FREIGHT MOVEMENT

Chapter 5

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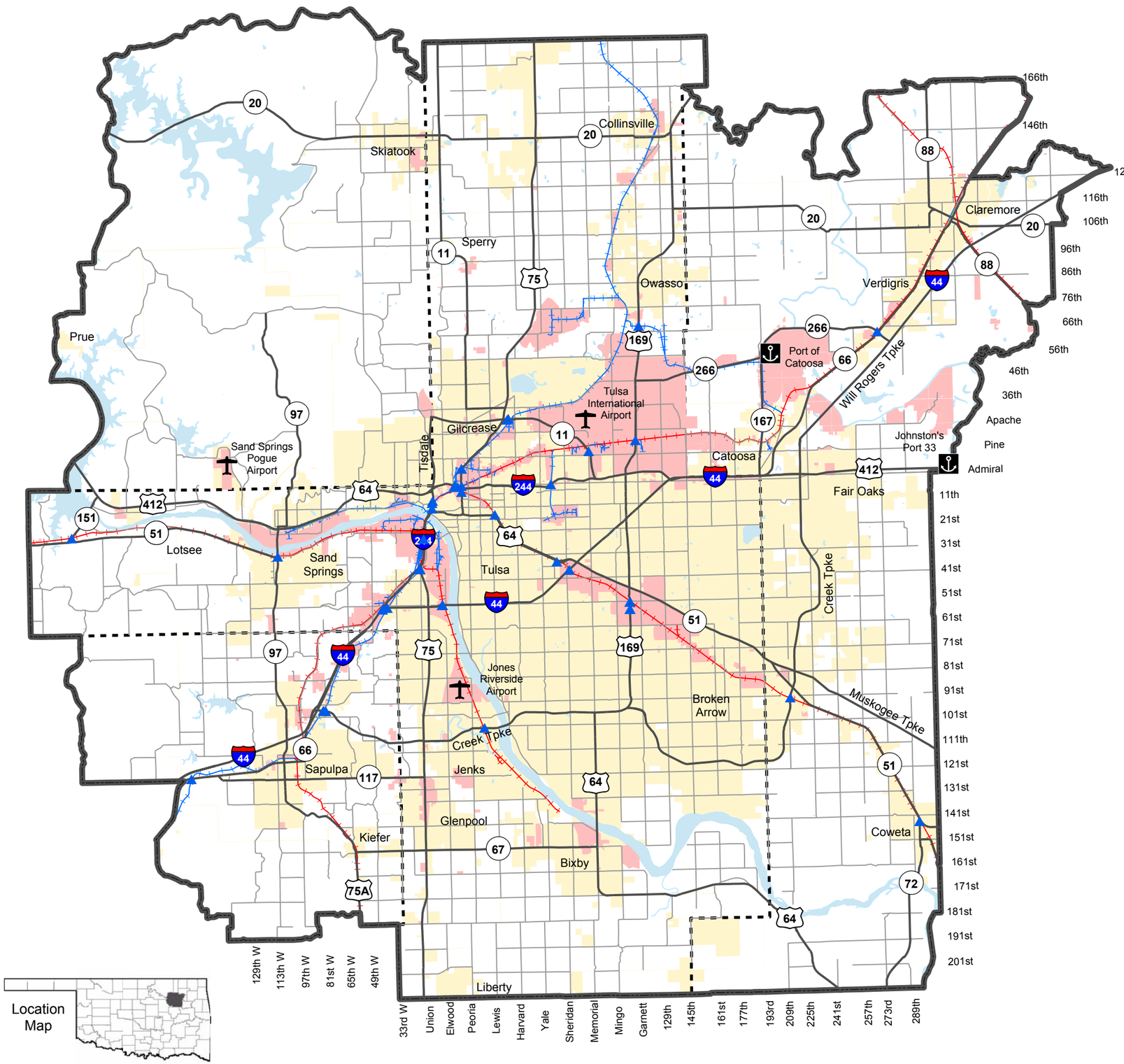

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Destination 2030

2030 Freight Movement Plan

- Class 1 Railroad
- Class 3 Railroad
- Grade Separated Highway/Rail Crossings
- Industrial Areas
- Highways
- Arterials
- County Boundary
- Transportation Management Area
- Corporate Limits

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INTRODUCTION

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, and its successor, the Transportation Equity Act for the 21st Century (TEA-21), provided the basis for states and metropolitan areas to examine and address freight transportation issues in the context of metropolitan Long Range Transportation Plans. The *Destination 2030* Long Range Transportation Plan (LRTP) Freight Transportation Element highlights the multimodal aspects of the infrastructure that facilitates freight movement in the region, including 2 internal water-ports, an international airport, 2 Class I railroads, several short-line railroads, and trucking. These strategic regional facilities are well-connected to one another and to the National Highway System (NHS).[7] The *2030 Freight Movement Plan* map is shown on Page 85.

Due to the increasing size and complexity of urban areas, intra-regional goods movements have outpaced goods movement between regions. According to the Bureau of Transportation Statistics (BTS), the market share of U.S. freight movement in 2002 consisted of approximately 58.2% truck, 14.8% barge/ship, 12% rail, 10.5% pipeline, about 0.1% air, 1.3% multimodal combinations, and 3.2% undetermined.

Development Process

The freight movement element development process involved the collection of data related to the 5 modes of moving goods in the Tulsa area, including trucking, rail, water and air transportation. The local freight operators and stakeholders, including the Tulsa Port of Catoosa and Johnston's Port 33, Tulsa International Airport, Burlington Northern Santa Fe Railway, Union Pacific and several local Short-Line operators were consulted. These visits, data acquisitions and data collection efforts provided information that was used in developing the freight element.

A Freight Transportation Model for the Tulsa Transportation Management Area (TMA) was developed by the University of Oklahoma and Oklahoma State University to forecast freight flow in the region. The freight model provides insight into the nature of freight transportation useful to generate the policy recommendations desired.

It also provides the ability to forecast the effects of changes in demand or other variables on freight transportation and the impact of network changes, including inter-model freight flows between the major modes, such as rail-to-truck and barge-to-truck. The outcome of the freight model was used in the development of the roadway model as well as the freight element of the LRTP.

