tunnels/Underpasses, and Overpasses

- Weight capacity
- Height clearances
- Lane width

9.5 Oklahoma Highway-Rail Crossing Crash Data

The automobile collisions from across the Oklahoma are reported by the Oklahoma Highway Patrol, city police, county sheriffs, university police, or game wardens. They are forwarded to the Oklahoma Department of Public Safety (DPS), where they are either directly stored electronically or hand-coded, scanned, and stored electronically into a master database. These



electronic collision data are transferred weekly to the master collision file at ODOT. The Collision Analysis and Safety Section conducts a review on each collision adding the correct location codes to match the ODOT highway, city street, or county road location files. Collisions involving Highway-Rail grade crossings are cross referenced to the data in the highway-rail crossing inventory for the respective AAR-DOT Crossing Number⁴⁰ to help ensure that the appropriate codes match the crossing inventory data. In the event discrepancies are identified, any data in question are reviewed by Rail Programs Division personnel to populate any missing data fields or resolve any conflicting data elements.

The transfer of data from the DPS to ODOT and back to OU for final entry into the master collision file normally occurs on Friday of the same week or the Monday of the following week when it is submitted by the DPS. After all the collision data have been coded for each week, the location codes are transferred back into the ODOT master collision files. A copy of any collisions loaded or corrected each week is electronically transmitted to a computer server maintained on the Oklahoma University campus, where the revised data elements are merged into the master collision file database. These data are accessible through the web-based program, Safe-T where the user is allowed to select from a variety of reporting criteria to generate reports containing desired information. Safe-T provides access to the collision data for the OHP, city police, city planners, and other entities having a need for collision information, including engineers and safety personnel at ODOT.

9.6 ODOT Graphical Resource Intranet Portal (GRIP) Database

The Graphical Resource Intranet Portal (GRIP) is a web application that allows users to query, overlay, map, and report on many of ODOT's business data layers. Highway-rail crossing data were one of the first GPS location databases to be collected and inventoried statewide. Consequently, these data were identified as a "business layer" and utilized in the initial population and further development of the ODOT GRIP Database providing recently updated "baseline" data that could assist in the development of data utilization and reporting methods for similar roadway and bridge data. Railroad crossing, county bridge, and hazard elimination projects eligible for federal funding currently have specific inventory requirements tied directly to the data requirements deemed necessary for the allocation of safety funding under current federal legislative guidelines. The data available from GRIP is accessed utilizing workflows developed to display location, theme, attribute, historical, mileage, inspection, and mapping

⁴⁰ A national grade crossing numbering system to assist in the collection and maintenance of information regarding crossings. Jointing organized by the FRA and the Association of American railroads.



data for specific Business Layers identified to be useful for ODOT program and/or project management activities. The basic workflows for building maps or reports are:

- Opening a business layer includes specific categories of interest that have been identified as areas of primary interest for ODOT construction and management activities (i.e., pavement management, bridges, needs analysis, accidents, inventory, at-grade railroad crossing, speed zones, and HPMS).
- Displaying a Division Level Theme allows for the identification of specific available data sorted by Division (i.e., at-grade control type, concrete crossing surfaces, advanced warning devices, pavement markings, etc.)
- Displaying Map Features allow the attributes selected for a specific map theme to be highlighted on the map (i.e., grade separated highway-rail crossing locations, highway-rail at-grade crossings with flashing lights, etc.)
- Displaying Attributes based on Query allows the available data to be queried by physical and/or location attributes (i.e., crossing surface types, division, county, etc.)
- Displaying Attributes by Map Click allows the user to click on a map feature to display the attributes for the feature after the maps are built and themes applied.
- Displaying Photographs allows photographs of specific locations to be viewed by clicking links in the attributes tab (i.e., approach a, approach b, track left, track right and crossing fields)
- Displaying imagery (DOQQ/DRG/NAIP) allows background imagery to be projected on to the maps you build, however the type of background imagery is limited by availability in the specific area being mapped.
- Displaying Imagery from Legend allows images included in the legend for certain types of maps to be displayed on the mapping
- Displaying Mileage Report allows corresponding mileage reports to be generated for the maps built during the analysis or query.
- Displaying Highway Mileage Report allows corresponding highway mileage reports to be generated for the maps built during the analysis or query.
- Displaying Bridge Inspection Report allows bridge inspection reports to be generated for the maps built during the analysis or query.



- Displaying Interstate Structural History allows attributes from historical data associated with Interstate construction and maintenance to be displayed on the maps built during the analysis or query.

The primary users of the GRIP database are ODOT field division personnel responsible for new construction projects, the maintenance of minimum requirement safety or signing installation, or the maintenance of existing highway infrastructure throughout the State's rural and urban areas. Other users include Central Office Division, city, county, MPO personnel and personnel from any government entity interested in utilizing GRIP data for project management, needs analysis, safety, or enforcement. Users from agencies or other government entities must request and be granted access from ODOT. Data for the GRIP database is updated automatically through automated routines that regularly update the associated data repository from multiple legacy data sources throughout ODOT. GRIP provides tools that consistently monitor and analyze roadways, bridges and crashes, as well as overall highway performance improving the overall safety of Oklahoma's transportation network.

9.7 State-owned Rail Infrastructure Inventory

The Rail Programs Division recently contracted with Jacobs Engineering to collect infrastructure data on state-owned rail property. The data collection includes a continuous video of each segment coupled with GPS⁴¹ mapping to produce segment maps that list specific data elements collected to enable state-owned Property Section personnel to assess the condition of existing state-owned rail infrastructure. This data is utilized to plan and schedule necessary maintenance and capital improvements. Video data collected facing both forward and backward from a Hi-Rail⁴² vehicle is reviewed to assess the condition of rail, ballast and ties throughout each segment and segment limits are identified where a succession of poor infrastructure components currently exist. The segment limits are tied to the milepost markers for each segment providing location information as well as the data necessary to quantify the materials and associated costs for any proposed improvements. The data has been transferred into both mapping and GIS-data based applications that assist identifying and categorizing location data for any bridges, culverts, wayside signals, left turnout sidings, right turnout sidings, and any wayside signing (i.e., whistle boards) along each route. The production maps are scaled using a ratio of 1 inch : 1600 foot and provide a spatial distribution of the data elements along each segment, complete with illustrative icons assigned to each specific data

⁴¹ Global Positioning System – a system that indicates position of the receiver on the earth's surface by triangulating reference signals from satellites orbiting in space.

⁴² A highway vehicle fitted with retractable rail wheels permitting operation on both the highway and the rails.



element or type of data, positioned on the maps using GPS location data and cross referenced existing milepost data. An interactive application has been developed that allows Rail Programs Division personnel to view both videos while the location of the inventory data is referenced on the computer screen as well. The video data can be utilized as a tool to assess the condition of the rail, ballast and ties, however, the primary source for this type of distress information can more readily be obtained from segment maps that can be generated for individual segments identified by milepost limits. Each distress data element was captured as a single point GPS feature that indicates the type of distress with an associated illustrative icon referenced in the legend for the map. The corresponding video data will also serve as a tool to identify vegetative obstructions, clean-up areas, drainage issues, and encroachment by adjacent landowners. The video tool will also allow ODOT to conduct "point and click" assessments of the general area including critical operating issues in the event an emergency arises or a concerned landowner has an inquiry that can be referenced to route and the milepost data. This location data helps facilitate planning and budgeting functions coordinated by State-owned Property Section personnel without extensive field data collection. The development of this tool minimizes the labor effort necessary to produce the cost estimates and schedules necessary to administer funding for proposed rail infrastructure improvements.

Another feature of the mapping is the identification of the limits of the railroad right-of-way throughout each segment including tangent sections, curved sections, rail yards, and any other components of the adjacent infrastructure. This data was digitized from many dozens of historic maps dating back to the early 1900s to facilitate the identification of any additional property acquisition that may be necessary to complete any proposed improvements and provide a detailed record of the limits and location of rail property owned by the State. The right-of-way limits have been transposed into mapping functions that allow right-of-way maps for each segment to be illustrated on current project plans, maps, or other graphic documentation. This mapping has been scaled relative to the scale of the historic right-of-way maps and each sheet produced captures the original data from each scanned drawing. Title Sheets produced using these tools reference each sheet back to the original scanned sheet that will be stored on ODOT's server.

9.8 ODOT Rail Programs Division Reports

ODOT Rail Programs Division also produces and manages generation of reports addressing key rail issues in the state. Following is a list of recent documents:

- *Atlas Of Oklahoma Railroads And Their History, 1970*
- *KDOT-ODOT Regional Service Development Plan, October 2011*



- *Summary Of Previous Oklahoma Passenger Rail Studies*, December 2006
- *Measuring The Benefits of Intercity Passenger Rail: A Study of the Heartland Flyer Corridor*, April 2010
- *The Heartland Flyer Amtrak Passenger Train Service: The TXOK Connection*, March 2006
- *Rail Programs Division Management Guide And Procedural Manual*, 2011
- *Annual State Rail System Map* (updated every other year, includes all known rail lines for the entire state and indicates operator)
- *1992 Oklahoma State Rail Plan*
- *Annual Oklahoma State Of Rail Report For The Governor: 2002-2005*
- *Kansas Rail Feasibility Study*, March 2000
- *Cost Estimate Report For Midwest City To Downtown OKC Commuter Rail Project*, June 2009
- *Heartland Flyer Economic Benefit Report*, April 2005
- *Oklahoma High-Speed Rail Initiative, OKC To Tulsa HSR Corridor Cost Study*, February 2002
- *High-Speed Passenger Rail Feasibility Study*, March 2001
- Red Rock Subdivision Track Charts
- TEMS Trackman 2.3 For Newton To OKC (Red Rock Subdivision), December 1998
- TEMS Trackman 2.3 For Kansas City To Tulsa, December 1998
- *Oklahoma Amtrak Study*, December 1998
- *Amtrak Oklahoma Rail Passenger Study*, April 1996
- *Amtrak Proposal to Connect Missouri to Oklahoma*, November 1994
- *8-Year State-owned Rail Construction And Maintenance Work Plan, FY 2006 to 2013*
- *8-Year State-owned Rail Construction And Maintenance Work Plan, FY 2008 to 2015*
- *Oklahoma Railroad Rehab Cost Study: Oklahoma East-West Freight Rail Connection, McAlester To Shawnee*
- *-State-owned Short line Railroads 5-Year Funding Needs, 2004*
- *-Oklahoma Railroad Rehabilitation Cost Study: Bridgeport To Weatherford*, April 2002



- *-Oklahoma Railroad Rehabilitation Cost Study: Spaceport Project Dill City To Burns Flat, September 2003*
- *-ODOT State-owned Rail Lease Agreements (Multiple)*
- *-ODOT Railroad Purchase Agreements (Multiple)*



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10. Multi-modal Transportation in Oklahoma

Multi-modal transport involves more than one mode of transportation (at least two) for the movement of freight from origin to destination. This section focuses on the connectivity between transportation modes by identifying and describing Oklahoma's multi-modal connections and specifically connections with rail infrastructure/access. For the purpose of the state rail plan, Oklahoma's multi-modal connections are categorized into four types of facilities:

- Intermodal container/trailer transfer terminals.
- Transload facilities.
- Industrial parks/logistics centers.
- Port facilities.

Oklahoma is served by three Class I railroads providing rail access to locations throughout the state and the U.S. The rail network also connects with other forms of freight transportation allowing for integrated freight services that make best use of each mode. The McClellan-Kerr Arkansas River Navigation System (MKARNS) along with the Tulsa Port of Catoosa and Port of Muskogee give shippers the alternative of using barges as a cost effective mode of transportation. Oklahoma's highway infrastructure and local road networks provide truck access throughout the state. While water and motor carriers compete with rail transportation, they are increasingly working with the railroads to provide shippers with more efficient movement of goods.

10.1 Rail Intermodal Transportation

The concept of intermodalism is the use of two or more transportation modes to move goods efficiently from origin to destination. Intermodal transportation is commonly defined as the movement of goods by rail in trailers or containers on specialized flatcars. This method of freight transportation interconnects the movement of cargo via any combination of rail, truck, and waterborne carriers over that cargo's journey.

The transportation of truck trailers (TOFC) was the first application of intermodal technology. Trailers, however, were limited to use in domestic markets. In addition, the economics of TOFC transportation were not favorable enough to allow railroads to compete with motor carriers in but a few markets.



The introduction of container on flat car technology eliminated the transporting the wheels of a truck trailer, reducing cost by reducing weight. The use of containers also opened international markets to intermodal transportation as boxes could be readily exchanged between the railroads and ships.

The most important development, however, has been the invention of the double-stack freight car as it revolutionized the economics of container transportation. Trains increased their capacity without increasing costs. In the last three decades, the railroads invested heavily in their infrastructure to accommodate trains with stacked containers.

Intermodal Container/Trailer Terminal Feasibility in Oklahoma

In 2005, BNSF closed its intermodal terminal in Flynn (adjacent to Oklahoma City) due to a lack of demand. When the BNSF closed its intermodal terminal; Oklahoma lost its only container transfer facility. At the time of its closing, the terminal processed 1,200 trailers each month but no containers. A viable terminal today handles at least 10,000 containers each month. Since then, Oklahoma rail intermodal shippers have had to move containers by truck to terminals in other states. With relatively short distances to three major metropolitan areas with major intermodal terminals, Oklahoma is at a disadvantage in having one of the major railroads establish a new intermodal terminal in the state. Dallas-Fort Worth, Kansas City, and Denver each have terminals operated by BNSF and Union Pacific.

Trailer and Container Transfer Terminal Locations

Several factors determine the success of intermodal terminals. They are important considerations when railroads select locations for new terminals.

1. *TERMINALS MUST BE LOCATED ON THE RAILROAD INTERMODAL NETWORK*

In recent years; the railroads have invested heavily in developing efficient intermodal networks. The railroads upgraded key routes throughout the country to accommodate double-stack container trains by eliminating obstacles that prohibit operating these trains. The lines were also upgraded to permit higher speed operations by straightening track curves, reducing grades, and increasing the number of tracks. The upgrades also expanded the capacity of the lines.

For the most part, short line railroads do not participate in intermodal service. The cost of intermodal terminals and the need for speed have precluded short line railroads from any meaningful participation. A truck can deliver a container to an intermodal terminal in far shorter time than required to drive to a short line intermodal terminal, move the container on an intermodal flat car at a slow speed on the short line railroad, and then to hand-off the flat car to the connecting Class I railroad.

Both Oklahoma City and Tulsa are located on the BNSF and UP intermodal networks.



2. *TERMINAL VOLUMES MUST BE SUFFICIENT TO SUPPORT FREQUENT, LONG TRAINS*

Because of the high fixed costs of train operations; the economics of rail transportation favor long trains. Train crews are paid the same irrespective of the number of cars. In addition, a long train consumes the same track capacity as a short train. Double-stack trains transporting 240 forty-foot containers (equivalent to 120 freight cars) have become the norm with the railroads continually experimenting with longer trains carrying twice that number of containers. Large volumes are required to fill the longer trains at schedule frequencies required by shippers.

Large volumes are also required for cost effective terminal operations. Railroad terminals are capital cost intensive. Large container volumes are required to offset the fixed costs of the terminals. Although each terminal is a specific situation, typically an annual volume of 100,000-150,000 containers is required for a terminal to be viable.

The ability to attract the volume required to support a terminal in Oklahoma is questionable. Although the Oklahoma economy has grown substantially since the last terminal was closed, the hurdle volume level is significantly higher than the former Oklahoma City terminal.

3. *TERMINALS MUST BE OPTIMALLY SPACED*

A third factor in the feasibility of an intermodal container terminal is its proximity to the other similar terminals and the marketplace. There are several considerations concerning spacing. First, from a market perspective, terminals should avoid having overlapping geographic market areas except in locations with a large population or significant economic activity. It reasonable to assume that a trucker can make two round trips per day within a radius of 125 miles providing for time to pick up and drop off a container. A second dynamic is the corridors to be served. With the distance that intermodal train service is competitive with motor carriers being no less than 500 to 1,000 miles, consideration should be given to the origins and destinations of the traffic base.

New terminals in neighboring states are being constructed and existing terminals made more efficient that would compete with any Oklahoma terminal

The immediate development of new intermodal container terminals is questionable for the reasons just outlined. Even were conditions to change, it is not necessarily the role of the state to invest in intermodal facilities. That is the role of a railroad or a private investor working closely with the railroad.



10.2 Transloading

Transloading is a term used to describe another form of transfer of freight from one mode of transportation to another. Like intermodal freight, transloading freight occurs because of delivery constraints (i.e. a freight shipper or receiver can only access one mode), or there are financial benefits of switching modes during shipping. However, unlike intermodal transportation where freight is moved and transferred using containers, the freight itself is transferred itself between modes. The freight can be in many forms.

Transload operations involve products shipped either in bulk or as semi-bulk, dimensional cargo. Bulk shipments fall into two categories, dry and liquid. Dry bulk commodities are shipped in unpackaged quantities and can be stored in an open stockpile (aggregates, minerals, ore, etc.) or in covered storage such as silos (grain). Liquids (petroleum, chemicals) are moved in rail cars, trucks, or barges with tanks or in pipelines, and stored in larger tanks.

Grain elevators are a type of transload facility. Grain is delivered to the elevator by truck where it is stored and eventually transferred to covered hopper rail cars. The elevator serves the purpose of consolidating smaller shipments into freight car or train size lots, and storing grain until demand appears. Oklahoma has approximately 100 rail-served elevators. Figure 10-1 shows a grain elevator, one form of a transload facility.

Figure 10-1: Bulk Transload: Grain Elevator



Source: <http://www.bnsf.com/customers/grain-facilities/elevators/bin9/ele2379.html>

Some dimensional commodities are shipped packaged, bailed, but are typically too large to be shipped in a container. They are stored in the open (lumber, steel) or in a warehouse (paper



rolls, boxed freight, etc.). Figure 10-2 shows a crane loading steel from the storage yard to the flatbed truck.

Figure 10-2: Dimensional Transload: Rail to Storage Yard to Truck



Source: http://www.upds.com/customers/attachments/transload/transload_works.pdf

Table 10-1 at the end of this section lists the transload, dry bulk, liquid bulk, and auto facilities in Oklahoma that have rail access. Rail-served grain elevators are shown in Table 10-2.

10.3 Major Industrial Parks/Logistics Centers

At one time, industrial parks were small facilities serving local needs, typically populated by a few industrial companies. While these are still prevalent, there has been increasing interest in larger multi-modal facilities providing a range of logistics services.

Ardmore Industrial Airpark

Originally built as a military airfield, the Ardmore Industrial Airpark (AIA) is one of four logistics centers owned by the Ardmore Development Authority (ADA) and sits on 490 acres of the ADA's 3,400 acres (See Figure 10-3). AIA is situated 16 miles northeast of Ardmore in Gene Autry, OK, and is centrally located between Oklahoma City (95 miles) and Dallas (125 miles). I-35 is seven miles away via the adjacent State Route 53. The industrial park has rail service



provided by BNSF and accommodates general aviation service for both freight and persons at the attached regional airport.

Current tenants include King Aerospace, Higgins Interiors, Inc., Beetle Plastics, Dollar General Distribution Center, East Jordan Iron Works, Carbonyx, Inc., and Online Packaging.

Currently, Sovereign Development Fund I, LLC, is working on a large-scale development adjacent to this facility. The \$33 million proposal includes plans for transloading and the movement of unit trains for the energy and commercial business sectors.

Distance of AIA from the highway network:

- Interstate
 - Interstate 35 – 7 miles
- U.S. Highways
 - U.S. 177 – 4.5 miles
 - U.S. 77 – 6 miles
- State Highways
 - Route 53 – adjacent
 - Route 199 – 12 miles

Rail: Onsite spurs served by BNSF, nearest switching yard is in Ardmore (10 miles by rail) with direct access to the mainline, which runs to Kansas City, Fort Worth, and Houston

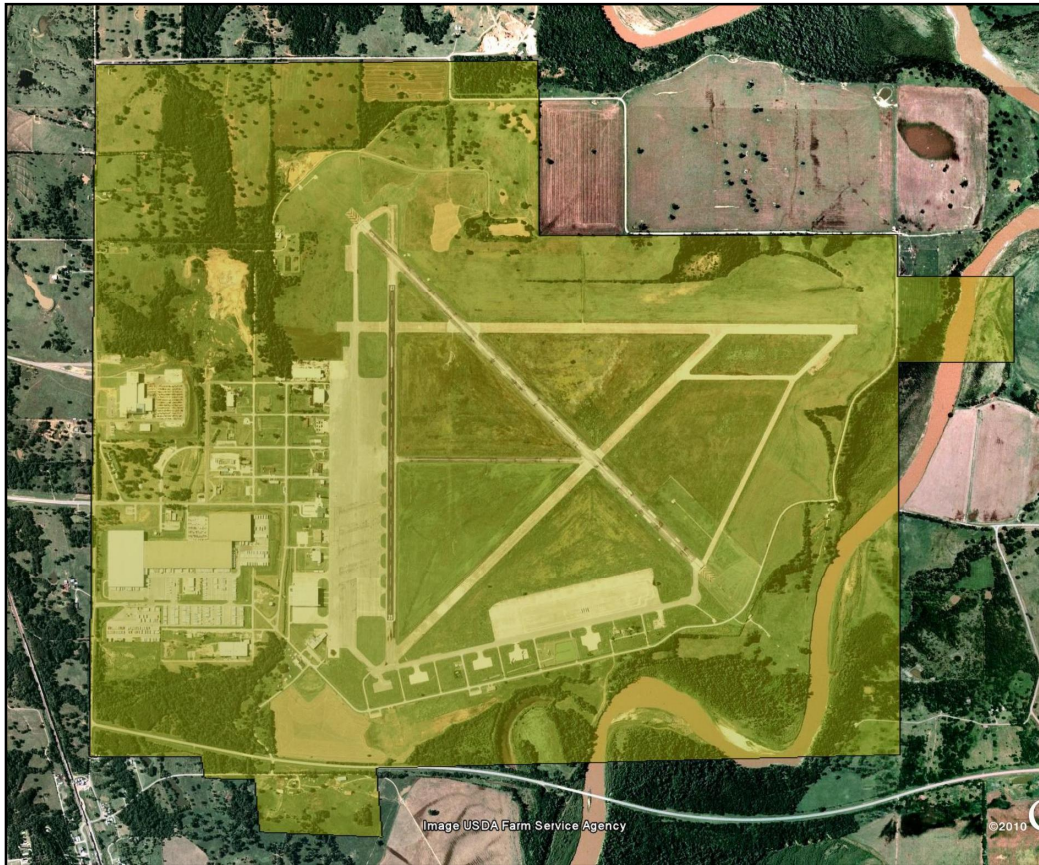
Water:

- Port of Muskogee – 192 miles
- Johnston's Port 33 – 197 miles
- Tulsa Port of Catoosa – 215 miles
- Port of Houston – 350 miles

Air: On-site, general aviation airport



Figure 10-3: Ardmore Industrial Airpark



Source: Google Earth and PB Analysis

Mid-America Industrial Park

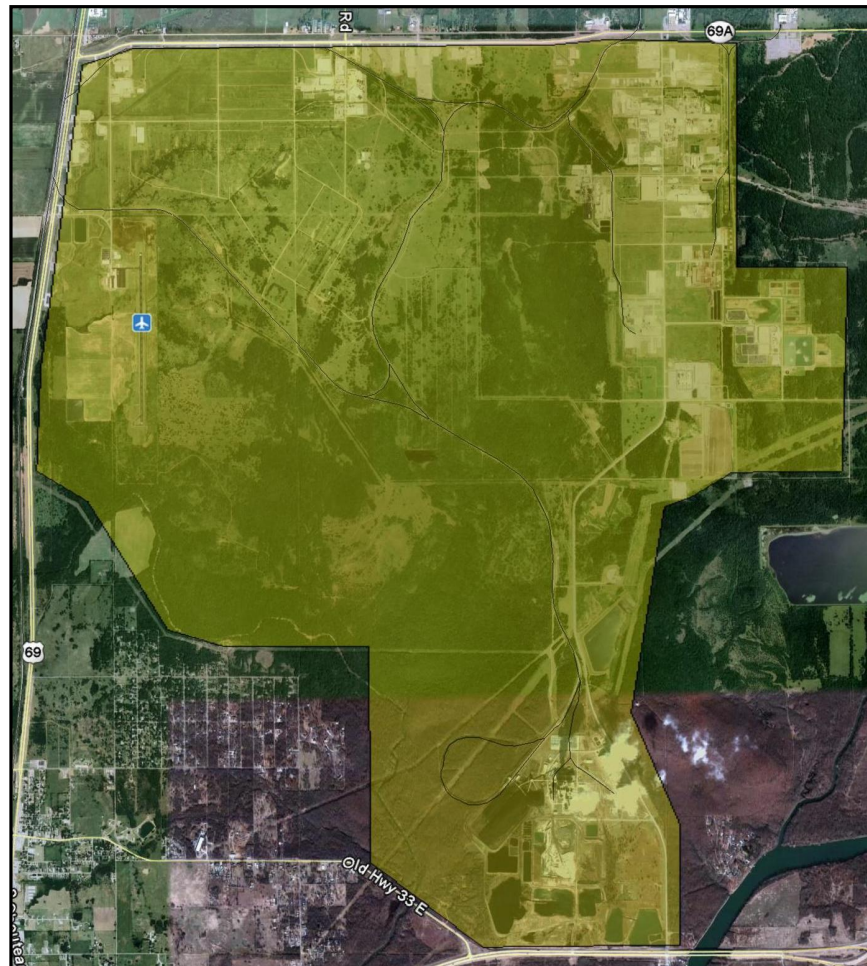
The Mid-America Industrial Park (MAIP), founded in 1960, is located 38 miles east of Tulsa, has a 9,000-acre footprint, and is home to more than 75 industrial and commercial tenants (See Figure 10-4). MAIP is situated less than 25 miles from Interstate 44 and minutes from major U.S. and Oklahoma State Routes. MAIP is less than one hour from three river ports with year-round service; Tulsa Port of Catoosa, Johnston's Port 33, and the Port of Muskogee.

Additionally, the park owns and operates an on-site general aviation airport. Union Pacific railroad serves MAIP, which has approximately 20 miles of track and rail sidings throughout the park and a switching yard just off-site.

Tenants include Airgas, Bennett Steel, GRDA Coal-Fired Complex, Georgia Pacific Gypsum, NORIT Americas, and DB Schenker Logistics.



Figure 10-4: Mid-America Industrial Park



Source: Google Earth and PB Analysis

Distance of MAIP from the highway network:

- Interstate
 - Interstate 44 – 22 miles
 - Interstate 40 – 60 miles
 - Interstate 35 – 130 miles
- US Highways
 - U.S. 69 – 2.5 miles
 - U.S. 412 – 8 miles



- State Highways
 - Route 69A – 0 miles
 - Route 412 B – 0.5 miles
 - Route 20 – 5 miles

Rail: Onsite with switching yard just offsite, served by Union Pacific

Water: less than hour from,

- Johnston's Port 33 – 18 miles
- Tulsa Port of Catoosa – 35 miles
- Port of Muskogee – 40 miles

Air: on-site, general aviation airport

Clinton-Sherman Industrial Airpark (Oklahoma Spaceport)

The Clinton-Sherman Industrial Airpark, also known as the Oklahoma Spaceport, (Figure 10-5) is an authorized spaceport near Burns Flat, Oklahoma (See Figure 10-5). It was expected to serve as a flight center for space tourism and take-off and landing of suborbital, reusable spacecraft. Its market advantage, at the time, was its ability to use airspace without federal restrictions.

