2.0 CURRENT CONDITIONS OF THE INTERMODAL SYSTEM

This chapter provides vital information on statistics and characteristics of the existing transportation system; views of the current system from key stakeholders either through the mailed questionnaire or from face-to-face interviews; and current system strengths and weaknesses.

2.1 Transportation Mode Inventory

This section documents an inventory of the relevant transportation modes across the state including major freight and passenger corridors and facilities. It will be an important component of the Intermodal element of the Oklahoma Statewide Intermodal Transportation Plan. The report focuses on intermodal linkages, including air passenger/air cargo systems, the river port system, major interstate and state highway corridors, the freight rail system, both urban and rural public transit systems, intercity rail and bus systems, and selected bicycle and pedestrian facilities.

Data for this inventory have come from a variety of primary and secondary sources. Considerable data were obtained from existing Oklahoma Department of Transportation (ODOT) files with valued assistance from ODOT staff. In addition, federal statistical publications and databases were accessed by the study team and some local metropolitan transit providers made their data available. Freight and passenger utilization data are provided and in most cases recent utilization trends are summarized and described. Similarly, mapping to support the modal inventory was either provided by ODOT, local transportation providers, various agency websites, or created by the consultant team.

The inventory attempts to focus on existing intermodal facilities and the status of various intermodal connections between the various modes. This report is organized into two main sections: 1) Freight Transportation and 2) Passenger Transportation. Within the freight category, material is included on air cargo, rail freight, rail-to-truck freight, truck freight, water-borne freight, and associated intermodal connections. Within the passenger category, information is included for aviation (commercial and general aviation), bicycles and pedestrians, public transit (urban, rural and intercity), and state highways and toll facilities (turnpikes).

At the time of final preparation of this task report, certain utilization data were still being compiled by various agencies, thereby not allowing utilization time series consistency for all modes. More data will become available as this study progresses and the latest information will be inserted during preparation of the Final Report.

2.1.1 Freight Transportation

The inventory begins with a survey of the freight transportation system in Oklahoma. Modes surveyed and included in the inventory are:

- Air cargo
- Rail freight

- Intermodal rail
- Trucking
- Ports and waterways

While much of the freight traveling within and through Oklahoma is carried on a single mode – trucks – truck transport is a critical link in the intermodal chain, as intermodal connections almost invariably involve movement of goods or containers between trucks and the rail, water, or air cargo modes. Moreover, goods moved exclusively by truck may benefit from consolidation, repositioning, or warehouse distribution, and to this extent, the logistics chain for truck transported freight may involve discontinuities which, in a broader sense, represents intermodal connection opportunities.

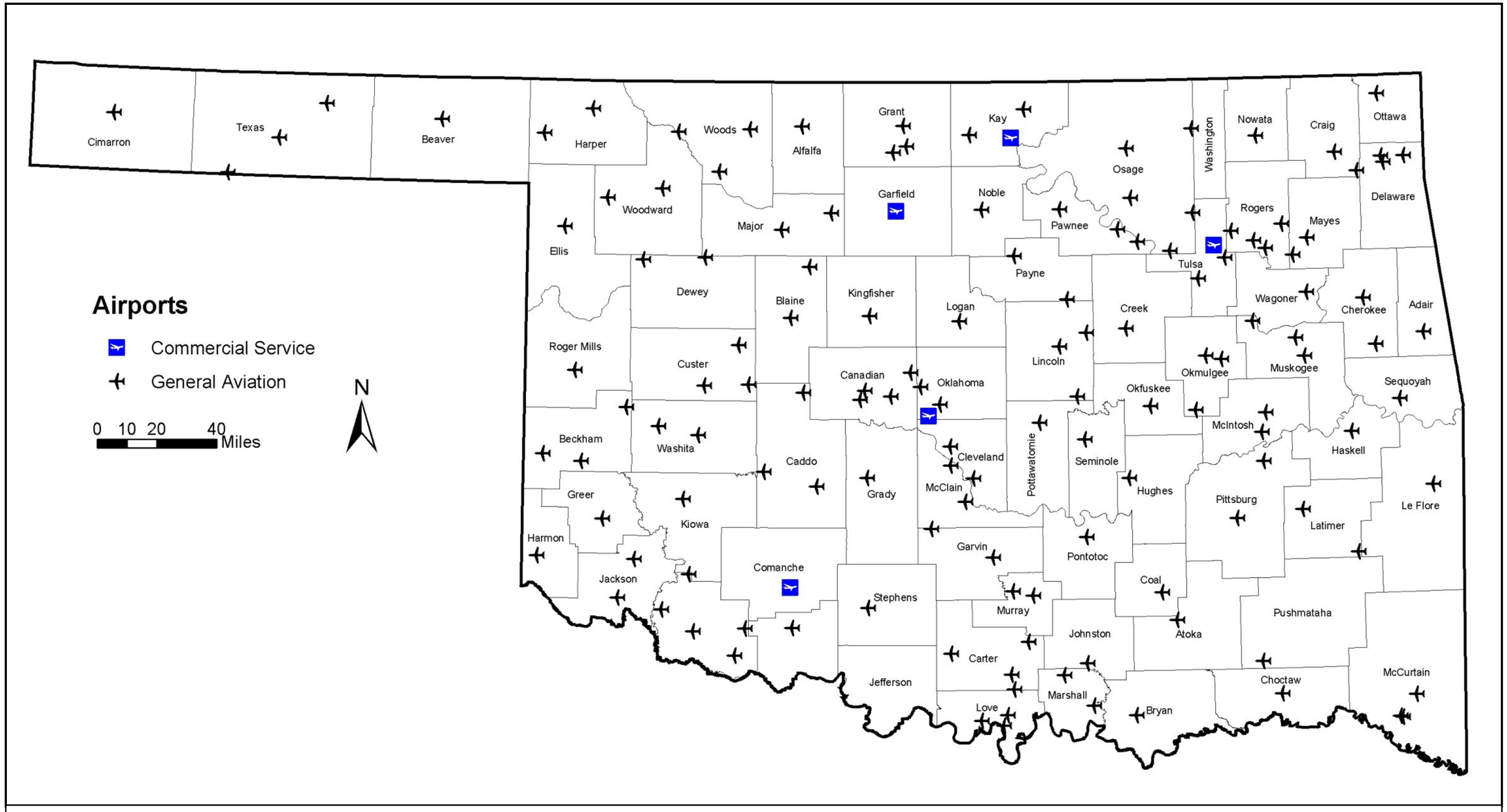
Existing total freight movements in Oklahoma exhibit the following major characteristics:

- In 1998 (latest data available), 40.9 million tons of freight moved out of Oklahoma. Most outbound movements (42.5 percent) were southbound to Texas. The northeastern U.S. received 17 percent of the state's outbound freight, and the northern plains and the southeastern U.S. each received 15 percent.
- In 1998, 58 million tons of freight moved into Oklahoma. Most freight was from the northwestern U.S. (27 percent), this primarily being coal moved by rail. Other major regions from which inbound freight originated were the southeastern U.S. (21 percent), northern plains (20 percent), Texas (13 percent), and the northeastern U.S. (15 percent).
- A total of 450 million tons of freight moved through Oklahoma, but did not originate or terminate in the state in 1998. This is approximately 4.5 times the amount of inbound and outbound freight. Approximately 57 percent of this through freight traveled in a general north/south direction, reflecting the orientation of the transportation system, the NAFTA trade corridor, and the preponderance of trade to and from Texas.
- Approximately 34 million tons of intrastate freight was transported within Oklahoma in 1998, that is, freight with both origin and destination in the state.

2.1.1.1 Air Cargo

Two major international airports serve Oklahoma—Will Rogers World Airport in Oklahoma City and Tulsa International Airport, in Tulsa. These two airports are the primary air cargo facilities in the state. Three regional airports located in Enid (Woodring Regional Airport), Lawton (Lawton-Fort Sill Regional Airport), and Ponca City (Ponca City Regional Airport) serve as commercial passenger links in their respective regions, but host no substantial cargo operations. The two major airports have both experienced recent declines (since 2000) in total cargo and mail shipped (Table 2.1 and Table 2.2), although non-mail cargo has remained relatively steady at Tulsa International. Major air cargo users in Oklahoma include oil companies, auto parts distribution firms, electronics firms, and other special industries. Oklahoma's airports are shown in Figure 2.1.

Figure 2.1 Oklahoma Airports



OKLAHOMA AIRPORTS

Source: Oklahoma Airport Master Plan

Will Rogers World Airport is located in the southwest corner of Oklahoma City. With two main runways (both 9,800 feet) and a 7,800 foot crosswind runway, the airport presently serves commercial passenger, cargo, general aviation, and Air National Guard customers. Air freight services at Will Rogers include Emery, Federal Express, United Parcel Service, Airborne, and Burlington as well as the major freight carriers. The airport is also designated as a Foreign Trade Zone, with the availability of general purpose warehouses and a U.S. Customs Port of Entry office. It is located near Interstate Highways I-44, I-35, and I-40, providing easy access for truck freight transport. Meridian Avenue and Airport Road have also been designated as National Highway System Intermodal Connectors to I-44. The airport is also located near rail services in Oklahoma City and is approximately 90 miles from the Port of Catoosa in Tulsa. A layout of the airport is shown in Figure 2.2.

Will Rogers Airport handled approximately 35,571 tons of cargo and mail in 2003 (Table 2.1 and Table 2.2), with total tonnage projected to decrease by approximately 1,000 to 34,556 tons in 2004. As noted in the tables, the amount of cargo and mail passing through the airport declined from 2000 to 2003.

Table 2.1 Cargo at Oklahoma Commercial Airports, 2000 to 2004
(tons)

Airport	2000	2001	2002	2003	2004*
Will Rogers World	49,369	45,078	42,431	32,431	31,521
Tulsa International	52,367	48,293	48,188	51,060	53,948
Total	101,736	93,371	90,619	83,491	85,469

Source: Will Rogers World Airport (www.flyokc.com); Tulsa International Airport

* 2004 estimated tonnage based on actual data for January through May.

Table 2.2 Mail at Oklahoma Commercial Airports, 2000 to 2004
(tons)

Airport	2000	2001	2002	2003	2004*
Will Rogers World	9,910	7,048	2,776	3,140	3,035
Tulsa International	7,290	5,109	2,048	2,242	2,268
Total	17,200	12,157	4,824	5,382	5,303

Source: Will Rogers World Airport (www.flyokc.com); Tulsa International Airport

* 2004 estimated tonnage based on actual data for January through May.

Tulsa International Airport is located on a 4,000-acre tract on the north edge of Tulsa, with 1,000 acres available for development. The airport has two main runways (10,000 feet and 7,400 feet) with a 6,100-foot crosswind runway that serves commercial passenger, cargo, general aviation, and Air National Guard customers. Air freight services at Tulsa International include Airborne Express, American Airline Cargo, Continental, Delta Dash, Menlo/Emery, Federal Express, Southwest, United Parcel Service, and the U.S. Postal Service. American operates a major

aircraft maintenance center at Tulsa International. The airport is also designated as a Foreign Trade Zone, with the availability of general purpose warehouses and a U. S. Customs Port of Entry office. State Highway (SH) 11 has been designated a National Highway System Intermodal Connector, providing direct access to I-244. The airport is also located near I-44 and US 169, providing easy access for truck freight transport. In addition, it is also located near rail services in Tulsa and is only minutes from the Tulsa Port of Catoosa. A layout of the airport is shown in Figure 2.3.

Tulsa International Airport handled approximately 53,302 tons of cargo and mail in 2003 (Table 2.1 and Table 2.2). As shown in the tables, the amount of cargo passing through the airport fluctuated slightly from 2000 to 2003 and is expected to increase by approximately 2,000 tons in 2004, but mail shipments have declined sharply since 2000 (69 percent) and have remained relatively stable the last three years.

Oklahoma's international airports remain important intermodal connectors in the state's transportation system. However, recent freight trends as measured in total freight tonnage seem to indicate a decline in activity for this transportation mode. Airport marketing personnel consider the drop in mail service to be largely attributable to the September 11 attacks. Since that time, increased security measures were placed on the airlines requiring that mail be sent only on approved carriers and only in approved containers. More mail is likely being shipped by truck to nearby states, with cross-country mail being transported by air. The Internet and the use of email may also be important factors in this decline. The U.S. Postal Service reports that Priority Mail and Express Mail have declined over the last three years, which is consistent with these observations.

The decline in cargo shipments at Will Rogers World Airport can be largely explained by changes in the aircraft being used by the airlines. Several commercial airlines flying into Will Rogers have shifted to using more "regional" size jets that do not have the capacity to carry cargo. These jets typically carry 70 to 90 passengers and only have cargo capacity for passengers' luggage. In addition, increased security since 2001 has also inhibited carrying cargo on passenger jets. Cargo shipped through Will Rogers World Airport from fiscal year 2001 to 2004 is shown by individual carriers in Table 2.3.

Figure 2.2 Will Rogers World Airport Facilities

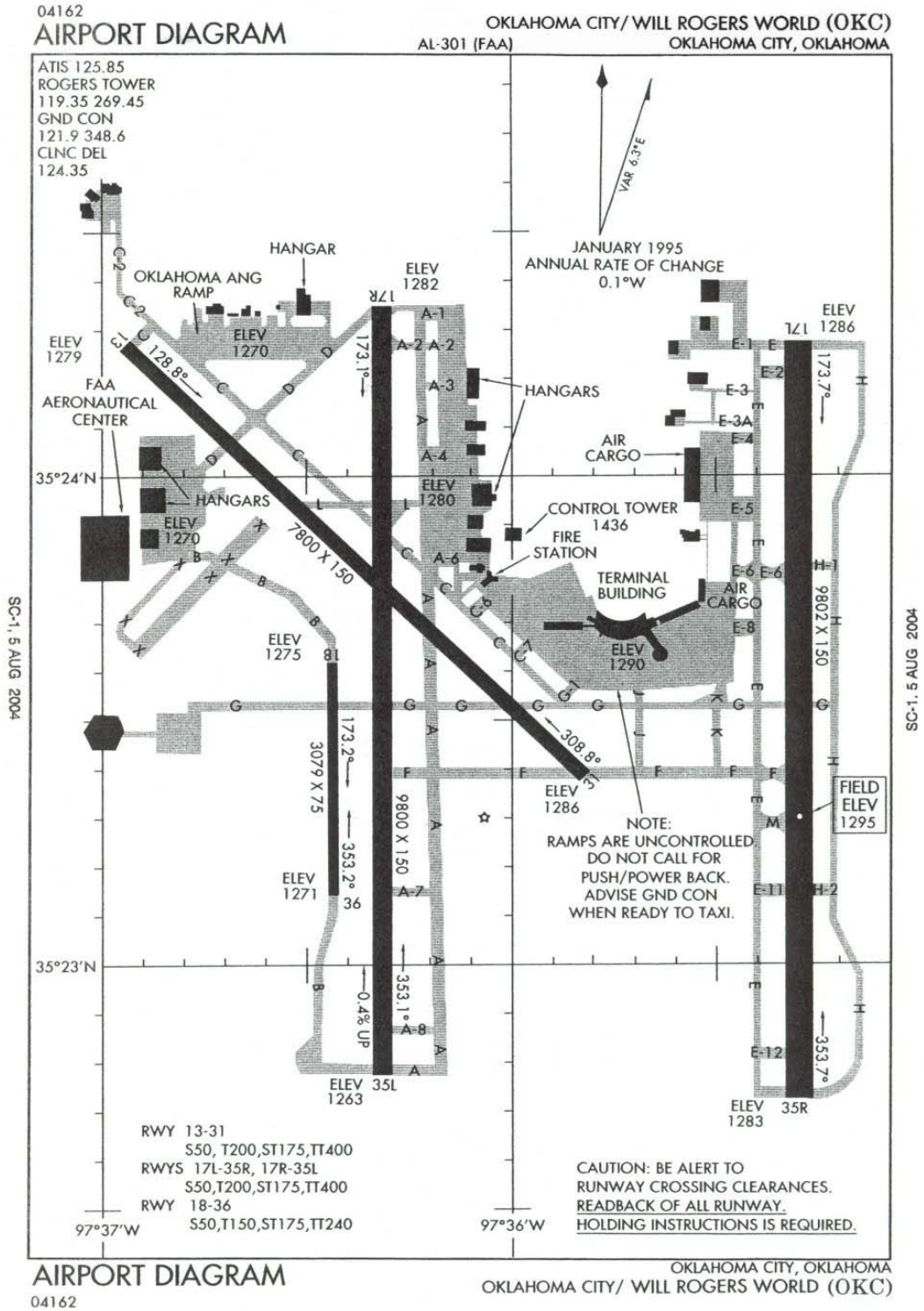


Figure 2.3 Tulsa International Airport Facilities

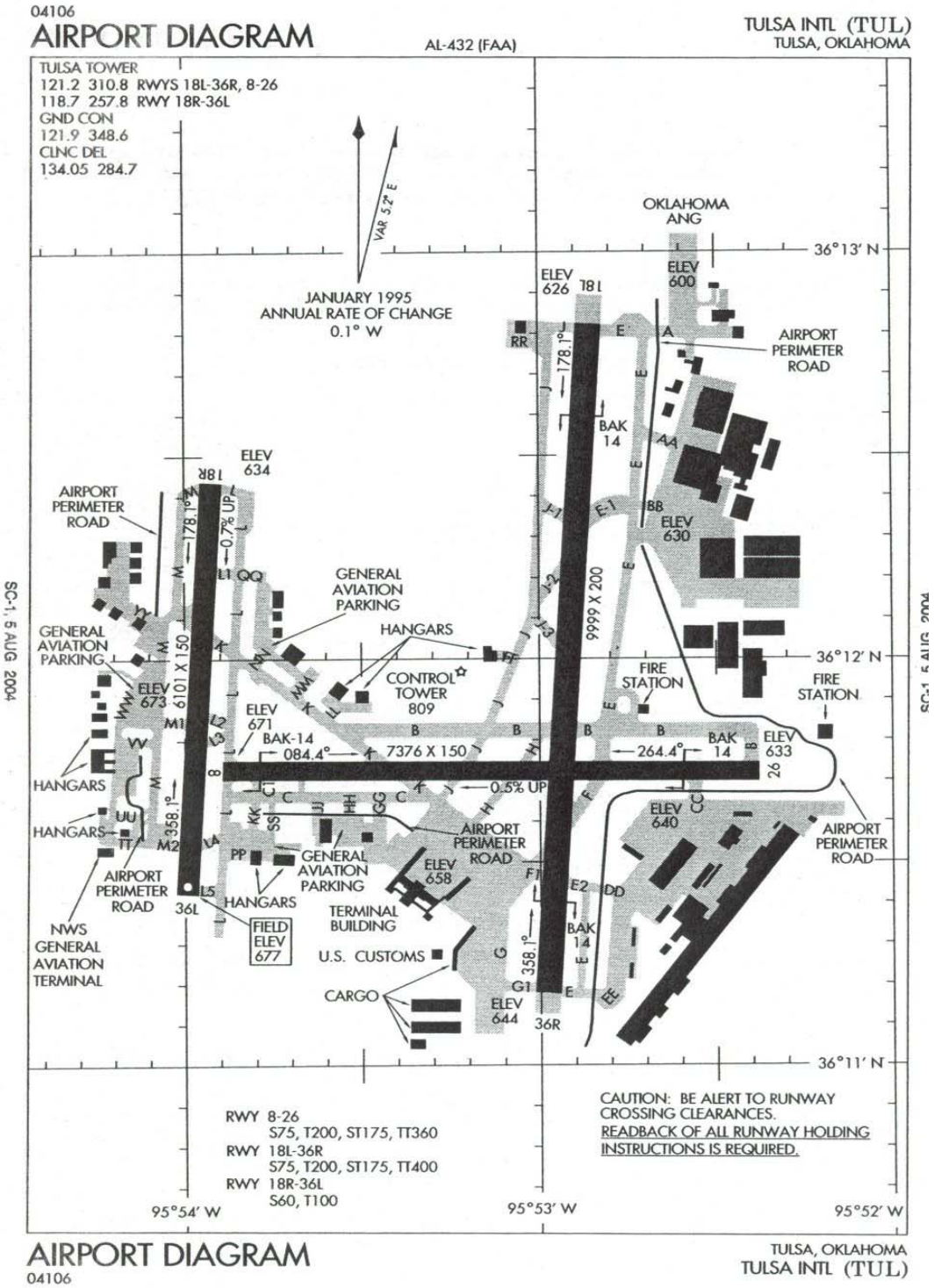


Table 2.3 Cargo at Will Rogers World Airport, Fiscal Years 2001-2004
(tons)

Carrier	2001 Enplaned	2001 Deplaned	2002 Enplaned	2002 Deplaned	2003 Enplaned	2003 Deplaned	2004* Enplaned	2004* Deplaned
American	14	54	1	5	0.4	0.6	0.1	1
American Eagle	0.6	6	0.4	2	0.2	2	0	1
Atlantic SE	5	13	3	2	0	0.1	0	0
ComAir	2	3	3	3	0	4	5	8
Continental	76	170	41	218	44	143	71	128
Delta	305	322	198	212	183	232	123	209
Frontier	0	0	0	0	36	9	7	17
Mesa	0	0	0	0	0	0	0	1
Northwest	11	48	10	46	6	43	13	26
Skywest	0	0	69	0.4	0.1	0.5	1	78
Southwest	333	865	260	765	458	897	380	946
TWA	10	87	16	2	0	0	0	0
Trans State	0	0	0	0	0	0	3	12
United	21	126	13	129	15	96	13	100
Airborne	3,023	3,525	2,135	2,269	2,214	2,159	2,130	2,181
Air Net/ US Check	399	24	3,277	7	0	0	0	0
Air Trans. International	4,733	4,592	23	3,469	30	30	0	0
Baron Aviation	115	100	230	214	0	0	0	0
Emery	2,090	3,596	0	0	0	0	0	0
FedEx	6,308	8,537	11,076	12,346	10,530	11,439	9,884	11,239
UPS	2,233	2,833	1,480	2,705	1,485	2,757	1,675	3,132
Total	19,678.6	24,901.0	18,835.4	22,394.4	15,001.7	17,812.2	14,305.1	18,079.0

Source: Will Rogers World Airport, Accounting Department, 2004

* Fiscal years run from July to June

2.1.1.2 Rail Freight

Currently, 20 freight railroads operate in Oklahoma: three Class I railroads, one regional railroad, 11 local line, and five switching and terminal lines (Table 2.4). As Table 2.4 indicates, total railroad miles operated in Oklahoma increased from 1997 to 2000 (74 miles), but then decreased from 2001 to 2002 by 769 miles. (Note that this increase was probably caused by trackage rights with the same trackage being used by two rail operators.) Class I railroads lost 770 miles over the six-year period, while local railroads increased trackage and trackage rights by 368 miles from 1997 to 2001, but declined in mileage by 165 miles from 2001 to 2002—a net increase of 203 miles. Other railroads (regional and switching/terminal) declined by 28 miles during the same six-year period. The state's railroad system is shown in Figure 2.4.