RAIL

History

Tulsa, Oklahoma's second largest city, became attractive to railroad companies when a Federal Post Office was opened and there was a huge influx of goods and money from ranchers and farmers. In 1871, the Atlantic and Pacific railroads extended their lines into Vinita and Muskogee. The Frisco Railroad acquired the Atlantic and Pacific Rail Company, extending its line to Tulsa, and the first train crossed the Arkansas River. The implementation of the railroad resulted in easy access to the city and, consequently, rapid growth. Tulsa became one of the most significant oil towns of the Southwest, and the favorable economy brought one of the most prestigious railroads of the country, the Santa Fe Railway, to Tulsa in 1905. The railroad had a profound impact on the development of the city, which can be seen in the expansion of the city including several businesses established along the rail tracks. It can also be seen on the alignment of downtown streets oriented in northeast-southwest and northwest-southeast directions at right angles, parallel and perpendicular to the Frisco railroad tracks. With the expansion of the city, new streets and blocks were added but still conformed to the rectangular system established by the rail tracks.

[7] The National Highway System (NHS) consists of the Interstate Highway System, plus selected other US and state highways, links, and connections that serve the major population centers, ports, airports, public transportation facilities, intermodal transportation facilities, and major travel destinations. The NHS network of significant highways was approved by congress in 1995.

Rail Corridor Overview

Today Rail Transportation in the Tulsa area is provided by 2 Class-I[8] carriers and 5 short-line[9] carriers. The Class-I carriers are Union Pacific (UP) and Burlington Northern Santa Fe Railway Company (BNSF). Together, they operate in approximately 200 miles of track in the area. The 5 short lines that operate in the Tulsa Region are the Southern Kansas and Oklahoma Railroad (SKO), Tulsa-Sapulpa Union Railroad (TSU), Sand Springs Railroad (SS), Port of Catoosa (PC) and Stillwater Central. The short lines operate on approximately 66 miles of track in the area.

The 2 major commodities transported by the railroads in Oklahoma are coal and grain, with coal terminating in the state and grain being shipped beyond Oklahoma. Most of the freight movement within the state is between the Oklahoma City and the Tulsa areas.

Class-I Carriers

BURLINGTON NORTHERN SANTA FE RAILROAD (BNSF):

BNSF has the largest rail yard in the area, located southwest of downtown Tulsa. Access to the BNSF yard is from US-75. Approximately 5,400 tons of freight and 160 rail cars are operated daily, originating and terminating in the Tulsa area. The trains generally run east-west, and destinations vary greatly, with bulk industrial products being the primary cargo. BNSF provides rail access to the Port of Catoosa and the manufacturing plants near the Tulsa International Airport.

BNSF operates on about 150 miles of track in the Tulsa region with traffic consisting of mineral ore (15%), chemicals (30%), autos/metals (15%), forestry (5%), consumer (10%), agricultural (15%), and general products (10%).[10] Two BNSF spurs in the area provide rail access to the Tulsa Port of Catoosa, and the manufacturing plants near the Tulsa International Airport, respectively.

UNION PACIFIC (UP):

The Union Pacific runs between Muskogee and Tulsa. Their warehouse is the former KATY yard near 51st Street South and Mingo.

The Union Pacific Railroad operates on about 40 miles of track at 2 train yards in the Tulsa area. The UP processes 4 trains per day, including support operations for the UP regional terminal facility in Muskogee, Oklahoma. The local UP cargo consists of sand, lime and dolomite, pulp, wood, lumber, plastics and miscellaneous products including syrup and sugar. In addition, the UP transports most of the coal utilized at electric generating plants outside the Tulsa metropolitan area in Chouteau, Muskogee, and Oologah.

Short-Line Carriers

The short-line railroads serve primarily as the connection between shippers and Class I rail carriers. The Sand Springs Railroad is owned by Sheffield Steel, which is also their primary customer. It operates service between downtown Tulsa and Sand Springs with 32 miles of track connecting freight cars daily with the Burlington Northern Santa Fe Railroad, Union Pacific Railroad, and the South Kansas Oklahoma Railroad (SKO). Their covered storage facility is multimodal and is 68,000 square feet. The primary commodities transported are silica sand, steel, pulp board, scrap iron, scrap paper, petroleum products, chemicals, plastic, lumber and other merchandise.

The South Kansas and Oklahoma Railroad is a segment of the former Santa Fe line to Kansas City. The Company warehouse is located in Owasso between 76th Street North and 86th Street North, 1 mile west of Highway US-169. The trains run north out of Owasso and south to Tulsa connecting with BNSF and UP. It also serves the Port of Catoosa daily via an 8 mile track that goes from Owasso to the Port (*Table 16*).

The Tulsa-Sapulpa Union Railroad is primarily a switch carrier between Class I carriers (BNSF and UP) and customers located on TSU railway. It serves the Metropolitan area, running from Sapulpa to West Tulsa to Jenks on a total of 23 miles of track. It is considered one of Oklahoma's oldest and smallest operating railroads. Ninety-five percent of rail traffic is inbound to customers. The railroad serves St. Gobain Glass Plant, Prescor Inc. (maker of steel tank ends), Greenbay Packaging Inc, Atlantis Plastics, C.G. Martin Company (steel fabricator) and Technotherm Corporation (produces boilers and heat-recovery equipment). In January 2001, TSU became operator of Union Pacific Railroad (UP) track connecting

[8] The Federal Surface Transportation Board defines Class-I Railroads as those with annual revenues of $256 million or more.
[9] Short Line Railroads are those with annual revenues between $2 and $40 million. All switching and terminal railroads, regardless of their miles of track or annual revenues are classified as short lines.
[10] Data used from the 2025 Mobility Plan.

TABLE 16
Characteristics of SKO in the TMA

CHARACTERISTICS	
Number of Railcars Daily	Average of 25
Primary Destination of Trains	Tulsa, Kansas Cement Plants, Port of Catoosa
Tons of Freight Daily	2,517 (average)
% of Traffic Terminating in the Tulsa Area	42.72%
% of Traffic Originating in the Tulsa Area	2.93%
% of Traffic Routed Through Tulsa	54.35%
COMMODITIES HANDLED	**% TOTAL TRAFFIC**
Aggregates	29%
Cement, Steel Products	17%
Asphalt	10%
Gypsum, Beer	9%
Fertilizer	7%
Pipe	5%
Wastewater, Wood Products, Chemicals, Flour, Wheat, Others	10%

Tulsa and Jenks and serving Sinclair Oil Refinery, Kentube, Pepsi Cola Co., and Kimberly Clark Corporation. TSU also has connection with the Burlington Northern Santa Fe (BNSF) railroad at Sapulpa. With about 6,700 cars per year, the primary commodities transported are silica sand, pulpboard, limestone, and sodium carbonate (*Table 17*).