Burns Flat is 100 miles West of Oklahoma City and is 7 miles from Interstate 40. It is also 160 miles from Amarillo, Texas, and 270 miles from Dallas Fort Worth. The facility covers 2,700 acres and currently has four industrial/commercial buildings. Farmrail (a regional railroad) operates the onsite rail spur and connects with BNSF and Union Pacific railroads to provide service to Oklahoma City, Tulsa, and Dallas. The state of Oklahoma has several incentives in place to attract industrial business to the spaceport facility. It must be noted that, at this time, track renovation will be necessary to put the spur connection back into usable operation. A proposal to renovate was presented to Farmrail by Halliburton Corporation (Halliburton adjoins the industrial park) though no formal talks are currently underway.

Past users of the facility included Armadillo Aerospace and Rocketplane Kistler, both developers and manufacturers of reusable spacecraft. However, Rocketplane Kistler ceased operation in 2010.

The facility features a runway that can accommodate aircraft as large as a fully laden B-52 it was designed for but now serves as a general aviation airport. State officials seek to lure UPS or FedEx service to the airport. Though there are currently no industrial tenants on-site, a large adjoining company is interested in exploring reactivation of the spur serving the park.



Figure 10-5: Clinton-Sherman Industrial Airpark



Source: Google Earth and PB Analysis

Distance of Oklahoma Spaceport from the highway network:

- Interstate: Interstate 40 – 7 miles
- State Highways: Route 44 – 0 miles

Rail: Onsite spur, served by Farmrail

Water:

- Tulsa Port of Catoosa – 229 miles
- Johnston's Port 33 – 232 miles
- Port of Muskogee – 250 miles

Air: on-site, general aviation airport former Strategic air Command base. Runway 17R-35R is 13,503 feet. Stressed for heavy aircraft (B-52 at 488,000 pound maximum takeoff weight)



10.4 Port Facilities

Oklahoma Navigable River System

The McClellan-Kerr Arkansas River Navigation System (MKARNS) is Oklahoma's primary navigable waterway originating at the Tulsa Port of Catoosa and flowing southeast connecting to the Mississippi River. MKARNS is 445 miles long and has 18 locks and 10 dams that enable year-round navigation. The locks and dams are maintained by the U.S. Army Corp of Engineers (USACE) and are operated 24 hours a day, 365 days per year. The U.S. Coast Guard is responsible for maintaining the channel markers and navigation aids. MKARNS is comprised of two rivers in Oklahoma, the Arkansas and Verdigris Rivers. The Verdigris River's segment begins at Tulsa Port of Catoosa (navigational head of the MKARNS) and runs south approximately 50 miles to the Port of Muskogee. The Arkansas River begins at the Port of Muskogee and flows into the State of Arkansas on its way to the Mississippi River. Figure 10-6 displays the entire MKARNS system and identifies each lock and/or dam.

MKARNS has the following navigational characteristics:

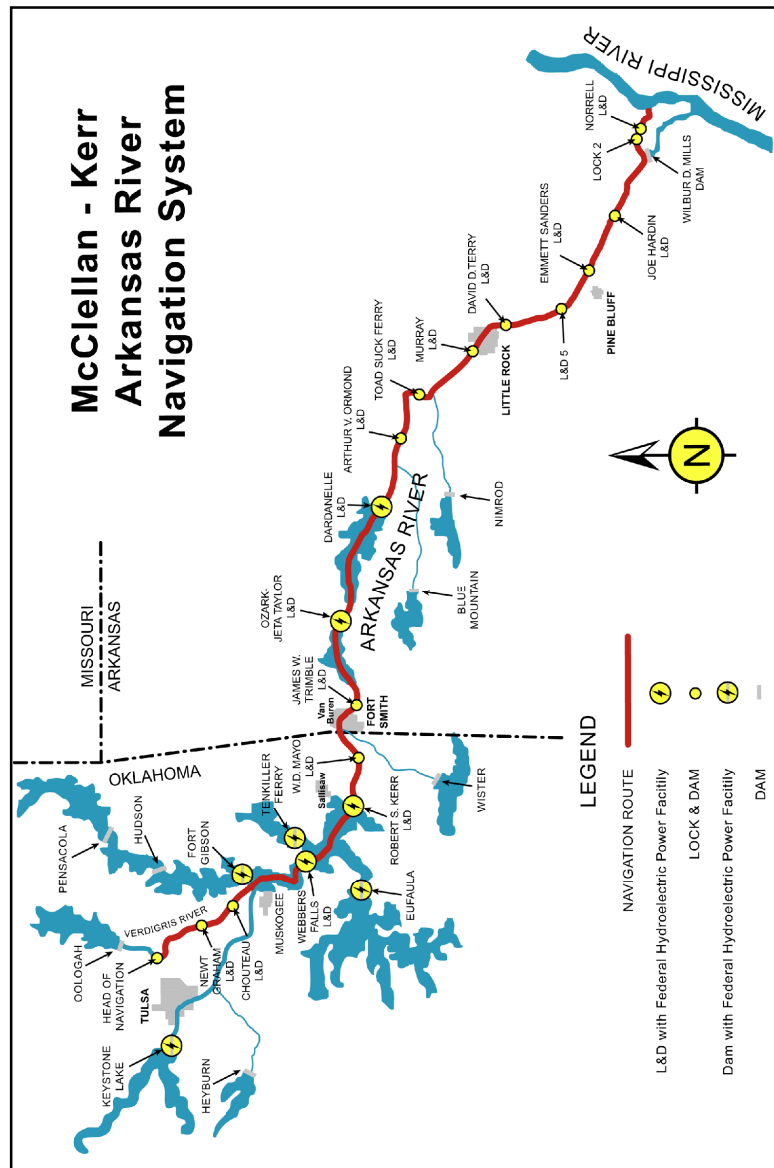
- Channel depth: 9 feet
- Channel width: ranges from 250 to 300 feet
- 18 locks; 5 in Oklahoma
 - W.D. Mayo Lock 14 – Spiro, OK
 - Robert S. Kerr Lock 15 – Sallisaw, OK
 - Webbers Falls Lock 16 – Gore, OK
 - Chouteau Lock 17 – Porter, OK
 - Newt Graham Lock 18 – Inola, OK
- Lock chamber dimensions (same for all): 110 feet wide by 600 feet long

The MKARNS can accommodate a tow comprised of eight jumbo barges (one jumbo barge measures 35 feet wide by 195 feet long) plus the towboat. Oversized tows (tows exceeding 8 jumbo barges) have to be "cut" or split into units that are able to pass through the locks. There is an initiative underway to deepen the MKARNS channel from 9 feet to 12 feet from the Mississippi River to the Tulsa Port of Catoosa. The three feet difference would allow a barge to increase its loading capacity by 33 percent (1,500 tons to 2,000 tons. 1,500 tons equals 60 truckloads or 15 railcars. 2,000 tons equals 80 truckloads or 20 railcars. An eight-barge tow would transport the equivalent of 640 truckloads instead of 480 truckloads). The MKARNS channel is currently 12 feet deep along the majority of the span, except for 75 miles that would



require dredging. It has an estimated cost of \$180 million and funding has not yet been secured.

Figure 10-6: MKARNS



Source: Arkansas River Navigational Study Final Feasibility Report



Public Port Facilities

Tulsa Port of Catoosa

The Tulsa Port of Catoosa is an inland river port located at the head of the McClellan-Kerr Arkansas River Navigation System in northeast Oklahoma. The port is situated on approximately 2,500 acres, with 2,000 developed acres accommodating an industrial park with sixty-three facilities, primarily in the heavy haul industry that include manufacturing, distribution and processing of goods companies. Currently 150 acres of the 2,000 is unused including 40 acres set aside for potential future container operation. In addition, there is the new Riverview Business Park, 150-acre development, located on SH 166, 1.5 miles east of the Port Industrial Park.

In 2010, Tulsa Port of Catoosa handled 2.26 million tons of cargo with 57 percent of that being either delivered to the port or shipped from the port by rail. Sixty percent of the companies located in the Port Industrial Park have a rail spur. In 2006, approximately 13,000 railcars were switched within the Port.

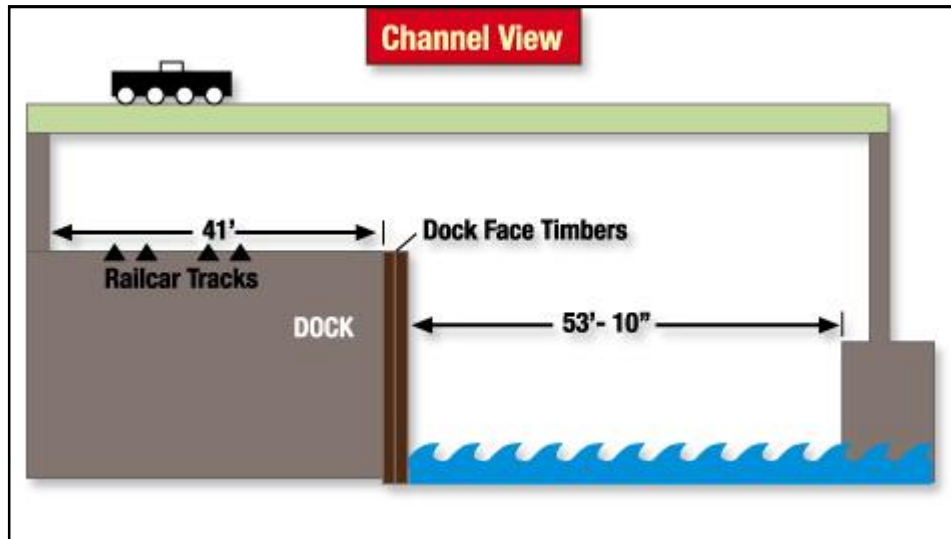
The Tulsa Port of Catoosa has five public terminal facilities; each fully equipped and staffed to efficiently transfer inbound and outbound cargos between barges, trucks, and rail cars. The assets of these terminals, with the exception of the liquid bulk facilities, are owned by the Tulsa Port of Catoosa but are maintained and operated by independent contractors that have lease agreements with the Port Authority. The liquid bulk companies are private and own their own facilities⁴³. The five public terminal areas are listed below with a general description:

General Dry Cargo Dock: a 40-year old public dock operated by Tuloma Stevedoring, Inc. The dock is 720 feet long with a 230 wide apron, has a variety of cranes and forklifts including a new 200-ton overhead traveling bridge crane, to handle a variety of commodities such as iron and steel, project cargo and break bulk cargo (lumber, wood pulp, coils, etc.). Figures 10-7 and 10-8 are renderings of the channel and dock views of the general cargo dry dock.

⁴³ http://www.tulsaport.com/docks_and_terminals.html

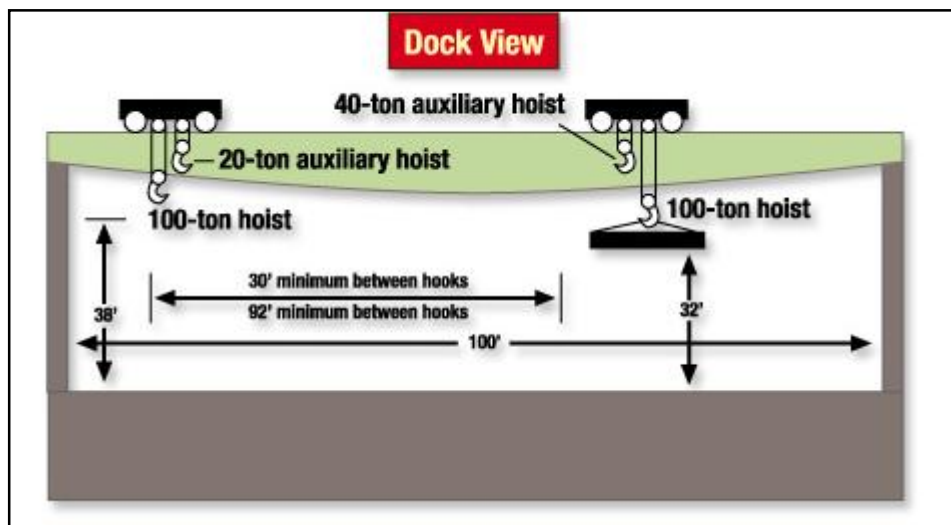


Figure 10-7: General Dry Cargo Dock – Channel View



Source: Tulsa Port of Catoosa

Figure 10-8: General Dry Cargo Dock – Dock View

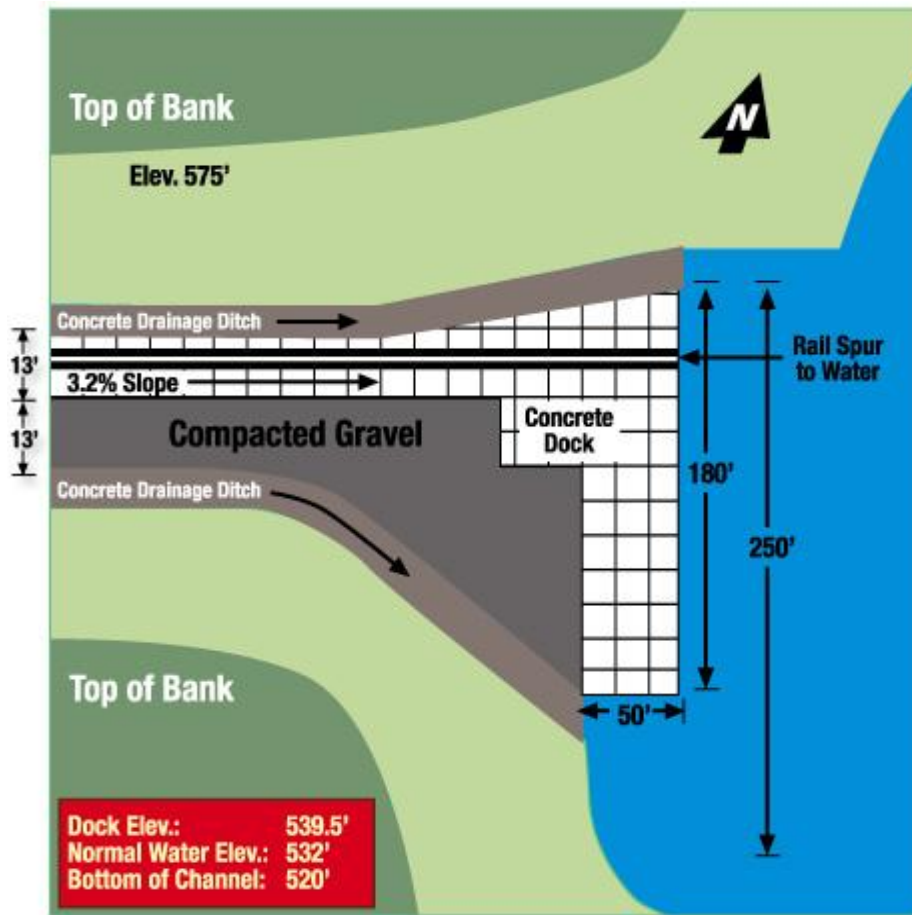


Source: Tulsa Port of Catoosa

Roll-On Roll-Off (Ro-Ro) Low Water Wharf: a public wharf operated by Tulsa Port of Catoosa Port Authority that specializes in the transfer of over-weight, over-dimensional or wheeled cargo. The wharf is 180-feet long with a 50-foot wide apron and has a 3.2-percent slope with a rail spur extending to the water's edge for efficient transfer of cargo. Figure 10-9 is an aerial rendering of the Ro-Ro wharf.



Figure 10-9: Ro-Ro Low Water Wharf



Source: Tulsa Port of Catoosa

Dry Bulk Terminal: a public terminal operated by Gavilon Fertilizer LLC. The terminal has two storage areas, an 80,000 ton covered storage area and a 50,000-ton open storage area. One has two pedestal cranes and an import conveyance system for the outbound distribution of a variety of bulk commodities. Inbound and outbound load systems rate up to 400 tons per hour.

Grain Terminals: there are two grain terminals within the Tulsa Port of Catoosa. Peavy Co. is a public grain terminal. DeBruce Grain, Inc. is a private terminal.

Facilities include outbound conveyance systems with 25,000-bushel-per-hour capacity, inbound unloading systems with a 30,000 bushel per hour capacity, grain samplers, dust control systems, and approximately 5.0 million bushel storage capacity. Grain grading is available on-site. The major product handled by these terminals is outbound hard red winter wheat, but inbound or outbound soybeans, oats, milo, and millet can also be handled. Grain barges can be



loaded in as little as 2.5 hours. These facilities will remain open 24 hours per day in peak season if necessary.

Liquid Bulk Terminals: There are seven liquid bulk terminals at Tulsa Port of Catoosa, which are all privately owned. They handle various types of liquid bulk commodities including chemicals, asphalt, refined petroleum products, and molasses. The following terminals are located at the Tulsa Port of Catoosa:

- Brenntag
- BKEP Energy Partners, LLC
- Nustar Energy LP
- Safety-Kleen
- Petro Source Terminals
- Terra Nitrogen
- Westway

More than 2,500 people are directly employed by the 50 tenant companies at the Tulsa Port of Catoosa. These firms manufacture, distribute, and process a variety of products that range from agricultural commodities to manufactured consumer goods. The Port of Catoosa averages more than 450 daily truck calls from nationwide trucking carriers and the Port's geographic location near the center of the United States puts truck shipments only two days from either the East Coast or the West Coast. Additionally, the Tulsa International Airport is approximately seven miles west of the Port.

The Tulsa Port of Catoosa provides a number of tax and duty-free incentives through its grant of the Foreign Trade Zone 53 designation. FTZ 53 covers 61 acres of the port and has direct access to the State Highway 266 (an official National Highway System Intermodal Connector) via which Interstate 44 and U.S. 412 are 5 miles away.

Rail Service: The Tulsa Port of Catoosa has direct rail service provided by BNSF and the South Kansas & Oklahoma (SKO) railroads. The SKO also provides a connection with the Union Pacific, so the Port, in effect is served by two major railroads that are direct competitors. The port also provides switching services to facilities located on port property.



Figure 10-10: Tulsa Port of Catoosa



Source: Tulsa Port of Catoosa website (http://www.tulsaort.com/aerial_large.html)

Port of Muskogee

The Port of Muskogee is an inland river port located on the Verdigris River, part of the McClellan-Kerr Arkansas River Navigation System. The port is situated on approximately 450 acres with 28 acres uncommitted. The port also owns the John T. Griffin Industrial Park, which consists of 527 acres. The Industrial Park is primarily comprised of manufacturing companies that facilitate the transportation of bulk and break bulk commodities such as steel, tiles, clay materials, granite, etc. The Port's existing maritime infrastructure consists of:

- 20 mooring dolphins along the river channel frontage.
- Barge terminal and dock facilities.
- Overhead and mobile cranes for transloading between barge, rail, and truck.
- 94,000 square foot dockside warehouse.



The Port of Muskogee provides extensive rail service to its users. The port has two switching locomotives for use in its marshalling yard and on its internal rail system. In addition to the on-site tracks, the port acquired 43 miles of right-of-way and 4.5 miles of track from Union Pacific, the mainline service that provides service to the port.

Industrial and economic development schemes could be expanded or introduced to entice new business growth within the port district. Recently, the Muskogee City Council gave the Port of Muskogee economic and industrial development responsibility to develop and implement economic incentive programs. The port also acquired the assets of the Greater Muskogee Development Corporation thereby transferring to it all maintenance and management responsibilities of the 83 acres at the Southside Industrial Park West. The port now has a greater role in attracting new business growth.

Rail traffic through the Port grew 8 percent in 2011. In 2010, the total rail tonnage transported through the port was 310,569 tons, approximately 43 percent of the total tonnage throughput at the port (total throughput at the port in 2010 was 720,342 tons). The port's on-site rail service handled more than 3,400 cars in 2010. Primary rail commodities included 22 percent steel, 22 percent pipe, 18 percent other, 16 percent coke, 9 percent asphalt, 4 percent fertilizer, 4 percent glass cullet, 3 percent molasses, 1 percent cement and 1 percent feed product.

Private River Terminals on MKARNS

The Oklahoma shore of the MKARNS is an active and thriving maritime industry of more than 30 businesses that uses the river system to move bulk commodities. While many of the firms are private, their land or facility may be owned either out right or leased from a port authority. Table 10-3 lists the companies and port authorities that operate from the Oklahoma banks of the MKARNS.

10.5 Marine Trends

Two initiatives are occurring that may have an impact on inland water commerce, the expansion of the Panama Canal and the Marine Highway program.

Panama Canal Expansion

For many years the world's largest ships transporting containers have not been able to transit the Panama Canal due to limiting size of its locks. Larger ships from Asia have had to unload containers destined for markets in the central or eastern US at a Pacific Coast Port where they



are transferred to an intermodal train or hauled by truck. New wider locks, and the widening and deepening of the access channels will both permit the larger vessels to pass through the Canal and provide a faster crossing.

For container ships, the current maximum size that can transit through the Canal will increase from those designed to carry about 5,100 20-foot equivalent unit (TEU) containers (current "Panamax" size) to 12,600 TEUs or more. The resulting scale of economies is expected to reduce the average waterborne and operating costs for transporting containers from Northeast Asia to the US Gulf Coast. For dry bulk shippers, the ability to send Capesize ships (up to 180,000 Dead Weight Tons) through the Canal may provide cost-effective options for U.S. exports of bulk commodities such as grain and coal. The Canal improvements are expected to be completed in 2014.

Marine Highway Program

The U.S. Maritime Administration's (MARAD) Marine Highway Program was designed to identify waterway corridors where water transportation presents an opportunity to offer relief to landside corridors that suffer from congestion, excessive air emissions or other environmental concern and other challenges. The MKARNS is designated as M-40, a Marine Highway Connector that connects to M-55 (Mississippi River), a major arterial barge-shipping corridor. This designation aims to increase the public and private sector's awareness to use this mode of transportation and makes the MKARNS or M-40 eligible for grant funding.

The Tulsa Port of Catoosa, located on the MKARNS, is one of the westernmost inland ports with access to the Mississippi River. MKARNS, now a component of the AMH, could provide significant opportunities for importers and exporters who use or who could potentially divert their cargos to a water route with rail connections. However, using MKARNS will require further study and evaluation to determine whether such an arrangement would be competitive with existing routes.

10.6 Rail Expansion Opportunities for the Ports

The ports identified a number of opportunities for better integration with the railroads that would benefit freight shippers.

Tulsa Port of Catoosa

The Tulsa Port of Catoosa is interested in leveraging both the expansion of the Panama Canal and the Marine Highway initiative along with its rail connections. It supports the development of a major transload terminal in Tulsa with a potential for a container terminal in the future. As



the most western port on the waterway, it would be a terminus for the Marine Highway and provide intermodal connections to various markets in the region.

Port of Muskogee

The Port of Muskogee has identified several initiatives to enhance and to improve its rail service, rail storage capabilities, and diminish its operational impact on the surrounding community.

1. Rail access to the port could be improved by adding a north access to the existing south access wye track in order to increase rail route selection. This conceptual plan would also eliminate 29 at-grade crossings in Muskogee. However, the funding to accomplish the project's objectives has not been secured. The port also plans to expand the storage capacity of its marshalling yard by adding an additional track and switches to provide an additional 3,500 feet of storage track.
2. The port is served by only one railroad limiting the choices of its customers. In light of this situation, the port has initiated a plan to build a new, mile-long access track to intersect with the BNSF line. The project is estimated to cost \$4 million to \$5 million and has received preliminary state and federal approval. Property acquisition and engineering analysis has already been completed. Further state and federal approvals are still needed.

10.7 Foreign Trade Zones

A Foreign Trade Zone (FTZ) is an area within or approximate to a U.S. Port of Entry and serves as a location where foreign goods are considered to be outside of U.S. Customs and Border Protection jurisdiction. They are duty-free areas, offering warehousing, storage, and distribution facilities for trade, transshipment, and re-export operations. Goods held in the FTZ are not assessed a customs duty until they are brought out of the FTZ and enter the U.S. market.

However, certain U.S. firms receive an additional advantage when located within an FTZ. U.S. firms that use imported components for their exported goods do not pay duties on those imported items if their production process occurs within an FTZ. The tariff and tax relief benefits U.S.-based operations engaged in international trade by exempting their goods from duties.



There are two types of zones:

1. General-Purpose: Commonly found in or near a Port of Entry and may be a section within a port or an entire industrial park.
2. Sub-zone: Typically is a single firm's site that has a more extensive operation than what could be contained within a general –purpose facility.

Oklahoma has been granted several Free Trade Zones by the U.S. Department of Commerce:

Port of Muskogee Zone (FTZ 164)

FTZ 164 hosts two industrial parks and is located along the banks of the Arkansas River with immediate access to rail, river, and highway transportation infrastructure. Rail service is provided by Union Pacific and by the port's switching service in the port's marshalling yard and internal rail system. The port also offers towboat service for barge switching and fleetings. The two industrial parks offer more than 260 acres of vacant and developed sites.

Tulsa Port of Catoosa Zone (FTZ 53)

The Tulsa Port of Catoosa enjoys free trade zone status and is home to four industrial parks; Stillwater Industrial Park, Bartlesville Industrial Park, Mid America Industrial Park at Pryor Creek, and Tulsa International Airport. The Port covers more than 2,000 acres and is a well-equipped, multi-modal facility that provides its tenants with direct transportation access via river, road, and rail. FTZ 53 currently has over 60 tenants utilizing its 500 acres of waterfront property and 1,500 acres of landlocked, general industrial property.

International Business Park in Durant (FTZ 227)

FTZ 227 is situated on 320 acres in Durant, Oklahoma, and encompasses several industrial parks. Adjacent to or near major highways and Interstate 35, it is centrally located among several key transportation locations: one hour from Dallas/Fort Worth, five hours from Houston and San Antonio, and eight hours from Laredo, Texas, one of the busiest border crossings with Mexico. FTZ 227 was recently expanded to include the Ardmore Industrial Park and the Westport Industrial Park, both located in Ardmore. Throughout the industrial parks, truck dock facilities are available. Additionally, both Union Pacific and Kiamichi Railroad maintain daily rail service to a rail yard about ½ mile from FTZ 227 and a nearby general aviation airport offers small airfreight access to the zone.