Table 2.4 Oklahoma Freight Rail Characteristics, 1997 to 2002

Characteristic	1997	1998	1999	2000	2001	2002
Number of Freight Railroads	19	20	20	20	19	20
Miles Operated:*	3,829	3,782	3,900	3,903	3,903	3,234
- Class I	2,811	2,692	2,693	2,645	2,532	2,041
- Regional	93	93	78	78	78	78
- Local	613	685	817	868	981	816
- Switching & Terminal	312	312	312	312	312	299
Total Carloads (thousands)	3,389	3,957	4,219	4,279	4,693	4,851
Total Tons (thousands)	173,066	183,820	200,802	209,199	217,470	222,551

Source: Association of American Railroads, *Railroad Service in Oklahoma*, 2002

*Including trackage rights

The State of Oklahoma supports rail transportation with ownership of several railroad rights-of-way. Most of these facilities are leased to railroad companies although a few are not in operation. State-owned railroad rights-of-way include trackage leased by: Union Pacific; Stillwater Central; Farmrail; Arkansas-Oklahoma; Wichita, Tillman & Jackson; Austin, Todd & Ladd; and South Kansas & Oklahoma.

Total tons of rail freight carried in Oklahoma increased 28.6 percent from 1997 to 2002, and by 6.4 percent between 2000 and 2002 (Table 2.4). Total rail carloads transported increased by 43.1 percent between 1997 and 2002, and by 13.4 percent from 2000 to 2002. As indicated in Table 2.5, aggregate rail freight terminating in Oklahoma generally exceeds rail freight originating in the state by roughly a three-to-two ratio, suggesting greater demand for intermodal off-loading capacity than on-loading. However, approximately 75 percent of all rail freight tonnage transported in Oklahoma in 2002 was through tonnage originating in and destined for locations outside the state.

Figure 2.4 Oklahoma Railroad System

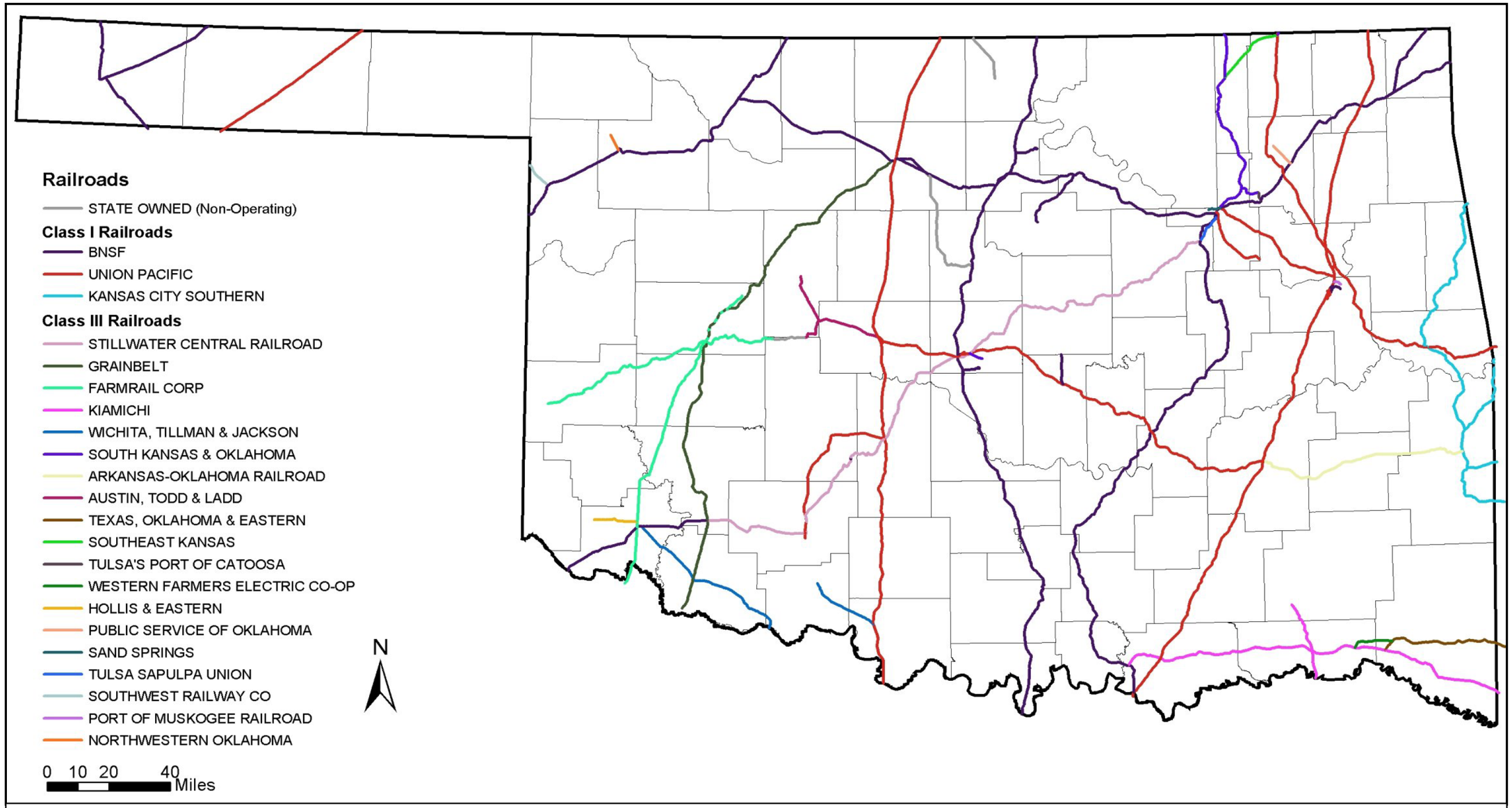


Table 2.5 Aggregate Rail Freight Trends in Oklahoma, 1997 to 2002
(thousands of short tons)

Movement Status	1997	1998	1999	2000	2001	2002
Total Originating	17,130	16,983	19,192	20,298	20,299	21,510
Total Terminating	27,680	28,466	30,559	27,099	31,626	34,445
Through Tonnage	128,256	138,371	151,051	161,802	165,545	166,696
Total Tons of Freight Carried	173,066	183,820	200,802	209,199	217,469	222,551

Source: Association of American Railroads, *Railroad Service in Oklahoma*, 1997-2002

Approximately 44 percent of all rail-shipped commodities originating in Oklahoma in 2002 were nonmetallic minerals, more than any other commodity (Table 2.6). This category also grew faster than other commodity types between 1997 and 2002—by 83 percent. Chemicals and farm products each accounted for approximately 12 percent of rail tonnage originating in the state, with growth in chemical shipments remaining relatively flat since 1997, while farm product tonnage grew by 28 percent. Other significant rail commodity freight originating in Oklahoma includes petroleum products and lumber and wood products.

Coal accounted for nearly two-thirds of rail commodities terminating in Oklahoma in 2002. Rail shipments of coal into the state grew by approximately 34 percent from 1997 to 2002. Other significant rail commodities terminating in Oklahoma include lumber and wood products, nonmetallic minerals, food products, and farm products.

Class I railroads operating in the state include BNSF Railway Company (BNSF), Union Pacific (UP), and Kansas City Southern (KCS). BNSF shares trackage with Amtrak passenger rail services between Oklahoma City and the Texas state line. Class III railroads are shown on the statewide railroad map (Figure 2.4).

BNSF's rail network in Oklahoma consists of four different operating divisions within the BNSF system. The route within the Springfield Operating Division connects Tulsa, Perry, Enid, and Avard through the northeastern corner of the state to Kansas City and St. Louis. A main line of the Kansas Operating Division in northwestern Oklahoma connects Kansas City to Amarillo as part of the transcontinental Chicago to Los Angeles corridor. The Powder River Operating Division crosses the Oklahoma panhandle carrying coal from Wyoming's Powder River Basin to Texas electric utilities. The Texas Operating Division primarily connects the Dallas – Fort Worth area to Kansas City, with two north-south main lines through Oklahoma—one through Oklahoma City and one through Tulsa. A small BNSF Intermodal Hub is located in Oklahoma City. BNSF operates 1,475 route miles within the state. Its primary customers include General Motors, Nestle Purina, Continental Carbon, Budweiser, Valero Refinery, Williams Refinery, and Georgia Gulf. The primary commodities transported by the BNSF in Oklahoma with either origins or destinations in the state are non-metallic minerals, chemicals, and grain. Coal bound for Texas electric utilities is a major commodity of BNSF's interstate traffic through Oklahoma. A map of BNSF's national intermodal network is shown in Figure 2.5.

Table 2.6 Statewide Rail Freight Trends: Tonnage Originating and Terminating, by Commodity, 1997 to 2002

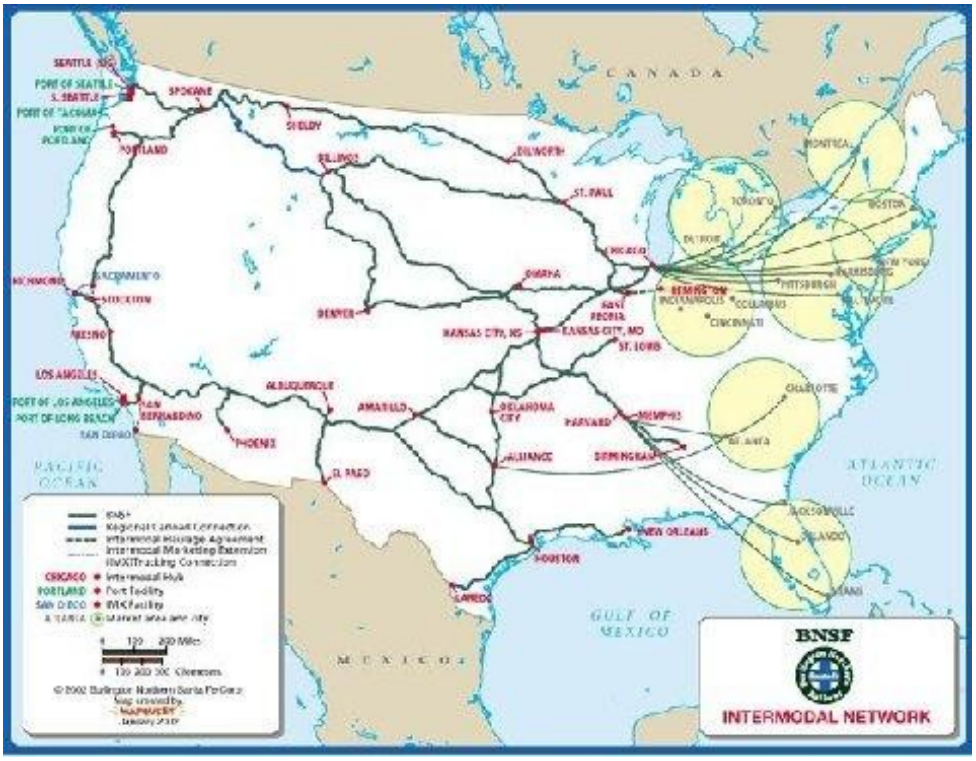
(thousands of short tons)

Originating	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Nonmetallic minerals	5,178	5,781	7,337	8,211	9,006	9,489
Chemicals	2,655	2,665	2,552	2,645	2,239	2,576
Farm products	1,997	2,263	2,550	3,037	2,739	2,561
Petroleum products	1,466	1,310	1,629	1,992	1,834	1,962
Glass and stone	1,205	1,195	1,414	n.a.	n.a.	n.a.
Lumber & wood products	n.a.	n.a.	n.a.	1,109	1,316	1,453
All other	4,629	3,769	3.710	3,304	3,166	3,469
Total Originating	**17,130**	**16,983**	**19,192**	**20,298**	**20,299**	**21,510**
Terminating	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Coal	16,070	17,024	18,247	14,650	18,704	21,604
Lumber & wood products	2,018	2,094	2,014	2,212	2,368	2,417
Nonmetallic minerals	1,619	1,557	1,886	2,094	1,906	2,052
Farm products	1,607	1,763	1,909	1,784	2,538	1,748
Food products	1,339	1,362	n.a.	n.a.	1,591	1,833
Chemicals	n.a.	n.a.	1,458	1,391	n.a.	n.a.
All other	5,026	4,667	5,067	4,969	4,520	4,692
Total Terminating	**27,679**	**28,467**	**30,581**	**27,100**	**31,627**	**34,346**
Total Through Traffic	**128,256**	**138,371**	**151,051**	**161,802**	**165,545**	**166,696**
Total Tonnage Carried	**173,065**	**183,821**	**200,824**	**209,200**	**217,471**	**222,552**

Source: Association of American Railroads, Railroad Service in Oklahoma, 1997-2002

n.a.: not available

Figure 2.5 BNSF National Intermodal Network



Source: BNSF Railway Company

Oklahoma is part of UP's north-south corridor linking the Midwest with the Gulf Coast. The railroad operates 1,181 miles of track in the state. Grain to be exported overseas and coal bound for power plants in the South is shipped through the state via UP (originating, terminating, and through rail freight commodities are shown in Table 2.6). Commodities shipped by UP originating in Oklahoma include wheat, cement, and aggregates. UP customers include Oklahoma Gas & Electric, Grand River Dam Authority and Great Lakes Carbon, Dolese Brothers, Lone Star Industries and Farmland Industries. Nearly all north-south UP traffic funnels through Wagoner, as well as some trains linking Arkansas with the Midwest. UP also operates another north-south line in western Oklahoma, serving Enid, El Reno and Duncan, which connects Kansas wheat producers to the Texas ports. Switch yards and related facilities are operated at Muskogee, Tulsa, Oklahoma City, Chickasha, Enid, and McAlester.

KCS operates primarily north-south in the eastern portion of Oklahoma, providing the shortest route between Kansas City and the Gulf of Mexico. The KCS system funnels traffic from the Kansas City area to the ports of Port Arthur, Texas, New Orleans, West Lake Charles, Louisiana, and Gulfport, Mississippi, as well as NAFTA-related Mexican border crossings at Laredo and Presidio. In the 1990s, while UP and BNSF concentrated on increasing east-west transcontinental traffic, KCS achieved its goal of creating the "NAFTA Railway," connecting the heartland of the United States to central Mexico. KCS operates 139 route miles in Oklahoma. The majority of the KCS traffic in Oklahoma is interstate traffic, having neither an origin nor destination within the state. A map depicting KCS's North American rail system is provided in Figure 2.6.

Figure 2.6 KCS Rail System

2.1.1.3 Rail Freight Intermodal—Truck/Rail

Intermodal facilities, as formally defined by railroads, are those in which containers or truck trailers are loaded to or from railcars in facilities equipped to effect those movements efficiently. Oklahoma has several intermodal facilities with the capability for rail-truck and other types of intermodal freight transfers. Five Oklahoma intermodal facilities are served by six routes designated official National Highway System Intermodal Connectors by ODOT (Table 2.7). None of these, however, is a rail-truck intermodal facility. The rail industry's definition of intermodal facilities is more restrictive than the criteria used by the FHWA in connection with designation of intermodal facility connectors. The Williams Pipeline Station is a truck-pipeline intermodal facility and the remaining facilities have considerable truck traffic. For example, the Tulsa Port of Catoosa averages over 450 trucks per day.

Table 2.7 National Highway System Intermodal Connectors

Connector	Intermodal Facility	Location	Facility Type
23rd St., from I-44 ramp to Station	Williams Pipeline Station	Tulsa	Truck/Pipeline Terminal
SH 266, from US 169 to Port SH 266, from I-44 to Port	Port of Catoosa	Tulsa	Port Terminal
SH 11, from I-244 to Airport	Tulsa International Airport	Tulsa	Airport
Meridian Ave., Airport Rd. to Terminal Airport Rd., I-44 to Meridian Ave.	Will Rogers World Airport	Oklahoma City	Airport
SH 412P, from US 412 to Port	Johnston's Port 33	Tulsa	Port Terminal

Source: Federal Highway Administration (http://www.fhwa.dot.gov/hep10/nhs/intermodalconnectors/oklahoma.html), 2001; ODOT, 2004

In addition to the facilities with officially designated connectors, BNSF has an intermodal rail-truck facility in Oklahoma City, near the junction of I-35 and I-240. BNSF's national intermodal network is shown in Figure 2.5. KCS operates an intermodal ramp in Sallisaw, where private port facilities on the McClellan-Kerr Arkansas River Navigation System are located. However, that facility was slated for closure in September 2004. BNSF also provides the names and locations of privately-operated "transload" facilities the railroad uses for intermodal transfers of freight throughout the state (Table 2.8). However, several of these facilities are currently open only to BNSF use.

Despite what appears to be relatively few intermodal freight transfer facilities in the state, Oklahoma ranked within the second highest tier of states in the intermodal share of freight originating in the state (based on total value) as early as 1993 (Figure 2.7). This places Oklahoma alongside a few select states in the central region of the U.S., with the intermodal share of originating freight being typically higher in the Northeast and on the West Coast.

Another relevant factor in considering needs and opportunities for developing intermodal transfer capabilities in Oklahoma is the location of designated foreign trade zones in the state. Four foreign trade zones are located in Oklahoma. They are in Rogers County (FTZ No. 53), Oklahoma City (FTZ No. 106), Muskogee (FTZ No. 164), and Durant (FTZ No. 227). The Rogers County FTZ is divided into five separate geographical areas:

- Bartlesville Chamber of Commerce – 160 acres
- Mid-America Industrial District – 750 acres

- Stillwater Chamber of Commerce – 500 acres
- Tulsa International Airport – 1,731 acres
- Tulsa Port of Catoosa – 61 acres

The Oklahoma City FTZ is operated by the Oklahoma City Department of Airports, with the grantee being the Port Authority of the Greater Oklahoma City Area. The Muskogee FTZ encompasses the entire Port of Muskogee, but is currently inactive. The Durant FTZ is located in the 320-acre International Business Park in Durant. The FTZ has been working to develop 16,000 square feet of business incubator space available within the business park.