TABLE 17
Characteristics of TSU in the TMA

Location	Sapulpa
Highway Access	SH-66 – Access from I-44 and local streets
Truck Service	Yes – truck to rail
Miles of Track in the Tulsa region	23 miles
Number of Rail Cars Daily	Average of 26 (6,700 annually)
Primary Destination of Trains	Sapulpa – West Tulsa – Jenks Industries
Tons of Freight Daily	2,500
% of Traffic Terminating in the Tulsa Area	61%
% of Traffic Originating in the Tulsa Area	39%
% of Traffic Routed Through Tulsa	None

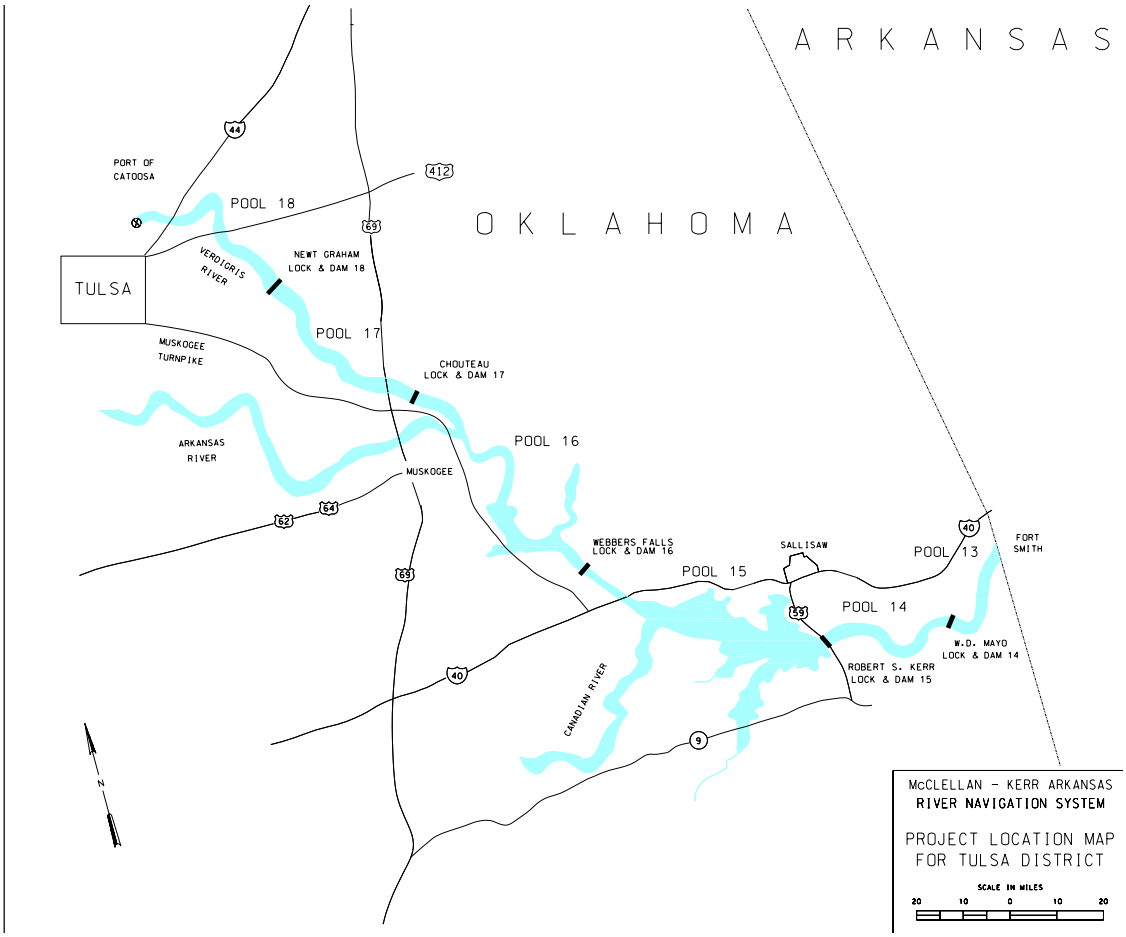
Stillwater Central operates a 97 mile line between Sapulpa and Oklahoma City. In Sapulpa, it interchanges the cars to BNSF, which then distributes the cars accordingly. In cases where Stillwater Central interchanges cars with SKO, SKO carries the traffic across to Tulsa.

The Port of Catoosa, 5 miles from Tulsa and the country's most inland port, has its own railroad. It has 2 switch engines and serves customers on 13 miles of rail track. The Port is also served directly by BNSF and SKO.

WATER TRANSPORTATION

The Tulsa Port of Catoosa is located at the head of the navigation channel for the McClellan-Kerr Arkansas River Navigation System. The 445 mile waterway links Oklahoma and the surrounding five-state area with ports on the U.S. inland waterway system, and foreign and domestic ports beyond, by way of New Orleans and the Gulf Intra-coastal Waterway. The Port is owned jointly by the City of Tulsa and Rogers County and operated through a public authority appointed by both governments. The Port complex encompasses a 1,500-acre industrial park, offering fully developed sites for prospective industry, and a 500-acre terminal area for public and private barge handling operations.

The port channel is 1.5 miles long, and the port facilities include 2 towboats for barge switching, liquid cargo loading and unloading docks, a grain handling facility, a dry cargo wharf, an overhead traveling crane, and dolphins for barge mooring. The port area also contains dry bulk storage compartments, sites for warehousing and fabrication, and other terminal operations within the 1,500-acre industrial complex. The Port's intermodal capabilities include barge



The McClellan-Kerr Arkansas River Navigation System - Image courtesy of the Army Corps of Engineers.

switching service, in-port rail operations, pipelines, and access to Class I rail service. The Port is accessible from I-44 and US-169 via SH-266 (Port Road), and SH-167, and is located about 8 miles northeast of Tulsa International Airport.