Table 10-1: Oklahoma Rail Transload Facilities

Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area	Commodities Handled
Watco Transload	Transload	Oklahoma City	BNSF/UPRR/ SLWC	70	Open: 2.4 million ft ²	Dry Bulk, Liquid Bulk, Dimensional
Watco Transload	Transload	Stroud	SLWC	NA	n/a	Petroleum –Railcar to Pipeline
D&M Distribution	Transload	Oklahoma City	BNSF	13	Warehouse: 185,000 ft ²	Dimensional
Oklahoma City Reload	Transload	Oklahoma City	BNSF/SLWC	10	Open: 404,000 ft ²	Dimensional
Blendstar	Liquid Bulk	Del City	SLWC	10	Tanks: 150,000 gallons	Ethanol, Biodiesel
Blendstar	Liquid Bulk	Tulsa	n/a	5	n/a	Ethanol
National Tank Services	Liquid Bulk	Oklahoma City	n/a	23	n/a	Chemicals, plastics, petroleum
Plastic Express	Liquid Bulk	Tulsa	UPRR	18	n/a	Plastics
Plastic Express	Liquid Bulk	Stroud	SLWC	n/a	n/a	Plastics
Oklahoma Vehicle Facility	Auto	Oklahoma City	BNSF	41	3,202 vehicle bays	Autos

Source: BNSF & UP



Table 10-2: Oklahoma Rail-Served Grain Elevators

Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
ADM Grain Co. (Elevator A)	Grain Elevator	Enid	BNSF/UP	70	7,700,000	Milo, Soybeans, Wheat
ADM Grain Co. (Elevator B)	Grain Elevator	Enid	BNSF/UP/ Farmrail	36	11,100,000	Wheat, Soybeans
			BNSF			
ADM/Farmland Elevator Y	Grain Elevator	Enid	UPRR	50	163,000	Milo, Soybeans, Wheat
Apache Farmers COOP	Grain Elevator	Apache	UPRR	13	1,400,000	Grains
Attebury Grain	Grain Elevator	Temple	WTJR	25	450,000	Milo, Wheat
Attebury Grain, LLC	Grain Elevator	Enid	BNSF	30	3,078,000	Wheat, Sorghum
Bartlett Grain Southwest	Grain Elevator	Boise City	BNSF	10	745,000	Wheat, Corn, Sorghum
Beachner Grain Inc.	Grain Elevator	Afton	BNSF	5	732,000	Wheat, Sorghum, Soybeans
Big V Feeds	Grain Elevator	McAlester	AOK	n/a	n/a	Grains



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Blackwell Coop Elevator Assn.	Grain Elevator	Braman	BNR	11	1,000,000	Wheat, Sorghum, Corn, Soybean
Blackwell Coop Elevator Assn.	Grain Elevator	Kildare	BNSF	10	815,000	Wheat, Soybeans, Corn, Sorghum
Blackwell Coop Elevator Assn. Elevator 2	Grain Elevator	Blackwell	BNSF	5	185,000	Wheat, Sorghum, Corn, Soybean
Boise City Farmers Coop	Grain Elevator	Boise City	BNSF	4	709,000	Wheat, Sorghum
BTR Terminal	Grain Elevator	Muskogee	UPRR	30	200,000	Grains
Calumet Industries - Sold	Grain Elevator	Calumet	ATLT	10	555,000	Grains
Calumet Industries - Sold	Grain Elevator	Geary	ATLT	8	2,230,000	Grains
Calumet Industries - Sold	Grain Elevator	Geary	ATLT	15	240,000	Grains
Cargill	Grain Elevator	Hooker	UPRR	10	2,000,000	Corn, Milo, Soybeans, Wheat
Cargill	Grain Elevator	Oklahoma City	n/a	n/a	n/a	Grains



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Cassidy Grain Co.	Grain Elevator	Frederick	BNSF/UP/ GNBC/WTJR	30	1,175,000	Wheat, Sorghum, Corn
Cassidy Grain Co.	Grain Elevator	Manitou	GNBC	10	464,000	Wheat
Cassidy Grain Co.	Grain Elevator	Hollister	n/a	26	500,000	Wheat
CHS Inc dba Plains Partners	Grain Elevator	Kingfisher	UPRR (Shuttle)	15	1,100,000	Grains
Collingwood Grain	Grain Elevator	Altus	WTJR	75	2,185,000	Grains
Collingwood Grain	Grain Elevator	Guymon	n/a	28	2,550,000	Corn, Milo, Soybeans, Wheat
Collingwood Grain	Grain Elevator	Optima	n/a	100	n/a	Grains
Collingwood Grain	Grain Elevator	Tyrone	UPRR	25	1,270,000	Corn, Milo, Wheat
Consolidated Grain Barge	Grain Elevator	Muskogee	n/a	100	200,000	Grains
Continental Grain	Grain Elevator	Enid	BNSF	36	2,000,000	Grains
COOP Services	Grain Elevator	Grandfield	WTJR	25	756,000	Wheat



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
COOP Services	Grain Elevator	Lawton	BNSF	10	420,000	Wheat, Sorghum, Corn
Custer City Farmers Coop Exchange	Grain Elevator	Custer City	FMRC/GNBC	26	1,300,000	Wheat
Dacoma Farmers Coop, Inc.	Grain Elevator	Dacoma	BNSF	26	1,100,000	Wheat
Duke Farmers Union COOP Elevator	Grain Elevator	Duke	UPRR	10	417,000	Milo, Soybeans, Wheat
El Reno Terminal Grain	Grain Elevator	El Reno	UPRR	8	850,000	Grains
Elkhart Coop Equity Exchange	Grain Elevator	Keyes	CVR	18	991,000	Wheat, Sorghum, Corn
Farmers COOP	Grain Elevator	Anadarko	UPRR	10	26,000	Grains
Farmers Coop Assn	Grain Elevator	Clinton	GNBC	26	1,250,000	Wheat, Sorghum
Farmers Coop Assn.	Grain Elevator	Avard	BNSF	12	200,000	Wheat
Farmers Coop Assn.	Grain Elevator	Eldorado	BNSF	123	2,139,000	Wheat, Sorghum



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Farmers Coop Assn.	Grain Elevator	Perry	BNSF	6	500,000	Wheat, Soybeans, Corn, Sorghum, Barley
Farmers Coop Assn. (Alva, OK)	Grain Elevator	Capron	BNSF	8	489,000	Wheat
Farmers Coop Assn. (Elevator B)	Grain Elevator	Alva	BNSF	4	1,000,000	Wheat
Farmers Coop Assn. (Elevator A)	Grain Elevator	Alva	BNSF	54	1,900,000	Wheat
Farmers Coop Exchange	Grain Elevator	Weatherford	FMRC	26	2,300,000	Wheat, Sorghum, Soybeans, Corn, Oats
Farmers Coop Exchange	Grain Elevator	Bessie	GNBC	26	714,000	Wheat
Farmers Cooperative Assoc.	Grain Elevator	Snyder	BNSF/GNBC/ FMRC	27	1,179,000	Wheat, Sorghum
Farmers Cooperative Mill & Elevator, Assoc.	Grain Elevator	Hobart	BNSF	18	75,000	Wheat
Farmers Elevator	Grain Elevator	Goodwell	UPRR	8	1,374,000	Corn, Milo, Other, Soybeans, Wheat
Farmers Elevator Co.	Grain Elevator	Ames	GNBC	13	613,000	Wheat, Rye



Oklahoma Statewide Freight and Passenger Rail Plan

Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Farmers Elevator Co.	Grain Elevator	Drummond	GNBC	9	597,000	Wheat, Soybean
Farmers Exchange	Grain Elevator	Helena	BNSF	15	690,000	Wheat
Farmers Exchange	Grain Elevator	McWillie	BNSF	10	500,000	Wheat
Grain Co. (Elevators Y & Z)	Grain Elevator	Enid	BNSF/UP/ Farmrail (Shuttle)	110	28,280,000	Wheat, Sorghum, Corn
Hansen Mueller	Grain Elevator	Broken Arrow	UPRR	3	153,000	Corn, other, wheat
Humphreys Coop Elevator	Grain Elevator	Altus	BNSF/WTJR	28	443,500	Wheat, Sorghum
Humphreys Coop Elevator	Grain Elevator	Blair	FMRC	17	45,000	Wheat
Humphreys Coop Elevator	Grain Elevator	Olustee	BNSF	26	34,000	Wheat
Inola Feed & Supply	Grain Elevator	Inola	UPRR	10	105,000	Grains
Johnston Grain WB	Grain Elevator	Enid	BNSF	100	9,000,000	Corn, Milo, Soybeans
Johnston Seed Co.	Grain Elevator	Enid	UPRR	1	250,000	Rye, Malt, Wheat, Corn, Sunflower



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Morrison Grain & Ag Services	Grain Elevator	Morrison	BNSF	7	205,000	Wheat, Soybeans
North Caddo COOP	Grain Elevator	Hinton	ATLT	20	135,000	Wheat
Peavey Co.	Grain Elevator	Tulsa Port Authority	BNSF/SKOL	27	4,000,000	Wheat, Sorghum, Soybeans, Oats
Planters Coop	Grain Elevator	Elmer	FMRC	26	n/a	FMRC
Planters Coop (Standard)	Grain Elevator	Altus	FMRC/WTJR	26	571,000	Wheat, Sorghum
Planters Cooperative Assn.	Grain Elevator	Cambridge	FMRC	13	351,000	Wheat
Planters Cooperative Assn.	Grain Elevator	Hobart	GNBC	11	13,200,000	Wheat, Soybean
Planters Cooperative Assn.	Grain Elevator	Lone Wolf	FMRC	80	1,300,000	Wheat
Planters Cooperative Assn.	Grain Elevator	Lugert	FMRC	17	112,000	Wheat
Planters Cooperative Assn. (C/Elevator)	Grain Elevator	Roosevelt	GNBC	18	243,000	Wheat
Planters Cooperative Assn. (W/Elevator)	Grain Elevator	Roosevelt	GNBC	12	440,000	Wheat



Oklahoma Statewide Freight and Passenger Rail Plan

Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Purina Mills	Grain Elevator	Oklahoma City	n/a	11	n/a	Grains
R. A. Ford & Son	Grain Elevator	Gage	BNSF	1	8,000	Corn, Sorghum, Oats, Barley
Rocky Farmers Cooperative, Inc.	Grain Elevator	Dill City	FMRC	26	131,000	Wheat, Sorghum
Rocky Farmers Cooperative, Inc.	Grain Elevator	Rocky	GNBC	14	1,062,000	Wheat, Sorghum
Sayre Grain & Farm Supply	Grain Elevator	Sayre	FMRC	9	192,000	Wheat, Sorghum, Corn, Oats
Schroeder Grain Elm Street	Grain Elevator	El Reno	UPRR	7	500,000	Grains
Sentinel Farmers Coop	Grain Elevator	Sentinel	FMRC	26	919,000	Wheat, Sorghum
			BNSF/UPRR			
Sooner Coop, Inc.	Grain Elevator	Okeene	GNBC	13	286,800	Wheat, Sorghum
Temple Coop Branch	Grain Elevator	Temple	WTJR	7	200,000	Grains
Temple Milling	Grain Elevator	Waurika	UPRR	10	50,000	Grains
Texhoma Wheat Grow	Grain Elevator	Texhoma	UPRR	25	3,500,000	Corn, Milo, Wheat



Oklahoma Statewide Freight and Passenger Rail Plan

Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
The Hooker Equity Exchange	Grain Elevator	Hooker	UPRR	14	2,700,000	Corn, Milo, Wheat
Tillman Producers Coop	Grain Elevator	Frederick	UP/WTJR/ GNBC	26	900,000	Wheat, Sorghum, Corn
Tillman Producers COOP	Grain Elevator	Hollister	WTJR	25	340,000	Corn, Milo, Wheat
Tipton Farmers COOP	Grain Elevator	Tipton	WTJR	10	410,000	Grains
Todd Fees Grain	Grain Elevator	El Reno	UPRR	14	1,200,000	Grains
Tuttle Grain & Supply	Grain Elevator	Tuttle	BNSF	7	230,000	Wheat, Soybean, Sorghum, Corn, Barley
W. B. Johnston Grain Co.	Grain Elevator	Enid	BNSF (Shuttle)	110	13,300,000	Sunflower, Corn, Sorghum
W. B. Johnston Grain Co.	Grain Elevator	Shattuck	BNSF (Shuttle)	110	2,000,000	Wheat, Corn, Sorghum, Soybeans
Walters COOP Elevator Assn	Grain Elevator	Walters	WTJR	18	625,000	Grains
Wheeler Bros. Grain Co	Grain Elevator	Enid	BNSF	36	2,100,000	Wheat, Sorghum



Facility	Facility Type	City	Railroad	Rail Car Spots	Storage Area (Bushels)	Commodities
Wheeler Bros. Grain Co.	Grain Elevator	Cordell	GNBC	26	427,000	Wheat
Wheeler Bros. Grain Co.	Grain Elevator	Thomas	GNBC	26	1,229,000	Wheat
Wheeler Bros. Grain Co. (West)	Grain Elevator	Westhom	GNBC	60	1,197,000	Wheat
Wheeler Bros. Grain Co. L.L.C. (East)	Grain Elevator	Alva	BNSF	26	872,000	Wheat
Wheeler Bros. Grain Co. L.L.C. (West)	Grain Elevator	Alva	BNSF	26	1,324,000	Wheat
Wheeler Brothers Grain	Grain Elevator	Greenfield	n/a	50	825,000	Wheat
Wheeler Brothers Grain	Grain Elevator	Watonga	ATLT	100	1,955,000	Wheat
WP Milling	Feed Mill	Muskogee		8	250,000	Grains

Source: <http://www.bnsf.com/customers/grain-facilities/elevators/menu/oklist.html>,
<http://dx01.my.uprr.com/pubdir/graindir.nsf?OpenDatabase>



Table 10-3: Private Terminals on the MKARNS in Oklahoma

River Milepost	Company Name	City Location
337.3 L	Jeffrey Sand Company Dock	Sallisaw, OK
342.0 R	Port Carl Albert	Keota, OK
342.0 R	Port of Keota	Keota, OK
344.1 L	Cherokee Nation Port	Sallisaw, OK
362.4 L	Jeffrey Sand Company Dock	Webber Falls, OK
363.2 R	Consolidated Grain and Barge	Webber Falls, OK
390.2 R	Fort James Corporation	Muskogee, OK
391.0 R	Frontier Terminal	Muskogee, OK
393.0 R	Koch Materials Company	Port of Muskogee
393.8 R	Consolidated Grain and Barge	Port of Muskogee
393.8 R	Johnston Terminal-Muskogee	Port of Muskogee
393.8 R	Muskogee City-County Port Authority	Port of Muskogee
393.8 R	Uni-Steel, Inc.	Port of Muskogee
412.5 L	Consolidated Grain and Barge	Wagoner, OK
426.5 L	Inola Station Slip-Public Service Co.	Inola, OK
431.8 R	Johnston's Port 33, Inc.	Inola, OK
431.8 R	Total Petroleum	Inola, OK
431.8 R	Port Barge Cleaning	Inola, OK
443.8 R	Mid-America Port	Catoosa, OK



River Milepost	Company Name	City Location
445.2	Advance Chemical Distribution, Inc.	Tulsa Port of Catoosa
445.2	Catoosa Fertilizer Terminal	Tulsa Port of Catoosa
445.2	Safety Kleen Systems, Inc.	Tulsa Port of Catoosa
445.2	Peavy Company	Tulsa Port of Catoosa
445.2	Port Barge Cleaning	Tulsa Port of Catoosa
445.2	Frontier Terminal and Trading Co.	Tulsa Port of Catoosa
445.2	Southern Missouri Oil Co.	Tulsa Port of Catoosa
445.2	Tuloma Stevedoring, Inc.	Tulsa Port of Catoosa
445.2	City of Tulsa-Rogers County Port Authority	Tulsa Port of Catoosa
445.2	Terra Nitrogen	Tulsa Port of Catoosa
445.2	Westway Terminal Co., Inc.	Tulsa Port of Catoosa
445.2	Royal Training Co.	Tulsa Port of Catoosa

Source: USACE - <http://www.swl.usace.army.mil/navigation/portlistings.html>



11. Oklahoma Passenger Rail

11.1 History

The efficient movement of people and goods is fundamental to the functioning of a modern economy. While all modern modes; highway, air, water, and rail; have adapted well for the commercial movement of goods, transportation policy in the U.S. since the mid 20th Century has favored the development of commercial air and non-commercial highway as the principle carriers of persons. As a result, the previously established system of rail passenger transport declined.

Historically, railroads were late to develop in Oklahoma. However, in the earlier days of Oklahoma railroads, passenger service was extensive. In the 1966 edition of the Official Guide of the Railways, Oklahoma passenger service included:⁴⁴

Table 11-1: Oklahoma Passenger Trains (1966)

Train Name/Number	Origin-Destination	Route	Railroad
The Oklahoman	St. Louis – Oklahoma City	via Tulsa	St. Louis-San Francisco Railway Co. (Frisco)
Golden State Rocket	Chicago-Los Angeles	via Guymon	Chicago, Rock Island and Pacific Railroad Co. (Rock Island)
#39 (westbound) & #40 (eastbound) Locals	Kansas City-Los Angeles	via Guymon	Chicago, Rock Island and Pacific Railroad Co.
#21 (westbound) & #22 (eastbound) Locals	Memphis-Los Angeles	via McAlester-Shawnee-Ok City ⁴⁵ -El Reno-Clinton-Sayre	Chicago, Rock Island and Pacific Railroad Co.

⁴⁴ The Official Guide of the Railways, National Railway Publication Co., New York, NY, July 1966

⁴⁵ Connecting motor coach service from Oklahoma City to Chickasha and Lawton, however, connection times were not closely synchronized.



Train Name/Number	Origin-Destination	Route	Railroad
Twin Star Rocket	Minneapolis-Fort Worth	via Enid-El Reno	Chicago, Rock Island and Pacific Railroad Co.
#19-211 & #1-47 (westbound) & #212-12 & #48-20 (eastbound)	Chicago-Tulsa	via Bartlesville	Atchison, Topeka and Santa Fe Railway Co. (Santa Fe)
Texas Chief	Chicago-Galveston	via Guthrie-Ok City-Purcell	Atchison, Topeka and Santa Fe Railway Co.
The Kansas Cityan & The Chicagooan	Chicago-Fort Worth	via Guthrie-Ok City-Purcell	Atchison, Topeka and Santa Fe Railway Co.
The Tulsan; #1 & #20 Locals	Kansas City-Tulsa	via Bartlesville	Atchison, Topeka and Santa Fe Railway Co.
#37 & #38 Mixed Locals	Las Animas CO-Amarillo TX	via Boise City	Atchison, Topeka and Santa Fe Railway Co.
#173 & # 174 Mixed Locals	Dodge City KS-Boise City OK	connection at Dodge City with Super Chief	Atchison, Topeka and Santa Fe Railway Co.
#61 (eastbound) & #62 (westbound)	Pampa TX – Clinton OK	connection at Pampa with San Francisco Chief	Atchison, Topeka and Santa Fe Railway Co.

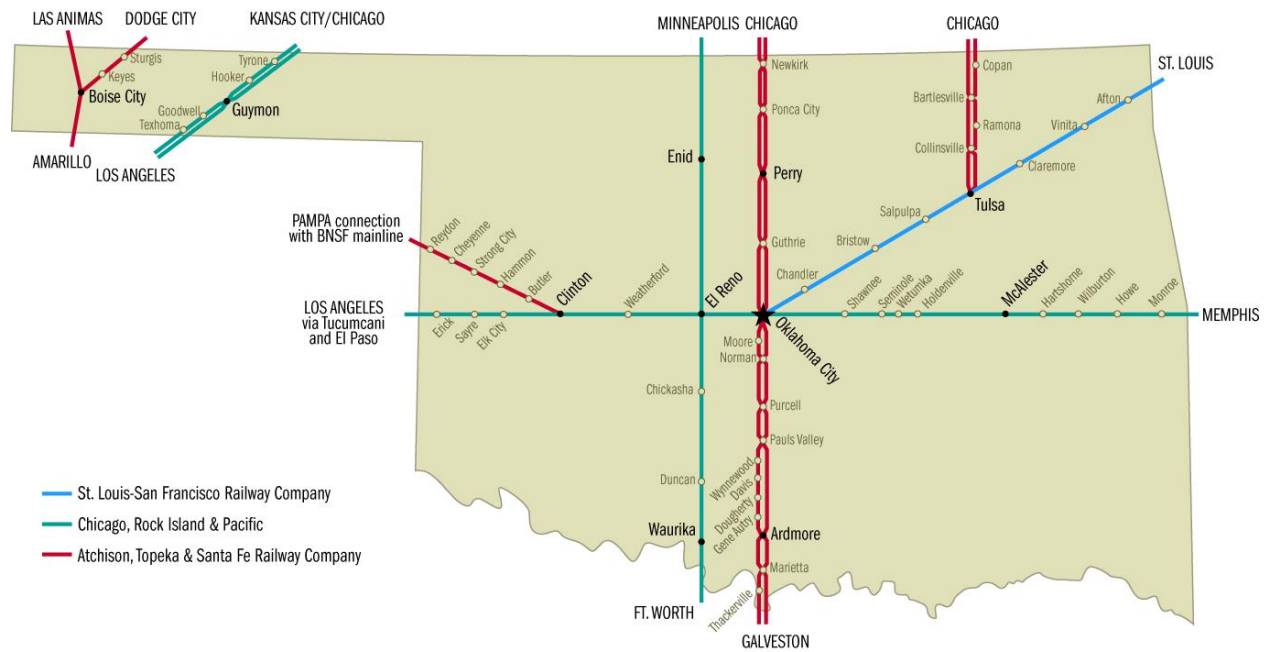
By 1970, commercially operated passenger trains had long since lost their profitability. Under regulation of the Interstate Commerce Commission (ICC), however, the railroad companies which, at the time provided both passenger and freight services, were largely prevented from terminating passenger service. Faced with potential financial disaster in the rail industry, caused in part by losses in passenger service, Congress acted and formed the National Railroad Passenger Corporation, known as Amtrak, under the Rail Passenger Service Act of 1970. The act was signed into law by President Richard Nixon and Amtrak came into existence on May 1, 1971.

Under this act, the commercial railroads were relieved of passenger business obligations. Participating railroads received common stock in Amtrak and in some cases, tax credits. The



railroads gave up their passenger equipment (in some cases, cash) and the right of track access. For passenger train operations, Amtrak paid the railroads the incremental cost for the use of their tracks.

Figure 11-1: Passenger Rail Routes (1966)



When Amtrak was formed, participation by the commercial railroads was optional. If a railroad chose not to join, they were obligated to operate their established passenger routes until 1975, after which the normal service withdrawal procedures could be initiated with the ICC.

Only three railroads chose not to participate in Amtrak. One of these was the Chicago, Rock Island, and Pacific Railroad, that operated in Oklahoma. Their non-participation did not affect their passenger operations in Oklahoma because they had already been terminated. The “Rock Island” was in receivership and totally ceased operations in 1979.

The “Santa Fe” did participate. The *Texas Chief*, a prominent Santa Fe Chicago to Texas train, was initially operated but was soon renamed the *Lone Star*⁴⁶. After some re-routing in Texas, the *Lone Star* did not perform up to expectations and along with several other cancellations in 1979; the train was removed from service. The result was that Oklahoma lost all passenger rail service.

⁴⁶ The Santa Fe owned the ‘Chief’ brand and withdrew their permission for Amtrak to use the brand in 1975.



11.2 Overview of Current Rail Passenger Operations

Today, one passenger operation is active in Oklahoma. The *Heartland Flyer* is a state-sponsored Amtrak-operated train operating between Oklahoma City and Fort Worth, Texas. Texas and Oklahoma share support of this service. The train departs Oklahoma City at 8:25 AM, arriving Fort Worth mid-day. The train returns to Oklahoma City in the evening. The "*Flyer*" operates daily.

Under Section 403(b)⁴⁷ of the Rail Passenger Service Act of 1970 (RPSA), states and other governmental agencies are permitted to partner with Amtrak to operate passenger trains of local interest. Under these provisions, Amtrak operates the service but are reimbursed a "reasonable share" of the service's loss by the sponsor. "Reasonable share" was defined as two-thirds of the operating deficit in the original act. In Amtrak reform legislation of 1997, the two-thirds provision was revised to a negotiated amount. Current Amtrak policy is to charge 100% of deficits to the sponsor. The Passenger Rail Improvement and Innovation Act of 2008 (PRIIA) further refined the local sponsorship provisions by requiring Amtrak to establish a "*standardized methodology for establishing and allocating the operating and capital costs*" for the locally sponsored services.

Oklahoma established the *Heartland Flyer* train, operating between Oklahoma City and Fort Worth under the provisions of the RPSA and its subsequent revisions. Operation commenced on June 14, 1999. The State of Texas became a co-sponsor of the train in 2006. The *Flyer* is the only passenger train in Oklahoma.

The *Heartland Flyer* does provide for a reasonable connection to both eastbound and westbound sections of the current *Texas Eagle* at Fort Worth. The Chicago to San Antonio *Texas Eagle* operates along a route different from the discontinued *Lone Star*. From Chicago, the trains are routed through St. Louis and Little Rock, to Dallas and Fort Worth, terminating in San Antonio on four days per week. The other three days per week, the *Chief* continues to Los Angeles.

11.3 The Heartland Flyer

The *Heartland Flyer* is a favorite among passengers. The route between Santa Fe Depot in Oklahoma City and the Fort Worth Intermodal Transit Center is 206 miles in length. Intermediate stops on the route are Norman, Purcell, Pauls Valley and Ardmore in Oklahoma,

⁴⁷ Section 403(b) states: "Any State, regional or local agency may request of the Corporation (i.e. Amtrak) rail passenger service beyond that included in the basic system. The Corporation shall institute such service if the State, regional or local agency agrees to reimburse the Corporation for a reasonable portion of any losses associated with such services."



and Gainesville in Texas. The southbound Flyer is designated as Amtrak train #821 with the northbound being #822.

The public timetable, having only minor changes since inception, is:

Table 11-2: *Heartland Flyer* Timetable (effective November 7, 2011)

821	Train Number				822
Daily	Days of Operation				Daily
Read Down	Miles		Stations		Read Up
8:25 AM	0	Dp	Oklahoma City, OK	Ar	9:39 PM
8:49 AM	20	Dp	Norman, OK	Dp	9:04 PM
9:06 AM	35	Dp	Purcell, OK	Dp	8:47 PM
9:31 AM	57	Dp	Pauls Valley, OK	Dp	8:21 PM
10:23 AM	102	Dp	Ardmore, OK	Dp	7:28 PM
11:05 AM	141	Dp	Gainesville, TX	Dp	6:47 PM
12:39 PM	206	Ar	Fort Worth, TX	Dp	5:25 PM

Amtrak timetables are usually constructed to include actual running time and time at the stations (dwell time), and with added to time recover from unexpected delays that may occur enroute. Different from normal Amtrak timetable practice where recovery time is added in the last segment of a run, the *Heartland Flyer* schedule distributes the recovery time between each station pair. When running on-time, the *Flyer* will tend to arrive at each station a little early but will adhere to the published departure time.

The *Heartland Flyer* schedule favors day trips taking Oklahomans to Texas. Except for a short trip confined to afternoon business or recreation in Fort Worth, a trip to Texas would require one night stay at a minimum but would afford a full day in the Dallas/Fort Worth area. A trip to Oklahoma on the train would require two nights stay to allow any time in the state for daytime business or personal activities.



Because of the historic Santa Fe track configuration, the *Heartland Flyer* route serves Fort Worth instead of Dallas. Dallas is much larger than Fort Worth. Tarrant County (which contains Fort Worth) has a 2010 population of 1.8 million, less than one-third of the total Dallas-Fort Worth-Arlington metro area population of 6.5 million. Although the Santa Fe main line always passed through Fort Worth, during the 1950s and 1960s, the Santa Fe would split the *Texas Chief* at Gainesville, Texas, with some cars proceeding direct to Dallas. The branch line to Dallas has since been removed.

Existing Stations and Station Services

Oklahoma City, Oklahoma

The Santa Fe Depot (OKC) is located on the eastern edge of downtown Oklahoma City, within easy walking distance of the Bricktown entertainment district and the basketball/hockey arena. The station is open from 7:30 to 8:45 AM and again from 9:00 to 11:00 PM. There is no ticket counter but in 2011, an automated ticketing machine was installed and is available when the station is open. Tickets may be purchased in advance over the internet or over the telephone at 1-800-USA-RAIL, at the automated ticket kiosk or on the train. The *Heartland Flyer* is a reservation required train and space must be reserved in advance. Onboard tickets will usually cost more than those purchased in advance. No checked baggage is handled at OKC.

The Santa Fe Depot is privately-owned by a third party. Access to the station is through a lease agreement between the owner and the State of Oklahoma. There is retail space available adjoining the station. A new retail establishment commenced operations at the station in 2011.