Figure 2.7 Intermodal Share of Total Value of Shipments Originating in States, 1993

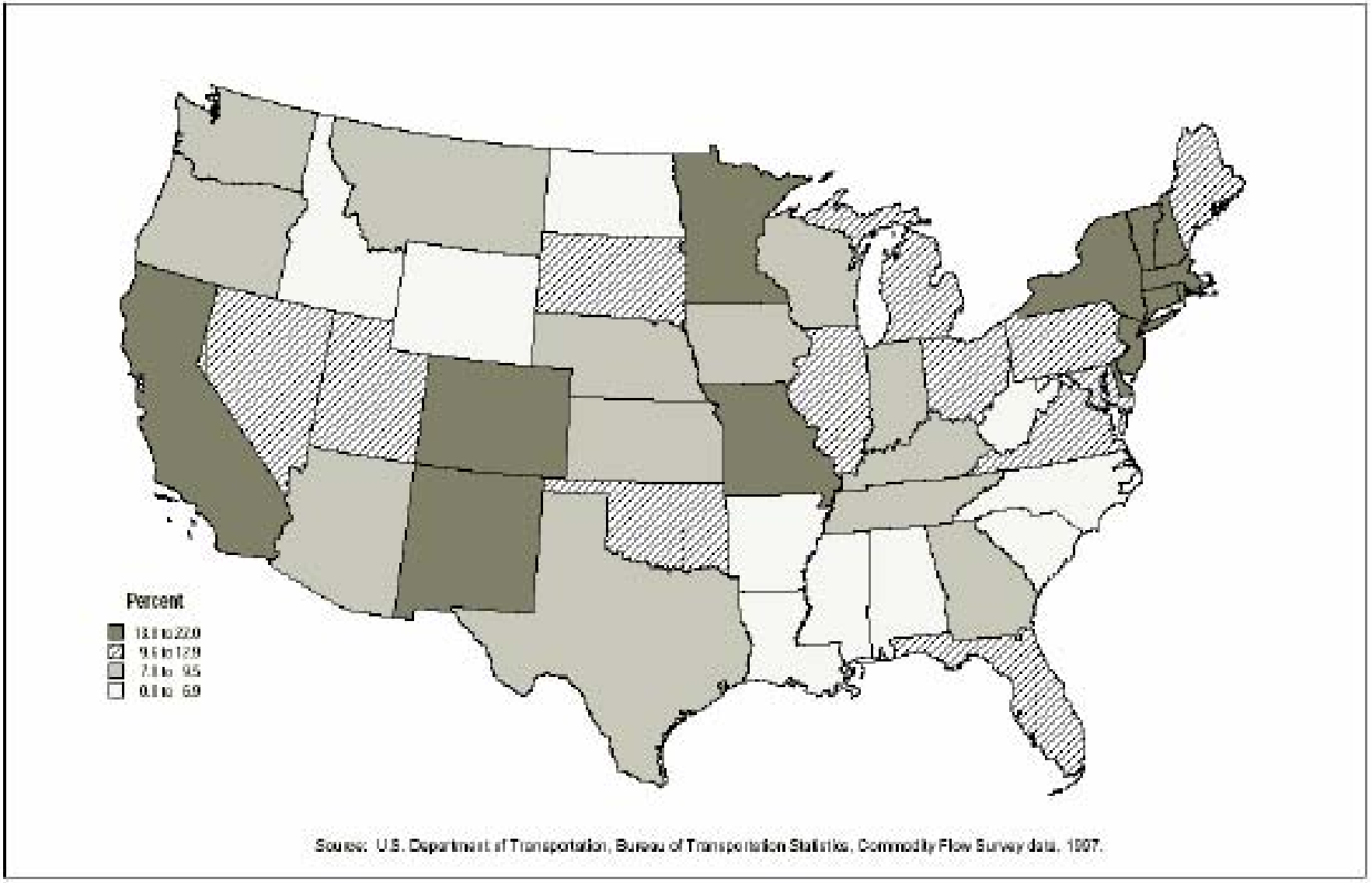


Table 2.8 Private Intermodal Facilities on BNSF and Affiliated Lines

Name	Status	Address	Operator
Oklahoma Transload Altus	BNSF use only	720 S. Grady Altus	Oklahoma Transload Co.
Steel Coil Catoosa	BNSF use only	5151 Ft. Gibson Rd. Catoosa	Staub Petroleum
Tuloma Stevedoring Catoosa	BNSF use only	5275 W. Channel Rd. Catoosa	Tuloma Stevedoring, Inc.
Affiliated Cartage Oklahoma City	Open	2101 SE 69th Oklahoma City	Affiliated Cartage, Inc.
AmeriCold Oklahoma City	BNSF use only	Oklahoma City	Americold Logistics, LLC
Apollo Distribution Oklahoma City	BNSF use only	5001 S.W. 36th Oklahoma City	Apollo Distribution, Inc.
Commercial Warehouse Oklahoma City	Open	3815 N. Santa Fe Oklahoma City	Commercial Warehouse, Inc.
CX Transport (CXT) Oklahoma City	BNSF use only	4607 S. MacArthur Blvd. Oklahoma City	CX Transportation
D & M Distribution Oklahoma City	BNSF use only	7815 Gimini Oklahoma City	D&M Distribution Services, Inc.
Oklahoma City Reload Oklahoma City	BNSF use only	1008 South High Oklahoma City	Oklahoma City Reload
Hodges Companies Okmulgee	BNSF use only	800 South Madison Okmulgee	Hodges Warehouse
Arco Warehouse Tulsa	Open	1810 East Jasper Tulsa	Arco Warehouse Co., Inc.
Ellsworth Motor Tulsa	BNSF use only	2120 N. 161st East Ave. Tulsa	n.a.
Metro Port Tulsa	BNSF use only	5524 E. 12th Street Tulsa	n.a.
Reynolds Trucking Tulsa	BNSF use only	Team Track #2 South Tulsa	Reynolds Trucking Co.
Sand Springs Tulsa	Open	1650 South 81st West Ave. Tulsa	Sand Springs Railway Co.
Frederick Sales Wheatland	Open	6800 S. Council Road Wheatland	Frederick Sales, LLC

Source: BNSF Railway Company, 2004

n.a.: not available

2.1.1.4 Truck Freight

Truck Freight Movement

Truck traffic is expected to grow throughout Oklahoma during the next 20 years. This growth will most likely occur in urban areas and on the state's Interstate highways and other major highway arterials, such as US 54, US 69, US 70, US 169, and US 412. According to FHWA's *Freight Analysis Framework* (FAF), truck traffic to and from Oklahoma accounted for 12 percent of the average annual daily truck traffic (AADTT) on the FAF road network. Approximately eight percent of this traffic comprised in-state shipments, while 32 percent involved trucks traveling across Oklahoma to markets out of state. About 48 percent of the AADTT was not identified with a route-specific origin or destination. The State's designated commercial vehicle routes are shown in Figure 2.8. the percentage of truck AADT as of 2003 on the state highway system is shown on Figure 2.9.

Over 120.6 million tons of freight originating or terminating in Oklahoma were moved via truck in 1998, the latest year for which data were available for the intermodal study. From 1994 to 1998, truck freight tonnage originating in Oklahoma grew by nearly 20 million tons (Table 2.9). Terminating truck freight grew by nearly 26 million tons during the same period.

Table 2.9 Oklahoma Truck Freight
(tons)

Direction	1994	1995	1996	1997	1998
Originating	37,286,504	45,924,352	48,824,688	50,438,850	57,178,682
Terminating	37,669,669	48,557,933	52,186,652	54,685,972	63,471,953

Source: Bureau of Transportation Statistics (www.bts.gov)

Figure 2.8 Federal Commercial Vehicle Routes in Oklahoma

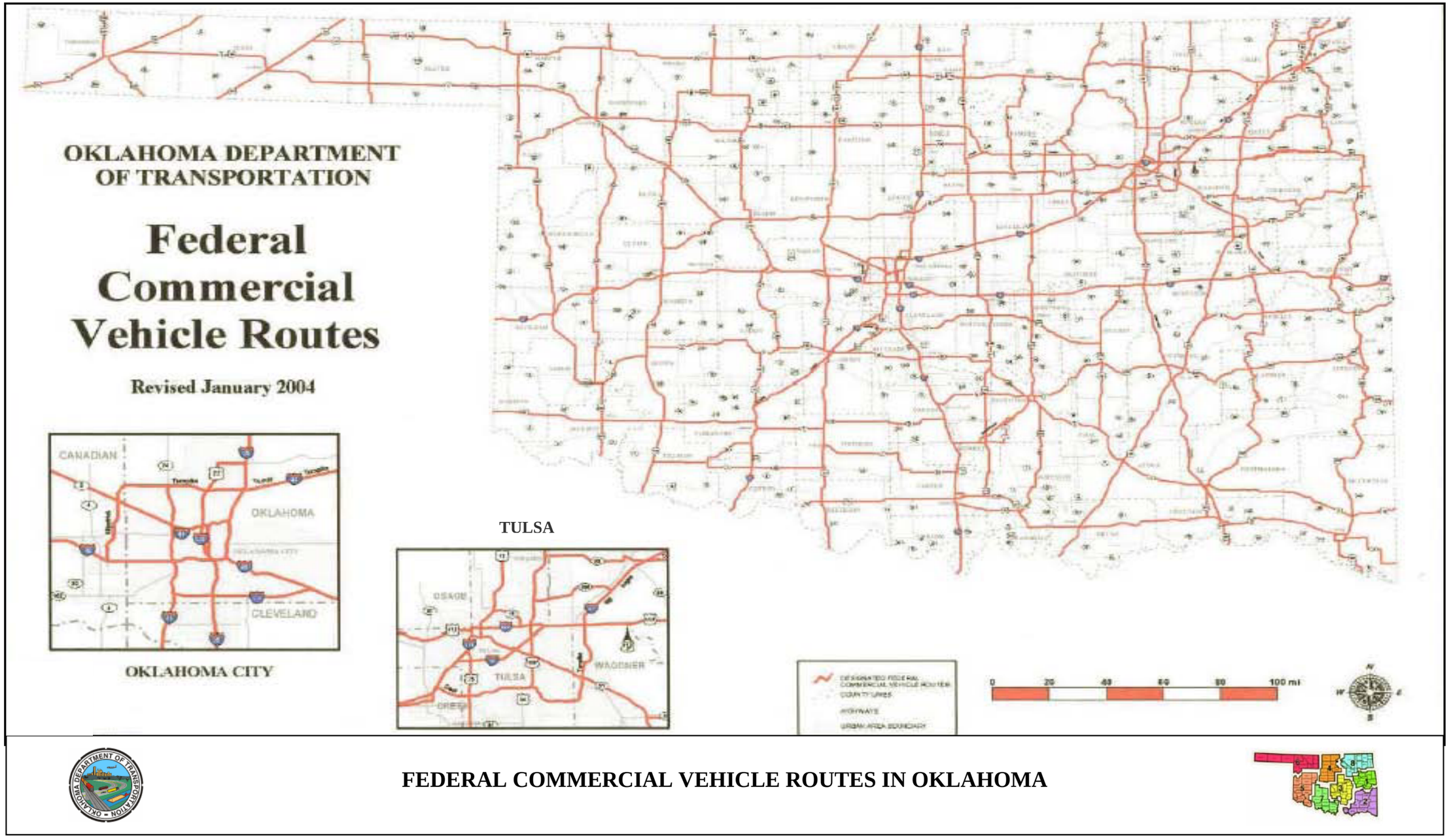
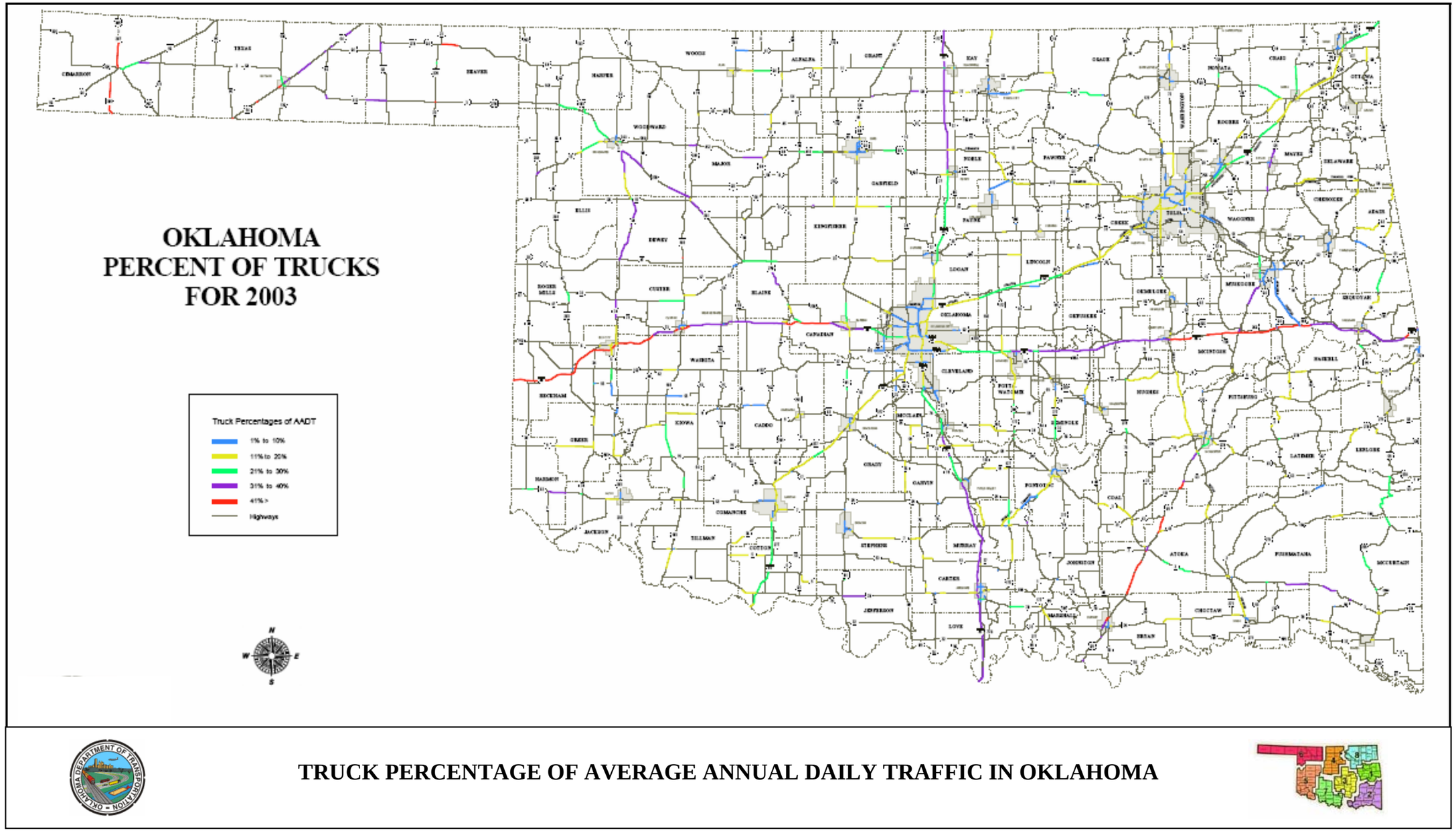


Figure 2.9 Truck Percentage of Average Annual Daily Traffic in Oklahoma



Truck Size and Weight Limitations

Oklahoma's legal truck size and weight limitations, as in any state, have implications for the planning and design of intermodal facilities so that those facilities can adequately accommodate the types of trucks likely to use them. Size and weight limits may, in other cases, represent a barrier to movement of certain types of shipments. The maximum lengths for various types of freight-hauling trucks are displayed in Table 2.10. Oklahoma's size and weight restrictions require a truck width of no more than eight and one-half feet and a maximum height of 14 feet (with some exceptions, see Table 2.10). Legal truck weight limits are shown in Table 2.11 and Table 2.12. Vehicle escort requirements are listed in Table 2.13.

Table 2.10 Oklahoma Legal Truck Dimensions

Dimension	Feet	Inches	Variations/Special Applications
Width	8	6	
Height	14	0	Baled hay 14 feet, 3 inches
Length	45	0	Single truck or bus
	53	0	Semi-trailer, excluding truck tractor
	80	0	Road tractor trailer (including towbars, excluding road tractor; 28 feet, 6 inches maximum per trailer; 19 feet, 0 inch maximum towbar)
	80	0	Straight truck-trailer
	81	6	Semi-trailer (45 feet, 0 inch maximum per trailer; second unit may not exceed first unit by more than 3,000 pounds)

Source: Oklahoma Department of Public Safety, 2004

Table 2.11 Legal Axle Weight

Single axle (dual wheel)	20,000 lbs.
Two-axle tandem	34,000 lbs.

Note: All other axle combinations per Federal Bridge Formula

Source: Oklahoma Department of Public Safety, 2004

Table 2.12 Gross Weight

Interstate	80,000 lbs. (except by special permit)
Primary and Secondary	Maximum allowed by Federal Bridge Formula

Source: Oklahoma Department of Public Safety, 2004

Table 2.13 Truck Escorts

Interstate Highways	All loads exceeding 16′ 0″, rear escort required
Non-Interstate	All loads exceeding 20′ 0″, front escort required on two-lane highways, rear escorts required on divided highways. Special requirements apply to escort vehicles.
Flagging	All loads exceeding 8′ 6″ wide; or extending more than 3′ 0″ ahead of the front bumper; or extending more than 4′ 0″ beyond the rear of the bed of a vehicle must be flagged. Minimum of 18″ square flag required. Warning signs are required on all vehicles or loads exceeding 95′ long or 12′ wide.
Holidays and Weekends	Overlength loads may move seven days a week and twenty-four hours per day if lighted (limitations apply). Overwidth loads may move seven days per week. Overwidth loads may not move during the period of day between one-half hour after sunset and one-half hour before sunrise. All oversize loads may move during weekends and holidays.

Source: Oklahoma Department of Public Safety, 2004

2.1.1.5 Ports and Waterways

The McClellan-Kerr Arkansas River Navigation System is 445 miles long, with a minimum nine-foot draft, and begins at the Mississippi River in Rosedale, Mississippi, and ends at the Port of Catoosa in Tulsa. Every year, 13 million tons of cargo are transported on the McClellan-Kerr waterway by barge. Commodities range from sand and rock to fertilizer, wheat, raw steel, refined petroleum products, and sophisticated petrochemical processing equipment. The McClellan-Kerr System is shown in Figure 2.10.

There are two public port facilities that serve Oklahoma: the Port of Muskogee, located in Muskogee, and the Tulsa Port of Catoosa, located in Tulsa. Both are administered by city-county port authorities. In addition, private port facilities are located in or near Inola, Wagoner, Webbers Falls, Keota, and Sallisaw. Five locks are located in Oklahoma, at Spiro, Sallisaw, Gore, Porter, and Inola. All lock chambers are 110 feet wide by 600 feet long.

The Port of Catoosa is conveniently located on 2,000 acres in the city of Tulsa and lies near I-244, I-44, and US 169. The port has five public terminal areas, each fully equipped and staffed to transfer inbound and outbound cargo efficiently between barges, trucks and rail cars. The port's transportation assets include waterfront docks and terminals and the 1.5-mile private channel on which they are located. The Port Authority owns two locomotives, serving the terminals and 20 private industry spurs on its 12-mile short-line system. The five public terminal areas include:

- A general dry cargo dock operated by Tuloma Stevedoring, Inc. This public dock, 720 feet long, with a 230-foot wide concrete apron, is equipped with an assortment of forklifts and cranes, including a 200-ton overhead traveling bridge crane. The primary types of freight loaded and unloaded at this dock are commodity iron and steel, project cargo, and other breakbulk material.
- A roll-on/roll-off low water wharf operated by the Port Authority. This wharf is used for transferring over-dimensional or over-weight project cargo, such as giant processing equipment used in refineries. The wharf is a public dock 180 feet long with a 50-foot wide concrete apron

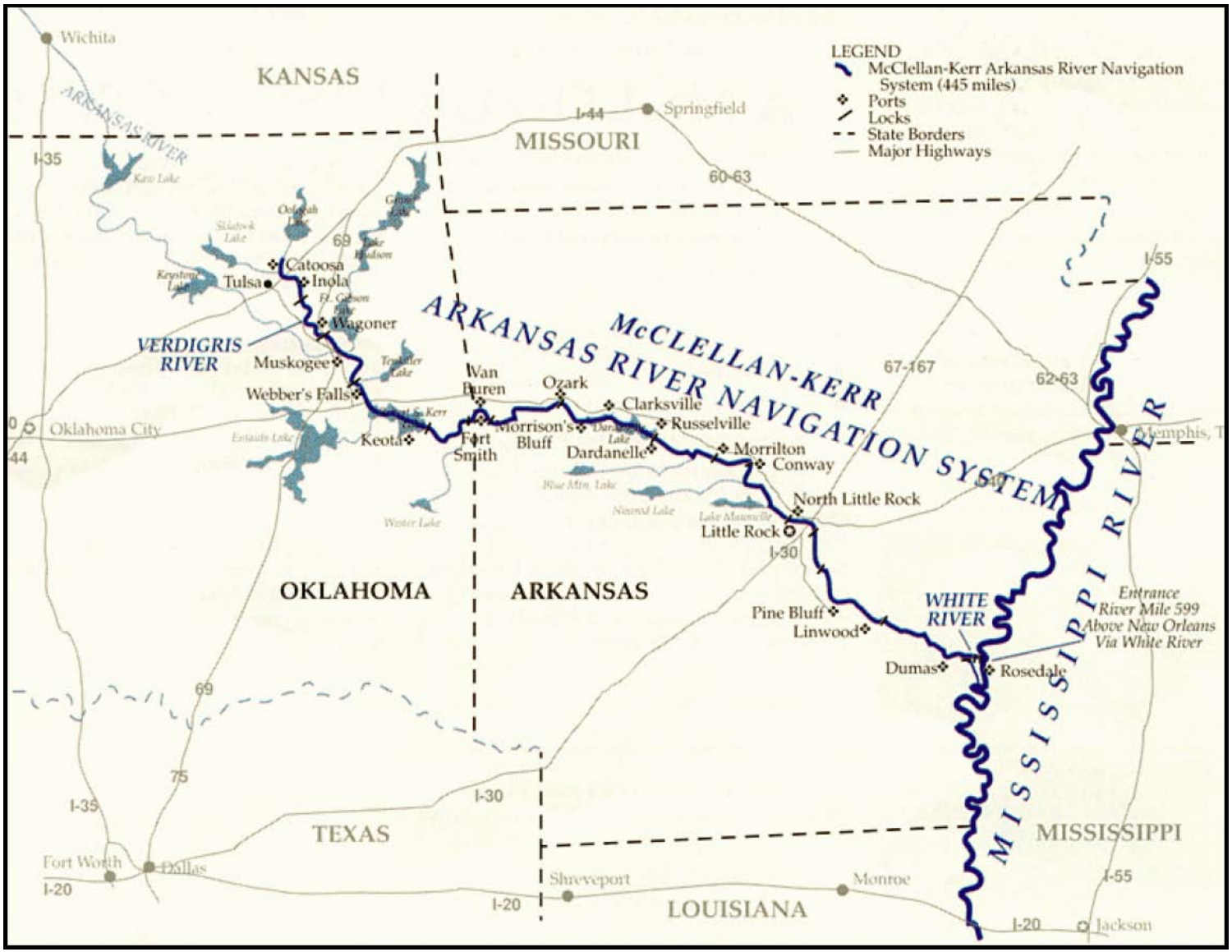
and embedded railroad tracks. The dock is connected to a concrete road with a 3.2-percent slope. Loads exceeding 600 tons can be driven directly on to or off of giant, ocean-rated, flat-deck barges using rail cars, trucks, or wheeled transporters.