In December 1979, the Port was designated as a duty-free port or Foreign Trade Zone No. 53. This designation covers an area of 52 acres, including an area that may be used by individual companies for construction of their foreign trade-zone facility. A foreign trade zone is an area considered outside the customs territory of the United States where foreign and domestic merchandise may be admitted for storage, exhibition, assembly, processing, manipulation, relabeling, sampling or manufacturing, duty-free and without quota, while being processed for the consumer market. Payment of customs duties on foreign goods is not required unless and until the merchandise enters customs territory for domestic consumption.

The port handled over 2.2 million tons of freight in 2004. Of this, nearly 1 million tons or approximately 45% was inbound, while 1.23 million tons or 55% was outbound (*Figure 23*). Every year, 13 million tons of cargo is transported on the McClellan-Kerr by barge. This ranges from sand and rock to fertilizer, wheat, raw steel, refined petroleum products and sophisticated petrochemical processing equipment.

Additionally, Johnston's Port 33, a privately owned and operated port facility, is located at the eastern boundary of the TMA near the intersection of US-412 and the navigation channel. It consists of 5 separate docks for simultaneous loading/unloading, 2 service boats, and capacity for several barges; conveyor systems, barge unloading excavators, and scrap handling magnet. The port has capacity for open bulk storage, including fertilizer and grain storage. The port's primary outbound shipments consist of liquid bulk and agricultural products, as well as grain trucked-in from Enid, Oklahoma. Fertilizer, dry bulk, steel & pipe are the primary inbound commodities.

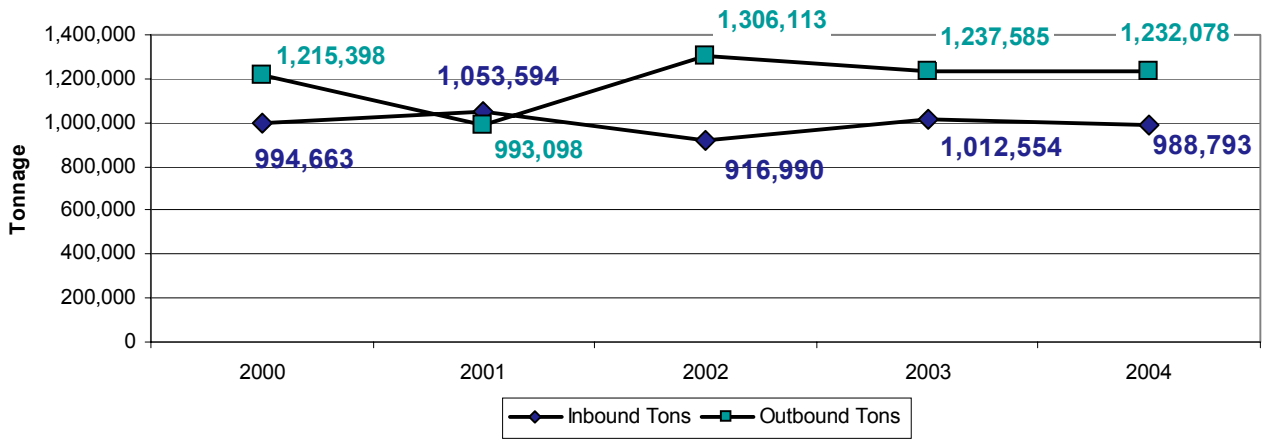
Water transportation will continue to play an important role in the Tulsa area. According to figures provided by the Tulsa Port of Catoosa, the total annual tonnage grew almost 5% during 2000-04. The number of businesses located at the port also continues to grow, and now stands at over 60. The port is involved in an ongoing marketing program offering prime industrial sites for lease or sale in the adjacent Riverview Business Park. Port officials are predicting that the growth in total tonnage transported and in the number and variety of industries at the port will continue. In turn, the port facilities will be expanded to keep pace with projected growth.

The Port is served by most of the nationwide contract carriers and averages over 450 trucks per day. Truck shipments are usually "next-day" requirements and average 20 short tons. Most truck shipments are to or from bulk storage at the Port's terminals or for plants in the general industrial park.

Over the next 5 years, the port plans to set up a truck staging area on the north side of the port, along SH-266,

FIGURE 23

Tulsa Port of Catoosa Inbound/Outbound Tonnage



to control truck traffic within the port facility. The port also plans to add 3 more docks to facilitate cargo transfer, including a short-range plan for an additional general cargo/ steel dock; an intermediate plan for an inbound dry bulk dock; and a longer range (8-10 years) plan for a container dock. Other anticipated improvements include widening the Verdigris River to 300 feet from Muskogee to Port of Catoosa to enable routine passing of 8 barge tows (current channel width is 150 feet) and, also, deepening of the waterway from the current 9 feet to 12 feet for greater shipping volumes per barge.

The port facilities are currently adequate to transfer cargo quickly and easily to the next mode of transportation (truck, rail, or barge). However, based on current growth trends, port officials are predicting that even with the dock development plan fully implemented, the region may need another port by the end of the planning horizon (2030).

AIR TRANSPORTATION

The Tulsa International Airport (TIA) is owned by the City of Tulsa and operated by the Tulsa Airport Authority. Established in 1928 on a 390-acre tract, Tulsa International today encompasses more than 4,000 acres just 10 minutes northeast of downtown. The airport complex employs more than 17,000 people and is classified as a medium hub, primary commercial service airport by the FAA's National Plan for Integrated Airport Systems (NPIAS). It presently operates with 3 runways, along with parallel and connecting taxiways that provide aircraft access to the airport terminal and other airport facilities. Air Carrier, General Aviation, Military, and Air Taxi aircraft utilize these runways.