Location:	Santa Fe Depot is located at 100 S. E.K. Gaylord Boulevard.
Parking:	There are 47 parking spaces at the station available at a fee of \$6 per day. Nearby overflow parking is available for \$3 per day.
Major Highways:	North South I-35, U.S. 77 East West I-40, U.S. 62 Northeast-Southwest I-44,
Intercity Rail:	The <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs in the morning, returning in the evening.
Intercity Bus:	Greyhound and Jefferson Lines offer intercity buses along north south routes along I-35 and east-west along I-40. A diagonal route from Wichita Falls TX to Tulsa and beyond operates along I-44. The intercity bus station is located approximately 2000 feet west of the depot.



Aviation:	Will Rogers World Airport is served by five major airlines with direct service to 20 destinations, many of which are hub airports with connection throughout the world. The airport is located approximately 6 miles southwest of the Central Business District
Public Transit:	Central Oklahoma Transit and Parking Authority operates bus and paratransit services in Oklahoma City. Direct connections at the Oklahoma Santa Fe Depot are scarce. METRO local bus routes #1 and #24 pass near the station and both serve the Oklahoma City Transit Center, which will afford transfers to most parts of the city. Routes operate Monday through Friday with some route offering Saturday service. Most route commence around 6 AM and terminal service by 7:30 PM.
Rental Car:	Yes with station pickup available during normal business hours
Taxi:	Yes Numerous taxi providers 24/7

Norman, Oklahoma:

The Norman station has an enclosed waiting area but no other amenities or services. No checked baggage is handled. The station is owned by the City of Norman and has shared space with the Community Art Center.

Location:	200 S. Jones Street.
Parking:	Free parking is available across the tracks from the station. There are also provisions for bicycle parking.
Major Highways:	North-South I-35, U.S. 77 East-West O-9
Intercity Rail:	Yes, the <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs southbound in the morning, returning in the evening.
Intercity Bus:	Greyhound operates at Norman with a station at 506 N. Porter. The bus route operates along the I-35 corridor with transfers available to other destinations at Oklahoma City.
Aviation:	University of Oklahoma Max Westheimer Airport is a general aviation facility without scheduled service. Norman is in the service area of Oklahoma City's Will Rogers World Airport for scheduled services.



Public Transit:	CART (Cleveland Area Rapid Transit) passes 1 block to the east of the Norman station. The N21 bus on St. Peters Avenue proceeds to the South Loop transfer station on the Oklahoma University campus for connections to all quadrants of the city. The buses run 7 AM to 8 PM Monday through Friday with reduced Saturday service.
Rental Car:	Yes with station pickup available during normal business hours
Taxi:	Yes Numerous taxi providers 24/7

Purcell, Oklahoma

The Purcell station has an enclosed waiting area but no other amenities or services. No checked baggage is handled. The station is owned by the City of Purcell.

Location:	E. Main Street and N. Santa Fe Ave.
Parking:	Twenty-seven spaces of free parking are available at the station property.
Major Highways:	North-South I-35, U.S. 77 East-West O-39
Intercity Rail:	Yes, the <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs southbound in the morning, returning in the evening.
Intercity Bus:	None
Aviation:	Chandler Field is a general aviation facility without scheduled service.
Public Transit:	Delta Public Transit operates a demand/response rural transit system serving Purcell.
Rental Car:	Yes, with the agencies located in Norman. Station pickup available during normal business hours.
Taxi:	Yes Several Norman taxi providers will serve Purcell for surcharge.

Pauls Valley, Oklahoma

The Pauls Valley station has an enclosed waiting area but no other amenities or services. No checked baggage is handled. The station is owned by the City of Pauls Valley. It is a new facility built in 2002 and is adjacent to the former Santa Fe station.

Location:	S. Santa Fe Street at E. Paul Street.
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Parking:	Fifty-seven space of free parking are available at the station.
Major Highways:	North-south I-35, U.S. 77 East-West O-19
Intercity Rail:	Yes, the <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs southbound in the morning, returning in the evening.
Intercity Bus:	Greyhound operates intercity buses along the I-35 north-south route. The station is located at 215 W. Paul Street, co-located with Delta Public Transit.
Aviation:	Pauls Valley Municipal Airport is a general aviation facility with scheduled service.
Public Transit:	Delta Public Transit operates a demand/response rural transit system serving Pauls Valley.
Rental Car:	Yes with station pickup available during normal business hours.
Taxi:	Yes Taxis from Norman or Ardmore will serve Pauls Valley for surcharge.

Ardmore, Oklahoma

The Ardmore station has an enclosed waiting area but no other amenities or services. No checked baggage is handled. The station is located in the former Santa Fe station and shares space with the Community Police and the Main Street Coalition.

Location:	251 E. Main Street
Parking:	There are 48 spaces of free parking at the station.
Major Highways:	North-South I-35, U.S. 77 East-West U.S. 70
Intercity Rail:	Yes, the <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs southbound in the morning, returning in the evening.
Intercity Bus:	Greyhound operates buses on the north-south route along I-35. The bus station is located at 2501 W. Broadway, near the interstate. This is approximately 2 miles west of the train station.
Aviation:	Ardmore Downtown Executive Airport is a general aviation facility without scheduled service



Public Transit:	Southern Oklahoma Rural Transportation System operates a demand/response transit operation that serves Ardmore and Carter County.
Rental Car:	Yes , with station pickup during normal business hours
Taxi:	Yes Aa Cab Company 24/7

Gainesville, Texas:

The Gainesville station has an enclosed waiting area but no other amenities or services. No checked baggage is handled. The station is the former Santa Fe station and houses the Santa Fe Museum.

Location:	605 E. California Street
Parking:	There are 15 spaces of free parking at the station.
Major Highways:	North-South I-35 (co-located with U.S. 77) East-West U.S. 82
Intercity Rail:	Yes, the <i>Heartland Flyer</i> operates one round trip daily between Oklahoma City and Fort Worth. The train departs southbound in the morning, returning in the evening.
Intercity Bus:	Greyhound operates buses on the north-south route along I-35. The bus station is located at 1934 N. I-35. This is approximately 2 miles northwest of the train station
Aviation:	Gainesville Municipal Airport is a general aviation facility without scheduled service
Public Transit:	The Texoma Area Paratransit Service operates both demand/response transit services in the Gainesville region. Fixed route bus service is in planning stages.
Rental Car:	Yes with station pickup during normal business hours
Taxi:	Yes Safeway Transportation 24/7

Fort Worth, Texas

The Fort Worth Amtrak station is the city-owned Fort Worth Intermodal Transit Center (ITC). The ITC joins several public transportation options together in the Fort Worth Central Business District. Connections are afforded to the Amtrak *Texas Eagle*, *Heartland Flyer*, the Trinity



Railway Express commuter train, commercial intercity buses, local transit bus routes, and rental cars.

The station is located immediately adjacent to the east edge of downtown Fort Worth. The station is open from 8:00 AM until 6:00 PM with the ticket window and checked baggage counter operating from 10:00 AM until 5:30 PM. The ticket kiosk is available from 8:30 AM until 10:00 PM. The station features an enclosed waiting area with payphones and an ATM. Fort Worth handles checked baggage for the *Texas Eagle*. The *Heartland Flyer* does not have checked baggage. Passengers transferring from the *Eagle* to the *Flyer* with checked bags must claim those bags before boarding.

Location:	1001 Jones Street
Parking:	There is no parking directly associated with the station but on-street metered parking is available as well as commercial parking adjacent to the station site.
Major Highways:	North-South I-35W, U.S. 81 and U.S. 77 co-located with I-35W), U.S. 287 East-West I-20, U.S. 80
Intercity Rail:	The <i>Heartland Flyer</i> schedule is timed to make a convenient transfer to the <i>Texas Eagle</i> . The <i>Texas Eagle</i> is a daily operation between Chicago and San Antonio. The eastbound (toward Chicago) and the westbound (toward San Antonio) trains meet at Fort Worth, affording transfers in either direction. On Monday, Wednesdays and Fridays, the westbound <i>Texas Eagle</i> continues to Los Angeles after a 7-hour layover in San Antonio. The eastbound <i>Texas Eagle</i> returning from Los Angeles arrives at Fort Worth on Tuesday, Friday, and Sunday.
Intercity Bus:	Greyhound Lines, Kerrville Bus Company and Americanos USA motor coach operators serve the ITC. Buses to points east or north almost universally require a transfer at Dallas. Direct buses are available to several points west, mostly via the I-20 or U.S. 287 corridors. Train and bus schedules are not coordinated
Aviation:	Dallas-Fort Worth (DFW) Airport is a major hub facility serving 191 domestic and international destinations by 19 air carriers.



<p>Public Transit:</p>	<p>Trinity Railway Express - The Trinity Railway Express (TRE) is a commuter train that operates between Dallas and Fort Worth. A shuttle connection to the Dallas/Fort Worth Airport is also afforded from the CentrePort station. The TRE operates their full schedule on weekdays and an abbreviated schedule on Saturdays. No Sunday service is offered. TRE offers convenient connection to the DART light rail system at Dallas Union Station. There are 17 departures and 22 arrivals at the ITC weekdays. The first train departs at 5:02 AM and the last arrival at 10:14 PM. There is reduced Saturday service but no service on Sunday.</p> <p>The "T" operates 18 local and 5 express bus routes directly from the ITC. The routes extend to all quadrants of the "T" service area. Most buses operate from around 5:30 AM until 10:00 PM Monday through Friday. There is reduced Saturday service but no Sunday service.</p> <p>Two blocks to the west of the ITC on Commerce Street where <i>Molly the Trolley</i> operates a loop route throughout the Fort Worth downtown from 10 AM to 10 PM daily. On Saturday, a shuttle directly from the ITC to the Ft Worth stockyard district operates from 9 AM to 10:30 PM</p>
<p>Rental Car:</p>	<p>Yes, with station pickup during normal business hours</p>
<p>Taxi:</p>	<p>Yes Numerous taxi providers 24/7</p>

Planned New Stations

Two new stations are under consideration for the *Heartland Flyer*. One is in Oklahoma and the other in Texas. No definitive schedule has been made for these additions.

Davis, Oklahoma:

<p>Location:</p>	<p>The historic station is located at the tracks on W. Main Street. The City Museum operates in the building.</p>
<p>Parking:</p>	<p>There is limited free parking at the historic station.</p>
<p>Major Highways:</p>	<p>North-South I-35 U.S. 77 East-West O-7</p>
<p>Intercity Rail:</p>	<p>None</p>
<p>Intercity Bus:</p>	<p>None</p>



Aviation:	Crazy Horse Municipal airport is a general aviation facility without scheduled service.
Public Transit:	Davis is in the demand-response service area of Southern Oklahoma Rural Transit
Rental Car:	Yes with pickup available during normal business hours
Taxi:	Yes Taxis from Norman or Ardmore will serve Davis for surcharge.

Krum/Denton, Texas

The Krum is located 9 miles west of Denton, Texas.

Location:	No historic station site is apparent in Krum. Vacant land is plentiful near the tracks.
Parking:	N/A
Major Highways:	North-South FM 156, I-35 is 3 miles east of town. East-West FM 1173, U.S. 380 is 1 ½ miles south of town
Intercity Rail:	None
Intercity Bus:	Greyhound serves Denton on their north-south I-35 route with their station located along I-35 near the intersection with FM 1173, approximately 3 miles from Krum.
Aviation:	Denton Municipal Airport is a general aviation facility without scheduled service.
Public Transit:	Denton County Transit Authority operates fixed route public transportation in Denton County but does not serve Krum. The Denton A-train is a new interurban rail system that connects Denton to the DART system at Carrollton, for continuing service to Dallas.
Rental Car:	Yes, with station pickup during normal business hours.
Taxi:	Yes Denton County Taxi serve Krum 24/7



Rail Connections

Amtrak Fort Worth Connections

The *Heartland Flyer* schedule is timed to make a convenient transfer to the *Texas Eagle*. The “*Eagle*” is a daily operation between Chicago and San Antonio. The eastbound (toward Chicago) and the westbound (toward San Antonio) trains meet at Fort Worth, affording transfers in either direction. On Monday, Wednesdays and Fridays, the westbound *Texas Eagle* continues to Los Angeles after a 7-hour layover in San Antonio. The eastbound *Texas Eagle* returning from Los Angeles arrives at Fort Worth on Tuesday, Friday and Sunday.

The continuation to Los Angeles is facilitated by connecting cars from the *Texas Eagle* to the New Orleans - Los Angeles *Sunset Limited*. The *Sunset Limited* only operates three days per week where as the *Texas Eagle* is a daily train. On the return, cars are removed from the *Limited* and attached to the *Eagle* for the trip to Chicago via Fort Worth.

Connections can also be made from the *Texas Eagle* to the *Sunset Limited* operating east of San Antonio to Houston and New Orleans. This connection accommodates transfers to and from the *Heartland Flyer*.

The southbound *Texas Eagle* arrives at San Antonio at 9:55 PM with the eastbound *Sunset Limited* departing at 11:55 PM on Mondays, Thursday and Saturday evenings.

The westbound *Sunset Limited* arrives at San Antonio at 3:00 AM Tuesday, Thursday and Saturday, with the northbound *Texas Eagle* departing at 7:00 AM.

Table 11-3: Amtrak connections at Fort Worth

From	To	Arrive	Depart	Layover
<i>Heartland Flyer</i>	Eastbound <i>Texas Eagle</i>	12:39 PM	2:20 PM	1 hr 41 m
<i>Heartland Flyer</i>	Westbound <i>Texas Eagle</i>	12:39 PM	2:10 PM	1 hr 31 m
Eastbound <i>Texas Eagle</i>	<i>Heartland Flyer</i>	1:58 PM	5:25 PM	3 hr 27 m
Westbound <i>Texas Eagle</i>	<i>Heartland Flyer</i>	1:25 PM	5:25 PM	4 hr 0 m

Connections from the *Heartland Flyer* to the *Texas Eagle* are quite convenient when considering the length of the trip usually involved on Amtrak long distance trains. Returning to Oklahoma does require a longer wait but not totally out of reason (i.e. Los Angeles, El Paso). For a shorter intrastate trip to Austin or San Antonio, these wait time might be considered too



long. For trips on the *Eagle* to or from points west of San Antonio, there is a lengthy layover in San Antonio also.

Trinity Railway Express Fort Worth Connections

The Trinity Railway Express (TRE) is a commuter train that operates between Dallas and Fort Worth. A shuttle connection to the Dallas-Fort Worth Airport (DFW) is also available at the CentrePoint station. The TRE operates their full schedule on weekdays and an abbreviated schedule on Saturdays. No Sunday service is offered. TRE offers convenient connection to the DART light rail system at Dallas Union Station.

Table 11-4: Trinity Railway Express connections at Fort Worth

From	To	Arrive	Depart	Layover
<i>Heartland Flyer</i>	TRE (Monday – Saturday)	12:39 PM	1:51 PM	1 hr 12 m
	The 1:51 PM TRE arrives at CentrePoint at 2:15 PM. Allow 40 minutes for the shuttle to arrive at DFW terminals. The shuttle runs every 15 minutes but is synchronized to TRE arrivals or departures. This TRE arrives Dallas Union Station at 2:47 PM.			
TRE (Monday – Friday)	<i>Heartland Flyer</i>	5:14 PM	5:25 PM	0 hr 11 m
	This TRE departs Dallas Union Station at 4:20 PM. The next earlier train departs Dallas at 3:50 PM. From DFW airport, passengers should be available for shuttle pickup no later than 4:10 PM. This connection is very tight and carries risk of a missed connection if TRE experiences even minor delay. A 3:50 PM Dallas departure, arriving Fort Worth at 4:44PM reduces delay risk.			
TRE (Saturday)	<i>Heartland Flyer</i>	4:44 PM	5:25 PM	0 hr 41 m
	This TRE departs Dallas Union Station at 3:49 PM. From DFW airport, passengers should be available for shuttle pickup no later than 3:40 PM			



Ridership

Overall *Heartland Flyer* ridership has shown steady growth since the start of the service. A downturn in 2009 is consistent with a downturn in all forms of travel due to the recessionary economy. Ridership data is based upon the federal fiscal year, which starts on the 1st of October.

Table 11-5: *Heartland Flyer* Ridership and Revenues

Year (Federal FY)	Ridership	Revenue	
		Tickets	Food Service
1999 (3 ½ mo)	26,832	\$ 532,985	\$ 37,098
2000	65,529	\$ 1,213,228	\$ 171,409
2001	57,799	\$ 1,069,520	\$ 118,150
2002	52,584	\$ 903,402	\$ 111,020
2003	46,592	\$ 756,268	\$ 124,540
2004	54,403	\$ 900,980	\$ 111,033
2005	66,968	\$ 1,187,567	\$ 135,098
2006	64,078	\$ 1,174,234	\$ 128,905
2007	68,245	\$ 1,260,566	\$ 155,518
2008	80,892	\$ 1,682,089	\$ 198,744
2009	72,564	\$ 1,592,434	\$ 152,312
2010	81,749	\$ 1,806,780	\$ 165,837
2011	84,039	\$ 1,911,994	\$ 189,756

June, July, and August are the highest ridership months with a spike in ridership also in March due to spring breaks (130% to 140% of average). The lowest ridership months are January and February (50% to 60% of average). Over the week, highest ridership occurs on Friday,



Saturdays, and Sunday (140% to 160% of average). Tuesday and Wednesday are the lowest days (80% of average). The southbound train has heavier ridership on Fridays and Saturdays, and the northbound on Sundays, indicating that weekend breaks are being taken south of Oklahoma City.

Table 11-6: Ridership by Station

Station	Average Annual Boarding/Alighting (2007-2009)
Oklahoma City	48,914
Norman	12,333
Purcell	2,320
Pauls Valley	5,897
Ardmore	9,114
Gainesville	8,982
Fort Worth	60,653

Data showed a general downward trend in ridership for Purcell, Pauls Valley, and Gainesville, while other stations tended to follow the general growth trend in total ridership.

Customer Satisfaction and Innovations

Because of the stewardship by the Oklahoma Department of Transportation to the operations of the *Heartland Flyer*, the service has received numerous awards and consistently score high on customer satisfaction surveys conducted by Amtrak.

In 2010, the *Heartland Flyer* was awarded Amtrak’s highest honor, the President’s Award for Safety and Service. This follows the *Flyer’s* 2008 naming as the “Champion of the Rails.”



Table 11-7: Passenger Distribution by Station Pairs

Station Pair	Percent of Ridership
Oklahoma City – Fort Worth	55.6 %
Norman – Fort Worth	12.7 %
Ardmore – Fort Worth	5.3 %
Oklahoma City – Gainesville	4.5 %
Pauls Valley – Fort Worth	3.5 %
All other pairs (16 pairs)	18.4 %

Also in 2010, Time magazine named the test of Biodiesel fuel in the *Heartland Flyer* as one of the top 50 inventions of 2010. The test was inaugurated in April 2010 and is scheduled to continue until April 2011. The fuel being tested, known as B-20, consists of 20% biodiesel derived from cattle industry byproducts, mixed with petroleum-based diesel fuel. Results have been favorable.

Since 2006, the *Heartland Flyer* has been co-sponsored by Oklahoma and Texas. This is the only state-sponsored service with more than one state taking the responsibility.

The *Heartland Flyer* consistently ranks high in customer satisfaction. The Amtrak CSI (Customer Satisfaction Index) is developed yearly for all routes in the Amtrak system. Data is collected via a mailed customer survey asking for passenger ratings on 38 separate aspects of service. The score is based on a 0 to 100 scale with scores of 80 or greater being in the very satisfied category.

On-time Performance

The ability to meet the published schedule is one and perhaps the most important customer preference. Amtrak's measure of schedule reliability is based on the length of the train's trip from origin to endpoint. In the case of the *Heartland Flyer*, the train is considered late if it arrives at its terminal more than 10 minutes behind schedule.



Table 11-8: Customer Satisfaction Index Scores

Year	<i>Heartland Flyer</i>	All state-sponsored or short-distance Amtrak trains
2004	91	83
2005	90	83
2006	88	83
2007	86	84
2008	92	86
2009	94	88
2010	95	not available

Since 2009, the *Heartland Flyer's* schedule performance has been very good with more than 80 percent of trains arriving within the ten-minute on-time window. However, between mid-2005 and early 2009, on-time performance suffered and a slump in CSI scores can be seen.

In Amtrak's tracking of schedule performance, delays are attributed to Amtrak, to the Host Railroad (BNSF), or to "Other." Examination of delays in 2009 shows about 80% of delays attributable to the Host Railroad, with the Amtrak and Other categories each responsible for approximately 10% each.

On-time performance improved significantly in 2009, likely due to the host railroad, BNSF, making passenger train on-time performance a priority on its system.

Delays encountered in 2010 are tabulated below. Some delays are necessary for safety reasons. Amtrak, in general, has had problems with adhering to timetable schedules. The predominate source of the delays are the host railroads.

The majority of Host Railroad delays were for slow orders. Slow orders are temporary speed restrictions placed on a track for maintenance or other conditions. Freight train interference can be due to dispatching misjudgment or traffic blocked due to congestion at Tower 55 in Fort Worth. Tower 55 is the at-grade crossing of the BNSF and Union Pacific railroads immediately south of the Fort Worth ITC. This location is infamous for the delays due to the high traffic volume and the time needed to clear the signals and permit the next train to proceed across



the crossing diamond. The State of Texas has recently received a grant from the FRA to initiate improvements to expedite traffic through the Tower 55 crossing.

Table 11-9: *Heartland Flyer* Total Delays by Cause (2010)

DELAY TYPE	MINUTES	Percent of TOTAL
Slow Orders due to Defects	11,815	53.3 %
Freight Train Interference	3,346	15.1 %
Routing Delays	1,458	6.6 %
Communication & Signal Work	1,260	5.7 %
Weather	877	4.0 %
Passenger Related	737	3.3 %
Wait on time	598	2.7 %
Maintenance of Way	482	2.2 %
Trespassing/Grade Crossing	439	2.0 %
Crew Related	406	1.8 %
Various Other	751	3.4 %
TOTAL	22,169	100 %

In 2009, Amtrak's Inspector General published results of a study on the revenue implications of on-time performance⁴⁸. A positive correlation was found. Sensitivity of the *Heartland Flyer* was low, showing an expected negative impact on revenue of \$7.11 for every minute of delay. In the short-distance or state-sponsored category, the average cost of delay was \$31.00 per minute.

⁴⁸ Amtrak Office of Inspector General, *Financial Impact of Equipment Delays*, Evaluation Report E-09-02, March 25, 2009.



Funding

After 18 years since the cancellation of the *Lone Star*, the Taxpayer Relief Act of 1997 afforded payments by Amtrak to states that did not have passenger rail service. The payment of \$23 million to Oklahoma provided the basis to establish the new service connecting Oklahoma City and Fort Worth starting on June 14, 1999.

Through 2006, Oklahoma was the sole sponsor of the *Heartland Flyer* although it served both Gainesville and Fort Worth, Texas. Starting in 2007, the State of Texas through action of the Texas Transportation Commission, allocated \$1.8 million to support the service. Since then, Texas has taken a 50% stake in the sponsorship expense. For 2010, the State of Oklahoma provided \$1,950,000 for the operation.

Train Equipment

Amtrak, under its Operating Agreement with the State of Oklahoma, provides and maintains the rolling stock used by the *Heartland Flyer*. The train consist typically consists of one General Electric P42DC "Genesis" Series 1 locomotive, two Hi-Level coach cars, and a Hi-Level combination café/coach car. This configuration has a total seating capacity of 210. The cars are generally of the Amtrak car series known as the Superliners.

A NPCU (Non-Powered Control Unit) locomotive is also attached. This locomotive is an older model that has had its diesel engine and other propulsion equipment removed but its control equipment remains active. The space formerly occupied by the propulsion equipment is modified and could be utilized to carry baggage. The baggage space is not typically utilized by the *Heartland Flyer*. These NPCU units are also referred to as a Cabbage Car (cab plus baggage). The P42DC locomotive is placed at the north end of the train and the NPCU car is attached at the south end. The train is capable of operating in either direction without turning the train around to reverse its direction.

In summer months, a second P42DC may be substituted for the NPCU to provide backup power in case of a locomotive failure. A total locomotive failure would disable the train's air conditioning and food storage refrigeration. Also during the peak summer months and during spring break, an additional car is added for increased capacity. The extra car is usually a café/coach car but without the food service facilities being in operation.

The P42DC is capable of a top speed of 110 MPH with its 4250 HP engine but the trackage and signaling between Oklahoma City and Fort Worth limits operations to 79 MPH maximum.



The Superliner cars were first ordered by Amtrak in the late 1970s. The first order was constructed by Pullman Standard. A second order of Superliner cars was made in the early 1990s and constructed by Bombardier.

These double-deck cars were modeled after the Santa Fe Hi-Liner cars used by the Atchison, Topeka and Santa Fe Railway on their El Capitan Chicago-Los Angeles service. Before 2008, former Santa Fe Hi-Liner coaches were common in the *Heartland Flyer* consist, but have now been retired.

Each coach car has a seating capacity of 74 persons, 62 on the upper deck and 12 on the lower deck. The lower deck is ADA⁴⁹ compliant.

Light running repairs on the train equipment can be performed by Amtrak shop in Fort Worth. Cleaning is performed at both Fort Worth and Oklahoma City. Under special circumstances, maintenance can be performed overnight while the train is parked in Oklahoma City. Every 90 days, the passenger cars are taken to Amtrak's Beech Grove Shop near Chicago for periodic maintenance and inspection. During the maintenance absence, the car is replaced by the protect café/coach that is used in the summer months and as a spare for these circumstances.

Ticketing

Except for Fort Worth and Oklahoma City, none of the stations on the *Heartland Flyer* route has agents or "Quik-Trak" automated ticketing kiosks. Tickets are sold on-board by the train staff. It is reported that most of the staff's time enroute is consumed by ticketing duties.

Ticketing is also available over the Amtrak internet web site or by telephone at 1-800-USA-RAIL. If the ticket is purchased a sufficient time before the journey, Amtrak will mail the tickets to the passenger. If time is not sufficient to mail tickets, the purchaser can print a voucher that can be exchanged onboard or at the Fort Worth ticket counter, for the ticket. Advance purchase tickets can also be printed at an Amtrak "Quik-Trak" automated ticket kiosk. These kiosks are available both at Oklahoma City and Fort Worth.

Amtrak practices revenue management, or as known in the air travel industry, yield management. Ticket prices are adjusted in accordance with the demand for a certain train on a certain day. Tickets purchased onboard without an advance reservation are charged at the highest price.

⁴⁹ Americans with Disabilities Act



Host Railroad - BNSF

The *Heartland Flyer* operates on tracks owned and controlled by the BNSF Railway Company, headquartered in Fort Worth, Texas. The BNSF is the successor to the Atchison, Topeka and Santa Fe railroad, the long time operator of this line that, along with its subsidiary, the Gulf, Colorado and Santa Fe Railroad, created the line connecting the Santa Fe's east-west mainline at Newton, Kansas to the seaport at Galveston, Texas. The connection was completed in 1887.

BNSF is a closely held corporation that executes its business to make a profit for its owner, Berkshire Hathaway. Until 2009, BNSF was a publicly traded capital stock company but was purchased by Berkshire Hathaway, a holding company headed by Warren E. Buffett. Berkshire Hathaway is a publicly traded corporation.

As one of the original subscribers to Amtrak under the RPSA, Amtrak is given the right to operate over ATSF (now BNSF) tracks in exchange for payment of the incremental costs imposed by the passenger operation. Because calculation of incremental costs is not a science, considerable negotiation is required to settle on the level of payment. The agreement for the *Heartland Flyer* contains a provision for incentive payments for consistent on-time performance and penalties for BNSF-related delays. Since 2009, the *Heartland Flyer's* on-time performance has improved dramatically, corresponding to the BNSF initiative to improve passenger train performance on their system. Amtrak monthly performance reports consistently shows BNSF on-time performance as the best among the six host railroads for Amtrak service.