- A dry bulk terminal, which is a public terminal operated by Catoosa Fertilizer Co. A wide range of dry bulk commodities, from fertilizer to pig iron, are transferred between transportation modes. Inbound and outbound systems can load or unload up to 400 tons per hour. Covered storage is available for 80,000 tons of material and open storage for 50,000 tons. The terminal is equipped with two pedestal cranes and an outbound loading conveyance system.
- A public grain terminal operated by Peavey Company, a division of ConAgra. The facility includes an outbound conveyance system with a 25,000-bushel per hour capacity, an inbound unloading system with a 30,000-bushel per hour capacity, a grain sampler, dust control system, and an approximately 4.5-million bushel storage capacity. The major product handled is outbound hard red winter wheat, but inbound or outbound soybeans, oats, milo, and millet can also be handled.
- Seven private bulk liquids terminals, where many types of bulk liquids, including chemicals, asphalt, refined petroleum products, and molasses, are transferred and stored.

The 50 companies located at the Port of Catoosa employ over 2,500 people involved in manufacturing, distribution, and processing of products ranging from agricultural commodities to manufactured consumer goods. Nationwide trucking carriers averaging over 450 trucks per day serve the Port of Catoosa. With the port located near the geographic center of the U.S., truck traffic can reach either coast in just two days. Adding to the Tulsa Port of Catoosa's accessibility is the Tulsa International Airport, which is located just seven miles from the port. The Port of Catoosa is the home of Foreign Trade Zone 53, encompassing 61 acres at the port facility, and is served by SH 266, an official National Highway System Intermodal Connector. Figure 2.11 shows a layout of port facilities.

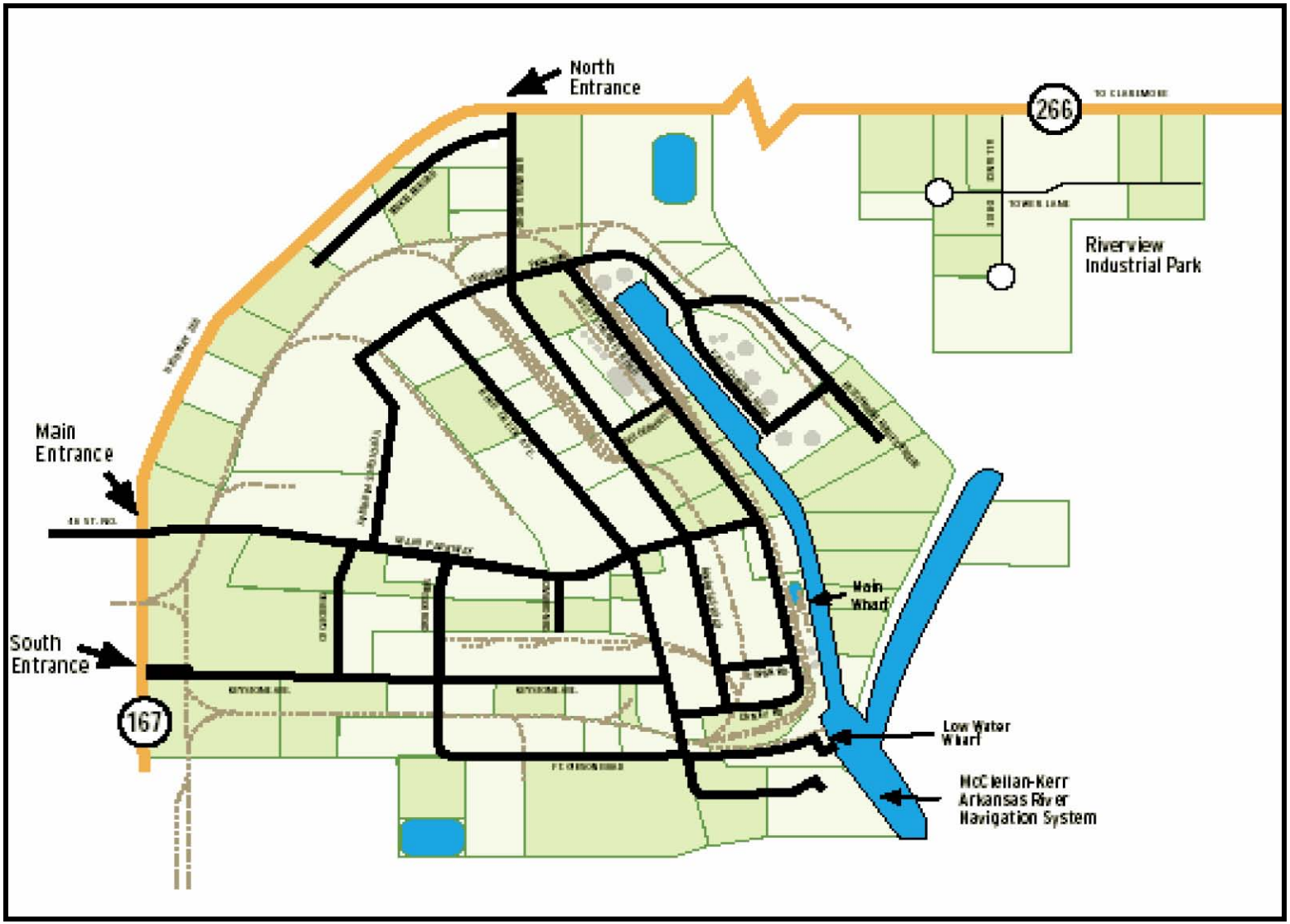
The Port of Muskogee is located in the City of Muskogee. All-weather, paved industrial roads extend throughout the port. Industrial roads connect to the Muskogee Turnpike and State Highway 165 at the port entrance. The Port of Muskogee has twenty mooring dolphins along the river channel frontage, and is fully equipped with overhead and mobile cranes for efficiently transferring inbound and outbound cargo between barges, trucks and rail cars. Port facilities also include a 94,000-square foot dockside warehouse, a rail marshalling yard, and an internal track system that is within the Muskogee switching limits of the Union Pacific Railroad. Port services include a harbor towboat for switching and fleeting barges. The port is served by most of the nationwide trucking carriers, and located near the geographic center of the U. S. Truck traffic can reach either coast in just two days. Adding to the Port of Muskogee's accessibility is Tulsa International Airport, which is located just 45 miles from the port. The Port of Muskogee is the home of Foreign Trade Zone 164, encompassing 144 acres at the port facility. Figure 2.12 shows the port location.

Figure 2.10 McClellan-Kerr Arkansas River Navigation System



Source: ODOT Waterway Branch

Figure 2.11 Tulsa Port of Catoosa



Source: Tulsa Port of Catoosa

Table 2.14 Cargo at Oklahoma Public Ports, 2000 to 2004
(tons)

Port	2000	2001	2002	2003	2004*
Port of Muskogee	488,968	498,073	576,938	672,170	541,534
Tulsa Port of Catoosa	2,210,061	2,046,692	2,223,103	2,250,139	2,205,127
Total	2,699,029	2,544,765	2,800,041	2,922,309	2,746,661

Source: Port of Muskogee, 2004; Tulsa Port of Catoosa, 2004

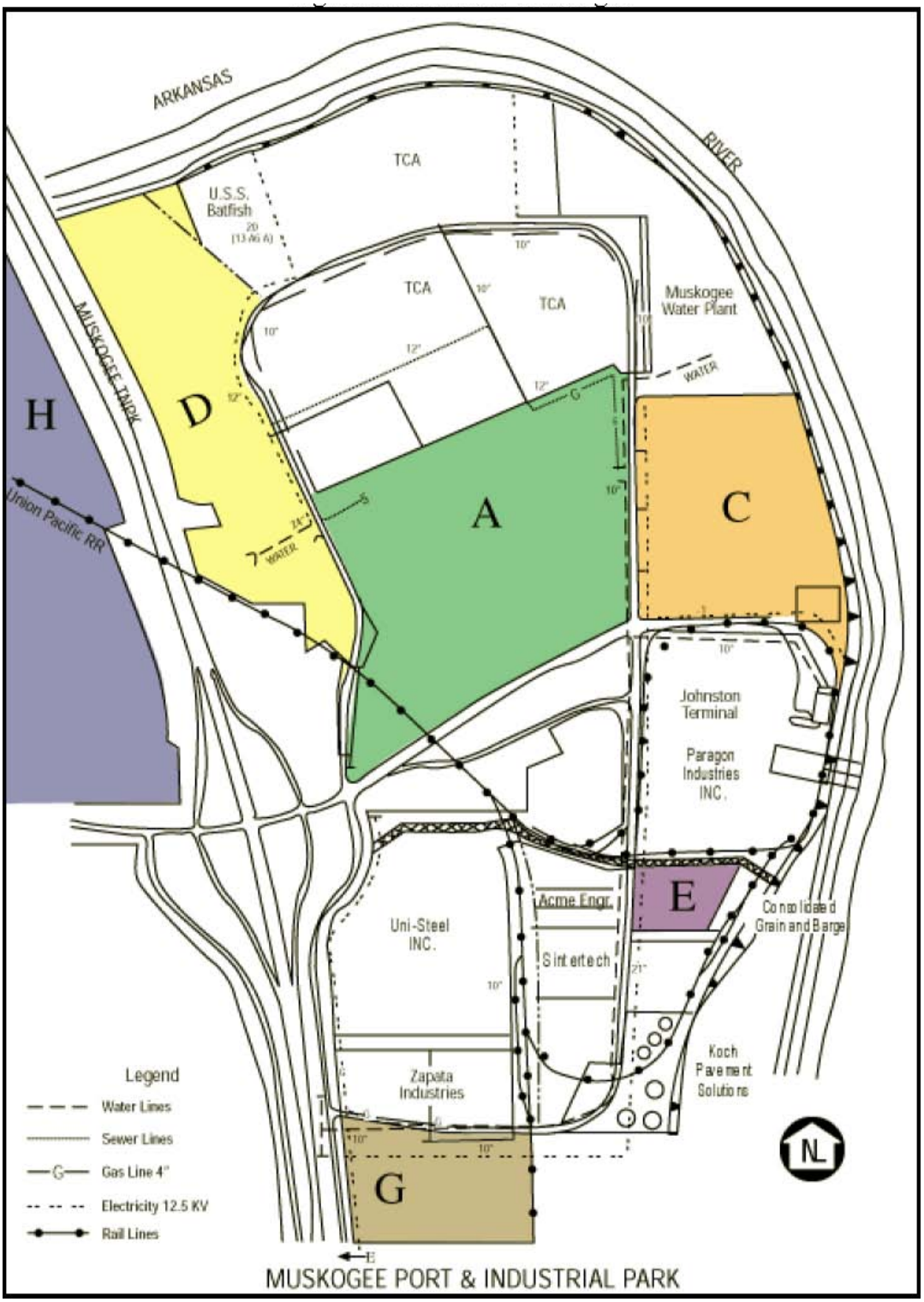
* 2004 projected tonnage

The quantities of freight moving through Oklahoma's public river ports have fluctuated considerably from 2000 to 2004 (Table 2.14). Both public ports have been subject to this pattern in river freight traffic, leaving 2004 estimated freight tonnage not substantially changed from 2000. Approximately 77 percent of the state's waterway freight was shipped through the Tulsa Port of Catoosa in 2003. Approximately 1.0 million tons were inbound and 1.2 million tons were outbound (Table 2.15 and Table 2.16).

Dry bulk and general dry commodities comprised most of the inbound tonnage to Oklahoma between 2000 and 2003 (Table 2.15), with liquid bulk and agricultural commodities constituting the remainder. However, liquid bulk and agricultural goods comprised most of the commodities shipped out from Oklahoma's ports over that same period (Table 2.16). This suggests differing needs in on-loading and off-loading capabilities at the state's ports.

Commodity categories recorded by the Port of Muskogee differ from those reported by the Tulsa Port of Catoosa (Table 2.17 and Table 2.18). Leading commodities shipped inbound to the Port of Muskogee over the last five years include steel, clay, asphalt, fertilizer, and petroleum coke (Table 2.17). Leading outbound commodities have included petroleum coke, fly ash, and cement (Table 2.18).

Figure 2.12 Port of Muskogee



Source: Port of Muskogee

Table 2.15 Inbound Cargo, Tulsa Port of Catoosa, 2000 to 2003 (tons)

Commodity	2000	2001	2002	2003
General Dry	411,096	357,929	386,860	369,552
Dry Bulk	416,223	563,339	373,025	504,019
Agricultural	14,838	25,767	24,432	32,205
Liquid Bulk	152,506	106,559	132,673	106,778
Total	994,663	1,053,594	916,990	1,012,554

Source: Tulsa Port of Catoosa, 2004

Table 2.16 Outbound Cargo, Tulsa Port of Catoosa, 2000 to 2003 (tons)

Commodity	2000	2001	2002	2003
General Dry	7,293	3,795	3,240	5,412
Dry Bulk	8,710	16,478	26,038	18,749
Agricultural	514,732	469,165	575,372	542,139
Liquid Bulk	684,663	503,660	701,463	671,285
Total	1,215,398	993,098	1,306,113	1,237,585

Source: Tulsa Port of Catoosa, 2004

Table 2.17 Inbound Cargo, Port of Muskogee, 2000 to 2004 (tons)

Commodity	2000	2001	2002	2003	2004*
Asphalt	127,356	154,157	150,221	78,272	109,651
Clay	0	0	0	28,919	198,132
Corn	2,460	0	0	0	0
Feldspar	0	0	0	19,609	0
Fertilizer	66,906	81,772	36,755	42,862	63,806
Glass	3,218	3,466	2,003	2,021	1,975
Glass Cullet	5,724	0	2,922	1,330	0
Grain Pellets	0	8,313	7,270	0	0
Machinery	0	0	600	0	0
Molasses	20,047	19,077	22,633	24,830	34,498
Nepthalene CN	0	0	0	18,061	30,350
Petroleum Coke	46,685	48,340	75,201	35,275	15,086
Pipe	0	1,091	0	0	0
Salt	10,338	7,734	8,824	4,634	0
Sand	1,398	1,619	2,999	925	1,334
Steel	53,107	105,730	161,970	206,791	213,052
Wood Mulch	8,824	1,678	0	0	0
Zinc	13,580	7,101	0	0	0
Total	359,643	440,078	471,398	463,529	667,884

Source: Port of Muskogee, 2004

* 2004 projected tonnage

Table 2.18 Outbound Cargo, Port of Muskogee, 2000 to 2004 (tons)

Commodity	2000	2001	2002	2003	2004*
Asphalt	8,376	2,835	0	0	0
Beans	0	0	15,247	9,314	4,393
Cement	0	0	0	61,424	31,651
Corn	1,306	0	0	0	0
Fly Ash	37,254	40,895	44,855	77,324	75,660
Milo	3,042	1,470	0	0	3,439
Petroleum Coke	48,459	105,589	37,894	54,394	39,232
Wheat	30,881	2,199	7,538	6,180	0
Total	129,318	152,988	105,534	208,636	154,375

Source: Port of Muskogee, 2004

* 2004 projected tonnage

2.1.2 Passenger Transportation

This section of the inventory includes information on the following passenger transportation modes:

- Aviation
- Public Transit
- Bicycle & Pedestrian
- Highways

As expected, the automobile represents by far the most dominant passenger transportation mode, with accessibility to a considerable grid of state and federal highways. At the same time there is an extensive rural transit network which provides important connections from rural areas to more populated centers in the state and beyond through connections to intercity bus lines and Amtrak. There is also an extensive system of general aviation airports statewide. The major metropolitan centers (Oklahoma City and Tulsa) are well served by commercial airlines and have active public transit systems in place.

2.1.2.1 Aviation

Two major international airports serve Oklahoma—Will Rogers World Airport, in Oklahoma City, and Tulsa International Airport, in Tulsa. Three regional airports located in Enid (Woodring Regional Airport), Lawton (Lawton-Fort Sill Regional Airport), and Ponca City (Ponca City Regional Airport) serve as commercial passenger links in their respective regions. In addition to these five commercial airports, 122 general aviation airports located around the state serve private aircraft. Figure 2.1 in Section 2.1.1 (Air Cargo) displays the state's commercial and general aviation airports.

Commercial Aviation

Will Rogers World Airport is located in the southwest corner of Oklahoma City. With two main runways (both 9,800 feet) and a crosswind runway (7,800 feet), the airport presently serves commercial passenger, cargo, general aviation, and Air National Guard customers. Airlines that serve the airport include: American, American Eagle, Atlantic Southeast, Champion Air, COMAIR, Continental, Delta, Delta Connection, Frontier, Great Plains, Northwest, Northwest Airlink, Southwest, and United.

Will Rogers Airport is located near Interstate Highways I-44, I-35, and I-40, and is linked to these facilities by a National Highway System Intermodal Connector (Meridian Avenue - Airport Road route). These facilities provide easy automobile access for air travelers. The airport is also located near rail services, including Amtrak passenger service, in Oklahoma City.

Passenger traffic through Will Rogers Airport has declined slightly from 2000 to 2003 (Table 2.19). Will Rogers served approximately 3,260,000 passengers in 2003.

Tulsa International Airport is located on a 4,000-acre tract on the north edge of Tulsa, with 1,000 acres available for development. The airport has two main runways (10,000 feet and 7,400 feet) with a 6,100-foot crosswind runway, and serves commercial passenger, cargo, general aviation, and Air National Guard customers. Airlines serving the airport include: American, Atlantic Southeast, Champion Air, Chautauqua, COMAIR, Continental, Delta, Northwest, Skywest, Southwest, and United. American operates a major aircraft maintenance center at Tulsa International.

Tulsa International has direct access to I-244 via SH 11, a National Highway System Intermodal Connector, and is located near I-44 and US 169, facilitating automobile access for air travelers. Tulsa International served approximately 2,747,200 passengers in 2003 (Table 2.19).

Lawton/Fort Sill Regional Airport is located in Lawton, which is approximately 90 miles southwest of Oklahoma City. In 2003 and 2004, American Eagle was the only commercial airline serving the Lawton/Fort Sill Airport. Lawton is home to Fort Sill, a U.S. Army base. Military personnel from the base account for a large portion of the passengers traveling through Lawton/Fort Sill Regional Airport.

Woodring Regional Airport is located in Enid, approximately 80 miles north of Oklahoma City. In 2003 and 2004, Mesa Airlines was the only commercial airline serving Woodring Airport. Vance Air Force Base is also located in Enid, and the military personnel from the base account for a large portion of the passengers traveling through Woodring Regional Airport.

Ponca City Regional Airport is located in Ponca City, which is approximately 100 miles north of Oklahoma City. In 2003 and 2004, Mesa Airlines was the only commercial airline serving the Ponca City Airport. Ponca City is home to a very large Conoco refinery and refinery personnel comprise a large portion of the passengers traveling through Ponca City Regional Airport.

Table 2.19 Enplanements/Deplanements at Oklahoma Commercial Airports, 2000 to 2004 (estimated)

Airport	Activity	2000	2001	2002	2003	2004
Will Rogers World	Enplanements	1,743,661	1,665,153	1,593,496	1,626,994	1,645,140
	Deplanements	1,738,128	1,656,542	1,599,912	1,633,120	1,629,690
Tulsa International	Enplanements	1,737,874	1,622,670	1,457,952	1,373,943	1,444,778
	Deplanements	1,744,490	1,621,295	1,449,356	1,373,260	1,432,964
Lawton – Fort Sill Regional	Enplanements	62,363	51,330	44,375	40,953	42,130
	Deplanements	61,322	51,505	43,216	38,250	41,046
Enid Woodring Regional	Enplanements	4,230	4,028	3,848	977	2,202
	Deplanements	NA	NA	NA	1,080	1,427
Ponca City Regional	Enplanements	3,949	3,458	2,327	1,959	1,876
	Deplanements	3,779	3,298	2,485	1,923	1,686
Total	Enplanements	3,552,077	3,346,639	3,101,998	3,044,826	3,136,126
	Deplanements	3,547,719	3,332,640	3,094,969	3,047,633	3,106,813

NA: not available

Source: Will Rogers World Airport (www.flyokc.com); Tulsa International Airport; Lawton-Fort Sill Regional Airport; Enid Woodring Regional Airport; Ponca City Regional Airportt

General Aviation

In addition to the five major commercial airports (international and regional) discussed in Section 2.1.1, 140 public-use general aviation airports are currently operating in Oklahoma. These facilities also present opportunities for intermodal connections in passenger transportation. Figure 2.1 in Section 2.1.1 (Air Cargo) displays general aviation airports, as well as major commercial airports.