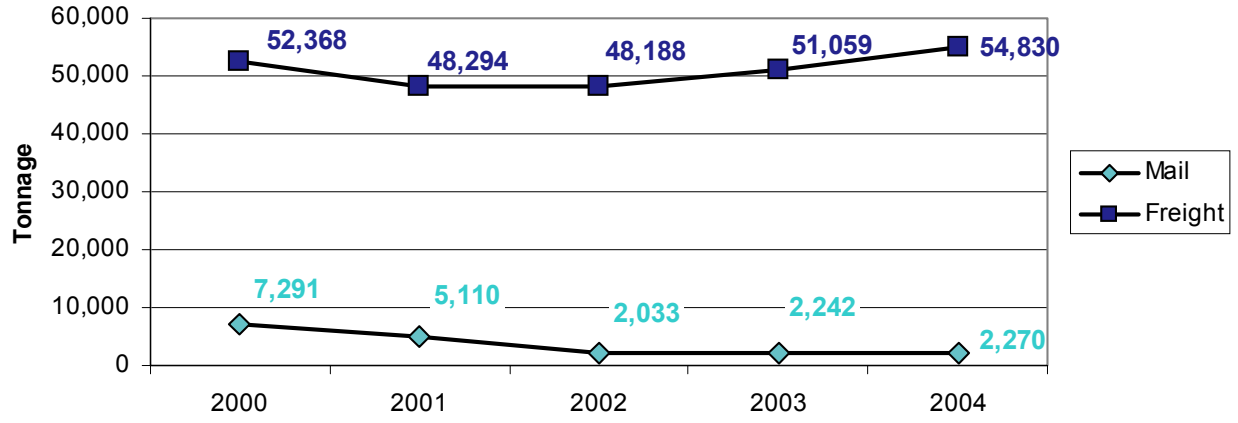
The airport's air carrier terminal is currently set up to operate as many as 22 passenger loading gates, serving 10 passenger air carriers, and processing about 3 million passengers in 2004, including 1,475,000 enplanements and 1,469,000 deplanements. From 2000 to 2004, enplanements decreased about 20% and deplanements decreased about 18%. Total operations by air carrier, air taxi, general aviation, and military aircraft decreased from approximately 199,000 to 167,000 (*Figure 24*). This is indicative of using larger aircraft with greater seating capacity and more efficient scheduling, as well as the effects of the terrorist attacks on September 11, 2001.

The airport facilities include passenger terminals serving the major air carriers, including American, Continental, Delta, Southwest, United Airlines, and regional commuter air carriers including Northwest Airlink, American Eagle, Comair, and Atlantic Southeast. In addition, Sun Country and Champion Air schedule regular charter flights to Las Vegas from TIA.

The air cargo terminal facility is located directly south and east of the passenger terminal building. The air cargo terminal consists of a landside and an airside, where incoming and outgoing cargo is processed and loaded from trucks to aircraft and vice versa. The air cargo terminal is currently occupied by Airborne, Burlington, Emery, Federal Express, Martinaire, and United Parcel Service. In addition, some freight and mail, including US Postal Service mail, is transported on scheduled air carrier and

FIGURE 24

Tulsa International Airport – Annual Activity



commuter airlines serving the airport.

The TIA handled approximately 57,100 tons of cargo in 2004 including airmail, and airfreight, transported by airfreight carriers, and in the cargo-hold of passenger aircraft. This total included about 50% inbound and 50% outbound cargo. Total air cargo activity at TIA has decreased by about 5% since 2000.

Direct access to Tulsa International Airport is provided via SH 11/Gilcrease Expressway, which runs east west along the southwest corner of the air carrier terminal. Access is also provided from the north by SH 266 or Port Road. The airport is accessible from I-244, and US-75 via SH-11/ Gilcrease Expressway. In addition, the airport is accessible from several major north-south arterials in the area, including Memorial Drive, Sheridan Road, and Mingo Road.

The Burlington Northern Santa Fe Railway (BNSF) operates a line that runs east-west along the south edge of the airport. Another rail line operated by the SK&O is located north of the airport and veers in a northeasterly direction. A rail spur that branches out from the BNSF rail line provides rail access to the manufacturing plants adjacent to the airport. However, there is no direct rail connection with the airport terminal facility at this point.

A general aviation airport in the area, Richard Lloyd Jones, Jr. Airport, (Riverside) is designated by the Federal Aviation Administration (FAA) – as a reliever for Tulsa International Airport. This reliever is part of the Tulsa metropolitan area Airport System Plan and is located approximately 15 miles south and west of TIA near Jenks. This airport is equipped to handle potential excess capacity at Tulsa International Airport.

According to the TIA, future air cargo development will either involve reconfiguration of existing buildings, or take place in the north development area. The current access to the airport is adequate and provided through a variety of roadways and streets from the south and east. However, as the airport grows and expands, design and engineering will be initiated as necessary to improve any traffic bottlenecks. According to the TIA, specific areas requiring redesign include entrance/exits to parking areas and strategies to minimize weaving along the airport terminal road.

FREIGHT FLOW MODEL

In the current project, freight attraction is analyzed for the Tulsa TMA and the 4 groups of commodities below:

1. Food/consumable products (*e.g.,* Live animals, cereal grains, animal feed)
2. Mining products (*e.g.,* Building stone, natural sands, gravel, coal)
3. Chemical products (*e.g.,* Chemicals, Fertilizers)
4. Manufactured products (*e.g.,* Plastics, Wood products, Mixed freight)

A detailed listing is provided in the *Supporting Documents*.