The BNSF line between Fort Worth and Oklahoma City is part of a high-density freight lane known as the Mid-Continent corridor, or "Mid-Con." BNSF has designated this route for concentrated capital improvements and is the preferred route for much of its north-south traffic. Mid-Con traffic is dominated by merchandise, manufactured goods, and grain moving between the Midwest and Pacific Northwest to Texas and Gulf of Mexico ports. The line also connects to the BNSF's crossing to Mexico at Eagle Pass, Texas. Additionally, coal moving from the Powder River Basin in Wyoming to Texas uses this route. In all, approximately 23 to 24⁵⁰ trains per day utilize the line. The Mid-Con is used in a quasi-double track arrangement with another parallel BNSF line located in eastern Oklahoma.

Maximum passenger train speed in Oklahoma is 79 MPH. In Texas, the speed limit is 55 MPH. Texas recently received a federal ARRA grant of \$4 million to make improvements to grade-crossing signal timing in order to permit higher speeds over the line. These savings could result in a 17 minute reduction of run time.

⁵⁰ BNSF 2010 Traffic Data



Speeds above 79 MPH require the very costly addition of in-cab signal indicators under current regulations. Cab signals consist of both trackside and onboard equipment, and every control locomotive operating over the route would need to be equipped, regardless of the speed operated. All lines that carry passenger trains or certain hazardous materials are required to be equipped with Positive Train Control or PTC by 2015. Positive train control provides for automatic control of a train to avoid a crash. The current Centralized Train Control (CTC) used on the line provides the instruction necessary for a train crew to avoid crashes but is reliant on crew attention to see and to obey signal indications.

The line is also subject to heat slow orders. Between 95°F and 109°F, trains are restricted to 60 MPH; at 110°F or higher, the speed limit is 40 MPH. These restrictions are due to the heightened possibility of “heat kinks” or “sun kinks” forming in the track. These kinks form from high compressive stress in the rails due to heat expansion. They present a serious derailment risk.

Amtrak and Operating Agreement

For each federal fiscal year, the operation of the *Heartland Flyer* is authorized by an operating agreement between Amtrak and the States of Oklahoma and Texas. The agreements outline the services to be provided, the responsibility for the provision of certain facilities and equipment, and the payments to be made by the parties. The state-sponsored, Amtrak-operated service description includes the stations serviced and the schedule. The typical equipment to be provided by Amtrak is also defines as two Hi-Level coaches, one Superliner snack/coach, one P-42 locomotive, and one NPCU. This train consist is typical. In the summer months, Amtrak, at its discretion, often adds additional seating and an additional locomotive. Superliner coaches are substituted for the Hi-Level coaches.

Amtrak is obligated to provide daily round-trip service over a route serving the designated stations. Amtrak is not required to provide addition frequencies or service on other routes, however, nothing in the agreement restricts Amtrak from providing additional frequencies or service on additional routes at its own discretion and expense.

Amtrak is required to make its “best effort” to provide a service of “high-quality.” The states and Amtrak are obligated to cooperate in efforts to improve the service. Decisions regarding the on-board menu and pricing, on-board amenities, fares, on-board operating policies and reservation requirements must be made jointly by the parties. General tariff provisions of Amtrak shall apply to the *Heartland Flyer*.

The States are obligated to provide station facilities, all of which must be ADA-compliant. All costs for station acquisition and upkeep are the states’ responsibility. If a station is unavailable,



the respective state is liable to Amtrak for any losses occurred due to the unavailability including the provision of alternative transportation.

The States of Oklahoma and Texas pays Amtrak a fixed amount for the service plus 50 percent of the fuel used and track usage fees from BNSF. The fuel charges are calculated based on parameters agreed by the parties and are a best effort to simulate the actual fuel usage and costs. The states are billed monthly for one-twelfth of the fixed amount and the fuel and BNSF charges for the month. For the federal FY2012, the Oklahoma fixed amount is \$1,089,667. A cap on the fixed amount, fuel and BNSF charges is established at \$2,325,000. The flow of funds is analyzed after two-thirds of the contract period has passed, and if the cap is projected to be inadequate, the State agrees to provide additional funding or cooperate with Amtrak in finding cost reductions. The State of Texas has a similar reimbursement agreement accounting for 50% of the fuel and BNSF charges but with a different fixed amount.

The agreement has provisions for the states to provide the passenger equipment (except locomotives) in the stead of Amtrak, and provides for the approval and acceptance of the equipment and adjustments in the financial obligations.

The parties agreed to defend, indemnify and hold the other harmless for losses or injuries to properties or parties associated or attached to them. Amtrak has full responsibility for its equipment and employees, and incidents resulting from the operation of the service, except when employees or contractors of a state are involved.

2009 Texas Transportation Institute On-board Survey

In April and July of 2009, the Texas Transportation Institute of Texas A&M University conducted on-board surveys to determine several characteristics of *Heartland Flyer* passengers⁵¹. Data was collected on ten one-way trips in April (five each direction) and seven one-trips in July (four northbound, three southbound). During the April data collection period, 435 surveys were completed. In July, 588 surveys were received. Because of parental consent issues, passengers under 18 years old were not surveyed, as were passengers traveling in organized groups. Of the eligible passengers that chose to participate in the survey, 98% returned their survey instrument complete.

⁵¹ Benjamin Sperry & Curtis Morgan, *Measuring the Benefits of Intercity Passenger Rail: A Study of the Heartland Flyer Corridor*, Texas Transportation Institute, April 2010.



Station Access

Several modes of arriving or departing the station are available (see Table 11-11). The survey revealed that the private automobile is the dominate mode of accessing the rail station. In the survey, the following was revealed:

Table 11-10: Origin and Destination Stations

Station Distribution of Passengers		
Station	April	July
Oklahoma City	31 %	32 %
Norman	9 %	11 %
Purcell	1 %	1 %
Pauls Valley	2 %	3 %
Ardmore	8 %	4 %
Gainesville	6 %	4 %
Fort Worth	43 %	45 %

Making the connection to the national Amtrak system accounts for just fewer than 10% of passengers but has been a primary driver in setting the *Heartland Flyer* schedule to make the connection with the *Texas Eagle*. However, an examination of the station access data indicates that only 2% of *Flyer* passengers connect to the TRE commuter train to Dallas. While this would be a “cross platform” transfer, the timing of the trains does not make this connection convenient. Some alteration of train schedules could improve this opportunity to build ridership by providing a convenient access to Dallas.

Market Area

The time needed to travel to the train station is an indicator of the distance from which passengers are drawn to the train service.



Table 11-11: Means of Station Access

Mode	Percent of Passengers	
	at Origin	at Destination
Drove or rode with other passenger	41 %	32 %
Drop-off/pick-up by private car	36 %	37 %
Local transit	4 %	6 %
Commuter train (TRE)	2 %	2 %
Amtrak connection (<i>Texas Eagle</i>) ^(a)	9 %	6 %
Intercity Bus ^(b)	0 %	0 %
Pedestrian or Bicycle	4 %	7 %
Taxi or Shuttle	5 %	10 %

(a) Numbers of passengers accessing the *Texas Eagle* connection was substantially higher in July than April. This may indicate the use of the connection is for longer vacation-like trips.

(b) Greyhound Lines service the Fort Worth station directly but does not coordinate any schedules to the *Heartland Flyer* schedule. Amtrak does not operate any "Thruway" bus services in connection with the *Heartland Flyer*.

Table 11-12: Origin Station Access Time

Access Time	April	July
10 minutes or less	23 %	18 %
10 to 30 minutes	43 %	42 %
30 minutes to 1 hour	13 %	16 %
1 to 2 hours	11 %	13 %
over 2 hours	11 %	12 %



Expressed as mileage:

Table 11-13: Access Distance to Origin Station

Access Distance	April	July
10 miles or less	35 %	32 %
10 to 20 miles	26 %	18 %
20 to 50 miles	15 %	23 %
50 to 100 miles	7 %	15 %
over 100 miles	17 %	13 %

In July, the radius of the destination hinterland is larger, likely indicating using the train for longer trips.

Table 11-14: Destination Radius

Destination Radius	April	July
10 miles or less	39 %	38 %
10 to 20 miles	32 %	26 %
20 to 50 miles	18 %	21 %
50 to 100 miles	8 %	14 %
over 100 miles	16 %	10 %

Trip Purpose

The reasons that passengers have for making a trip is of value in evaluating whether opportunities might exist to alter the service to make a greater market penetration. Recreational and social purposes currently dominate the current ridership. These purposes might not be as sensitive to schedule alterations as other, more clock sensitive purposes.



Table 11-15: Trip Purpose

Purpose	April	July
Visit Family / Friends	36 %	42 %
College / University	2 %	1 %
Business Trip	5 %	2 %
Leisure / Recreation	45 %	33 %
Personal Business	6 %	5 %
Shopping	1 %	2 %
Vacation	4 %	15 %

Pleasure travel dominates *Heartland Flyer* trips. The presence of the University of Oklahoma at Norman might be expected to generate more trips but the proximity of Norman to Oklahoma City combined with a single trip per day probably accounts for the low number of riders for that purpose. Students have historically been a good source of riders. The University community would be better served by a commuter or the Tulsa-OKC intercity services that are proposed with multiple daily frequencies.

Table 11-16: Diverted and Induced Trips

Alternative Travel Mode	April	July
Diverted Trips:		
Private automobile	58 %	63 %
Rental or company vehicle	3 %	2 %
Airline	7 %	5 %
Intercity Bus	3 %	3 %
Induced Trips:		
Would not otherwise make trip	29 %	27 %



As an alternative, the private automobile dominates. Significant in the results were the numbers of persons that would not have made the trip if it were not for the *Heartland Flyer*. This level of induced travel is higher than what is usually predicted for this type of travel.

Table 11-17: Trip Duration

Nights Away from Origin	April	July
None	22 %	19 %
1	23 %	19 %
2	20 %	23 %
3 to 5	24 %	25 %
6 or more	10 %	14 %

Questions regarding trip duration yielded answers not completely predictable yet some general and expected patterns were present upon closer examination. First, Oklahoma residents can and do make single day round trips. Two nights' away are more prevalent for Texas residents traveling to Oklahoma. The survey did not determine the relationship between state of residence and trip duration directly. It can be seen that summer trips tend toward slightly longer duration.

Other characteristics

The vast majority of passengers are low frequency riders with 89 percent indicating making four or fewer one-way trips per year.

The survey permitted up to two answers on why the *Heartland Flyer* was chosen for the trip. The most common reasons (in order) were (1) More comfortable/Relaxing (38%); (2) Least expensive (32%); (3) Rather not drive (22%); (4) Avoid congestion or parking (12%). Only 7 percent of riders responded that they did not have access to another vehicle or did not drive. The novelty of a train trip or the opportunity to treat grandchildren to a train trip was a common response (14%).



Oklahoma residents made up the majority of passengers at 73 percent. Texas residents accounted for 20 percent. The train schedule is more convenient for Oklahoma residents but it should be noted that spending by passengers at their destination would better benefit Texas.

The gender of *Heartland Flyer* passengers was heavily weighted toward females at 62 percent. This result is not uncommon but the percentage is high. All ages of passengers were represented but there is a bias towards passengers 45 years of age or older.

Passenger Service Issues

Delay

Research into passenger preferences indicates that on-time performance is the most important parameter in customer satisfaction.⁵² Service unreliability is a problem experienced by Amtrak system wide. The *Heartland Flyer* has benefited from the perspective of BNSF that passenger train on-time arrivals reflects upon their brand also, and has made changes to greatly improve their performance. With the improvement, ODOT cannot become complacent in monitoring delay and its causes. On-time performance is an issue made for constant improvement approaches.

Dirty Cars after Maintenance

This issue was raised in interviews with ODOT personnel involved with *Heartland Flyer* stewardship. When returned from their periodic maintenance visits to Amtrak's Beech Grove shops in Indiana, the cars have been used in other regular Amtrak operations before delivery to the *Heartland Flyer*. It has been noted that the cars are not returned clean and orderly. Customer preference research has shown that the cleanliness of cars and stations are high priorities, even higher than trip time. The Operating Agreement calls on Amtrak to perform in creating a "high quality" service. Methods to improve the situation need exploring by the parties.

Need For Improved Connections

Both ends of the *Heartland Flyer* route have numerous transit and transportation operations that could enhance the usefulness of both the *Flyer* and the connecting services. Tight connections with the *Flyer* are not currently in place, and those connections are important, especially with shorter trips within the metropolitan areas.

Wi-Fi

The installation of wireless internet access onboard passenger rail cars has proven to be a popular and widely used customer service feature on Amtrak's routes in the northeast United

⁵² Taylor Nelson for British Railways Board, 1976.



States. Wi-Fi provides many passengers, not just business passengers, with the ability to be productive or just to be “connected.” Oklahoma is initiating investigations into the costs and logistics of providing internet connectivity for the *Heartland Flyer*.

11.4 Other Rail Passenger Operations

No other passenger trains operate in Oklahoma strictly for the provision of transportation.

The Oklahoma Railway Museum in Oklahoma City offers short rides on passenger trains equipment. The rides are available primarily on weekends and holidays.

Farmrail, in cooperation with the Lone Wolf and Quartz Mountain Arts and Conference Center and Nature Park, offers excursion rides between the Quartz Mountain Resort and Lone Wolf. For 2010, five excursions are scheduled in the summer and fall months. The station is located at the intersection of State Highways 44 and 44A, near Lake Altus. Specific information can be obtained at (580) 323-1234.



12. Multi-modal Connectivity - Passenger

For numerous reasons detailed in the Oklahoma railroad development sections, passenger rail services have not been blended into the overall fabric of the transportation system in the United States except in the older, densely populated northeast. The newer urbanized areas grew in the two-mode era of commercial aviation and private automobiles. While the speed of the airplane and the convenience of the private automobile have significant mobility benefits, neither of these modes are energy efficient, and have rendered land use patterns that further exaggerate energy demand and consume vast tracts of land.

A stand-alone intercity passenger rail system does not make for convenient transportation. Its ability to attract patronage from the competing modes is greatly diminished without convenient connections. Consequently, the presence of “last mile” alternatives is critical to the success of intercity passenger rail services (just as they are to commercial air service). Intercity passenger trains themselves can assume the role of a feeder service for extended journeys. Newark Liberty International Airport in Newark, New Jersey and Baltimore-Washington International Airport are prime examples of where Amtrak (and local commuter trains) feed passengers from an entire region to the airport.

Amtrak has had success with its *Thruway* motorcoach services as a means of linking to a broader market. *Thruway* buses are used at many locations on Amtrak’s system to connect passengers to popular destinations. There is no *Thruway* bus service currently connected with the *Heartland Flyer* but passengers connecting with the southbound *Texas Eagle* can use the *Thruway* to reach Killeen, Texas and Fort Hood from the Temple, Texas Amtrak station. A return connection is also available.

Oklahoma DOT recently conducted a “Transit Gap” analysis, surveying where there is a lack of mobility in the state. This investigation found “Information obtained during public outreach efforts associated with the update of the Oklahoma’s Statewide Intermodal Plan found that, in general, adequate urban and regional transit is available for users. However, a need exists to improve statewide mobility and provide modal connections that will permit transit users to travel beyond urban and regional boundaries.” While the analysis found that transit can be used for general mobility, it did not particularly address the convenience issues that make public transportation options attractive to the segment of the public that have other travel options. Capturing those riders is key to growing ridership and further growing the transport option available.



12.1 Intercity Rail Connections

Texas Eagle: The nearly five-hour layover of the *Heartland Flyer* in Fort Worth complicates a tight connection with the *Texas Eagle*. While the connection with the southbound *Flyer* is reasonable, the return to Oklahoma requires waiting throughout the afternoon. An earlier departure to Oklahoma could reduce this wait but would harm other trip purposes that need time in Fort Worth. Fort Worth is home to world-class art museums and historical sites. Currently, the *Texas Eagle* connection accounts for only 6 percent to 9 percent of the *Flyer* passengers. Leisure passengers account for a much higher percentage and an earlier departure from Fort Worth might discourage day-trippers.

Three days per week, cars from the *Texas Eagle* continue to Los Angeles connected to the *Sunset Limited* at San Antonio. Some cars from Los Angeles are connected to the *Texas Eagle* for the return trip. Connection to the *Sunset Limited* between San Antonio and New Orleans are also convenient at San Antonio.

12.2 Commuter Rail Connections

Trinity Railway Express (TRE): The Trinity Railway Express is a regional commuter train service that operates between Dallas Union Station and the Fort Worth ITC. There are 17 weekday departures from Fort Worth. Reduced service is offered on Saturday and no service on Sunday.

The first departure of *TRE* following the arrival of the *Heartland Flyer* is at 1:51 PM, over a full hour after the *Flyer* reaches Fort Worth. The 1:51 train arrives in Dallas at 2:47 PM. Moving the 1:51 PM departure of the *TRE* earlier would reduce the current 1 hour 12 minute layover. The *TRE* train before the connecting train departs Fort Worth ITC at 12:21 PM, 18 minutes before the *Flyer's* arrival but the next *TRE* departure is one and a half hours later. After the 1:51 PM departure, it is two hours until the next train. Tightening this connection would also increase the usefulness connections to Dallas-Fort Worth International Airport. Returning to Fort Worth is more convenient. The 3:50 PM departure from Dallas gives a comfortable 41 minute layover before departure of the *Heartland Flyer*. A later departure from Dallas at 4:20 PM makes the connection but with only an 11 minute margin of error. A minor delay on the *TRE* could miss the connection.

Further improvement would be to time the airport shuttle buses to the *TRE* trains. The current system has the shuttles running every 15 minutes, regardless of arrivals or departures of *TRE* trains.



Two primary bus routes correspond with Interstate highways 35 and 40, the primary north-south and east-west corridors crossing at Oklahoma City. A diagonal route crosses the state from the southwest (originating at Wichita Falls Texas), through Oklahoma City, Tulsa and Bartlesville, crossing into Kansas enroute to Kansas City. Another diagonal route proceeds from Oklahoma City to Tulsa, and then Joplin Missouri enroute to St. Louis.

In addition to the direct I-35 route from Dallas, a second route enters the state near Durant, proceeding through McAlester, Muskogee, terminating at Tulsa.

A sampling of intercity bus travel between Oklahoma City (OKC) and Tulsa (TUL), and between Oklahoma City and Lawton (LAW) for an outbound leg on Feb 16, 2011 and returning on Feb 17, 2011 revealed:

OKC – TUL	5 published schedules by 2 bus lines (each way) Shortest trip time 1:40 Lowest roundtrip fare \$30.00 (>14 day advance)
OKC-LAW	1 published schedules by 1 bus line (each way) Shortest trip time 1:40 Lowest roundtrip fare \$56.00 (>14 day advance)

Oklahoma City

At one time, an Amtrak *Thruway* Bus (operated by Jefferson Lines) provided overnight service to Kansas City. This bus met the train at the Oklahoma City station. This service is no longer operated.

Reasonable connections between Kansas City and the *Heartland Flyer* at Oklahoma City can be made with Greyhound's schedule 0487 that leaves Kansas City at 11:10 pm and arrives in Oklahoma City at 5:30 am (6:20 trip time). A return trip departs Oklahoma City at 12:20am, arriving KC at 6:40am (6:20 trip time) on Greyhound schedule 484. The intercity bus station is located about one half mile from the train station and passengers would either need to summon a taxi or walk the distance.

Fort Worth

Greyhound bus lines connect the Fort Worth ITC with Dallas, but the connections are not convenient to the *Heartland Flyer* schedule. The next bus to Dallas following arrival of the *Flyer* is at 2:00 PM almost an hour and a half after the train's arrival. The last bus leaving Dallas in time to make the northbound *Flyer* departs Dallas at 1:55 PM, arriving Fort Worth at 2:35 PM, 2 hours and 50 minutes before scheduled departure. These schedules preclude a day trip to Dallas.



Other intercity bus connections toward Amarillo, Lubbock, El Paso, and Del Rio can be made at Fort Worth with varying degrees of convenience.

No intercity bus service is purposely coordinated with the *Heartland Flyer*.

12.4 Planned Intermodal Improvements

Opportunities exist to enhance the multi-modal role of the *Heartland Flyer* with agencies at both the Oklahoma City and Fort Worth terminals. Discussion with rural transit districts to coordinate at intermediate stops in Oklahoma may also be worthwhile. Ridership improvements could be anticipated if intermodal connections were improved and publicized. Most of these connections would require extraordinary cooperation between companies or agencies with diverse goals and objectives.

Fort Worth already has its Intermodal Transportation Center (ITC) where rail passenger, commuter rail, local transit, and intercity bus services come together, although the services are not coordinated.

In Oklahoma City, recent emphasis on integrating various modes of public transportation into the city's overall transportation matrix has led to several studies and initiatives. The Association of Central Oklahoma Governments just completed the "Intermodal Transportation Hub Master Plan" which focuses on expansion and development of the existing Santa Fe Depot, and the Central Oklahoma Transit and Parking Authority is about to begin "The Greater Downtown Circulator AA" which is the first step towards implementing enhanced commuter transportation options such as light rail. The City of Oklahoma City is also in the process of building a "modern streetcar" line which will serve the central business district (CBD). All of these efforts work in conjunction to point towards a greatly enhanced transportation network in the coming years

Locating the previously mentioned intermodal hub in Oklahoma City will lead to improved market reach as the hub study lays the groundwork for merging pedestrian/bicycle/ bus/ light rail, and heavy rail at the preferred location of the Santa Fe train station. The Santa Fe station is the home of the *Heartland Flyer*. The hub plan includes the capacity necessary for expansion of the *Heartland Flyer*, introduction of rail service between Oklahoma City and Tulsa, and space for the introduction of commuter rail lines serving central Oklahoma. Expanded taxi service and parking will also be located at the planned hub to assure this location is capable of meeting transportation needs for decades to come.

Tulsa, Oklahoma is experiencing a similar effort to prepare the way for expanded public transportation needs. Studies carried out by the City of Tulsa and the Indian Nations Council of



governments (INCOG) are preparing the way for introduction of an enhanced transportation network

All of the plans discussed may be viewed in their entirety on the internet:

- Overall fixed-guideway transit improvements for Oklahoma City by the Central Oklahoma Transit and Parking Authority (COTPA). This 2005 plan includes the modern streetcar downtown circulator, bus rapid transit and commuter rail:
www.gometro.org/fgp
- Since the 2005 Fixed Guideway Study (note above), further work has been conducted on the modern streetcar downtown circulator. The most recent information on the ongoing planning process can be found at: *www.letstalktransit.com*
- In coordination with the COTPA studies on fixed guideway transit in the Oklahoma City region, the Association of Central Oklahoma Governments (ACOG) recently published a comprehensive study for creating an intermodal hub to connect the wide variety of planned transportation options. in Oklahoma City. This report can be downloaded from: *www.acogok.org/Newsroom/Downloads11/hubreport.pdf*
- In the Tulsa region, the City of Tulsa and the Indian Nations Council of Governments released its comprehensive transit development plan in October 2011. Entitled FastForward, the final report can be obtained at *www.fastforwardplan.org/FinalPlan.aspx*

12.5 High-speed Intercity Passenger Rail

The Oklahoma Department of Transportation began studying the issue of high speed rail in 1999, and it subsequently issued studies on this topic—the 2001 High Speed Passenger Rail Feasibility Study” and the 2002 “Oklahoma High Speed Rail Initiative.” Oklahoma was also instrumental in obtaining a high speed rail route designation for the region which led to the founding of the South Central Corridor designation by the Federal Railroad Administration in 2000. This route includes portions of Oklahoma and Texas, and it is one of only 11 official “high speed rail corridors” in the United States.

With the launch of the Federal Railroad Administration’s “High Speed Intercity Passenger Rail Program” (HSIPR) in 2009, ODOT renewed its efforts to examine the expansion of passenger rail in the state. It submitted a series of funding applications for every one of the HSIPR Program’s funding notices beginning in 2009, including an initial application that sought to fund a new passenger rail line between Oklahoma City and Tulsa.



Through the HSIPR Program, ODOT has individually secured three separate grants to aid Oklahoma's passenger rail efforts. Grants were awarded to: 1) help the State complete its long-term rail plan; 2) complete the Service Development Plan and the Environmental Impact Statement for the rail corridor from Oklahoma City to Tulsa; and 3) fund infrastructure improvements at the Santa Fe Station for safer and more efficient operation of the Heartland Flyer.

Regionally since 2009, ODOT, TxDOT, and KDOT have been working together on HSIPR efforts related to the expansion of passenger rail service. ODOT and KDOT mutually funded and completed the "Passenger Rail Service Development Plan" in 2011 that looks at options for adding passenger rail lines between Kansas and Oklahoma. This document may be viewed on the internet at the following location: http://www.ksdot.org/PDF_Files/PDF-Passenger-Rail-SDP.pdf. TxDOT, with input from KDOT and ODOT, is about to begin a similar study for the corridor from Oklahoma City to South Texas. This study will also perform an environmental analysis of the corridor. While HSIPR has served as a vital tool to boost the State's passenger rail efforts, other federal programs have led to beneficial rail projects as well for both existing and proposed services.

In 2010, ODOT was awarded a TIGER grant for construction of the I-244 Multimodal Bridge in Tulsa, Oklahoma which has been designed to carry both intercity passenger rail and commuter rail on the lower deck of this state-of-the-art transportation facility. This project was one of the first granted in round one of USDOT'S innovative "Transportation Infrastructure Generating Economic Recovery" grant program. This project is a keystone to any new passenger rail service connecting Oklahoma's two largest population centers.

In fall of 2011, ODOT received a "Rail-Highway Crossing Hazard Elimination Grant" to upgrade three at-grade rail crossings in Ardmore, Oklahoma to improve safety and operations for the existing *Heartland Flyer* passenger rail service.

In terms of additional intercity and high speed passenger rail planning efforts, the Oklahoma City Intermodal Hub discussed earlier in this section included significant research to assure that the hub was capable of supporting added passenger rail capacity should any of the projects being examined by ODOT, KDOT and TxDOT move forward into construction. Additionally, ODOT and the Oklahoma Turnpike Authority have been examining upcoming large-scale highway projects to assure they include necessary right of way to allow for the inclusion of passenger rail structures should they be needed in the future.



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13. Safety and Security

Oklahoma's Railroad network is composed of multiple carriers that make up not only intrastate track systems, but connect across our state borders into national rail networks, and ultimately across international borders to Canada and Mexico. As such, Oklahoma's rail system is protected and monitored by both state and national entities. The events of September 11, 2001 led to a wave of security measures aimed at protecting America's transportation systems, including both freight and passenger rail, and a recent rail tragedy led to the 2008 Rail Safety Improvement Act which greatly enhanced all of the regulations and requirements aimed at assuring the country's trains run on safe infrastructure.

13.1 Security

Federal Security

As with all states, Oklahoma is covered by the federal Department of Homeland Security (DHS). DHS is administered locally by the Oklahoma Department of Homeland Security (ODHS). ODHS was established by state legislation in 2004 (HB2280). While this Department oversees coordination and communication, its "on the ground" enforcement is conducted through the Transportation Security Administration (TSA) which operates locally through a central office in Oklahoma City. TSA is charged with the safety of our country's freight rail system, including the administration of the *Freight Rail Security Grant Program*. This grant program offers funding to railroads for both enroute monitoring projects as well as bridge hardening projects for high volume rail bridges.