2.1.2.2 Public Transit

This section describes ridership and service characteristics plus intermodal opportunities for public transit in the three largest Oklahoma urban areas; for a variety of services offered through ODOT's rural transit program; and for service provided by national intercity bus carriers and by Amtrak. Where available, ridership and service data are provided between the years 2000 and 2003.

Urban Transit

There are four transit systems operating in Oklahoma classified as urban: the Central Oklahoma Transportation and Parking Authority (COTPA), Norman (CART), Tulsa Transit, and the Lawton Area Transit System (LATS). Table 2.20 summarizes service and ridership statistics between 2000 and 2002. Data for 2003 are only available for Lawton at this time and will be incorporated when received. The information includes all fixed route, circulator and paratransit services.

Although total urban system revenue miles have increased by 33 percent between 2000 and 2002, total passenger trips have begun to level off even with the addition of service in Lawton

(although small in comparison). Total passenger miles have been slowly increasing and are up 10 percent since 2000.

Table 2.20 Urban Transit Information, Statistics and Trends

Transit System	Calendar Year	Revenue Miles	Passenger Miles	Total Passenger Trips
COTPA/CART[1]	2000	3,216,460	17,511,400	4,485,200
Tulsa Transit		4,693,700	18,913,200	3,306,400
LATS		(no service)	(no service)	(no service)
Subtotal		7,910,160	36,424,600	7,791,600
COTPA/CART[1]	2001	4,232,900	19,202,600	4,903,660
Tulsa Transit		5,043,500	18,403,100	3,217,900
LATS		(no service)	(no service)	(no service)
Subtotal		9,276,400	37,605,700	8,121,560
COTPA/CART[1]	2002	4,339,600	23,949,900	4,680,420
Tulsa Transit		5,619,700	15,956,500	3,042,800
LATS[2]		566,240	NA	144,920
Subtotal		10,525,540	39,906,400	7,868,140

Sources: US DOT National Transit Database - Tulsa Transit; COTPA/CARTS database; LATS database

Notes: [1] Norman system data (CART) not separated. [2] Data for July 1, 2002 thru June 30, 2003

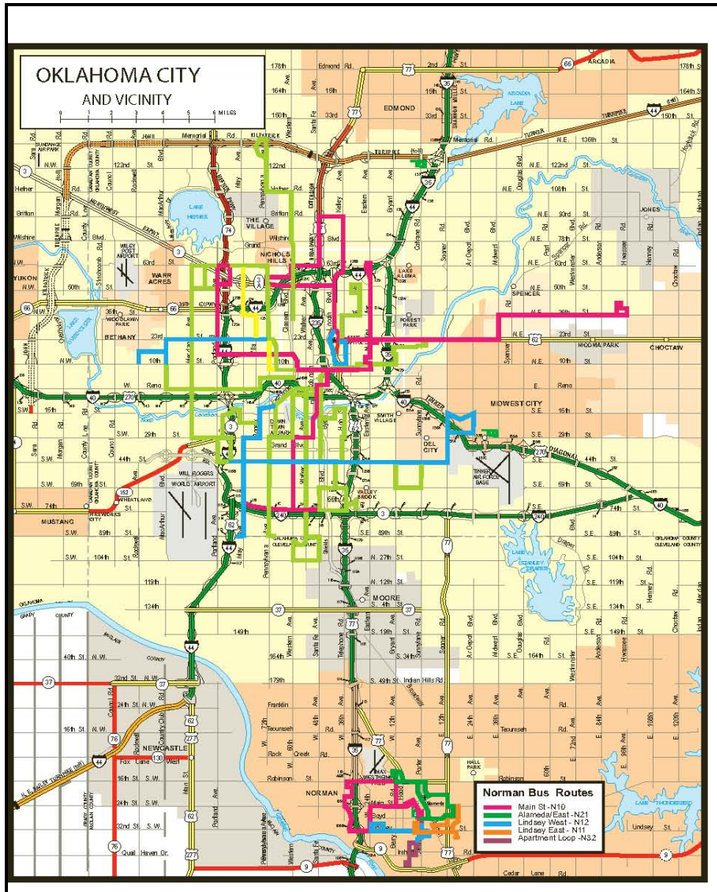
A map of the routes provided by the urban systems is provided in Figure 2.13. Currently COTPA operates 27 fixed routes in the Oklahoma Metro area, three of which provide express service. There are 15 park-and-ride locations operating informally at various church, grocery store, and retail store locations (Table 2.21). Tulsa Transit operates 15 fixed routes including two express routes each fed from an informal park-and-ride lot. The CART system has five routes and LATS also has five routes. The LATS system has one downtown transfer center where all routes converge to allow transferring. LATS also has one route serving Fort Sill – a major military base just north of downtown Lawton. Ten percent of the LATS ridership comes from Fort Sill.

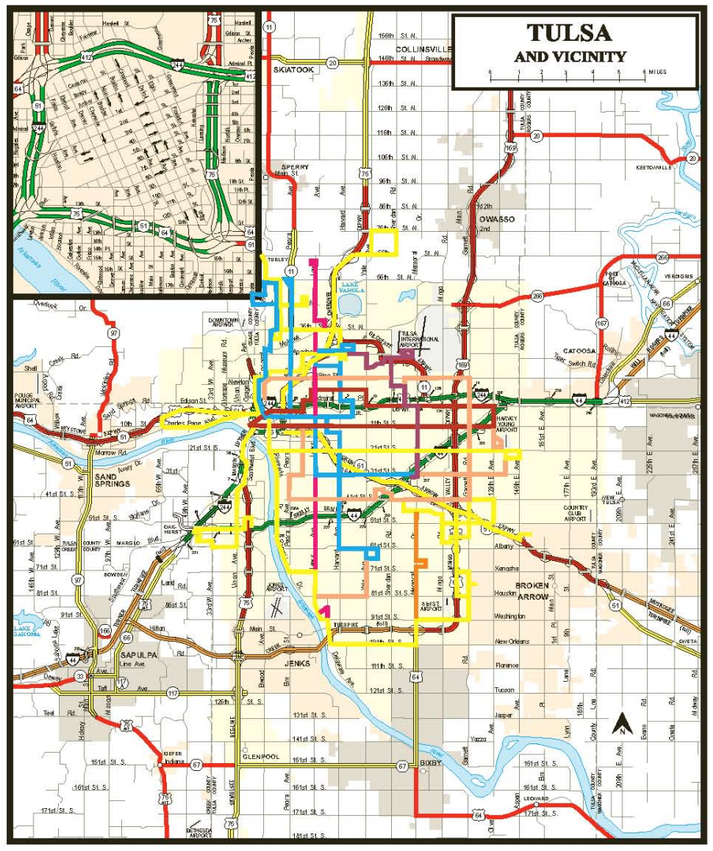
Table 2.21 Metro Transit Informal Park-and-Ride Facilities, Oklahoma City

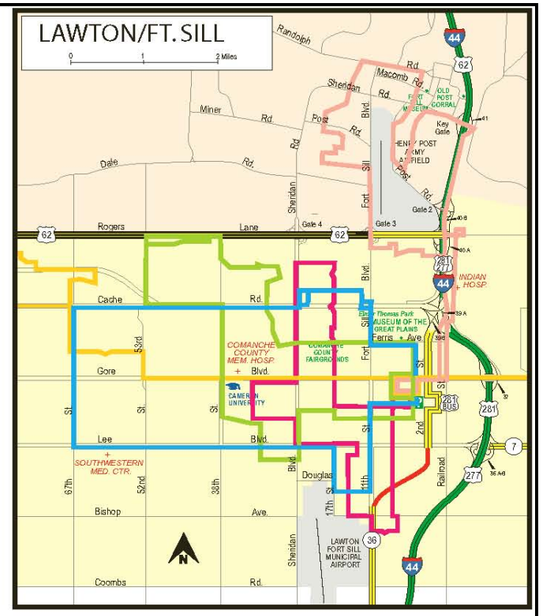
Route	Location	Address
5	Heritage Bowling Lanes	11917 N. Pennsylvania
7&8	Big Lots	3000 NW 63rd Street
8	Penn Square Mall (by Foley's)	1901 NW Expressway
8	Woodlake Racquet Club	6901 NW 63rd Street
12	Griders Discount Foods	2701 SW 29th Street
12	Oklahoma City Community College	7777 S. May Avenue
15	Target	7601 E. Reno Ave., Midwest City
20	Crossroads Mall (by J.C. Penney's)	7000 S. Crossroads Boulevard
22	Omniplex	2100 NE 52nd Street
23 &29	Big Lots	4605 NW 23rd Street
24	Albertson's Food & Drug	2600 W. Robinson Ave., Norman
37	Wal-Mart	3200 S. Broadway, Edmond
37	Southern Hills Christian Church	3207 S. Boulevard, Edmond
37	St. John the Baptist Catholic Church	9th & Boulevard, Edmond
40	Brookwood Baptist Church	8921 S. Walker Avenue

Source: Central Oklahoma Transportation and Parking Authority, 2004

Figure 2.13 Urban Transit Systems







0 10 20
Scale: one inch equals approximately 16 miles.

This map illustrates the towns where public transportation service is available . Information is based on a January 2004 survey. Services are subject to change.

LEGEND

HIGHWAY CLASSIFICATIONS

- Interstate / FREE
- (TOLL) Turnpike / (with toll gate)
- Other Multilane Highways
- Paved Highways

TRANSPORTATION SYMBOLS

- Available Service Routes

ROUTE MARKERS

- 44 Interstate Route
- 60 U.S. Numbered Route
- 152 33 8A State Numbered Route

URBAN TRANSIT SYSTEMS OF OKLAHOMA

Rural Transit

At the end of the state's Fiscal Year (FY) 2003, Oklahoma had 18 rural transit systems in operation. As of FY 2004 there are 20 rural transit systems in operation. Figure 2.14 illustrates the 20 systems operating in FY 2004; however, available data presented in this discussion are for FY 2003. All systems provide a demand responsive service and in some cases offer route deviation. Ridership and service characteristics for each system are summarized in Table 2.23 for FY 2003. During that 12-month period, over 1.9 million passenger trips were provided, with approximately 30 percent of those trips provided for elderly and disabled riders. A total of 10.4 million revenue miles were provided along with 18.1 million passenger miles. System wide, the average trip length per passenger was 9.2 miles, suggesting intercity and/or rural-to-city trip making. A summary of system-wide ridership and service characteristics since FY 2000 is provided in Table 2.22.

Although there have been increases since FY 2000 in revenue miles (8.5 percent) and passenger miles (11 percent), these indicators have been in decline since FY 2001, as have total passenger trips.

It is worth noting that current total ridership is slightly above FY 2000 levels, disabled ridership is up 19 percent, and ridership for those classified as both elderly and disabled is up 20 percent. As mentioned previously, two more systems started operation in FY 2004, one serving Oklahoma State University and the Stillwater community, and the second serving Bartlesville. Data for these new systems are not available at this time and, therefore, not included in this discussion.

As shown in Figure 2.14, many of the rural systems individually link together many communities and have extensive service areas. This explains the high average trip length of 9.2 miles. Also shown are the connections offered between the rural systems and the intercity bus and rail network.

Table 2.22 Rural System Statistics by Federal Fiscal Year

Fiscal Year	Revenue Miles	Passenger Miles	All Passenger Trips	Elderly Trips	Disabled Trips	Elderly & Disabled Trips
2000	9,573,774	16,318,812	1,952,473	381,149	198,996	105,478
2001	10,686,490	19,871,507	2,039,139	373,063	208,541	111,993
2002	10,495,496	19,172,676	2,052,546	389,103	229,783	117,668
2003	10,411,000	18,194,621	1,983,854	350,948	236,681	126,323

Source: Transit Programs Division, Oklahoma Department of Transportation, August 2004

Figure 2.14 Rural Transit Systems

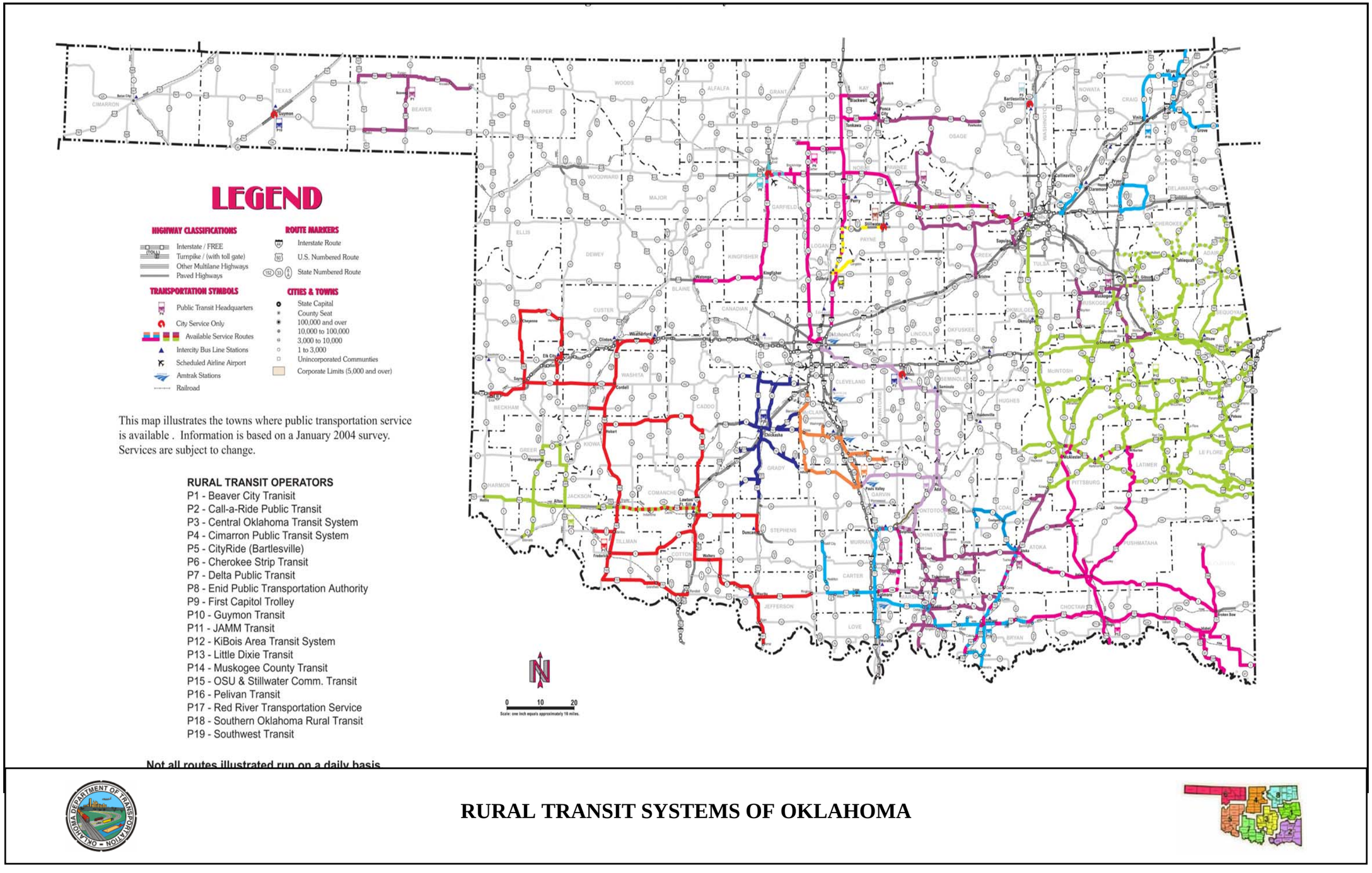


Table 2.23 2003 Rural Transit System Information and Statistics

Transit Program	Service Area	No. of Vehicles	Ridership		Annual Vehicle Revenue Miles	Annual Passenger Miles
			Elderly/ Disabled	Other		
The Transit	Enid	12	53,343	46,682	316,020	469,409
Beaver City Transit	Beaver County	2	3,881	9,403	13,897	46,370
Call-A-Ride Public Transit	Pontotoc County	23	38,352	75,868	575,703	854,357
First Capitol Trolley	Guthrie with scheduled service to Langston University	22	6,480	157,280	503,044	658,079
Kibois Area Transit System	Adair, Pittsburg, Haskell, Cherokee, McIntosh, Latimer, LeFlore, Sequoyah Cos.	108	91,897	332,504	2,587,568	4,521,376
Little Dixie Transit	Choctaw, McCurtain, Pushmataha Cos.	67	32,088	137,215	1,510,150	1,970,215
Muskogee County Transit	Muskogee Co., NEOSU	15	20,721	56,718	337,438	2,057,362
Pelivan Transit	Craig, Delaware, Mayes, Rogers, Ottawa Cos.	26	49,122	59,309	384,400	1,210,348
Red River Transit Service	Beckham, Cotton, Custer, Jefferson, Kiowa, Roger Mills, Stephens, Tillman, Washita Cos.	75	53,382	140,530	1,320,153	1,826,578
Southern Oklahoma Rural Transit System	Atoka, Bryan, Carter, Coal, Love Cos.	32	57,660	116,069	667,997	1,510,116
Southwest Transit	Greer, Harmon, Jackson Cos.	18	16,699	63,150	365,681	570,747
Cimarron Public Transit System	Creek, Pawnee, Kay, Osage Cos.	29	19,279	81,477	636,523	762,982
JAMM Transit	Johnson, Atoka, Murray, Marshall Cos.	20	55,537	21,160	297,487	563,588
THE RIDE	City of Guymon	4	9,716	30,471	75,490	85,555
Central Oklahoma Transit System	City of Shawnee	8	13,650	4,963	63,158	162,830
Washita Valley Transit System	Grady Co.	10	15,403	14,206	123,335	191,556
Delta Public Transit System	Garvin, McClain, Cleveland Cos.	9	29,626	12,541	110,227	140,961
Cherokee Strip Transit	Garfield, Noble, Kingfisher, Blaine, Kay Cos.	18	17,831	18,205	505,203	543,234
TOTALS		498	584,667	1,377,751	10,393,474	18,145,663

Source: Transit Programs Division, Oklahoma Department of Transportation, August 2004

**All transit programs listed provide "demand response" service. Under this type of service a provider may vary their bus routes, hours of service and offer varying pick up and/or drop off points, as requested by the user.*

Two transit systems, CityRide (Bartlesville) and OSU/Stillwater Community Transportation System, were initiated in 2003 and statistics are not available for these systems.

Intercity Bus Transit

Currently there are three intercity bus companies providing service in and through Oklahoma: Greyhound Lines, Jefferson Lines, and the T.N.M. & O. Routes are provided in Figure 2.15. At this time ridership and service statistics are not available for the intercity bus companies for inclusion in this report.

Intercity Rail Transit

Since June of 1999 intercity rail – the Heartland Flyer – has been in service through Amtrak and the State of Oklahoma. Two trains operate per day, one in each direction along the BNSF rail line between Oklahoma City and Ardmore, with continuing service to Gainesville and Fort Worth, Texas (Figure 2.15). Ridership trends by fiscal year since 2000 are given in Table 2.24.

Table 2.24 Amtrak Heartland Flyer Ridership

Fiscal Year	Ridership	Percent Change Since 2000
2000	65,529	-
2001	57,799	(11.8%)
2002	52,584	(19.7%)
2003	46,592	(28.9%)
2004	54,223	(17.2%)

Source: Rail Programs Division, Oklahoma Department of Transportation (ODOT), August 2004

Although strong, ridership declined from 2000 to 2003 by almost 29 percent. Fortunately this past year has seen ridership increase by 11.7 percent without a change in service level. Though 2003 ridership was down 28.9 percent compared to the first full calendar year of operation, available statistics do not reveal whether the decline is more pronounced in Oklahoma or Texas. Ridership by station stop since service inception in June 1999 is summarized in Table 2.25.

Table 2.25 Amtrak Heartland Flyer Station Activity

Station Location	Total Station Activity	Percent of Total
Oklahoma City	155,477	29.5%
Norman	43,452	8.2%
Purcell	10,144	2.0%
Paul's Valley	27,496	5.2%
Ardmore	37,730	7.2%
Gainesville	59,879	11.4%
Fort Worth	192,603	36.5%
Total	526,781	100%

Source: Rail Programs Division, ODOT, August 2004

The station activity data include all station boardings and alightings since service inception. Activity at the five Oklahoma stations accounts for 52 percent, whereas the two Texas stations

account for the remaining 48 percent. This pattern suggests a strong link to North Texas, and the Dallas – Fort Worth area.