Classification of the Databases

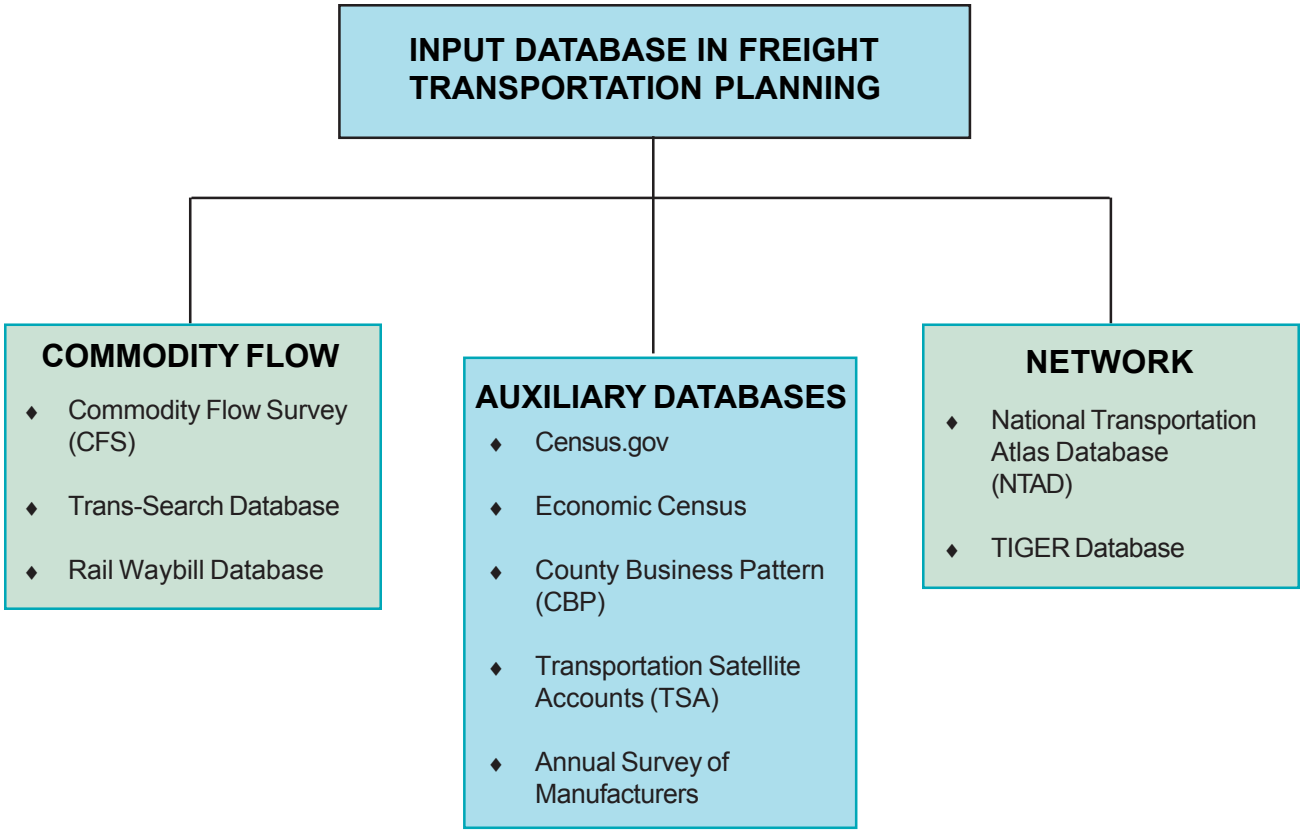
Based on the nature of the databases and their application, the databases have been classified into 3 categories. The schematic representation is shown in *Figure 25*.

Commodity Flow: These types of databases quantify/ describe the flow of commodities based on various attributes like origin, destination, mode, reliability, weight, dollar value, distance shipped, etc.

Auxiliary Databases: These types of databases quantify the factors that are either responsible for the generation of freight flow or are affected by the change in freight flow. They cover areas of the economy such as businesses, manufacturing, and trading that may contribute to the flow of freight and include demographic data such as population, income and other socioeconomic factors.

TULSA INTERNATIONAL AIRPORT (TIA)	
Highway Access	SH 11, I-244, US 169, US 75
Rail Proximity	BNSF, S K & O
Activity Indicator	57,100 Tons
Primary Cargo	Mail, Light Parcels, Computers, Electronics

FIGURE 25
Classification of Databases



The *Supporting Documents* contains tables showing *To* and *From* freight flows from Tulsa TMA.

Projected total flow for the year 2030, in total tonnage, is highest from Tulsa to Midwest and Great Lakes region, specifically to Missouri, Illinois, and Ohio. That flow is complemented with the flow to and from Texas and California. The flows in tonnage are also significant to Florida and Northeastern states.

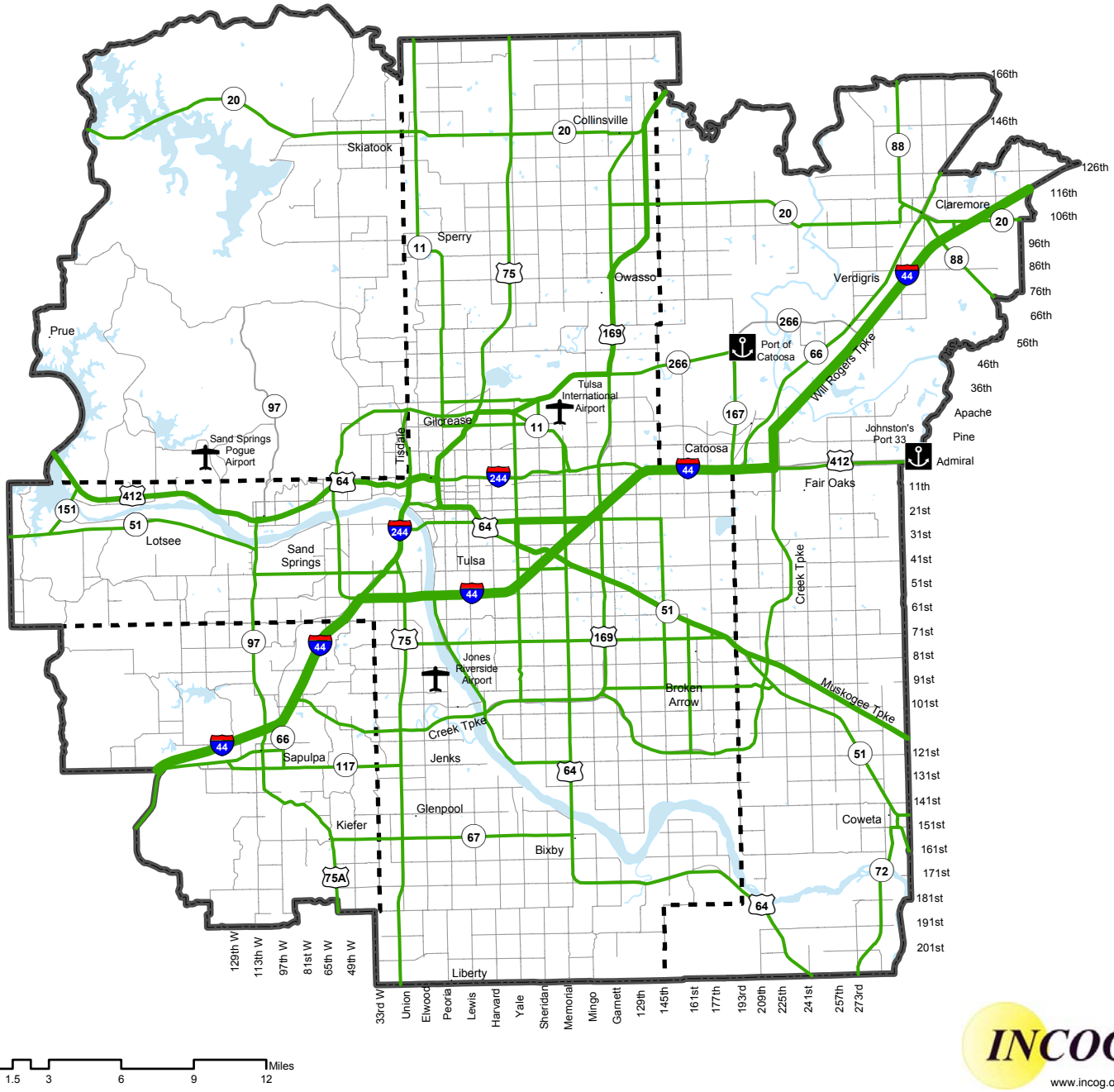
In general, freight flow is predominant via highway followed by rail and water. Tonnage by air is limited in comparison. Total tonnage by highway alone, to/from Tulsa TMA, is expected to grow to 29.6 million tons in 2030 from 18.3 million tons in 1997. Similarly, by rail, it is expected to grow to 10.9 million tons in 2030 from 7.8 million tons in 1997. It is important to plan for such a heavy growth forecast in freight flow when implementing the LRTP.