Within the TSA, the Transportation Sector Network Management's (TSNM) Freight Rail Security Division leads the unified national effort to protect and secure the nation's freight rail system. Efforts are divided into developing practices, protocols, and conducting enforcement to protect freight system infrastructure, monitor access to the infrastructure, and guard potentially hazardous material en-route from trip origination to trip termination.

(http://www.tsa.gov/what_we_do/tsnm/freight_rail/index.shtm)

State Security

Oklahoma Emergency Management and all local 911 dispatch centers coordinate regularly with police and fire departments to assure incoming calls effecting railroads are handled appropriately. Many local police and fire departments conduct annual exercises, both tabletop



and field-based, to identify best practices for handling of railroad accidents or threats. The BNSF and Union Pacific, Oklahoma's largest railroads, conducted field exercises in 2011 that focused on handling of hazardous materials accidents.

Other Security

All Class I railroads (BNSF, UPRR, KCS) maintain police units within Oklahoma, and these units include K9 deployments. These units not only offer protection, they also devote their time to extensive public outreach, education, training and accident investigation. They interface with local law enforcement and respond to rail-involved accidents. All these organizations maintain Special Response Units trained to deal with hazardous spills and catastrophic incidents. Through tabletop exercises and live field events, the Class I railroads interact with in-state law enforcement to assure coordination and communication remain open.

Oklahoma's Class III railroads fall under the jurisdiction of the Federal Railroad Administration (FRA), and as such they are held to the same national standards as the Class I railroads. While these railroads do not maintain static police elements, they all participate in annual training and work hand in hand with the FRA and the local police to remain vigilant to trespassing, enforce infrastructure and employee standards and reporting, and participate in annual inspection programs aimed at both rail crossings and rail infrastructure. As summed up by one of Oklahoma's short lines, Farmrail's motto is "Working Safely May Get Old, But So Do Those Who Practice It."

13.2 Safety

Federal Safety

The Federal Railroad Administration is charged with the overall safety of our nation's rail network, and it conducts on-the-ground inspection and enforcement activities throughout the United States, including Oklahoma (FRA Division 6). With the Rail Safety Improvement Act of 2008, the FRA was charged with a redoubling of its mission of promoting safety on America's rail infrastructure.

The Act was a comprehensive effort to address all the areas that effect rail safety by introducing requirements effecting rail workers, rail infrastructure, rail crossings, rail research and technology. While it was mostly noted for its requirement concerning the implementation of Positive Train Control (PTC), the Act has proven to be very far-reaching and ODOT Rail Programs Division has noted a tremendous increase in field inspections being conducted by the



FRA across Oklahoma. Additionally, our state's Class III railroads have noted it has led directly to increased employee safety requirements.

State Safety

Oklahoma contains some 3,852 public at-grade railroad crossings, making up one of the state's most important matters concerning rail safety. By State Statute, the Oklahoma Corporation Commission (OCC) is charged with overseeing this network. OCC's Railroad Department monitors the operations of 21 Oklahoma railroads for compliance with state railroad crossing safety regulations. It also investigates and makes recommendations concerning railroad crossing openings, closings, and crossing signal upgrades.

In addition to this main function, OCC's Rail Division also handles crossing violations (such as blockages) and the state's rail fencing ordinance which requires railroads to maintain fencing under certain conditions to assure the safety of adjoining land owners. It also oversaw development of the Oklahoma Railroad Grade Crossing Task Force Final Report in 1998 which led to codified recommendations for improving Oklahoma's highway-rail crossing safety as well as guidelines for opening or closing crossings. ODOT's Rail Programs Division has addressed many of the recommendations made through the Final Report.

In conjunction with oversight by the OCC, ODOT Rail Programs Division administers a comprehensive Rail Crossing Safety Program. It conducts annual ranking and field inspections to ascertain which railroad crossings are most in need of upgrading, and it then works with all of Oklahoma's railroads to enact an annual Crossing Upgrade Project List. As part of this program, ODOT built and maintains a comprehensive crossing database which is updated monthly to assure that all the characteristics of Oklahoma's railroad crossings are available at all times.

The State of Oklahoma owns 428 miles of railroad line, the vast majority of which is currently in operation through various agreements with second-party operators. However, the State of Oklahoma conducts an annual inspection of its rail property through the Rail Programs Division (RPD) within the Oklahoma Department of Transportation. The State-Owned Property Section of RPD also administers an annual maintenance program to assure continuous safe operation of its rail inventory. This same Section coordinates the "8-Year State-Owned Rail Construction and Maintenance Work Plan" which funds basic maintenance and repairs on the state-owned rail system to assure the track is kept in operating condition.



Earthquake Safety

Railroads in Oklahoma follow established Earthquake Safety Procedures to assure immediate assessment and response to any earthquake reported out of the U.S. Geological Survey in Golden, Colorado. Depending on the nature of the earthquake, trains may be ordered into immediate shutdown until assessment determines the extent of the damage caused. Quakes rated 5.5 or higher cause immediate shutdown of train operations, while quakes 5.4 or lower cause slow orders to be issued. Following any reported earthquake, qualified safety inspectors are required to travel the rail infrastructure to identify any possible safety concerns with the track or bridge structures.

13.3 ODOT Rail Safety Program

The Rail Programs Division Safety Section works with all railroads active in Oklahoma, the Oklahoma Corporation Commission, as well as the counties and communities in which the railroads are found to actively pursue actions that lead to direct improvements for Oklahoma's citizens, as well as employees of the railroads themselves.

The ODOT Rail Safety Program is comprised of three primary focuses: single high-priority rail crossing locations, statewide minimum rail safety standards projects, and rail corridor safety improvements. These programs aim to either improve on-the-ground safety conditions or close and eliminate highly active railroad crossings that rise to the top of our annual ranking and inspection reports. Through a combination of annual OK.RAIL crossing database reporting results and the field-based Diagnostic Team Inspections, ODOT Rail Programs Safety Section can identify the crossings most in need of attention.

Funding

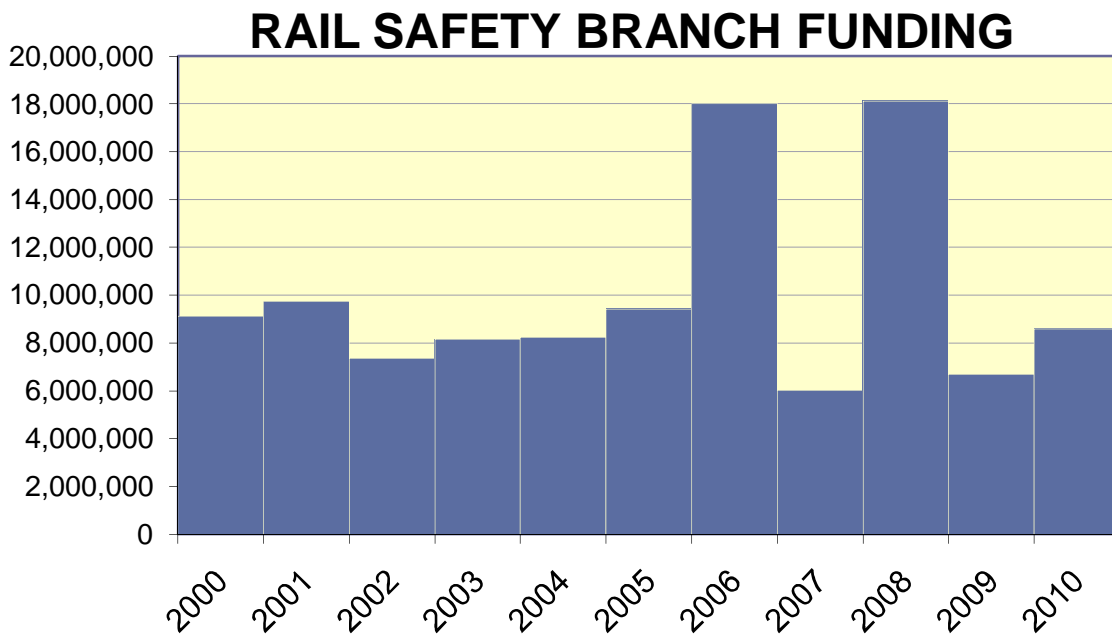
As previously stated, an average of 25 projects per year are instigated for rail crossing safety improvements. The single most important factor in determining how many projects can be carried forward is the size of the annual budget for such projects. The funding for all of the rail safety improvement projects come from a combination of *Section 130 (railroad safety improvement funds)* funding set aside through the highway funding bill current at the time of the project implementation, *Hazard Elimination Safety (HES)* funding sources provided through the same segment of highway safety funding, and 10% project match requirements that fall on either the railroads or the political entities geographically bound to the crossing.

Oklahoma receives an average of \$3.2 Million per year in Section 130 railroad safety funding that is solely applied to the upgrade or consolidation of at-grade railroad crossing locations



each federal fiscal year. In some years additional funding is made available through the Hazard Elimination Safety (HES) funding sources provided through the same segment of highway safety funding. It should be noted however, that HES funds are only utilized on railroad safety improvements when no other roadway HES improvement projects require its full funding during that fiscal year. HES averages \$5 million per year for rail crossing safety projects. The only other source for railroad crossing safety improvement funding comes from the community or railroad through the 10% funding match participation required for the various project types described below. Occasionally, to comply with new safety standards additional funding is arranged to assure Oklahoma remains as a leader in railroad safety compliance.

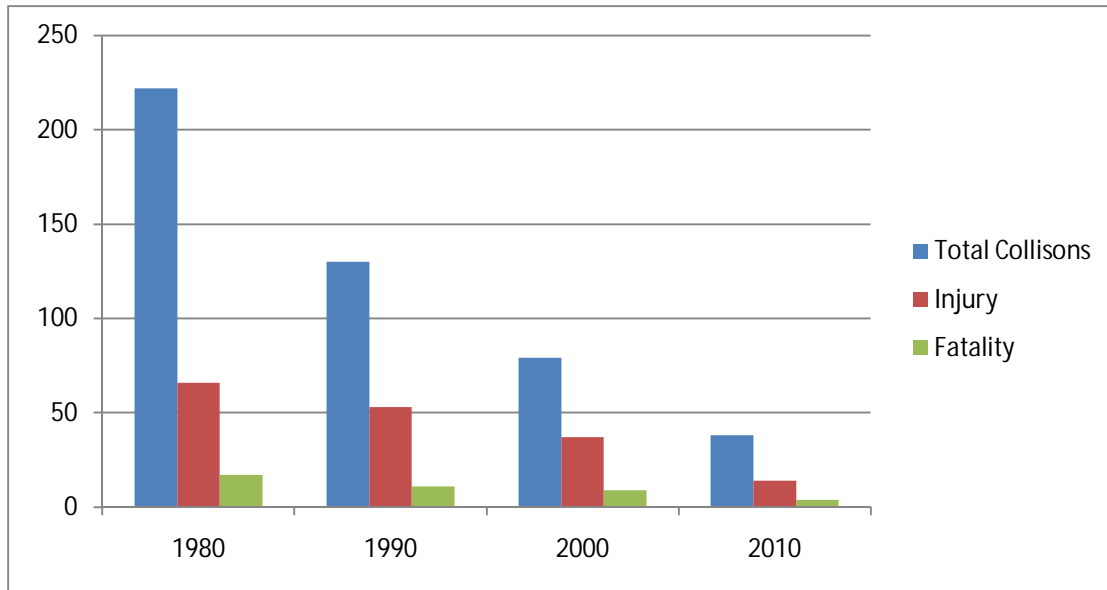
Figure 13-1: Rail Safety Section Funding



As shown by the overview below, all of Oklahoma’s safety activities have significantly improved Oklahoma’s overall rail safety record in regards to publicly-involved crashes.



Figure 13-2: Public-involved Crashes



Diagnostic Team Inspection (DTI)

The Rail Safety Section will utilize the results of the annual rail crossing ranking analysis to identify the crossings most in need of safety improvements. They will then make arrangements with both the railroads operating the crossings as well as the political entities within whose boundaries the crossings are located, to set up “Diagnostic Team Inspections” which are on-the-ground field inspections aimed to further identify the crossings most in need of improvement. Annually, the Rail Programs Safety Section will conduct an average of 50 DTIs. Of those 50, approximately 25 of those inspections will result in projects.

Single Priority Location Safety Improvements

The single location safety improvements are selected utilizing the methods previously described in conjunction with Section 130 requirements and the FRA Accident Prediction Equation. This combination provides the incredibly detailed information necessary to prioritize locations with the highest potential for hazard, and it gives Oklahoma one of the nation’s most sophisticated models for conducting rail crossing hazard analysis calculations. These projects are paid with 90% funding from ODOT and 10% funding from the local community or political entity tied geographically to the crossing. The railroad will occasionally offer to pay the 10% match for the community.



Statewide Minimum Requirements Program

This program is focused on providing the minimum safety requirements at at-grade crossing locations as established nationally and accounted for in the Manual on Uniform Traffic Control Devices. The types of improvements included in this program are crossbuck signs, advanced warning signs, AARDOT inventory number postings, supplemental advanced warning signs where applicable and advanced warning pavement markings at locations where the surface will facilitate the life cycle of the pavement marking proposed for placement. ODOT has previously completed several crossbuck upgrade projects on rail lines throughout the State and completed an Advanced Warning Sign and Pavement Marking program in the late 1980s for each local jurisdiction throughout the State who would sign a corresponding maintenance agreement.

The most recent compliance program under Statewide Minimum Requirements involves the installation of YIELD or STOP signs at all passive railroad crossings where crossbucks are present. FHWA established a 10-year compliance period (until December 31, 2019) in the 2009 MUTCD for the installation of Crossbuck Assemblies at passive grade crossings. ODOT is currently working on the installations for this compliance. They have established a 50/50 funding split with the railroads.

Corridor Safety Improvements

When a community holds a section of track with multiple crossing locations, it becomes eligible to participate in a "Corridor Rail Crossing Improvement Project." This project aims to eliminate hazardous and redundant railroad crossings by targeting closures as well as improvements. If a community holds 4 rail crossings, and it is willing to allow for at least 1 of these crossings to be permanently closed, it will not be responsible for any project costs. This can also be done on a 6+2 equation, where 6 crossings are improved and 2 crossings are closed. ODOT pays 90%, while the railroad pays the remaining 10%. These projects result in the greatest potential rail safety improvements.

Corridor History:

- Corridor projects: 42
- Closures: 52
- Pending Corridor projects: 1 with 1 closure

2000-2011: A Decade of Success

Over the past decade, approximately 175 safety projects utilizing approximately \$52,500,000 has been completed. These projects are comprised of surface improvements, signal



improvements, signage/ marking improvements, and closures. As discussed previously, the projects may take place as single-location projects or as corridor projects.

For the current year, FY2011, ODOT Rail Programs Division Safety Section has 25 commissioned projects and 8 projects pending. Within the 8 pending, 1 is a major corridor project, 3 are signal upgrades, and one is a closure (Duncan). For the next fiscal year, FY2012, we currently have 25 additional scheduled DTIs to complete.

13.4 Other Safety and Security

Heartland Flyer Passenger Rail Corridor

With the recent award of an FY2011 High-Speed Rail Highway Crossing Hazard Elimination Grant, ODOT has nearly completed a 100% active crossing protection program for the corridor from Oklahoma City to the OK-TX state line along the route traveled by the *Heartland Flyer*. This line is also a segment of the nationally-designated South Central High-Speed Rail Corridor. Currently, only 3 unprotected crossings remain.

Positive Train Control (PTC)

Recent federal legislation (PRIIA 2008) mandates all railroads implement PTC on rail operations deemed as critical safety corridors. All lines with passenger rail operations are so designated. Regarding PTC, Oklahoma's only passenger rail service, known as the *Heartland Flyer*, runs on a BNSF corridor that has already been outfitted with a PTC system. BNSF has already conducted extensive testing of the system, and the *Heartland Flyer* route is at the forefront of this new federal requirement.

Additional Public and Private Entities

As with the Class I railroads, Amtrak maintains its own police units which the State of Oklahoma participates in supporting annually by way of the *Heartland Flyer* Annual Operating Agreement. Amtrak, in conjunction with the TSA, has developed a nationwide network of agents and officials charged with assuring that Amtrak's passenger rail operations offer safe travel to its customers. It focuses on the luggage and people who travel with them as well as the railroad equipment. Amtrak maintains all FRA standards as well as enforcing its own policies and programs geared to assure safe passage on their routes.



Operation Lifesaver

Oklahoma Operation Lifesaver (OKOL) is a nonprofit, public safety education program committed to preventing and reducing collisions, death, and injuries at highway-rail grade crossings and on railroad rights-of-way. It has a wide variety of partners, including federal, state, and local government agencies, highway safety and transportation organizations, and the nation's railroads. OKOL was established in 1979 and is a member of the national organization, Operation Lifesaver, Inc., which is headquartered in Alexandria, Virginia. Our education efforts include increasing the public's awareness of the dangers at highway-rail grade crossings and railroad rights-of-way through free Operation Lifesaver safety presentations made by trained, certified volunteers. The program strives to improve driver and pedestrian behavior at highway-rail grade crossings by encouraging compliance with traffic laws relating to crossing signs and signals. In conjunction with its education program, OKOL emphasizes the enforcement of existing traffic and trespassing laws, consolidation and closure of redundant highway-rail grade crossings, and engineering improvements, including the installation and upgrading of crossing warning devices and signs.

Additional Needs

One area that has been of concern to the Oklahoma Department of Transportation is the timely reporting of accidents to ODOT'S Rail Programs Division. While we maintain detailed accident records including accident reports and investigations, we have shared a concern with railroad operators of our need to receive immediate notification when incidents or accidents occur that involve injury, death, or catastrophe so that we may fulfill our role as a public information source through the Oklahoma Department of Transportation. The State of New York, for instance, by law requires all railroads to notify the state immediately upon clear indication of a rail-involved accident or incident.

In addition to accident notification, ODOT would benefit from the railroads including them in table-top and field-based training exercises carried out across the state with local jurisdictions. ODOT could coordinate with its field divisions to grow and expand its rail safety education through participation and observation of rail safety training events routinely conducted by operators such as BNSF, UP, and KCS.



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14. ODOT Statewide Freight and Passenger Rail Plan Vision, Goals, and Objectives

ODOT's passenger and freight rail network is an integral component of a broader multi-modal network and an even larger continental and global transportation system. Development of an implementable long-term rail transportation plan involved public and private sector stakeholders representing a variety of interests. They included rail operators, shippers, interest groups, residents, and government planning partners. To ensure that the statewide rail plan is part of the broader transportation planning effort in the State, its development was informed by other existing plans as well as current planning efforts in the State. At the same time, the plan is guided by the federal mandate provided by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), which besides establishing a national rail passenger policy stipulates the requirements of state rail plans.

The vision, goals, and objectives of Oklahoma's rail system have been developed in view of its role in domestic and internal commerce, and in recognition of the important role rail transportation plays in improving the state's economy and environment. With the vision statement as the guiding principle, five goals of the state's rail transportation system have been identified and used to shape the state rail plan, serving as broad statements of purpose for the rail transportation system. Each goal was translated into specific objectives, which serve as targeted, measurable, intended outcomes for rail transportation in the State.

Like many states, Oklahoma faces the challenge of funding an ever-growing need for infrastructure maintenance as well as improvement. Both will result in measurable regional economic and environmental benefits. The challenge, however, is to allocate scarce financial resources to their highest and best use. Taken together, the vision, goals and objectives reflect the desires of rail stakeholders and constituents to preserve and enhance the system, while recognizing the challenges and opportunities that exist in a rapidly changing economy.

14.1 Vision

Through coordinated efforts aimed at developing a dynamic and responsive statewide rail system that provides for the safe, effective and environmentally sound movement of both people and goods, Oklahoma seeks to expand its economy and meet the needs of its future growth while also aligning its rail system with regional and national goals when appropriate.



14.2 Goals and Objectives

- 1) Further develop and expand rail-based economic activity across Oklahoma and the region.

Objectives:

- a) A rail network that enhances Oklahoma's economic competitiveness by maximizing efficiency and geographic reach of the freight rail system.
- b) A clear understanding of the rail industry's role in promoting Oklahoma's economic viability and supporting emerging industries that rely on rail transportation.
- c) Expanded rail capacity to promote and meet projected growth in freight and passenger demand.
- d) A rail capital development program aimed at increasing capacity and connecting businesses to the rail network.

- 2) Maintain and develop a dynamic rail system that provides safe, efficient and reliable movement of people.

Objectives:

- a) A safe and secure rail system that employs advances in rail technology to protect both people and assets.
- b) Rail as part of a multi-modal transportation vision and comprehensive funding strategy throughout Oklahoma.
- c) Creation of a cohesive door-to-door passenger network that grows with Oklahoma.
- d) Re-establishment of passenger rail service where supported by demand.
- e) Expanded metropolitan area transportation options available for residents and visitors.
- f) Continued use of federal policy-compliant project development procedures to advance viable passenger rail concepts.
- g) Integration of Oklahoma's major population centers into the national passenger rail system.



- 3) Maintain and develop a dynamic rail system that provides safe, efficient, and environmentally sound movement of goods.

Objectives:

- a) A safe and secure rail system that employs advances in rail technology to protect both people and assets.
 - b) Compliance with all FRA policies, procedures, and regulations.
 - c) Maintenance of the existing infrastructure to ensure reliable freight service.
 - d) Cost-effective programs to preserve the existing freight rail network and to meet expected future rail network capacity needs, including addressing potential chokepoints in the system.
 - e) Upgrading of rail infrastructure as required to permit universal accommodation of higher capacity rail rolling stock and higher operating densities
 - f) Increased share of Oklahoma freight traffic through improved highway-rail and water-rail intermodal connections as well as improved rail connectivity to Oklahoma's industries.
 - g) Provide the capability to support changes in the supply chain such as the containerization of agriculture crops and the expanded use of rail to transport petroleum products.
-
- 4) Identify, develop, and secure funding that promotes and enhances rail system investment.

Objectives:

- a) Stable and sufficient funding secured for a program of rail investments to support operating, constructing, and maintaining Oklahoma's rail network.
- b) Statutory authority to enable the use of innovative funding sources such as public-private partnerships.
- c) Additional funding for high-priority grade crossing improvements that protects the public and enhances rail service.



- 5) Promote the understanding of both rail service as a cost-effective, safe, secure, environmentally sound, and energy efficient means of improving freight and passenger mobility, as well as its importance to Oklahoma's economy.

Objectives:

- a) Effective safety and security partnerships with passenger and freight railroads.
- b) An open door to ODOT's planning process, and transparency in communicating with and educating the public.
- c) An appreciation of short and longer-term rail-related benefits by elected officials, the business community, and the public.
- d) An expedited decision-making process to advance beneficial rail projects.
- e) An understanding by elected officials, the business community, and the public of where and when passenger rail service is a viable transport alternative.
- f) An awareness of agriculture-related rail issues in Oklahoma by elected officials, the business community, and the public.
- g) Continuing education on the benefits of rail transportation and the opportunities to integrate rail and other modes of transportation



15. Current Rail Development Activities

The state of Oklahoma, through ODOT and agency partners, is supporting several rail development and improvement projects. The projects encompass freight and passenger services both locally and regionally.

Oklahoma Statewide Freight and Passenger Rail Plan

The development of this State Freight and Passenger Rail Plan is an initiative funded through a FY 2010 Federal Railroad Administration (FRA) High-Speed Intercity Passenger rail (HSIPR) state rail planning grant. Because of the federal mandate to develop state rail plan, HSIPR program funds have been made available to the states.

I-244 Multi-modal Bridge in Tulsa, Oklahoma

The Oklahoma Department of Transportation received a TIGER grant to fund this state-of-the-art transportation facility which is a double-deck structure carrying auto and truck traffic on the top deck while intercity passenger rail and commuter rail will be carried on the lower deck. It also has a pedestrian and bike facility connecting downtown Tulsa to its West Bank.

Service Development Plan for Expanded Passenger Rail Service: Fort Worth-Oklahoma City-Kansas City

ODOT is participating in the preparation of a passenger rail service development plan evaluating the investment required to expand passenger rail service in the region. Two alternatives are under consideration: extension of existing *Heartland Flyer* service from Oklahoma City to Newton, Kansas to connect with Amtrak's Los Angeles-Chicago *Southwest Chief* and the introduction of a new train operating between Fort Worth and Kansas City. The latter would provide additional train service between Fort Worth and Oklahoma City. The project is jointly funded by Kansas DOT, ODOT, and the Federal Railroad Administration.

Tulsa-Oklahoma City High-Speed Rail Corridor Investment Plan

With funding received from an FY 2010 FRA HSIPR planning grant, ODOT will be developing a federally mandated High-Speed Rail Corridor Investment Plan for a new service between Tulsa and Oklahoma City. The investment plan will comprise an updated service development plan



and documentation required to comply with National Environmental Policy Act (1970) requirements. At the conclusion of the plan development, the project can enter the design phase.

South Central HSIPR Corridor Study: Oklahoma City to South Texas

An FY 2010 FRA HSIPR planning grant was awarded to Texas DOT to develop a plan for high-speed passenger rail service from the Mexican border to Oklahoma City with the direction to examine initially the Fort Worth-Oklahoma City segment. TxDOT recently issued a request for consulting services.

Oklahoma City Amtrak Station Access Improvement

ODOT is improving access to the Santa Fe Railroad station in downtown Oklahoma City. The project funded through a FY 2010 FRA HSIPR Construction Grant will include the installation of a power switch and new rail line to provide the *Heartland Flyer* in-and-out access to the station.

Great Plains Freight Rail Project

Kansas DOT, on behalf of the South Kansas and Oklahoma Railroad, received a TIGER funding for the construction of a new yard and rail line improvements, which will permit the operation of heavier freight cars at higher speeds. Half of the project is located in Oklahoma.

Oklahoma "Rolling Pipeline" Freight Rail Upgrade Project

Oklahoma DOT received TIGER III funding for the upgrade of the rail line between Clinton and Sayre, Oklahoma to meet the growing needs of western Oklahoma and particularly the energy sector. The improvements will expand the capacity of the line and permit higher operating speeds for trains serving the Anadarko Basin oil fields.



16. Strategic Initiatives

The outreach meetings and individual stakeholder interviews identified strategic initiatives that should be considered by ODOT as it moves forward with its rail programs. These initiatives fell into several categories:

- Communication and Education
- Economic Development
- Funding
- Infrastructure/System Improvements
- Legislative
- Passenger Rail Service
- Safety
- Studies

The following initiatives, drawn from those recommended by stakeholders, are designed to move ODOT from a position of preserving rail service to one of rail industry growth in the state. As with many states, Oklahoma is facing several strategic challenges:

1. The need to support and promote rational growth of the short line industry and passenger rail service in the state
2. The need to find new sources of funds to replace lease revenues lost as rail lines owned by the state revert to the rail operators as part of the lease-purchase program
3. The need to exploit the economic and public benefits of rail transportation
4. The need to inform the public of the benefits of rail transportation

16.1 Communication and Education

Continue Developing Effective Relationships Between ODOT and the Freight Railroads: Maximize the efficiency of the state's rail network and the public and private investments made in that network by continuing to have regular and effective dialogue and communication between ODOT and the railroads through the Oklahoma Railroad Association and other venues. The railroads have requested development of a mutual forum to keep them current on



proposed future highway projects with rail infrastructure impacts. This cooperative effort would enhance planning efforts, and it would lead to more efficient project coordination.

Use the State Rail Plan as a Platform for the Continuation of a Rail Information Program:
As ODOT continues to be active in rail planning and other related programs, the need to educate the public on the benefits of rail transportation will increase. General public education information campaigns should build off the plan.

Better Inform the Public on Rail Policies and Requirements:
The public would benefit from a better understanding of ODOT activities and programs such as the rail line acquisition program and its ongoing passenger rail service development.