2.1.2.3 Bicycle and Pedestrian

Extensive bicycle and pedestrian trail systems are under development in Oklahoma's two major metropolitan areas—Oklahoma City and Tulsa—as well as a statewide Rails-to-Trails program. Oklahoma City has a 78-mile system of paved, multipurpose trails and other park trails in various stages of development, including trails currently existing, under construction, or planned within the next five years. The Tulsa metropolitan area has 36 miles of existing bicycle and pedestrian trails, plus 24 miles of trails under development (not including the Osage Trail, part of the Rails-to-Trails program). In addition, the Tulsa metro area has 19 miles of existing on-street bikeways and 191 miles of proposed bikeways. The state's Rails to Trails system includes six trails totaling 70 miles and the planned 35-mile Osage Trail.

2.1.2.4 Highways

Major Highway Corridors

The extent and usage of Oklahoma's State Highway System has grown since 1999. Lane miles have increased by approximately 1.2 percent (Table 2.26). Daily vehicle miles of travel (VMT) on the State Highway System increased 3.6 percent from calendar year 2000 to 2003 (a four-year period). Major highway corridors are shown in Figure 2.16, with National High Priority Corridors and Oklahoma Transportation Improvement Corridors shown in Figure 2.17.

Table 2.26 Oklahoma Highway System: Mileage and Vehicle Miles of Travel (VMT)

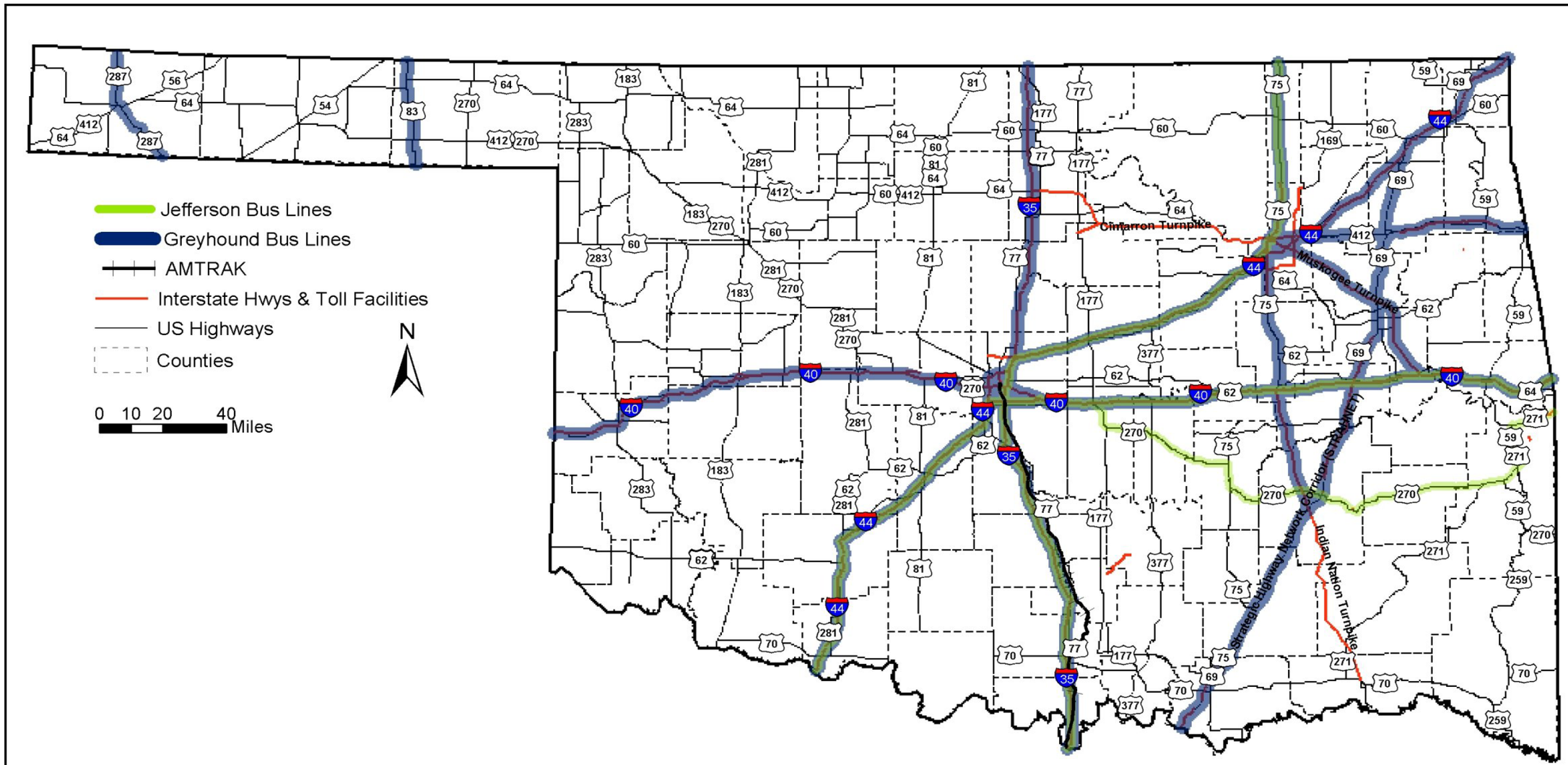
Calendar Year	System Miles	Lane Miles	Daily VMT
2000	12,270.19	29,209.57	62,876,060
2001	12,271.11	29,225.89	62,657,650
2002	12,265.90	29,494.75	65,872,810
2003	12,266.89	29,578.61	65,222,940

Source: Oklahoma Department of Transportation, Planning and Research Division, 2004

An analysis of annual average daily traffic (AADT) figures developed by ODOT shows that the highest traffic volumes occur within the largest metropolitan areas: Oklahoma City, Tulsa and Lawton. Interstates and a few other major highways carry the majority of the rural traffic.

Among the major metropolitan areas, Oklahoma City has numerous highway systems with 50,000 to 122,000 AADT, including portions of I-35, I-44, I-40, State Highway (SH) 3, SH 74, and SH 77. In addition, the John Kilpatrick Turnpike carries a large volume of traffic. Tulsa also has numerous highway systems with 50,000 to 111,000 AADT, including I-44, I-244, SH 412, US 169, US 75, US 64, and SH 51. Lawton has no highways with over 50,000 AADT, but does have highways with 12,000 to 25,000 AADT, including I-44, US 62, US 281 Business, and SH 7.

Figure 2.15 Intercity Transit Routes (Bus & Rail)



INTERCITY TRANSIT ROUTES OF OKLAHOMA
(BUS & RAIL)

Figure 2.16 Major Oklahoma Highways

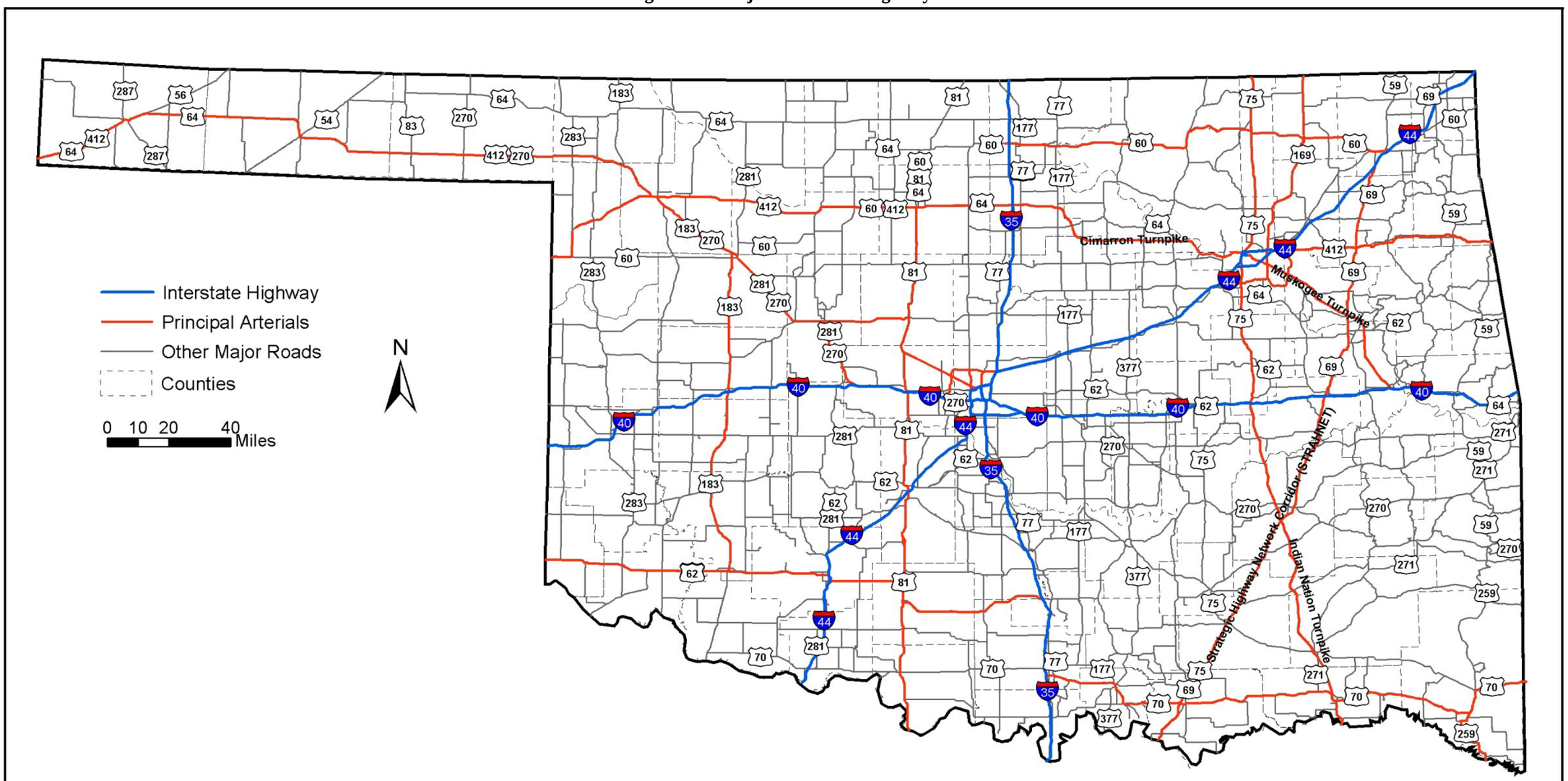
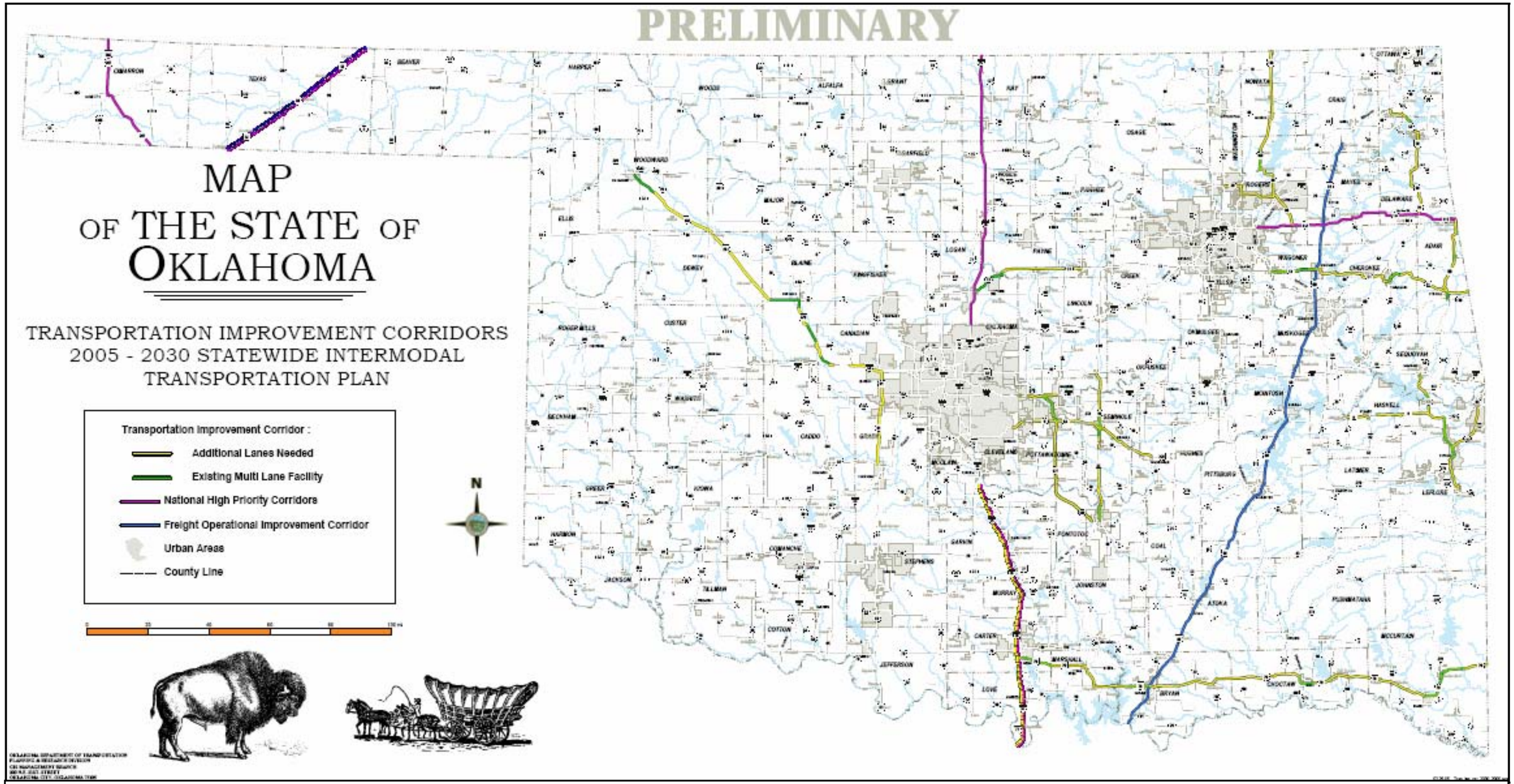


Figure 2.17 High Priority & Transportation Improvement Corridors



HIGH PRIORITY & TRANSPORTATION IMPROVEMENT CORRIDORS

Outside the metropolitan areas, the AADT volumes reduce significantly. However, I-35 from Oklahoma City to Guthrie is approximately 35,000 AADT. I-35 from Guthrie north to the Kansas state line ranges from about 15,000 to 22,000 AADT. I-35 south of SH 9 in Norman to the Texas state line ranges from approximately 28,000 to 36,000 AADT.

I-40 west of Oklahoma City ranges from about 45,000 to 65,000 AADT from Oklahoma City to El Reno, and from approximately 18,000 to 28,000 AADT from El Reno to the Texas State Line. I-40 east of Oklahoma City is approximately 45,000 AADT from Oklahoma City to Shawnee, and ranges from about 14,000 to 28,000 from Shawnee to the Arkansas state line.

I-44 is generally a toll road except within the three major metropolitan areas. However, this is a high-volume facility.

US 69 from Big Cabin, along I-44, through Muskogee to the Texas state line, and US 75 from Kansas though Tulsa to the Texas state line, are major freight corridors with high volumes of truck traffic traveling from Dallas to Tulsa, Muskogee, and the Port of Catoosa. US 69 and US 75 are four-lane divided highways and follow the same alignment from Atoka to the Texas state line. US 69/US 75 carries about 12,000 to 25,000 AADT.

There are a few other major highway corridors in Oklahoma. However, the above listed highways are the only ones which consistently carry over 12,000 AADT, except when in close proximity to one of the major metropolitan areas. Opportunities for intermodal connections would likely be in close proximity to one of these highly traveled corridors, whether for freight or passengers.

Turnpikes

The state of Oklahoma currently has 587.4 miles of turnpikes, administered by the Oklahoma Transportation Authority (OTA). Approximately 40 percent of the toll revenues collected on OTA turnpikes comes from out-of-state motorists. If tolls were eliminated, the state would have to spend at least $60 to $70 million per year from gasoline taxes to maintain existing turnpikes, necessitating a tax increase. Currently, there are ten operating turnpikes in the Oklahoma (see figure 2.18). Total vehicle miles traveled (VMT) on Oklahoma's turnpike system in 2003 was 725,401,423. Turnpike system miles increased by 42.3 miles from calendar year 2000 to 2003 (a four-year period), and daily VMT showed an increase of 2,082,450 (38.8 percent) over a four-year span (Table 2.27). The various turnpikes' toll schedules are shown in Table 2.28. The "Toll Ratio" column indicates how many times higher the toll is for the largest vehicle class (double semi-trailers) compared to the smallest class (cars, pickup trucks, vans, etc.).

Figure 2.18 Turnpikes in Oklahoma

Table 2.27 Oklahoma Turnpike System: Mileage and Vehicle Miles of Travel (VMT)

Calendar Year	System Miles	Lane Miles	Daily VMT
2000	558.97	2,201.18	5,369,910
2001	572.76	2,256.34	5,619,400
2002	600.65	2,369.92	7,349,070
2003	601.27	2,370.96	7,452,360

Source: Oklahoma Department of Transportation, Planning and Research Division, 2004

Table 2.28 Oklahoma Turnpike Toll Schedules

Turnpike Facility	2-axle	3-axle	4-axle	5-axle	6-axle	Toll Ratio: 6-axle / 2-axle
Turner -86 mi Entry OKC, Exit Tulsa	$3.50	$5.75	$8.50	$14.25	$17.25	4.9
H.E. Bailey – 86 mi Entry OKC, Exit Wichita Falls, Tx	$4.00	$5.50	$7.75	$12.50	$15.50	3.9
Muskogee – 53 mi Entry Tulsa, Exit Webbers Falls	$2.50	$3.50	$5.00	$8.00	$9.00	3.6
Cimarron – 59 mi Entry Tulsa, Exit IH-35	$2.50	$3.50	$6.00	$10.00	$12.00	4.8
Chickasaw – 17 mi Entry SH-1 Roff, Exit SH-7	$.55	$.75	$1.25	$2.25	$2.25	4.1
Will Rogers – 88 mi Entry Tulsa, Exit State Line	$3.50	$5.75	$8.50	$14.25	$17.25	4.9
Indian Nation – 105 mi Entry Henryetta, Exit Hugo	$4.75	$8.00	$9.50	$16.00	$19.50	4.1
Kilpatrick – 25 mi Entry I-35, Exit I-40	$2.00	$2.75	$4.00	$6.80	$8.20	4.1
Cherokee – 33 mi Entry Flint Creek, Exit US-69	$2.25	$3.25	$4.50	$7.50	$9.00	4.0
Creek – 33 mi Entry US 412, Exit US-66	$2.45	$3.65	$4.65	$7.80	$9.90	4.0

Source: Oklahoma Turnpike Authority – Pikepass website

2.2 Stakeholder Views of the Current System

An extensive survey of transportation stakeholders across the state was conducted as part of this study. A series of questions were asked concerning the existing system, future needs and the degree to which the system supports the state economy. Appendices B, C and D provide the survey methodology, the questionnaires used, the list of mailed recipients and the list of stakeholders selected for face-to-face interviews. The survey and interview responses relating to views on the current transportation system are provided in this section.

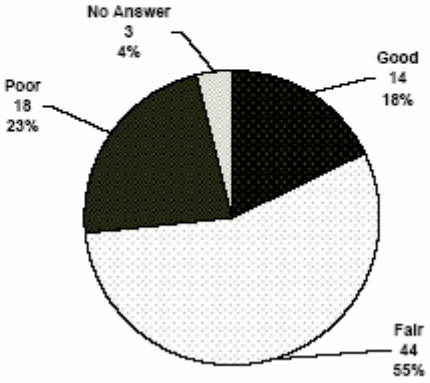
2.2.1 Mailed Survey Responses

Overall Perceptions of the Existing System

For survey question 1 regarding the quality of Oklahoma's statewide transportation system (see Chart for question 1), 55 percent ranked the quality of the system as Fair. In question 2, a plurality (45 percent) ranked the efficiency of the state system as Fair, while another 42 percent ranked the efficiency as Good (see Chart for question 2).

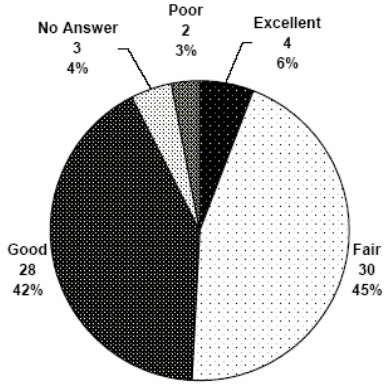
1 - How would you rate the quality of Oklahoma's transportation system, for the state as a whole?

Good	14
Fair	44
Poor	18
No Answer	3



2 - How would you rate the efficiency of Oklahoma's transportation system, for the state as a whole?