Trip Assignment for Total Flow by Road

Based on trip assignment for the freight origins and destinations reported in the freight study conducted by the University of Oklahoma, highest flows by road are estimated to be on Turner Turnpike/I-44, I-44 in the urbanized area of Tulsa TMA, Will Rogers Turnpike/I-44, US-412 and on US-75.

The highest flows by rail are by Union Pacific and Burlington Northern and Santa Fe rail lines.The 2030 forecast and the trip assignment virtually follow the existing flow by highway. Highest flows again are expected on I-44, US-412 and US 75 N. and US 75 S. The highest flows by rail are by Burlington Northern and Union Pacific rail lines. See the following Commodity Flow maps for more information.

Freight By Highway
2030 Forecast



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Destination 2030

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Highway Flows in Total Tons

- 0 - 5,000
- 5,001 - 10,000
- 10,001 - 15,000
- Over 15,000
- Highways
- Arterials
- County Boundary
- Transportation Management Area

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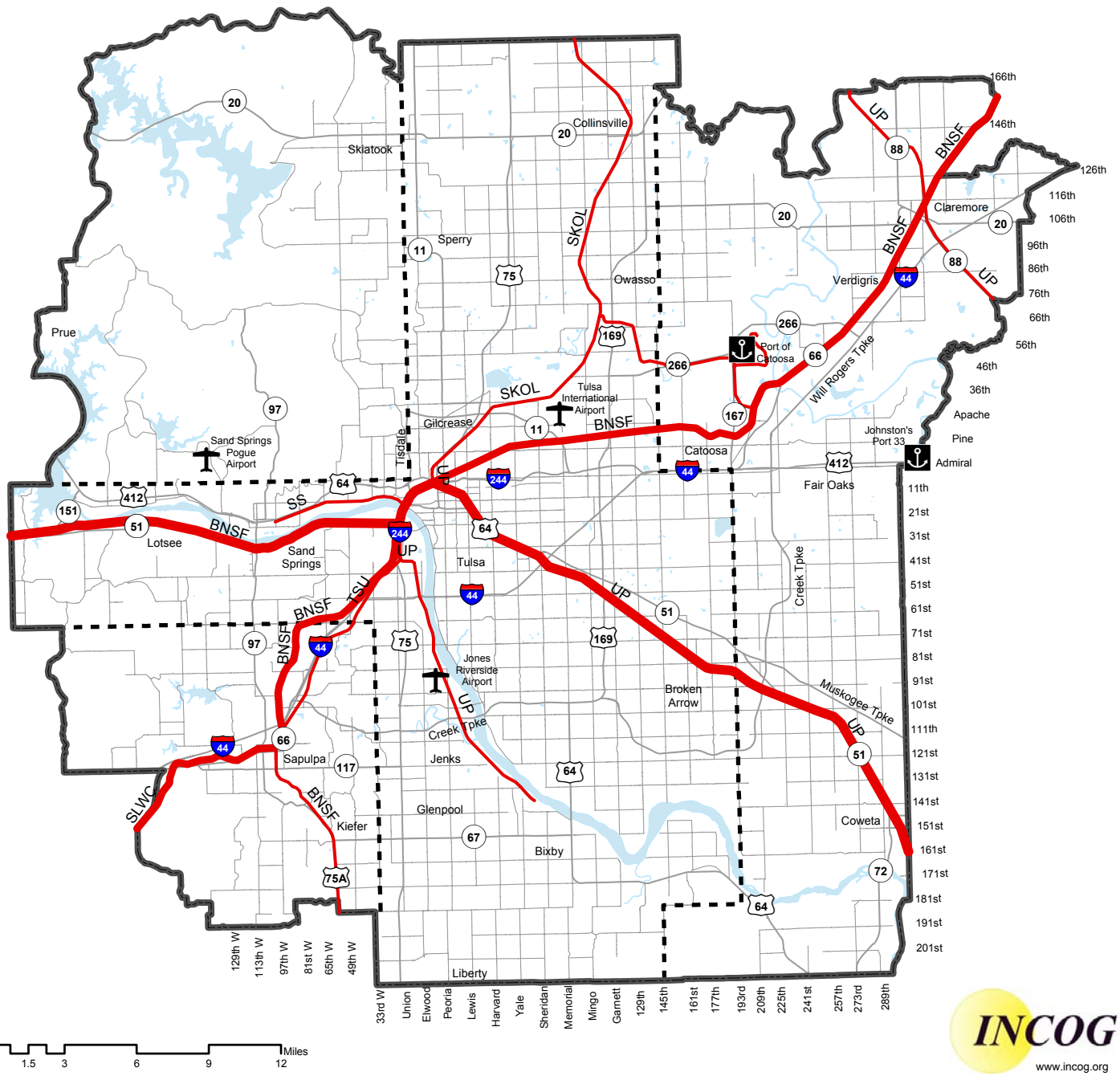
Location Map

Freight By Rail
2030 Forecast



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Rail Flows in Total Tons

- 0 - 5,000
- 5,001 - 10,000
- 10,001 - 15,000
- Over 15,000
- Highways
- Arterials
- County Boundary
- Transportation Management Area

N
W E
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Map Scale - 1:410,000

Location Map

ISSUES AND ACTIONS

Since freight transportation is a means to various regional economic ends, changes to the regional economy, such as manufacturing and retail, directly impact freight transportation and vice versa. In addition, access to raw materials and markets are key factors in the location decision of most manufacturing and distribution companies. Building an efficient freight infrastructure will require coordination among the various modes of freight transportation. An efficient freight movement system would expand markets, increase opportunity, production, and competition. The major issues associated with freight transportation in the TMA can be grouped into 5 broad categories, including government regulations, safety, energy consumption, economic impact, and infrastructure development and maintenance. These issues have been evaluated, and the following actions are proposed.