Incorporate Passenger Rail Stations into the Oklahoma Official State Travel Map:
Add notations for passenger rail station locations to the state's travel map that is distributed to motorists and other travelers.

Initiate a State Rail Workshop:
Convene a workshop on a recurring basis with relevant State agencies such as the Departments of Transportation, Agriculture, and Commerce along with representatives of the MPOs, the rail industry, and major shippers to discuss current rail issues affecting Oklahoma.

Establish regular rail forums between shippers and railroads:
Improving relationships and communication between railroads and shippers would enhance the economy of the state. Such events would allow participants to better understand opportunities and issues related to existing and emerging markets as well as rail service issues and infrastructure needs faced by both the railroads and the shippers.

Continue Partnering with Adjacent States Regarding Rail Passenger Service:
Continue to meet on a regular basis with Kansas, Texas and Missouri DOTs, a practice started with the preparation of the Fort Worth-Oklahoma City-Kansas City passenger rail service development plan, to create a regional base of support to enhance existing rail passenger services and create a regional passenger rail vision for the future which includes regional extensions of existing rail passenger services.



16.2 Economic Development

Integrate Rail into Oklahoma's Economic Development Process

ODOT should coordinate with the *Governor's Task Force on Economic Development and Job Creation* in regard to implementing the rail related recommendations in that Task Force's report entitled "Bold Ideas for Oklahoma".

Leverage the Railroads Connections with Mexico to Stimulate Business with Mexico:

The North American Free Trade Act (NAFTA) and subsequent related Congressional legislation, has opened up numerous new business opportunities with Mexico. Oklahoma should explore the potential for creating new business alliances with Mexico that would benefit both Oklahoma shippers and producers but also its short Line and Class I railroads.

Promote Rail Served Industries, Industrial Parks, and Transload Facilities at Strategic Locations:

The need to establish more rail served industrial parks was a theme at the Workshop/Open House meetings around the state. They would not only generate new rail business for the short line and Class I railroads but would also generate additional economic development for Oklahoma's economy.

- ODOT and the Department of Commerce should conduct a workshop to on freight rail transportation and invite short line and Class I railroads, regional economic development agencies, Oklahoma Chamber of Commerce
- Should funding be available, the ODOT railroad assistance program should be expanded to include transload and transfer facilities

Integrate Land Use and Transportation Planning:

ODOT should provide leadership in the integration of freight and passenger transportation and land use planning at local, regional, and state levels with both governments and businesses.

Establish a Trackside Land Preservation Education Program:

ODOT and Commerce would work with local economic development agencies to preserve trackside for rail dependent industrial use

Establish "industrial rail access" program:

There is a need for funding for rail spurs and industrial rail leads connecting Oklahoma's industrial properties to the Oklahoma rail network. The state should explore the creation of an industrial rail access program and sources of funding for the program.

Monitor and Promote Opportunities for Development of an Intermodal Terminal in Oklahoma:

Although conditions today are not favorable to the development of an intermodal container



terminal in the state, the future may be different. The recent interest by the railroads in short haul domestic containerization may provide a future opportunity for a new terminal strategically located in Oklahoma

Partner with the Waterways Advisory Board to implement recommendations of "Oklahoma's Intermodal Capacity Study" and to encourage increased transportation of commodities by both rail and water:

Develop strategies with the ODOT's Waterways Advisory Board and the ports at Catoosa and Muskogee to increase transportation of commodities and goods by rail and waterway, to increase access to both waterways and railways, and to take advantage of the efficiencies of these two modes of transportation and relieve Oklahoma's highways of unnecessary heavy truck traffic.

16.3 Funding

Explore and Analyze Innovative Funding and Financing Alternatives, Including Public-Private-Partnerships:

The transfer of state-owned rail properties to rail operators as part of the state's sale-leaseback program will reduce revenues for rail improvements. ODOT will need to assess current approaches to infrastructure funding to compensate for reduced availability of resources.

Continue to Pursue Regional Approaches to Secure Federal Rail Related Funding:

ODOT should explore multi-state regional initiatives for obtaining federal funding for both freight and passenger rail related projects.

Explore Development of Innovative Local Funding Mechanisms Such as the Port Authority Concept:

Oklahoma should explore what is required for the creation of local authorities such as Kansas Port Authorities that can issue bonds for rail development.

Educate Stakeholders on Existing Rail Funding Programs and Processes:

Educate rail stakeholders on the processes for applying for rail related grants/loans, including TIGER, Community Development Block Grants (CDBG) and Section 108 loans.

16.4 Infrastructure and System Improvements

Support Increasing Freight Rail Speeds Where Supported by Business:

Increasing permitted speeds on short lines serves to both increase capacity and reduce operating costs. This should be done where warranted to support traffic growth.



Continue to Support the development of emerging industries to strengthen Oklahoma's economy:

Provide the capacity in the state's rail network to allow for the use of the rail network in the development of emerging industries such as the Bakken Shale and wind energy.

Support the Upgrading Short Line Rail Lines to accommodate 286,000 pound Rail Cars:

As with most states, the short line railroad industry in Oklahoma faces the issue of keeping its infrastructure on par with its larger counterparts, the Class I railroads. Currently, the Class I railroads maintain a minimum standardized railcar weighing 286,000 pounds loaded, commonly known as "286 cars." For railroads with bridges, structures or rail that are not rated for these heavier loads, they are limited to shipping 263,000 pound rail cars or loading 286,000 pound cars 23,000 pounds short of their full capacity. This can place limits on their ability to interchange with Class I railroads, and maximize their business potential. It is important that Oklahoma's short line industry be able to maintain their infrastructure at the heavier 286k classification.

Although the short lines provided ODOT with basic 286k infrastructure data during the development of the Rail Plan, additional analysis is needed in Oklahoma to fully determine the costs and magnitude of the issue the short lines face in bringing all of their lines up to the 286,000 pound standard.

Create a Rail Corridor Preservation Program:

Continue to preserve abandoned rail lines, even in those instances where the tracks have been removed or salvaged for future rail use.

16.5 Legislative

Continue to Promote Legislative Action to enable Public Private Partnership (P3)

Opportunities:

Current state law in Oklahoma does not permit public funding in private corporations or businesses. Legislative changes need to continue to be pursued and implemented to provide other funding alternatives.



16.6 Passenger Rail Service

Continue Supporting Oklahoma City as a Multi-modal Hub:

Facilitate institutional arrangements that would enable Oklahoma City to become a multi-modal passenger rail hub: *Heartland Flyer*, additional proposed intercity rail services, new proposed commuter rail services, proposed high-speed rail, intercity bus service, as well as local transit services serving the Oklahoma City metropolitan area.

Develop Strategies with the Oklahoma City Area MPO to Enhance the Connectivity of Passenger Rail Options:

Strategies should address the development of selected commuter rail lines which would include linking the downtown area to the Will Rogers World Airport.

Evaluate Potential Enhancements to Existing Passenger Rail Services On an Ongoing Basis:

Evaluate the potential for other rail passenger operators other than Amtrak for the *Heartland Flyer* and other new proposed rail passenger services. Also, evaluate potential state ownership of rail passenger equipment.

16.7 Safety

Partner with the Railroads to Enhance Safety:

Specific elements of this effort could include developing plans to contact ODOT in the event of an emergency and conducting EMS field training.

16.8 Studies

Periodically, Perform an Analysis of Oklahoma's Rail Network to Identify Future Connectivity Gaps Based on Changing Freight Patterns:

Periodically re-evaluate the rail freight network in Oklahoma to identify potential gaps in freight service due to issues such as abandonments or lines taken out of service. The analysis should take into consideration emerging freight economic sectors and distribution patterns.

Conduct Grain Supply Chain Study to Determine Future Multi-Modal Needs:

Conduct a study, in cooperation with the Oklahoma Department of Agriculture, to evaluate the future supply chain requirements of the agriculture industry. The study should consider changes in grain distribution, future railroad service practices, freight car supply, storage capacity, and modal connectivity.



Prepare and Disseminate a GIS Based Statewide Rail Database:

Create a publicly accessible GIS and web-based railroad inventory which includes items such as ROW ownership, weight of rail, 286,000 # load capability, etc.

Develop an Unused Rail Siding Inventory:

In conjunction with the Department of Commerce, develop an inventory of all unused rail sidings and industrial leads in the state. This information would be valuable to economic development in identifying sites and locations for potential rail served businesses in the state.



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17 Rail and Rail-Related Infrastructure Improvement Projects

A number of rail infrastructure improvement projects for the State of Oklahoma have been identified through submittals from Class I railroads and short line railroads, as well as by identifying potential passenger rail operations projects including both intercity passenger rail and commuter rail. At present, Oklahoma DOT has inadequate resources to fund all of the major capital improvement projects compiled other than projects that have been designated for inclusion in the state's Eight Year Rail Program, or included as part of the Eight Year Highway Construction Program. The latter includes road projects that have a railroad element. The ODOT programs and railroad wish lists are outlined below.

17.1 The State-Owned Rail Construction and Maintenance Work Plan

The State-Owned Rail Construction and Maintenance Work Plan, which is funded through the Railroad Maintenance Revolving Fund established through the passage of Railroad Rehabilitation Act in 1978. Funding comes from both the Oklahoma Freight Car Tax and from the lease-purchase agreements with rail operators in the state. Annual contributions to the fund approximated \$1.8 million per year, expected now to fall to \$1.2 million per year with the UP acquisition of its lease lines.

Projects are and will continue to be identified from applications submitted through the Railroad Rehabilitation Act Loan Program as well as in the future from this State Rail Plan. Projects are prioritized based on safety considerations and infrastructure deficiencies. Consideration is given to the following in project selection:

- Track condition
- Rail structure condition
- Annual tonnage transported
- Anticipated percentage of truck traffic reduction
- Capacity
- Rail highway safety
- National freight transportation trends



ODOT has employed an objective investment program intended to maximize the benefit from its scarce resources. Last year’s plan included 31 multiple year projects on six short line railroads. The current plan is pending approval by the Oklahoma Transportation Commission.

17.2 ODOT Construction Work Plan (Highway)

Oklahoma has a similar plan for highway construction projects. Some of those projects include a railroad component. They are shown in Table 17-1.

Table 17-1: ODOT Construction Work Plan- Projects with Railroad Improvements

COUNTY	HWY.	DESCRIPTION	PROGRAMMED CONSTRUCTION ESTIMATE
Oklahoma	I-40	I-40 Crosstown: WP 14, pedestrian bridge (superstructure) in the vicinity of Harvey Ave (100% state)	\$3,056,725
Oklahoma	I-40	I-40 Crosstown: WP 34, GR, DR, BR & surface from Agnew west 0.7M	\$21,528,822
Oklahoma	I-40	I-40 Crosstown: Deconstruction of the existing Crosstown bridge	\$9,949,993
Oklahoma	I-40	I-40 Crosstown: WP 35, west connection of new Crosstown with the boulevard	\$12,247,811
Grant	U.S.81	U.S.-81: Over Pole Cat & unnamed creeks approx. 6.0 & 6.7 Miles N. of the Jct of U.S.-81/SH-11	\$6,663,700
Oklahoma	I-40	I-40 Crosstown WP 1.5, BNSF bridge at boulevard	\$6,688,495
Oklahoma	I-40	I-40 Crosstown WP, 4.4, GR, DR, BR & surface from the Oklahoma City Canal east 0.9 MI & shift I-40 traffic to new alignment	\$30,000,000
Oklahoma	I-40	I-40 Crosstown WP 4.5, GR, DR, BR & surface the boulevard from BNSF east to I-40	\$6,116,431
Logan	SH-33	SH-33 Over Cottonwood Creek Noble Street railroad in Guthrie. An additional rail project will be tied to this project	\$13,554,466



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COUNTY	HWY.	DESCRIPTION	PROGRAMMED CONSTRUCTION ESTIMATE
Oklahoma	I-40	I-40 Crosstown UPRR at the Harter Yard	\$1,315,097
Oklahoma	I-40	I-40 Crosstown WP 1.5 RR work for the BNSF bridge at the boulevard	\$1,340,000
Oklahoma	I-40	I-40 Crosstown BNSF Riverside Connection tracks, from I-35 to the new permanent interchange track site. An additional rail project will be tied to this project.	\$8,583,181
Payne	SH 51	SH-51 Over Boomer CR, just west of U.S.-177 in Stillwater City = ROW, UT & PE	\$8,540,000
Kay	U.S. 77	U.S.-77 add shoulder and resurface from Newkirk city limits N. 3.2 Mi. S. of the Kansas Stateline	\$5,907,834
Canadian	I-40B	I-408 Over the UPAC Railroad on the south edge of El Reno.	\$6,500,000
Oklahoma	I-235	I-235 NW 50 th and BNSF bridges and approaches (Segment 4A) (100% M).	\$7,760,267
Oklahoma	I-235	I-235 mainline from NW 36 th street interchange to north of NW 50 th (Segment 7) S-48) (H-88, 69) An additional rail project will be tied to this project.	\$15,450,000
Kay	I-235	I-35 begin at MM220 and extending north to MM224.43 including removal of abandoned RR bridges.	\$20,000,000
Logan	SH 51	SH-51: Over E. Beaver CR 0.3 Miles west of the U.S. 77 Jct. (includes improvements to the SH 51/U.S. 77 JCTS. & BNSF RR overpass).	\$12,000,000
Oklahoma	I235	I-35 over the I-240 Jct. (Phase I) reconstruct interchange. An additional rail project will be tied to this project. BNSF rail bridges over I-240, north of Flynn Yard.	\$14,233,431 (<i>additional railroad bridge costs to be determined</i>)



17.3 Stakeholder Identified Projects

Many projects were identified during the development of the State Rail Plan. They have been categorized by type of railroad: Class I, State-Owned Class III, Privately Owned Class III, and Commuter Rail. The projects are summarized in the following tables.

Table 17-2: Proposed Class I Railroad Improvements

NO.	SPONSORS/ ADVOCATES	RAILROAD(S) Operating and/or Owning Lines	PROJECT NAME/DESCRIPTION	MUNICIPALITIES	COUNTIES	ESTIMATED COST	FUND SOURCE	PROGRAM
1	Union Pacific	Union Pacific	Jacks Siding Extension	Jacks	Kingfisher	\$ 6 M	TBD	TBD
2	Union Pacific	Union Pacific	Tank Farm – New Siding	NA	NA	\$ 8 M	TBD	TBD
3	Union Pacific	Union Pacific	El Reno -Power Switches & S. Leg of Wye	El Reno	Canadian	\$ 12 M	TBD	TBD
4	Union Pacific	Union Pacific	CTC – Enid/Duncan Subs	Medford, Enid, Kingfisher, El Reno, Chickasha, Duncan, Waurika	Grant, Garfield, Kingfisher, Canadian, Grady, Stephens, Jefferson	\$ 40 M	TBD	TBD
5	Union Pacific	Union Pacific	Washita/Chickasha Run Through Terminal	NA	Caddo, Grady	\$ 40 M	TBD	TBD
6	Union Pacific	Union Pacific	CTC – Wagoner Sub	Wagoner	Wagoner	\$ 15 M	TBD	TBD
7	Union Pacific	Union Pacific	Sunray – Siding Extension	Sunray	Stephens	\$ 6 M	TBD	TBD
8	Union Pacific	Union Pacific	Waurika – Siding Extension	Waurika	Jefferson	\$ 6 M	TBD	TBD
9	Union Pacific	Union Pacific	Rush Springs – Siding Extension	Rush Springs	Grady	\$ 6 M	TBD	TBD
10	Union Pacific	Union Pacific	Enid Terminal Improvements	Enid	Garfield	\$ 10 M	TBD	TBD
11	Union Pacific	Union Pacific	Ryan – Siding Extension	Ryan	Jefferson	\$ 6 M	TBD	TBD
12	ODOT	UP/BNSF	Grade Separation of UP and BNSF	Claremore	Rogers	\$ 59 M	TBD	Proposed TIGER Grant
13	ODOT	BNSF	BNSF Bridge at Boulevard – I-40	Oklahoma City	Oklahoma	\$ 6.7 M	ODOT HIGHWAY	Related to I-40 Crosstown Project
14	ODOT	UP	Reconstruct Harter Yard	Oklahoma City	Oklahoma	\$ 1.3 M	ODOT HIGHWAY	Related to I-40 Crosstown Project
15	ODOT	UP	Relocate UP Wye Track	Oklahoma City	Oklahoma	\$ 5.4 M	ODOT HIGHWAY	Related to I-40 Crosstown Project
16	ODOT	BNSF	BNSF Bridge at Boulevard	Oklahoma City	Oklahoma	\$ 1.3 M	ODOT HIGHWAY	Related to I-40 Crosstown Project
17	ODOT	BNSF	BNSF riverside Connecting Track to New Permanent Interchange Site	Oklahoma City	Oklahoma	Cost Unknown	ODOT HIGHWAY	Related to I-40 Crosstown Project



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NO.	SPONSORS/ ADVOCATES	RAILROAD(S) Operating and/or Owning Lines	PROJECT NAME/DESCRIPTION	MUNICIPALITIES	COUNTIES	ESTIMATED COST	FUND SOURCE	PROGRAM
18	ODOT	BNSF	Bridge / SH 33 / Over Cottonwood Creek	Guthrie	Logan	\$13.6 M	ODOT HIGHWAY	TBD
19	ODOT	BNSF	I-235 / BNSF Bridges and NW 50th	Oklahoma City	Oklahoma	Cost Unknown	ODOT HIGHWAY	TBD
20	ODOT	BNSF	BNSF Rail Bridges over I-240 north of Flynn Yard	Oklahoma City	Oklahoma	Cost Unknown	ODOT HIGHWAY	TBD
21	City of Perry	BNSF	Grade Separation	Perry	Noble	Cost Unknown	TBD	TBD



Table 17-3: Proposed Class III Railroad Improvements – State-owned Lines

No.	Sponsors / Advocates	Railroad(s) Operating and /or Owning Lines	Project Name / Description	Municipalities	Counties	Estimated Cost	Fund Source	Program
1	AT&L Railroad	AT&L Railroad	Tie project	Unknown	Blaine Canadian	\$268 K	TBD	TBD
2	AT&L Railroad	AT&L Railroad	Tie projects	Unknown	Blaine Canadian	\$270 K - \$300 K	TBD	TBD
3	Blackwell Northern Gateway Railroad	Blackwell Northern Gateway Railroad	Grain Shuttle Facility Site	Braman or Blackwell	Kay	\$750 K	TBD	TBD
4	Blackwell Northern Gateway Railroad	Blackwell Northern Gateway Railroad	Grain Shuttle Mainline Improvement	Braman or Blackwell	Kay	\$1 M	TBD	TBD
5	Blackwell Northern Gateway Railroad	Blackwell Northern Gateway Railroad	Fertilizer Distribution Site	Braman or Blackwell	Kay	\$250 K	TBD	TBD
6	Stillwater Central Railroad	Stillwater Central Railroad	Spot Ties for gage and curves, 20 miles	Sapulpa Chandler Oklahoma City El Reno Chickasha Anadarko Lawton Hobart	Creek Lincoln Oklahoma Canadian Grady Caddo Comanche Kiowa	\$671 K	TBD	TBD
7	Stillwater Central Railroad	Stillwater Central Railroad	Resurface/ Ballast, 20 miles	Sapulpa Chandler Oklahoma City El Reno Chickasha Anadarko Lawton Hobart	Creek Lincoln Oklahoma Canadian Grady Caddo Comanche Kiowa	\$207 K	TBD	TBD



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No.	Sponsors / Advocates	Railroad(s) Operating and /or Owning Lines	Project Name / Description	Municipalities	Counties	Estimated Cost	Fund Source	Program
8	Stillwater Central Railroad	Stillwater Central Railroad	Ballast, 600 Tons for 20 Miles	Sapulpa Chandler Oklahoma City El Reno Chickasha Anadarko Lawton Hobart	Creek Lincoln Oklahoma Canadian Grady Caddo Comanche Kiowa	\$218 K	TBD	TBD
9	Stillwater Central Railroad	Stillwater Central Railroad	Cross Ties and Resurface 100 Miles	Sapulpa Chandler Oklahoma City El Reno Chickasha Anadarko Lawton Hobart	Creek Lincoln Oklahoma Canadian Grady Caddo Comanche Kiowa	\$588 K	TBD	TBD
10	Stillwater Central Railroad	Stillwater Central Railroad	Cross Ties/ Surface/ Ballast for 38 Miles	NA	NA	\$517 K	TBD	TBD
11	Farmrail	Farmrail	Sayre Yard Rehabilitation	Sayre	Beckham	\$175 K	TBD	TBD
12	Farmrail	Farmrail	Weatherford Yard Track	Arapaho	Custer	\$150 K	TBD	TBD
13	Blackwell	Blackwell Northern Gateway Railroad	Kay County, OK	RAIL Improvements to 36 miles of Blackwell Northern Gateway Railroad Wellington, KS to Blackwell, OK. (17 miles in OK)	NA	\$25,000,000	TBD	TBD



Table 17-4: Proposed Class III Railroad Improvements – Private-Owned Lines

No.	Sponsors / Advocates	Railroad(s) Operating and /or Owning Lines	Project Name / Description	Municipalities	Counties	Estimated Cost	Fund Source	Program
1	Kiamichi Railroad	Kiamichi Railroad	Sub Improvement	Ashdown/Lakeside	Arkansas	\$11 M	TBD	TBD
2	Kiamichi Railroad	Kiamichi Railroad	Sub Rail Replacement	Antlers	Pushmataha	\$2 M	TBD	TBD
3	Kiamichi Railroad	Kiamichi Railroad	System 75# Replace Rail	Unknown	NA	\$1 M	TBD	TBD
4	South Kansas & Oklahoma Railroad	South Kansas & Oklahoma Railroad	Replace Cross Ties, Switch Ties, Surface New Ballast	NA	NA	\$1.2 M	TBD	TBD
5	South Kansas & Oklahoma Railroad	South Kansas & Oklahoma Railroad	Replace Cross Ties and Surface	NA	NA	\$400 K	TBD	TBD
6	South Kansas & Oklahoma Railroad	South Kansas & Oklahoma Railroad	7,000 Ballast, Cross Ties and Surface	NA	NA	\$1.3 M	TBD	TBD
7	Texas, Oklahoma & Eastern Railroad	Texas, Oklahoma & Eastern Railroad	Track Maintenance and Bridges	Idabel	McCurtain	\$1.5 M	TBD	TBD
8	Texas, Oklahoma & Eastern Railroad	Texas, Oklahoma & Eastern Railroad	Grade Separation U.S.-70	Valliant	McCurtain	TBD	FHWA	TIGER
9	Tulsa Sapulpa Union	Tulsa-Sapulpa Union	5 Bridges – Stringer, cap and tie	Sapulpa Tulsa	Creek Tulsa	TBD	TBD	TBD
10	Grainbelt	Grainbelt	Relay New Rail (2,500m ft)	Enid Fairview Watonga Taloga Arapaho Cordell Hobart Frederick	Garfield Major Blaine Dewey Custer Washita Kiowa Tillman	\$110 K	TBD	TBD
11	ODOT	TOE	Grade Separation	Valliant, OK		TBD	TBD	TBD
12	Grainbelt	Grainbelt	Tie Replacement (6,000)	Enid Fairview Watonga Taloga Arapaho Cordell Hobart Frederick	Garfield Major Blaine Dewey Custer Washita Kiowa Tillman	\$375 K	TBD	TBD



Oklahoma Statewide Freight and Passenger Rail Plan

No.	Sponsors / Advocates	Railroad(s) Operating and /or Owning Lines	Project Name / Description	Municipalities	Counties	Estimated Cost	Fund Source	Program
13	Oklahoma DOT, Arkansas and Texas DOT's		Kiamichi Railroad	Bryan, Choctaw, McCurtain, Pushmataha Counties in Oklahoma;	Upgrade siding tracks, industrial leads, grade crossings.	\$28,300,000	TBD	TBD
14	Wichita, Tillman & Jackson Railway	Wichita, Tillman & Jackson Railway	Reconstruct Bridge (52.4)	NA	NA	\$320 K	TBD	TBD
15	Wichita, Tillman & Jackson Railway	Wichita, Tillman & Jackson Railway	Reconstruct Bridge (76.1)	NA	NA	\$100 K	TBD	TBD
16	Wichita, Tillman & Jackson Railway	Wichita, Tillman & Jackson Railway	Replace 61.06n miles 85 & 90# rail with 115# rail	NA	NA	\$20 M	TBD	TBD



Table 17-5: Proposed Commuter and Passenger Rail Improvements

NO	SPONSORS/ ADVOCATES	RAILROAD(S) OPERATING AND/OR OWNING LINES	PROJECT NAME DESCRIPTION	MUNICIPALITIES	COUNTIES	ESTIMAT ED COST	FUND SOURCE	PROGRAM
1	Commuter Rail	Commuter Rail	20 Mile North to Edmond	Oklahoma City – Edmond	Oklahoma, Logan	Cost Unknown	TBD	Add BNSF mainline track, Station facilities at Edmond Xing improvements
2	Commuter Rail	Commuter Rail	20 Mile South to Norman	Oklahoma City - Norman	Oklahoma, Cleveland	Cost Unknown	TBD	Add BNSF mainline track, Possible station upgrades, Review possible Xing improvements
3	Commuter Rail	Commuter Rail	30 Mile West to El Reno	Oklahoma City – El Reno	Oklahoma, Canadian	Cost Unknown	TBD	Add UP mainline track, Station facilities in El Reno & Yukon, Xing improvements, Possible Park & Ride in W. Oklahoma City
4	Commuter Rail	Commuter Rail	30 Mile East to Shawnee	Oklahoma City - Shawnee	Oklahoma, Pottawatomie	Cost Unknown	TBD	Add mainline track or rehab existing track, Station facilities in Shawnee, Other possible station facilities in McLeod, Harrah, Choctaw & Spencer, Xing improvements, Possible 2nd bridge over Oklahoma River
5	Commuter Rail	Commuter Rail	5 Mile East to Midwest City	Oklahoma City – Midwest City	Oklahoma	Cost Unknown	TBD	Track rehabilitation, Station facilities in Midwest City & Del City, Xing improvements,
6	Intercity Passenger Rail	Intercity Passenger Rail	Oklahoma City to Tulsa – 110 Miles	Oklahoma City - Tulsa	Oklahoma, Lincoln, Creek, Tulsa	Cost Unknown	TBD	OKC Station/Platform improvements, Construct wye connection from elevated BNSF tracks to UP tracks in former CHI&P freight yard, Rehab track from BNSF connection to NE 50th St., Address Xing & grade separation improvements, Construct new trackage NE50th to Sapulpa, New Park & Rides near Arcadia and Sapulpa, New Mainline track from Tulsa to Sapulpa, Station Facilities in Tulsa. New trackage around Cherokee yard.
7	ODOT/KDOT	Intercity Passenger	Extend Heartland Flyer to Newton	Oklahoma City-Kansas	NA	\$136.5 M	OK,TX and KS with FRA	Provide new passenger service to North Central Oklahoma and to Wichita. Connections at Newton KS to Southwest Chief
8	ODOT/KDOT	Intercity Passenger	New Daytime Service KC-OKC-FW	North-South Corridor	NA	\$436.2M	OK,TX, and KS with FRA	Provide new daytime passenger service between Kansas City, Wichita, Oklahoma City and Fort Worth