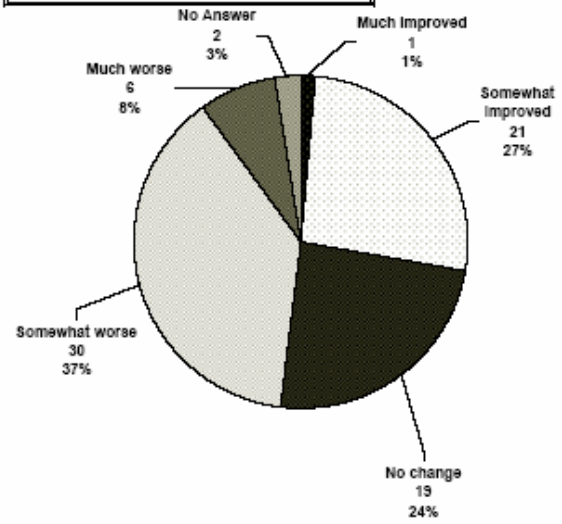
Excellent	4
Fair	30
Good	28
No Answer	3
Poor	2



There is always room for improvement, as results from question 3 have shown. When asked if the state's transportation system was improving, staying the same, or worsening (see Chart for question 3), 37 percent responded that Oklahoma's transportation system had become Somewhat Worse and 8 percent considered the system Much Worse. Nearly a quarter surveyed (24 percent) said that there had been No Change, and 27 percent said that it was Somewhat Improved with only 1 percent indicating the system was Much Improved.

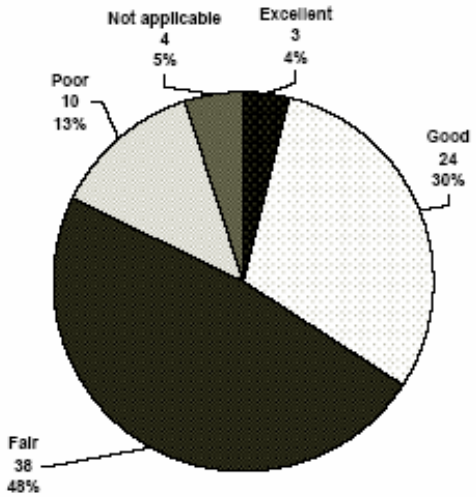
3 - Is Oklahoma's transportation system improving, staying the same, or worsening, for the state as a whole?

Much improved	1
Somewhat improved	21
No change	19
Somewhat worse	30
Much worse	6
No Answer	2



4 - How would you rate the quality of the transportation system serving your area/region?

Excellent	3
Good	24
Fair	38
Poor	10
Not applicable	4



The quality of local and regional transportation systems (see Chart for question 4) was rated Fair (48 percent) to Good (30 percent) in quality (a total of 78 percent of those surveyed, slightly

higher than the rating for the state system). While 13 percent rate the quality of the area/regional transportation system as Poor, 4 percent rate it as Excellent.

Impediments to Current Passenger Movement

Money was the primary impediment currently inhibiting passenger movement in Oklahoma (Survey Question 10), according to a majority of survey respondents (44 respondents, or 59 percent of those responding to this question). [Five respondents (6 percent) declined to list any impediments to passenger movement.] Respondents from many different sectors cited "financial" issues (i.e. funding; financing; not enough funding; lack of sufficient, permanent funding; adequate funding to maintain current system; money for improvements and maintenance; short of funds for new roads; state and federal financial support; limited funding sources; financial support for roads and runways; limited financial support for public transit; financial-legislative discord on refunding; diversion of fuel taxes to other government needs, etc.) as an impediment. Among respondents who cited financing (or the lack thereof) were respondents from intercity passenger providers, a major public transit system, smaller transit systems, smaller/municipal airports, a major air cargo company, major freight using corporations, a trade association/interest group, cities, counties, Indian nations, government associations and agencies, economic/industrial development groups, and chambers of commerce. Clearly, some respondents were more interested in funding for one mode or another, and some were more focused on the cause of funding shortfalls. One respondent asked, "Where does the US highway tax on trucks go?" Another protested a "funding bias that favors roads only." Funding/financing was the first thing that most respondents listed in their lists of three impediments; a few were so emphatic about financing as a principal current impediment to passenger movement that they listed it more than once on their lists.

Infrastructure (i.e. inadequate infrastructure, lack of infrastructure, failing infrastructure, etc.) -- without a specific reference to financing -- was the second most listed impediment. Twenty-five (25) respondents[1] (34 percent) listed infrastructure as among the greatest current impediment to passenger movement. Additional respondents cited specific aspects of infrastructure, such as bridges, roads, highways, supporting structures, the secondary road system, and public transportation infrastructure (total of 8 responses). Still others cited specific, infrastructure-related impediments; six responses specifically addressed roadway capacity (insufficient lanes; narrow substandard roads, 2-lane roads with high traffic counts, 4-lane highways with shoulders, etc.). Other infrastructure-related impediments listed included "lack of highway miles," "width of lanes," "interconnecting 4 lanes," "state highways through little towns and cities," and "bad intersections in small cities." For many of those respondents infrastructure was the second impediment that they listed, often right after funding. Again, some respondents listed infrastructure (or infrastructure-specific impediments) more than once among their lists of three -- for emphasis. Infrastructure was cited by respondents from major public transit systems, smaller transit systems, a major air cargo company and a major port user, other major freight using corporations, a trade/industry/other association, cities, counties, Indian nations, chambers

[1] Questions such as #10 provided for up to three responses from each person. Thus, from a total of 79 survey respondents, it was theoretically possible to receive 237 responses to a question. When the word "respondents" is used and a percentage of totals are provided, it refers to the number of surveys that mentioned the topic (at least once). In all other cases, references are to the number of "responses" that mentioned the topic.

of commerce, economic/industrial development groups, smaller transit systems and smaller/municipal airports.

Others specifically cited the condition and maintenance of infrastructure among the greatest impediments (14 respondents, or 19 percent). These impediments were listed as "maintenance," "inadequate maintenance of existing infrastructure," "condition of infrastructure," "road conditions," "deteriorated surface," "deteriorated bridges," "rail lines track repair," etc. Respondents who listed maintenance among the greatest impediments included a public port/waterway and a major port user, a major air cargo user and another major freight using corporation, a military installation, cities, economic/industrial development groups and a chamber of commerce, and smaller transit systems.

Eliciting equal attention as a current impediment to passenger movement was a lack of non-automobile/mass passenger transportation services (14 respondents, 19 percent). Impediments listed included "lack of passenger rail service," "inadequate transit service," "lack of viable mass transit," "lack of bus transportation services," "poor bus connections," "limited public transit options," "lack of transportation choices-private auto only in too many corridors," "no/limited service in rural areas," "convenient access to places statewide," "interconnectivity of different systems," "lack of coordination," "no easy passenger service between Oklahoma City and Tulsa airports," "passenger service connections from smaller cities to Oklahoma City and Tulsa airports," and "must own a car." Not surprisingly, smaller transit operators and an intercity passenger provider were among the respondents who listed these impediments, along with cities, a government association, a trade/industry/other association, a chamber of commerce, a major airport authority, a major freight using corporation, and a trucking/logistics/freight forwarder.

A fifth category of current impediments to passenger movement is a lack of air service (5 respondents, or 7 percent). This is expressed as "lack of direct flights to/from Oklahoma City," "lack of direct air flights to major cities," "inadequate air service to coastal cities," "lack of airline hub and feeder connections to small cities," "regional aviation schedules," and "intrastate (air) access." One respondent traces that impediment to Oklahoma's population distribution that results in neither Oklahoma City nor Tulsa having the density to support direct air service to some destinations. These impediments were cited by a major airport authority, cities, a major freight using corporation, an economic/industrial development group and a trade/industry/other association.

Five respondents (7 percent) – including a major public transit system, a major freight using corporation, a county, an Indian nation, and two smaller/municipal airports – all cited "regulatory," "regulatory and policy barriers," or "restrictions and engineering cost" among current barriers to passenger movement. Another respondent specifically cited "zoning policies favoring expensive sprawl."

Five respondents (7 percent) cited "operations" or "operational" as among the greatest impediments to passenger movement. It was not clear exactly what type of operations caused the impediment, and the respondents represented several different types of interests, businesses, and governments or government agencies. An additional respondent specified "operations which are held up by road construction."

Five respondents (7 percent) also mentioned tolls or toll roads in one context or another: "perceived cost of tolls by trucking companies," "toll roads," "tolls," and "high cost of toll roads." Three respondents listed "congestion" or "traffic delays in urban areas." And two respondents mentioned trucks: "trucks are too many for 4 lane roads" and "truck traffic (state of Oregon handles best)."

Table 2.29 below summarizes the survey responses by most frequent cited current impediments to passenger movement.

Table 2.29: Frequently Cited Current Impediments to Passenger Movement

Impediment	Number of Survey Respondents Who Listed this Impediment*	Percent of Survey Respondents Who Listed this Impediment*
Financial	44	59%
Infrastructure (in general)	25	34%
Maintenance/Condition of Infrastructure	14	19%
Lack of Automobile Alternatives/Public Transportation	14	19%
Inadequate air service	5	7%
Regulatory	5	7%
Operational	5	7%
Tolls	5	7%

*Impediments listed by fewer than five respondents are not included in this summary. Survey respondents could list up to three impediments; therefore, the numbers listed in the second column total to more than the total number of respondents and the percentages listed in the third column total to more than 100 percent.

Impediments to Current Goods (Freight) Movement

These questions elicited fewer responses. Only 60 respondents listed any impediments to freight movement. Of the 24 percent of those who did not respond to these questions, some explained "none that I know of," "unsure," or "not in a position to know."

Infrastructure was most frequently listed as among the greatest impediments that currently inhibit goods movement (34 respondents, or 57 percent of those responding to Question 12), and respondents who cited infrastructure were more clear – in general – that they were addressing a lack of infrastructure, a need for bigger/wider or more infrastructure, and greater capacity, rather than the condition/maintenance of infrastructure. In addition to "infrastructure" or "lack of infrastructure" as a whole, respondents specifically cited "woefully inadequate bridges," "width of lanes," "need more 4-lane highways," "major interstate corridors lack adequate capacity," "lack of adequate roads to rural communities," "convenient access with super 2- or 4-lanes," "lack of a 4-lane highway in Northwest Oklahoma to connect to Interstate," "not enough

interstate quality corridors to Northwest and Southeast Oklahoma," "intercity truck lanes," "lack of adequate interchanges at major trucking hubs," "rail access," "poor railroad infrastructure," "limited land and sea ports," "barge system not deep or wide enough," "intermodal facilities," and "intermodal connections," among other system impediments (and needs). In a separate category would be responses that cited "bridges," "low-rated (or low-weight) bridges," and "age of bridges and load limits" (6 responses) because the problem of Oklahoma's aged bridges is one that relates both to long-deferred maintenance and the fact that their original design standards do not accommodate current heavy truck needs; thus, to address such an impediment would in most cases necessitate going beyond maintenance/repair to rebuilding/replacement.

Infrastructure and/or bridges were listed among the greatest impediments to current goods movement by an intercity passenger provider, a major public transit system, smaller transit systems, a major port user, a major rail freight user, other major freight using corporations, a trade/industry/other association, cities, counties, government association, economic/industrial development groups, chambers of commerce, and smaller/municipal airports.

Financing gathered the second highest number of responses (from 17 respondents, or 28 percent). In addition to "financing" and "financial," respondents specifically cited the "ability to fund new roadways to potential plant and distribution locations," and some funding-related policy issues – "use of fuel tax for non-transportation needs" and "funding bias for roads only" – among other current impediments to goods movement. Financing was cited as among the greatest impediments by a major public transit system, smaller public transit systems, a major air cargo company, a major freight using corporation, a trade/industry/other association, cities, counties, Indian nations, a government association, an economic/industrial development group, and a smaller/municipal airport.

The "deteriorating" condition of infrastructure and the need for maintenance were listed by 13 respondents (22 percent). Among other problems, respondents specifically cited "road conditions," "rail conditions," "poor condition of Interstates," "poor pavement conditions," and "infrastructure conditions in rural areas." Infrastructure conditions and maintenance were cited by other major freight using corporations, a trade/industry/other association, cities, a county, and smaller public transit systems.

A mix of 14 different management, operational and policy impediments to goods movement were listed by 11 respondents (18 percent), many more than had been seen with impediments to passenger movement. These included:

- Lack of adequate traffic enforcement
- Non-recurring congestion/incidents
- Highway congestion in heavy truck lanes
- Not enough use of waterways
- Lack of rail service to many communities
- Congested rail service
- Poor service levels from Class I and Class III rail providers
- Rail company management
- Better cooperation among railroads
- Moving heavy loads via rail to prevent damage to highways

- Trucking driver shortage

It was not clear whether "lack of designated truck routes" was an impediment that could be addressed through designation or if it required new infrastructure. Similarly, "insufficient access to intermodal freight networks" could be a problem solely of railroad disinterest and operational/management barriers, or it may require new infrastructure.

These operational/management impediments were cited by a public/port waterway, a freight railroad, other major freight using corporations, a trucking/logistics/freight forwarder, a trade/industry/other association, cities, a government association, economic/industrial development groups, a smaller/municipal airport, and a smaller public transit system.

Regulations as an impediment to goods movement also were listed far more frequently by survey respondents (9, or 15 percent) than that subject elicited in relationship to passenger movement. Regulations were cited by a major public transit system, a major freight using corporation, a city, an Indian nation, a chamber of commerce, and smaller public transit systems.

Fuel costs and rising energy costs were cited by 4 respondents as among the greatest current impediments to goods movement. Toll roads were listed by three respondents.

Table 2.30 summarizes survey responses for the most frequently cited current impediments to goods movement in the state.

Table 2.30: Frequently Cited Current Impediments to Goods Movement

Impediment	Number of Survey Respondents Who Listed this Impediment*	Percent of Survey Respondents Who Listed this Impediment*
Infrastructure	34	57%
Financing	17	28%
Condition of Infrastructure/ Maintenance	13	22%
Management/Operational/Policy	11	18%
Regulations	9	15%
Fuel/Energy Costs	4	7%
Toll Roads	3	5%

*Impediments listed by fewer than three respondents are not included in this summary. Survey respondents could list up to three impediments; therefore, the numbers listed in the second column total to more than the total number of respondents and the percentages listed in the third column total to more than 100 percent.

2.2.2 Interview Responses

National and local businesses dependent on goods movement were interviewed and asked about similar subjects as those asked of survey respondents. The interview format provided for more in-depth responses and follow-through questions and clarifications. The subjects of Interview responses tended to cluster by mode and facilities: intermodal facilities, distribution centers and logistics centers/transportation hubs.

Existing Roads and Bridges

For a large manufacturer and for an agricultural storage and distribution company, roadways are the primary mode for product movement, although both transport some of their products via truck to port terminals. The agricultural storage and distribution company also transports some product via truck to two Oklahoma rail terminals, and distributes via truck within the state.

Oklahoma road quality and bridges are in need of improvement. Chambers of commerce and economic development groups interviewed reiterated the impediment to mobility represented by obsolete bridges and roadways, particularly interstate facilities, in Oklahoma. It was suggested that the first priority would be interstate bridges, and then state highway bridges.

Bridges conditions have required rerouting of truck traffic, lengthening shipping distances and time. For one company, some truck trips have increased 47 percent in length (from 92 miles to 135 miles). A chamber of commerce cited a rock quarry that requires a 20 mile out-of-the-way route because of deficient bridges.

Air Passenger Service and Goods Movement

Direct air service between Oklahoma airports and coastal cities (including Seattle, Los Angeles, Washington D.C.) was identified as an impediment to Oklahoma's economic growth and development by more than one interviewee. A major airport authority concurred, but noted that passenger demand does not justify the greater cost of non-stop flights. (Non-stop service for the same price as one- or two-stop service is unrealistic.)

Interviews with a chamber of commerce and an industrial park both suggested a potential role for improving smaller airports; small, private airports near Oklahoma's major cities might provide relief/augmentation to major city airports in meeting air cargo and business passenger needs. Air access is a criterion for location/site selection by some businesses. Commuter air service from communities with 5000-foot runways was suggested to serve the Ardmore, Ada, McAlester and Durant areas to connect with DFW air service.

Transit service for passengers and employees to/from the airports is an important intermodal element. Trolley service to/from downtown Oklahoma City connects directly with the airport service, but does require a transfer to reach the airport. There is direct bus service from downtown Tulsa to Tulsa International Airport.

Intermodal Ports

Additional use of ports would enhance the Oklahoma economy, according to a chamber of commerce. Inland waterway ports can play a key role in goods movement for a large

manufacturer, as an intermodal center that ties together the waterway with good road and rail connections. Port access is vital for a shipper that specializes in liquid bulk materials. That shipper also needs space at the port for on-site blending/operations, but this is not an impediment as the port has adequate space, including space for expansion. The ports are multimodal and essentially intermodal now, with rail and highway transport available or potentially available, and frequently pipelines and conveyor systems for liquids and grains.

Other Modes

Lack of sidewalks in urban areas is an impediment not only to pedestrian movements but also to transit use, notes a public transit provider.

Provision for bicycles on buses, as proposed by METRO in Oklahoma City, helps to facilitate mobility and use of both modes.

Improved urban taxi service was also cited as a need to improve passenger mobility by facilitating use of non-auto dependent modes.

Many existing hubs that depend on employee access are not well served by transit. In the Oklahoma City area, these include the Hobby Lobby facility at SW 44th and S. Council Rd. with over 2,000 employees and no service, Tinker-Midwest City, and the Northwest Oklahoma City/Medical Center area (all in Oklahoma City).

2.3 Current System Strengths & Weaknesses

This section identifies current and potential future intermodal restrictions and challenges for the state of Oklahoma. The report discusses each mode of transportation and the constraints they are faced with. Transportation modes discussed in this report include the state highway system as it relates to commercial vehicle operations, Oklahoma's turnpike system, the freight railroads, airports, inland waterways and public transportation.

2.3.1 State Highway System/Commercial Vehicle Operations

Oklahoma's State Highway system is vital to the state economy and the flow of goods carried by commercial vehicle operations (CVO). The inability to maintain and/or improve the State Highway system can create a number of transportation problems and obstacles for CVO in Oklahoma. This section discusses problems and obstacles associated with existing roadway surface conditions; bridge deficiencies and load postings; and level of service concerns.

2.3.1.1 Roadway Surface Conditions

The 2003 ODOT Needs Study and Sufficiency Rating Report revealed that over two-thirds of the roads in the State Highway System will need surface replacement by 2008 (Figure 2.19: 2003 Highway Needs Study Years to Next Surface Replacement). The Needs Study examined highway surface conditions as of July 2002. The roads were classified as either being in poor condition (surface replacement needed now), fair condition (surface replacement needed within five years), or good condition (surface replacement needed in six or more years).

Drivers on highways classified as being in poor surface condition are likely to notice they are driving on a rougher surface. These roads may have cracked or broken pavement and often show significant signs of pavement wear and deterioration. Some of the roads may have significant damage to their underlying foundations and require total reconstruction to correct problems in the underlying road deck. Highways classified as being in fair surface condition may show some signs of deterioration and may be noticeably inferior to those of new pavements (Source: *Bumpy Roads Ahead: Cities with the Roughest Rides and Strategies to Make our Roads Smoother*. April 2004. Road Information Program - www.tripnet.org). Table 2.31 shows the number of highway miles and their conditions as reported by ODOT Division.