Legal and Regulatory Issues

According to an Oklahoma trucking industry survey, the most burdensome issue in the goods movement process continues to be government regulation. In spite of federal deregulation of the trucking and airline industries in the late 1980s and early 1990s, individual states have continued to maintain restrictions on the weight and size of trucks that can operate within their borders. The following actions are recommended:

- In conjunction with the Chambers of Commerce, and local freight transporters, identify any legal and regulatory impediments to freight movement in the Tulsa area
- Developing Oklahoma's Commercial Vehicle Information Systems Network (CVISN) effort has undertaken major steps toward streamlining permitting and other regulatory needs with help from Department of Commerce, Oklahoma Tax Commission, Department of Public Safety and Oklahoma Department of Transportation. These recommendations will be supported through the planning process.

Energy and Efficiency Issues

The current system for moving freight relies heavily on trucking, which is one of the least fuel-efficient modes. Trends in freight transportation (just-in-time, next day delivery, etc.), appear to suggest that trucking and airfreight are the wave of the future. One prominent goal of ISTEA was to develop a Transportation System that ensures energy efficiency. In order to advance such a goal, the freight element of the LRTP identifies resources that foster the development of more efficient freight vehicles, better technology, or operational strategies that minimize the use of energy. An energy-efficient goods movement plan should focus on the following actions.

- Encourage the testing of less-polluting alternative sources of energy and their potential application in the goods movement process, particularly truck stop electrification
- Support the development of more efficient freight vehicle technology and the use of energy-efficient alternatives such as double stacked railcars, longer trailers, electronic sorting and tracking of packages, freight consolidation techniques, satellite distribution centers, etc.
- Support the local emergency/hazardous materials management agency in identifying alternative routing options in the area, for transportation of potential hazardous materials
- Encourage the use of new technology applications and practices that maximize efficiency
- Support efforts to maximize efficiency in the goods movement process, including handling and transporting goods to minimize air emissions and achieve air quality goals

Safety Issues

The goods-movement process is concerned with issues of safety. Freight movement involves safety at terminal facilities, vehicle operational safety, and safety along the roadways. The safety issues associated with individual terminal facilities are the responsibility of terminal operators. However, drivers must be certified, and vehicles must pass safety inspections in order to operate on the roadways. Similarly, the local roadway network must meet the minimum design standards to maximize safety for vehicles and other road users. Therefore, the freight transportation plan for the region must address the issue of safety from the perspective of the driver, the vehicle, and the roadway. The LRTP must also address safety as it relates to trains, barges, and other freight transportation modes.

- Identify the high accident locations involving freight movement in the region, including highways, railroads, railroad crossings, and waterways. Work with the local freight operators to identify and address safety-related issues on the road network and elsewhere
- In conjunction with ODOT, rail operators and local governments, develop and maintain an inventory of rail/highway crossings in the area, including at-grade and grade-separated crossings, and use the results to guide the prioritization and selection of potential projects
- Collect and maintain data related to truck accidents and truck safety on the region's primary roadways
- Encourage the development and use of improved vehicle technologies to enhance safety and support ongoing vehicle safety inspection programs for all modes

Economic Development Issues

Because the movement of freight is closely related to regional economic activity, changes in the economy are likely to affect the volume and pattern of regional goods distribution. Trends in regional production, manufacturing, and distribution will be closely monitored and characterized to get a better understanding of freight activity in the Tulsa area. As the region grows and expands economically, so will the need for freight service. Therefore, the goods movement planning process must support regional economic development activities.

- Work with local businesses, Chambers of Commerce, local governments and authorities to identify freight-related long-range and short-range transportation projects and encourage their funding and implementation
- Support the use of state and local economic development programs to develop regional transportation facilities, improving industrial areas and other freight activities that have the potential to strengthen the local economy
- Encourage public/private partnership ventures that provide leverage for local freight-transportation projects

Physical Infrastructure Issues

The regional freight infrastructure consists of networks, vehicles, and terminal facilities. These include airports, port facilities, and roadways that are built, maintained, and operated by the public sector. A significant portion of the infrastructure belongs to the private sector, including airplanes, barges, towboats; trains, rail facilities, trucks, truck terminals, pipelines, etc. This difference in ownership may present some challenges when it comes to planning for future infrastructure needs. The focus of the freight element is on the infrastructure that are built, maintained and operated by the public sector. Following are some actions that would facilitate the smooth flow of goods into and through the Tulsa region.

- Work with the Oklahoma Department of Transportation and other agencies to continue development and maintenance of the roadways in the area, including those that connect the manufacturing, storage, and distribution centers in the area to other market areas beyond the TMA; also continue to monitor the performance of airports, water ports, and rail facilities
- Identify bottlenecks, missing links, safety hazards, and other needed components of the regional infrastructure
- Continue to track the performance of airports, water ports, and rail facilities. Develop criteria to evaluate and monitor the performance of the freight movement infrastructure including roadways, railways, airports, and other networks in the area.
- Encourage feasibility studies along the Osage/NW passage, and investigate opportunities to improve US-75, US-169, and I-44 to facilitate freight movement between Tulsa and the surrounding metropolitan areas of Dallas/Ft. Worth, Texas; Kansas City and St. Louis, Missouri; and Wichita, Kansas
- Support development of regional ITS applications, in compliance with national ITS architecture for truck facilities and operations in the TMA
- Enhance the development of the Tulsa International Airport and the Port of Catoosa through implementation of planned physical infrastructure improvements, including additional air cargo facilities and improved landside access, and additional dock capacity at the Port of Catoosa for general cargo, dry bulk, and container cargo; support efforts to widen and deepen the water channel between the Port of Muskogee and the Port of Catoosa
- Conduct a study on how full container importers have functioned since the closing of the rail intermodal facility, and what can be done in the future to accomodate these importers