Oklahoma Statewide Freight and Passenger Rail Plan

NO	SPONSORS/ ADVOCATES	RAILROAD(S) OPERATING AND/OR OWNING LINES	PROJECT NAME DESCRIPTION	MUNICIPALITIES	COUNTIES	ESTIMAT ED COST	FUND SOURCE	PROGRAM
9	ODOT	Intercity Passenger	New Passenger Rail Equipment	State-Wide	NA	TBD	TBD	Possible use of CNG
10	City of Tulsa	BNSF	Downtown Tulsa Sealed Corridor Extension (UP Railroad)	Tulsa	Tulsa	\$400K	TBD	
11	Oklahoma City	BNSF	Multi-modal HUB	Oklahoma City	Oklahoma	\$26M	TBD	Related to Commuter Rail and Intercity Passenger Rail



Table 17-6: Proposed Industrial Improvements

No.	Sponsors / Advocates	Railroad(s) Operating and /or Owning Lines	Project Name / Description	Municipalities	Counties	Estimated Cost	Fund Source	Program
1	Port of Catoosa	Port of Catoosa	Pre-construction initial line Logistics Center	Claremore	Rogers	\$2.67 M FRA Capital Grant Appl.	TBD	TBD
2	Port of Muskogee	Port of Muskogee	Build wye to add north access	Muskogee	Muskogee	\$1 M	TBD	TBD
3	Port of Muskogee	Port of Muskogee	Connection between UP & BNSF	Muskogee	Muskogee	\$4 to 5 M	TBD	TBD
4	Port of Muskogee	Port of Muskogee	Longer 3 rd Track Expand yard	Muskogee	Muskogee	NA	TBD	TBD
5	City of Shawnee	Union Pacific (out of service)	Restore Rail Shawnee to McAlester	NA	Railroad in Pottawatomie, Seminole, Hughes, and Pittsburg Counties	\$36.5M	FRA	TIGER

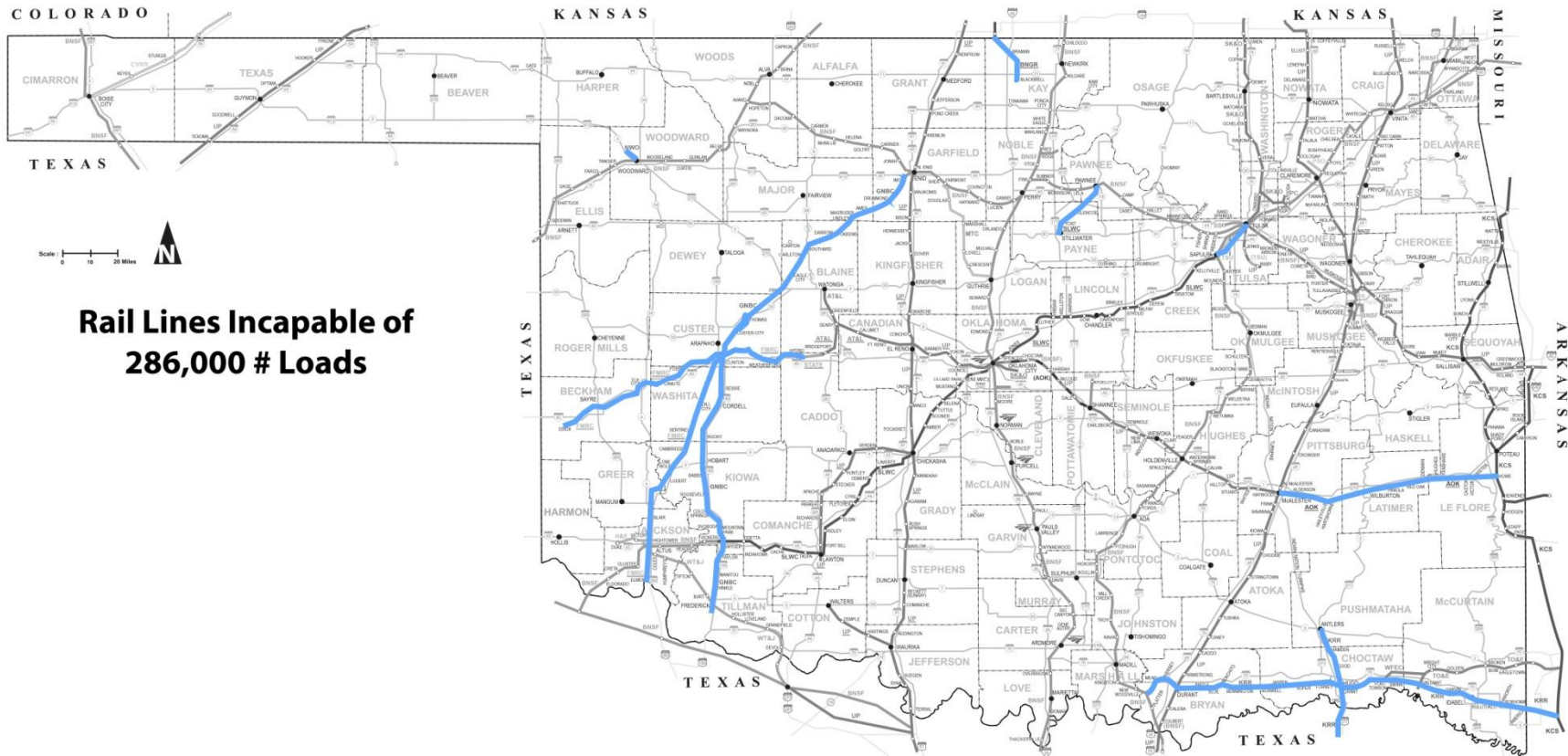


Table 17-7: Proposed 286,000 pound Capacity Improvements

Railroad	Structures deficient at 286,000 pound Load	Miles of Rail less than 90 pounds per yard
Arkansas-Oklahoma Railroad	Structures on 12 miles	Good
Austin, Todd and Ladd Railroad	All good	8.5 miles
Blackwell Northern Gateway	28 structures	18 miles
Kiamichi Railroad	Structures on 143.2 miles	Good
Stillwater Central Railroad	All structures on 22 miles	Good
Tulsa Sapulpa Union Railway	All structures on 23 miles	10 miles (estimated)
Grainbelt	94 structures	Good
Farmrail	109 structures	80 miles
Wichita, Tillman and Jackson railway	4 structures	12.2 miles
Northwestern Oklahoma	1 structure	Good



Figure 17-1: Lines with 286,000 pound Deficiency





18. Funding and Financing Alternatives

This section provides funding and financing sources used by ODOT as well as a survey of federal rail funding and financing sources currently available in the United States. It also offers snapshots of alternatives used in other states. A number of the sources examined could serve as models to offset infrastructure and operating costs related to new and existing rail service in Oklahoma.

18.1 Funding vs. Financing Programs

Funding and financing are two different concepts, though they are often misused interchangeably. Funding is money provided to pay for the capital or operations and maintenance needs of a project, and could come from grants, fare revenue, tax collections, bond programs, private equity, or a variety of other sources. Funding is generally received as a cash payment on a one-time or ongoing basis.

Financing, on the other hand, refers to a number of mechanisms that accelerate cash flows through borrowing. There are a number of public and private financing programs available and each requires an ongoing (short or long-term) flow of funds to repay the debt. The most attractive financing programs are those that are both inexpensive (have low initial fees and interest charges) and are flexible in the repayment terms. But financing is not simply a series of cash inflows; rather it is a transaction that dedicates all or part of a series of cash inflows to the repayment an upfront sum that fits the needs of a project.

18.2 Existing Oklahoma Rail Funding

State-owned rail funding in Oklahoma is collected from several sources and deposited into the Railroad Maintenance Revolving Fund (RMRF). This fund is then utilized for projects on Oklahoma's state-owned rail system. Major revenue sources for the fund are highlighted below.

Oklahoma Freight Car Tax-

This fund, composed of an annual 4 percent tax on freight rail car revenues, yields a nearly constant annual income, as its rate has not been changed since its inception in 1978.

Lease Agreements-

ODOT Rail Programs Division receives annual lease and operations payments from seven



separate short line rail operators. (ODOT has most all of its state-owned rail under lease at this time). These leases also carry a revenue-sharing component. Until recently, there were nine such leases, but the Union Pacific Railroad and the Wichita Tillman and Jackson Railway both exercised their right to purchase the lines they were operating under the terms of their matured lease-purchase agreements. It is significant to note that the loss of the annual payment that was being made by the UPRR is roughly equivalent to 66 percent of the total annual Rail Maintenance Revolving Fund so there is a strong need to make up for this cut in annual funding starting in 2012.

Following are the current leases:

1. Farmrail Corporation (FMRC): 179-miles on the Sunbelt Line between Hydro and Erick and the Orient Line between Thomas and Elmer.
2. Austin, Todd & Ladd (AT&L): 29-mile segment between El Reno and Geary.
3. Arkansas-Oklahoma Railroad (AOK): 70-mile segment between McAlester and Howe.
4. Stillwater Central Railroad (SLWC): 125-miles on two segments; one segment from Stillwater to Pawnee; and the other from OKC to Tulsa.
5. Blackwell Northern Gateway Railroad (BNGR): 17-mile segment from Blackwell to the OK-KS state line.

At this time, almost all of the state-owned rail line is under lease and in operation. The only track not under lease or in operation is a heavily deteriorated segment between Hydro and Bridgeport.

Right-of-Way Sales-

ODOT occasionally sells portions of land deemed as excess to its needs, and some of these sales are former rail rights-of-way acquired by ODOT. Also, as discussed previously, ODOT has situations where sales are generated as a result of a mature lease-purchase agreement. ODOT also recently sold a former rail segment known as the Guthrie to Fairmont Line following exhaustive efforts to return the rail line to active use. These sales are very infrequent and do not constitute any significant amount of annual funding.

Funding for the *Heartland Flyer* Passenger Rail Operation-

The *Heartland Flyer* passenger rail operation is funded through two sources—1) an annual line item state appropriation which goes into the Oklahoma Passenger Rail and Tourism Revolving Fund and 2) HB1873 - Passed in 1994, this bill establishes a dedicated fund for the public transit revolving fund. Past funding has come as a result of the appropriations process. Previously, the \$500,000 from the motor fuel tax was going to public transit every year. In 1993, the Legislature established a dedicated fund for passenger rail service from the motor fuel tax. This



passenger rail fund amounted to approximately \$1.2 million. This bill combines two funds (Amtrak earmark of \$1.2 million and transit funding of \$500,000) and splits the \$1.7 million funds evenly between the two systems at \$850,000.

18.3 Federal Funding Programs

ODOT Rail Programs Division participates in all rail-specific and rail-related federal programs. Recent years have provided numerous rail funding opportunities which have resulted in very positive results for the State. ODOT'S success is summarized below following descriptions of the various programs.

Passenger Rail Improvement and Investment Act of 2008 (PRIIA) -

PRIIA was enacted in October 2008 and provided for the reauthorization of the National Railroad Passenger Corporation (Amtrak) and tasked Amtrak, the U.S. Department of Transportation (US DOT), the Federal Railroad Administration (FRA), individual states, and other stakeholders with improving operations, facilities, and service. PRIIA authorizes over \$13 billion between 2009 and 2013 and promotes the development of new and improved intercity rail passenger services, state-sponsored corridors throughout the U.S., as well as the development of high-speed rail corridors.

PRIIA established three new competitive grant programs for funding high-speed intercity passenger rail improvements. Each of these three programs provides 80 percent federal funding with a required 20 percent non-federal match. The three grant programs established by PRIIA are described individually below:

Intercity Passenger Rail Service Corridor Capital Assistance Program -

Under PRIIA, an intercity passenger rail capital grant program was established, which requires individual states to identify passenger rail corridor improvement projects as potential funding recipients in their State Rail Plans. The program is intended to create the framework for a new intercity passenger rail service corridor capital assistance program. The High-Speed Intercity Passenger Rail (HSIPR) Program provides funding assistance to states, groups of states, interstate compacts, public agencies, and Amtrak (both alone and in cooperation with states). HSIPR funds can be utilized for service development programs; planning projects; or financing facilities, infrastructure, or equipment necessary to provide or improve intercity passenger rail transportation. Existing or proposed intercity passenger services are eligible for funding under this program.

High-Speed Rail Corridor Development Program -

PRIIA also authorized \$1.5 billion annually to establish and implement a high-speed rail



corridor development program. Funding is currently restricted to projects intended to develop the ten federally-designated high-speed corridors for intercity passenger rail services that may reasonably be expected to reach speeds of at least 110 miles per hour.

Congestion Grants -

PRIIA authorizes \$325 million annually for grants to states, or to Amtrak in cooperation with states, for financing the capital costs of facilities, infrastructure, and equipment for high-priority rail corridor projects necessary to reduce congestion or facilitate intercity passenger rail ridership growth.

ODOT has received three FRA HSIPR grants, providing matching planning and capital funds towards the state's effort to improve and expand its passenger rail service. These funds are being used to complete planning and environmental studies for the proposed high-speed rail route from Tulsa to Oklahoma City, to complete the "Oklahoma Freight and Passenger Rail Plan," and to improve infrastructure at the Santa Fe Depot related to operation of the *Heartland Flyer*.

The state also participated in the recently-completed HSIPR-funded KDOT-ODOT SDP examining passenger rail service expansion between Kansas, Oklahoma, and Texas. Additionally, ODOT will participate in the \$14 million HSIPR-funded Texas-Oklahoma study which will produce an EIS and an SDP for the Oklahoma City to South Texas Passenger Rail Corridor.

As noted, funding for programs associated with PRIIA must be appropriated annually, and at this time these programs have been defunded for fiscal year 2012. However, the initial appropriation is nearing 100 percent obligation and these projects will be completed over the next few years. ODOT, for instance, will be completing two projects associated with this Program over the next three years.

[American Recovery and Reinvestment Act \(ARRA\)](#)

The American Recovery and Reinvestment Act (ARRA) of 2009 allocated \$48.1 billion in transportation investments throughout the United States, including \$8.0 billion for high-speed rail, \$1.3 billion for Amtrak, and \$1.5 billion in National Surface Transportation Discretionary Grants (TIGER program). Additional information on ARRA funding programs available for HSIPR services is detailed below.

ODOT Rail Program Division carried out two ARRA-funded projects that improved rail infrastructure. The AOK Railroad was able to shore up a section of rail line being encroached upon by the Canadian River, and the BNSF Railway Company was able to improve operating conditions on an industrial track serving the community of Shawnee, Oklahoma.



TIGER –

The Transportation Investment Generating Economic Recovery (TIGER) program to date has provided over \$2.6 billion for the National Surface Transportation System through 2011. Funds are awarded towards capital investments on a competitive basis towards projects that demonstrate they will have a significant National or regional impact. Congress dedicated \$1.5 billion for the first round of the TIGER program as part of ARRA, and rounds two and three dedicated an additional \$1.1 billion through FY 2010 and 2011 Appropriations Acts. Congress has appropriated \$500 million for the TIGER program for FY 2012, with details to be announced this year in the Federal Register.

The third round of TIGER funding in 2011 allocated \$511 million in grants of which 10 percent will go to freight rail projects.

Oklahoma has been the recipient or co-recipient of three TIGER grant awards totaling \$66.5 million which all significantly improve rail in the state:

- I-244 Multi-modal Bridge Replacement is Tulsa's first multi-modal bridge crossing and will accommodate highway, high-speed intercity and commuter rail, and pedestrian and bicycle traffic
- Great Plains Freight Rail project is constructing yard, shop, and 286k line improvements and relocating the South Kansas and Oklahoma Railroad hub from an urban to rural area
- Oklahoma Freight Rail Upgrade will upgrade 49 miles of state-owned rail line in the Anadarko Basin to more efficiently and safely transport crude oil and gas to the refinement stage

SAFETEA-LU Programs

The Safe, Accountable, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), the current authorization bill for the nation's surface transportation program, was scheduled to expire on October 1, 2009; however, temporary extensions for SAFETEA-LU have been passed through March 2012 or until a new transportation authorization bill is approved.

The SAFETEA-LU bill contains a number of program provisions with specific eligibility for rail. These include both funding and financing programs, which are described in detail below:

Section 130 Highway-Rail Grade Crossing Program –

This program provides federal support to projects in an effort to reduce the incidence of accidents, injuries, and fatalities at public rail-highway crossings. States may utilize funds to



improve the safety of railroad crossings, including installing or upgrading warning devices, eliminating at-grade crossings through grade separation, or consolidating or closing at-grade crossings. The federal share for these funds is 90 percent, with the remaining 10 percent to be provided by local matching funds.

As discussed in the Safety and Security Section, ODOT Rail Programs Safety Branch carries out numerous grade crossing safety improvement projects annually utilizing this fund this fund.

Rail Line Relocation and Improvement Capital Grant Program -

Section 9002 of SAFETEA-LU authorizes funding for the purpose of providing financial assistance for local rail line and improvement projects. Any construction project that improves the route or structure of a rail line and 1) involves a lateral or vertical relocation of any portion of the rail line, or 2) is carried out for the purpose of mitigating the adverse affects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development, is eligible. The federal share for these funds is 90 percent, not to exceed \$20 million.

Successful grant applicants will meet cost-benefit requirements; specifically the requirement that a project's benefits (for the period of the estimated economic life of the improvements) exceed the costs of that project for the same time period.

Congestion Mitigation and Air Quality (CMAQ) 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 CMAQ-funded rail projects include intermodal facilities, rail track rehabilitation, diesel engine retrofits, idle-reduction projects, and new rail sidings.

Funding is available for areas that do not meet the National Ambient Air Quality Standards (nonattainment areas) as well as former nonattainment areas that are now in compliance (maintenance areas). Funds are distributed based on a formula considering an area's population by county and the severity of an area's ozone and carbon monoxide problems.

SAFETEA-LU requires states and MPOs to give priority in distributing CMAQ funds to diesel engine retrofits, and other cost-effective emission reduction and congestion mitigation activities. SAFETEA-LU also requires the Secretary of Transportation to evaluate and assess the effectiveness of a representative sample of CMAQ projects to determine the direct and indirect impacts of projects on air quality and congestion levels, as well as to ensure the effective implementation of the program.

Freight initiatives may be eligible under the 1999 CMAQ guidance. Although freight is not mentioned specifically, the provision for public-private partnerships represents another avenue of support for freight and intermodal projects that generate air quality benefits. Emissions



reductions can be generated directly by private projects through treatment of tailpipe exhaust or application of advanced engine technologies and may thus qualify for CMAQ funding (assuming all other requirements are met).

State Departments of Transportation and Metropolitan Planning Organizations select and approve projects for funding. The federal matching share for these funds is 80 percent.

Surface Transportation Program (STP) -

The Surface Transportation Program is a grant program available for improvement of any Federal-Aid highway, bridge, or transit capital project. The program is meant to provide flexible funding to be used by states and localities. Eligible rail improvements include lengthening or increasing vertical clearance of bridges, eliminating crossings, or improving intermodal connectors. State Departments of Transportation and Metropolitan Planning Organizations select and approve projects for funding under this program. The federal matching share for these funds is 80 percent.

Rail and Fixed Guideway Modernization -

The transit capital investment program (49 U.S.C. 5309) provides capital assistance for new rail systems (New Starts/Small Starts program), bus systems (Bus and Bus Related Equipment and Facilities program), and modernization of existing rail systems (Fixed Guideway Modernization program). Funding can be used for a variety of purposes including the following:

- Purchase and rehabilitation of rolling stock, track, line equipment, structures, signals and communications
- Development of power equipment and substations
- Construction of passenger stations and terminals
- Purchases of security equipment and systems
- Construction of maintenance facilities
- Operational support equipment including computer hardware and software
- System extensions
- Preventive maintenance

Eligible recipients for new starts funding are public entities and agencies (transit authorities and other state/local public bodies and agencies) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law. Modes eligible for funding include heavy rail, commuter rail, and a number of other transit modes.



Transportation and Community and System Preservation (TCSP) Pilot Program -

The Transportation, Community, and System Preservation (TCSP) Program provides funding for initiatives including planning and implementing grants; performing research to investigate and address the relationships between transportation, community, and system preservation; and identifying private sector-based initiatives.

Funds are available to states, metropolitan planning organizations, local governments, and tribal governments. The law requires the equitable distribution of funds to a diversity of populations and geographic locations. For discretionary funding, an interagency team evaluates applications for competitive TCSP Program grants. TCSP Program grants can also be designated by Congress. Although SAFETEA-LU authorized TCSP funding, specific funding levels can vary based on Congress' annual appropriations.

Transportation Enhancement Program -

These funds are available to strengthen the cultural, aesthetic, and environmental aspects of the nation's intermodal transportation system. Eligible projects include the rehabilitation of historic transportation facilities and the preservation of abandoned rail corridors, though a number of environmental preservation, scenic beautification, and historic preservation projects would also qualify. Projects are usually chosen at the local government level. The federal share of project costs is 80 percent.

18.4 Federal Financing Programs

Private Activity Bonds -

SAFETEA-LU established a new financial assistance program that allows the issuance of up to \$15 billion in private activity bonds for transportation infrastructure projects. States and local governments are allowed to issue tax-exempt bonds to finance projects sponsored by the private sector subject to rules set forth by the Internal Revenue Service.

Eligible projects include privately owned-or-operated highway and rail-truck transfer facilities, including any surface transportation project receiving Title 23 assistance. This provision therefore extends eligibility to TIFIA-assisted public transportation, intercity bus, or rail facilities and vehicles. Eligible rail activities include Amtrak vehicles and facilities, public freight rail facilities, or private facilities providing public benefit for highway users, as well as intermodal freight transfer facilities.

Transportation Infrastructure Finance and Innovation Act -

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects of regional and national significance. Many large-scale surface



transportation projects – highway, transit, railroad, intermodal freight, and port access – are eligible for assistance. Eligible applicants include state and local governments, transit agencies, railroad companies, special authorities, special districts, and private entities.

TIFIA offers three distinct types of financial assistance designed to address the varying requirements of projects throughout their life cycles: Secured (direct) loans, loan guarantees, and standby lines of credit. The amount of federal credit assistance may not exceed 33 percent of total reasonably anticipated eligible project costs. The exact terms for each loan are negotiated between the U.S. Department of Transportation (USDOT) and the borrower, based on the project economics, the cost and revenue profile of the project, and any other relevant factors. TIFIA interest rates are equivalent to Treasury rates. Depending on market conditions, these rates are often lower than what most borrowers can obtain in the private markets. Unlike private commercial loans with variable rate debt, TIFIA interest rates are fixed. Overall, borrowers benefit from improved access to capital markets and potentially achieve earlier completion of large-scale, capital intensive projects that otherwise might be delayed or not built at all because of their size and complexity or the market's uncertainty over the timing of revenues.

Any project that is eligible for federal assistance through existing surface transportation programs (highway projects and transit capital projects) is eligible for the TIFIA credit program.

The following types of projects are eligible:

- International bridges and tunnels
- Intercity passenger bus and rail facilities and vehicles
- Publicly owned freight rail facilities
- Private facilities providing public benefit for highway users
- Intermodal freight transfer facilities and projects that provide access to such facilities
- Service improvements on or adjacent to the National Highway System
- Projects located within the boundary of a port terminal under certain conditions

An eligible project must be included in the applicable state transportation improvement program. Major requirements include a capital cost of at least \$50 million (or 33.3 percent of a state's annual apportionment of federal-aid funds, whichever is less) or \$15 million in the case of Intelligent Transportation Systems (ITS). TIFIA credit assistance is limited to a maximum of 33 percent of total eligible project costs. Senior debt must be rated investment grade. The project also must be supported at least in part by user charges or other non-federal dedicated funding sources. Applicable federal requirements include, but are not limited to, Titles 23 and



49 of the U.S. Code, NEPA, Buy America provisions, and the Civil Rights and Uniform Relocation Acts.

Railroad Rehabilitation and Improvement Financing -

The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance development of railroad infrastructure. The RRIF program was established by the Transportation Equity Act for the 21st Century (TEA-21) and amended by the SAFETEA-LU. Under this program the FRA Administrator is authorized to provide direct loans and loan guarantees of up to \$35.0 billion. Up to \$7.0 billion is reserved for projects benefiting freight railroads other than Class I carriers.

The funding may be used to acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops; refinance outstanding debt incurred for the purposes listed above; and develop or establish new intermodal or railroad facilities. Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures that include at least one railroad, and limited option freight shippers who intend to construct a new rail connection.

Direct loans can fund up to 100 percent of a railroad project with repayment periods of up to 35 years. Interest rates on loans are equal to current treasury rates. All federal financial assistance programs must pay for the cost to the government of providing that financial assistance. In most cases this is done with appropriations from Congress. Since the RRIF Program does not currently have an appropriation, this cost must be borne by the applicant, or another entity on behalf of the applicant, through the payment of the Credit Risk Premium. The FRA Administrator will calculate the amount of the Credit Risk Premium that must be paid for each loan before it can be disbursed. In addition to the Credit Risk Premium, which is paid only if a loan is approved, each applicant must pay an Investigation Fee regardless of whether the loan is approved. The Investigation Fee defrays costs that the FRA incurs in evaluating RRIF loan applications, and may not exceed one half of one percent of the requested loan amount, but it is often substantially less.

State Infrastructure Banks (SIB) -

SAFETEA-LU established a new State Infrastructure Bank (SIB) program under which all states are authorized to enter into cooperative agreements with the Secretary of Transportation to establish infrastructure revolving funds. The SIB program gives states the capacity to increase the efficiency of their transportation investment and significantly leverage Federal resources by attracting non-Federal investment. A SIB, much like a private bank, can offer a range of loans and credit assistance enhancement products to public and private sponsors of Title 23 highway



construction projects or Title 49 transit capital projects. Oklahoma has authorization for a State Infrastructure Bank; however, Oklahoma's bank has not been capitalized sufficiently.

18.5 Future Federal Funding

Surface Transportation Reauthorization Act

The last full SAFETEA-LU authorization expired in at the end of September 2009. Unable to pass a full reauthorization, Congress has passed nine temporary extensions, currently set to expire in March 2012. There is significant uncertainty over when SAFETEA-LU will be reauthorized and in what form:

- The House has proposed a six-year bill at current funding levels which would require \$75 billion of federal appropriations in addition to gas tax receipts
- The Senate has proposed a two-year bill at current funding levels which would require \$12 billion of federal appropriations in addition to gas tax receipts
- Speculation that the Congressional "Super Committee" would include a robust Highway Trust Fund reauthorization proposal as part of its deficit reduction plan died with the Committee's failure to reach an agreement last November

With such uncertainty, it is unlikely that we will see a full extension of the Transportation Reauthorization Act before the 2012 elections.

Expanded Public-Private Partnership Opportunities

Many public agencies who have faced financial or operational difficulties managing infrastructure assets have found Public-Private Partnerships (3Ps) to be an attractive means of achieving a desired level of service over the long-term while transferring undesired risks to the private sector. In its simplest form a PPP is an agreement between public and private sector parties that transfers some or all infrastructure functions to the private sector for some predetermined period of time.

Varying degrees of private sector involvement are available, from design-build contracts for new construction projects to long-term operations concession agreements. Specific project characteristics and prevailing market trends will guide what is desirable and acceptable in a PPP arrangement for a given project.

A number of rail project components can be transferred to the private sector in a PPP arrangement, including project development, design, construction, financing, operations and maintenance.



Currently, Oklahoma is one of 19 states without PPP enabling legislation, which is typically required in order to complete complex transfers of risk or rights over state property. As such, the state is currently unable to enter into most PPP arrangements. However in 2011 Governor Fallin approved the creation of the Eastern Flyer Passenger Rail Development Task Force, which will study the feasibility of using PPP delivery formulas to accelerate passenger rail operations between Tulsa and Oklahoma City. The Task Force is scheduled to deliver its final report by the end of 2012. In addition, the State of Oklahoma is currently studying options for implementing P3 legislation, and discussion of this issue will be taken up during the 2012 State legislative session.

* * END * *