Table 2.31 State Highway Miles And Their Surface Conditions As Reported By ODOT Division

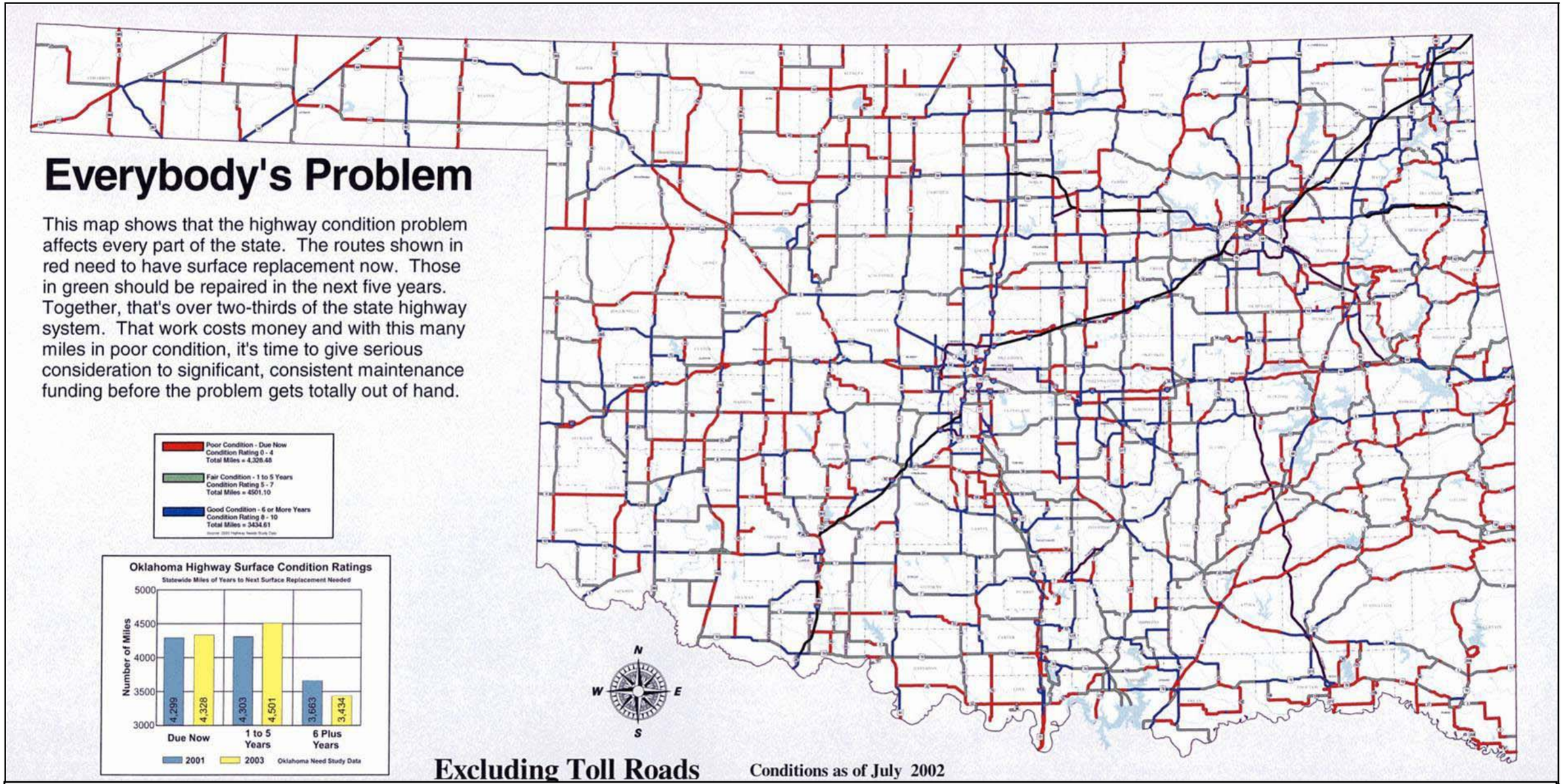
Division	Condition[1]						Total Miles
	Poor[2]		Fair[3]		Good[4]		
	Miles	Percent of Total Miles	Miles	Percent of Total Miles	Miles	Percent of Total Miles	
1	505.36	45.5	338.56	30.5	266.41	24.0	1,110.33
2	792.91	47.9	648.56	39.2	213.48	12.9	1,654.95
3	452.35	25.0	784.36	43.4	571.61	31.6	1,808.32
4	449.19	31.5	403.17	28.2	575.83	40.3	1,428.19
5	555.22	33.1	710.07	42.4	410.42	24.5	1,675.71
6	693.39	46.0	558.14	37.0	256.12	17.0	1,507.65
7	450.18	31.8	607.92	43.0	355.63	25.2	1,413.73
8	429.88	25.8	450.32	27.0	785.11	47.2	1,665.31
All Divisions	**4,328.48**	**35.3**	**4,501.1**	**36.7**	**3,434.61**	**28.0**	**12,264.19**

Source: ODOT, http://www.okladot.state.ok.us/public-info/civic/highways/index.htm
[1] As of July 2002
[2] Poor Condition: Surface replacement needed now.
[3] Fair Condition: Surface replacement needed within five years.
[4] Good Condition: Surface replacement needed in six or more years.

As shown in Table 2.31, less than 20 percent of highway miles were classified as being in good surface condition within Divisions 2 and 6, which encompass the southeast and northwest portions of the state, respectively. For all Divisions combined, 4,328.48 miles (35.3 percent) of highways were classified as being in poor surface condition and 4,501.10 miles (36.7 percent) of highways were classified as being in fair surface condition. Only 3,434.61 miles (28.0 percent) were classified as being in good surface condition. As shown in Figure 2.19, many of the major roadways leading into the state's two largest metropolitan areas, Oklahoma City and Tulsa, have poor surface conditions.

Roads in poor surface condition accelerate the depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Tire wear and fuel consumption also increase because there is less efficient transfer of power to the drive train and additional friction between the road and the tires (Source: *Bumpy Roads Ahead: Cities with the Roughest Rides and Strategies to Make our Roads Smoother*. April 2004. Road Information Program - www.tripnet.org). Roads in poor surface condition may also result in slower driving speeds and increased traffic congestion, which increases travel time and associated labor costs.

Figure 2.19 2003 Highway Needs Study Years to Next Surface Replacement



2003 HIGHWAY NEEDS STUDY YEARS TO NEXT SURFACE REPLACEMENT

2.3.1.2 Structurally Deficient and Functionally Obsolete Bridges

A bridge is classified as structurally deficient if there is significant deterioration of the bridge deck, supports, or other major components. This does not necessarily imply that the bridge is unsafe. Bridges that are structurally deficient are often posted to only carry lower weight vehicles or are closed if they are unsafe. A bridge is classified as functionally obsolete if it no longer meets current highway design standards such as narrow lanes, inadequate under clearances, or poor alignment, all of which reduce highway safety.

According to an analysis of the 2002 Federal Highway Administration (FHWA) National Bridge Inventory, Oklahoma leads the nation in the percentage of its bridges rated structurally deficient. The number and percentage of structurally deficient and functionally obsolete on- and off-system bridges for the state of Oklahoma is shown in Table 2.32 as follows:

Table 2.32 Structurally Deficient And Functionally Obsolete On-System And Off-System Bridges In Oklahoma

System	Total Bridges	Structurally Deficient Bridges	Percent of Total Bridges	Functionally Obsolete Bridges	Percent of Total Bridges	Total Deficient and Obsolete Bridges	Percent of Total Bridges
On-System[1]	2,683	1,082	40.3	547	20.4	1,629	60.7
Off-System[2]	20,566	7,226	35.1	1,241	6.1	8,467	41.2

[1] As of October 2004, ODOT
[2] As of December 2003, National Bridge Inventory, U.S. Department of Transportation Federal Highways Administration, http://www.fhwa.dot.gov/bridge/deficient.htm

As shown in Table 2.32, 60.7 percent of on-system bridges are either structurally deficient or functionally obsolete. Of these bridges, 40.3 percent are structurally deficient and 20.4 percent are functionally obsolete. Of the off-system bridges, 41.2 percent are either structurally deficient or functionally obsolete with 35.1 percent classified as structurally deficient and 6.1 percent as functionally obsolete.

ODOT has reported that as of October 2004, 1,082 structurally deficient and 547 functionally obsolete on-system bridges exist throughout the state (Figure 2.19: Structurally Deficient / Functionally Obsolete Bridges). Table 2.33 shows a breakdown of the structurally deficient and functionally obsolete bridges by Division.

Table 2.33 Structurally Deficient And Functionally Obsolete Bridges By ODOT Division

Division	Structurally Deficient	Functionally Obsolete	Total
1	124	72	196
2	73	59	132
3	275	65	340
4	200	85	285
5	82	38	120
6	99	5	104
7	77	77	154
8	152	146	298
All Divisions	**1,082**	**547**	**1,629**

Source: ODOT, http://www.okladot.state.ok.us/public-info/civic/bridges/index.htm

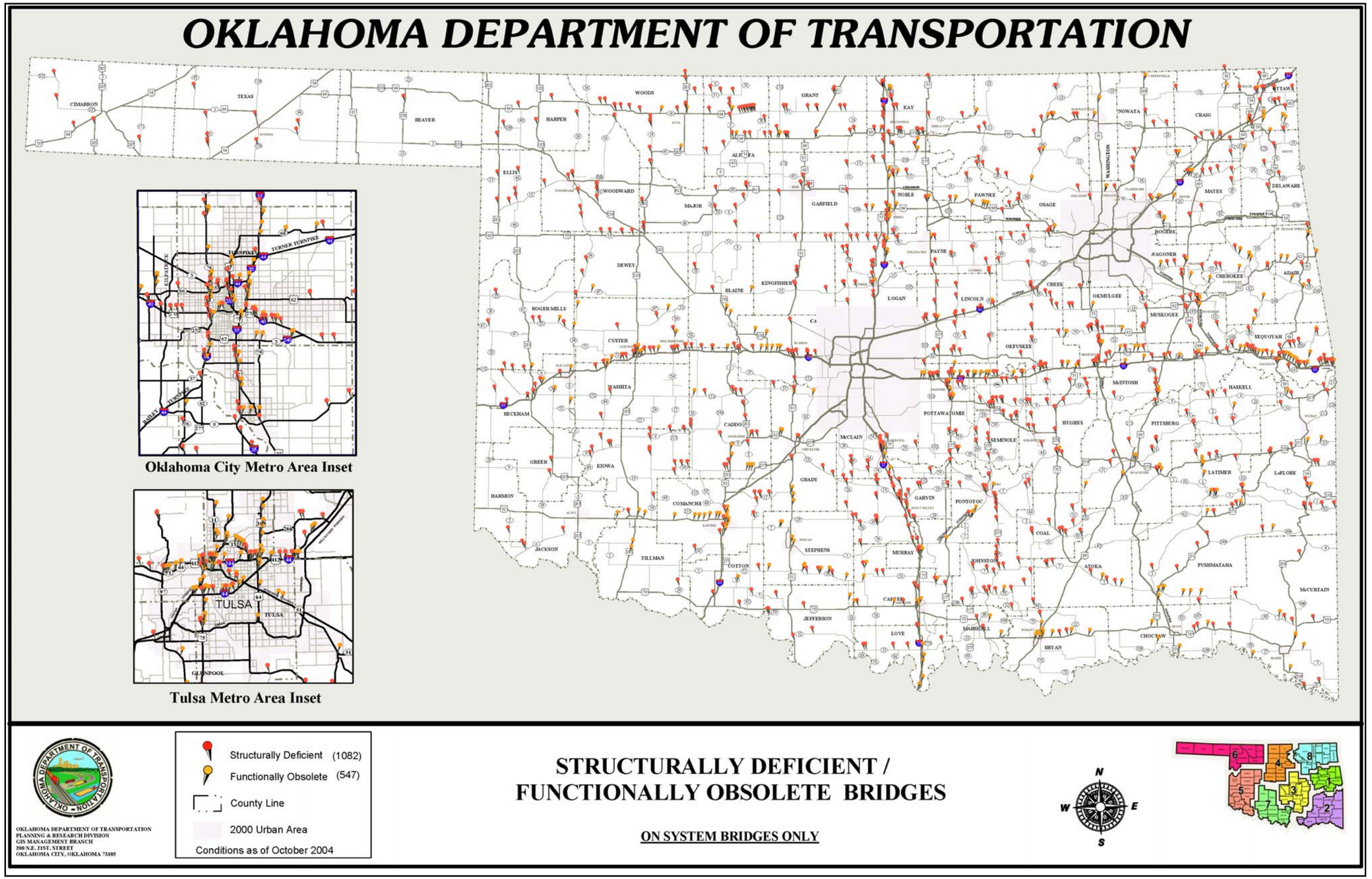
As shown in Figure 2.19, all of the major roadways leading into Oklahoma City and Tulsa contain structurally deficient and functionally obsolete bridges. ODOT Divisions 3, 4, and 8 have the greatest number of structurally deficient and functionally obsolete bridges. Divisions 3, 4, and 8 encompass the central, north central, and northeast portions of the state, respectively. Also note the large number of structurally deficient and functionally obsolete bridges along Interstate 35 and Interstate 40. These highways serve as major north-south and east-west routes across the entire state of Oklahoma, and are heavily used by trucks and other commercial vehicles.

ODOT also reports that of the 1,629 structurally deficient and functionally obsolete on-system bridges in the state, over 100 are within the Oklahoma City Metro Area and over 70 are within the City of Tulsa Metro Area. Oklahoma City and Tulsa are regional freight distribution centers within Oklahoma.

As previously stated, structurally deficient bridges are often posted to only carry lower weight vehicles. As a result, heavy trucks are forced to use alternate routes or detours to bypass these bridges. This may slow the delivery of freight and increase fuel and labor costs. Load posted bridges are discussed in detail in the next section of the report.

Functionally obsolete bridges no longer meet current highway design standards and reduce traffic safety. Narrow roadways make it difficult for drivers to safely maneuver in emergency and non-emergency situations because there is not enough room. Collisions with bridge ends are infrequent, but often severe. Such crashes usually occur when the width of the bridge is less than that of the approaching travel lanes and shoulders. As a result, vehicles strike the ends of the bridges, guardrails, curbing, or vehicles traveling in the opposite direction. Vehicles are therefore forced to slow down as they approach bridges with narrow roadways, inadequate vertical clearances, or poor alignment. This may result in increased congestion and longer travel times.

Figure 2.20 Structurally Deficient / Functionally Obsolete Bridges



2.3.1.3 Load Posted Bridges

Load posting is often required for structures that do not have the structural capacity to safely carry the State Legal Loads. Many older bridges were designed at a time when the design truck for a particular stretch of roadway had a gross truck load of 20,000 to 30,000 pounds. State of Oklahoma House Bill 1415 sets the load and weight limits for private commercial vehicles as follows:

- No single axle weight shall exceed 20,000 pounds.
- The total gross weight in pounds imposed by a vehicle or combination of vehicles shall not exceed the value given in Table 2.34 corresponding to the distance in feet between the extreme axles of the group measured longitudinally to the nearest foot.
- Except as to gross limits, Table 2.34 shall not apply to a truck-tractor and dump semi-trailer when used as a combination unit.
- In no event shall the maximum load in pounds carried by any set of tandem axles exceed 34,000 pounds for vehicles exempt from the table; however, any vehicle operating with split tandem axles or tri-axles shall adhere to the table.
- Special permits may be issued for divisible loads for vehicle configurations in excess of six axles. The permits may not exceed the Table "B" federal weights formula imposed by Title 23, U.S. Code, Section 127. Vehicles moving under the permits shall not traverse H-15 bridges (gross truck load of 30,000 pounds) or less without the express approval of the Secretary of Transportation.

Table 2.34 State Legal Loads

Distance in Feet Between the Extremes of Any Group of Two or More Consecutive Axles	Maximum Load in Pounds Carried on Any Group of Two or More Consecutive Axles				
	2 Axles	3 Axles	4 Axles	5 Axles	6 Axles
4	34,000	--------	--------	--------	--------
5	34,000	--------	--------	--------	--------
6	34,000	--------	--------	--------	--------
7	34,000	--------	--------	--------	--------
8	34,000	42,000	--------	--------	--------
9	39,000	42,500	--------	--------	--------
10	40,000	43,500	--------	--------	--------
11	--------	44,000	--------	--------	--------
12	--------	45,000	50,000	--------	--------
13	--------	45,500	50,500	--------	--------
14	--------	46,500	51,500	--------	--------
15	--------	47,000	52,000	--------	--------
16	--------	48,000	52,500	58,000	--------
17	--------	48,500	53,500	58,500	--------
18	--------	49,500	54,000	59,000	--------
19	--------	50,000	54,500	60,000	--------
20	--------	51,000	55,500	60,500	66,000
21	--------	51,500	56,000	61,000	66,500
22	--------	52,500	56,500	61,500	67,000
23	--------	53,000	57,500	62,500	68,000
24	--------	54,000	58,000	63,000	68,500
25	--------	54,500	58,500	63,500	69,000
26	--------	56,000	59,500	64,000	69,500
27	--------	57,500	60,000	65,000	70,000
28	--------	59,000	60,500	65,500	71,000
29	--------	60,500	61,500	66,000	71,500
30	--------	62,000	62,000	66,500	72,000
31	--------	63,500	63,500	67,000	72,500
32	--------	64,000	64,000	68,000	73,500
33	--------	--------	64,500	68,500	74,000
34	--------	--------	65,000	69,000	74,500
35	--------	--------	66,000	70,000	75,000
36	--------	--------	68,000	70,500	75,500
37	--------	--------	68,000	71,000	76,000
38	--------	--------	69,000	72,000	77,000
39	--------	--------	70,000	72,500	77,500
40	--------	--------	71,000	73,000	78,000
41	--------	--------	72,000	73,500	78,500
42	--------	--------	73,000	74,000	79,000
43	--------	--------	73,280	75,000	80,000
44	--------	--------	73,280	75,500	80,500
45	--------	--------	73,280	76,000	81,000
46	--------	--------	73,280	76,500	81,500
47	--------	--------	73,500	77,500	82,000
48	--------	--------	74,000	78,000	83,000
49	--------	--------	74,500	78,500	83,500
50	--------	--------	75,500	79,000	84,000
51	--------	--------	76,000	80,000	84,500
52	--------	--------	76,500	80,500	85,000
53	--------	--------	77,500	81,000	86,000
54	--------	--------	78,000	81,500	86,500
55	--------	--------	78,500	82,500	87,000
56	--------	--------	79,500	83,000	87,500
57	--------	--------	80,000	83,500	88,000
58	--------	--------	--------	84,000	89,000
59	--------	--------	--------	85,000	89,500
60	--------	--------	--------	85,500	90,000

Source: ODOT 2004

Many of the structurally deficient bridges in Oklahoma are load posted. According to ODOT, there are 151 load posted bridges for trucks and other vehicles on state, US, and interstate highways within Oklahoma. Table 2.35 shows the number of load posted bridges by highway.

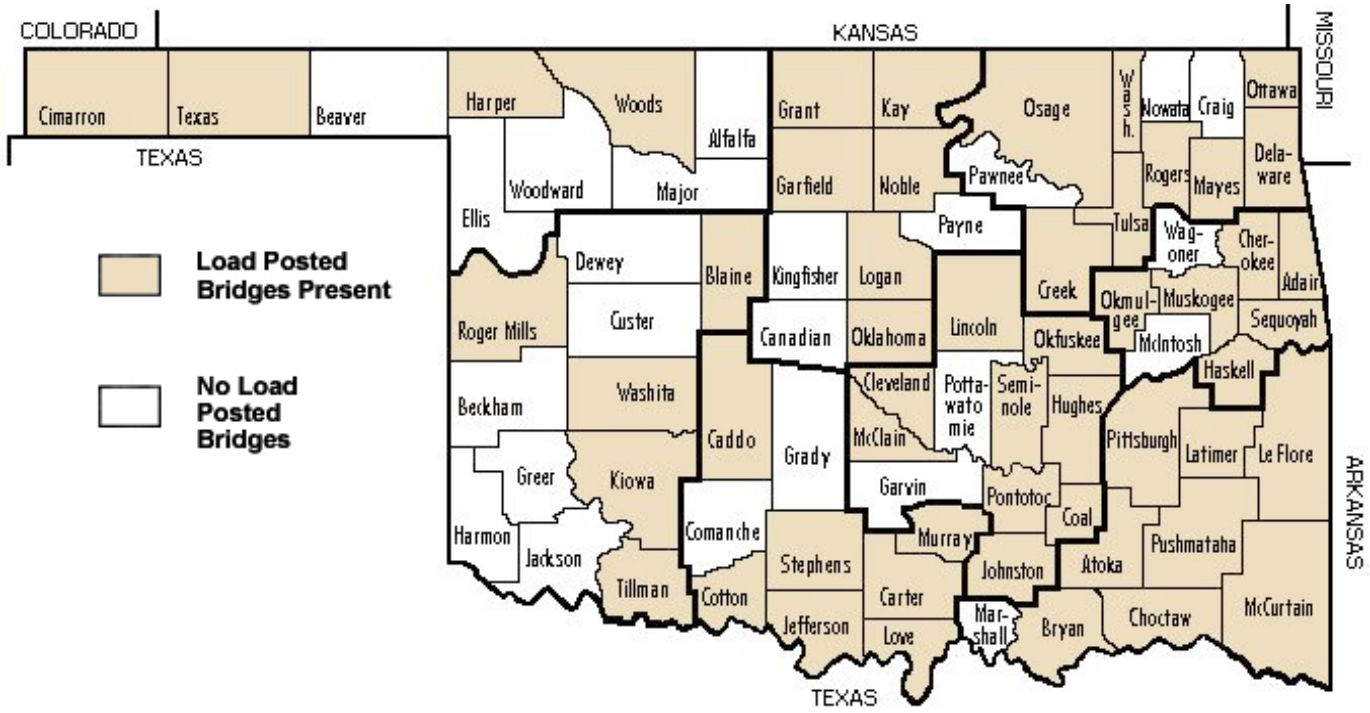
Table 2.35 State, US, and Interstate Highways With Load Posted Bridges for Trucks and Other Vehicles

Highway	Number of Load Posted Bridges	Highway	Number of Load Posted Bridges
SH 1	3	SH 74C	1
SH 2	1	SH 77	2
SH 5	4	SH 77D	1
SH 7	2	SH 82	4
SH 8	1	SH 87	1
SH 9	4	SH 88	3
SH 9A	2	SH 95	2
SH 10	3	SH 97	1
SH 11	1	SH 99	2
SH 15	1	SH 99A	1
SH 16	1	SH 101	4
SH 19	1	SH 104	1
SH 20	1	SH 127	1
SH 24	1	SH 128	6
SH 27	1	SH 131	2
SH 28	1	SH 132	1
SH 31	5	SH 141	1
SH 32	2	SH 144	2
SH 33	5	SH 147	1
SH 35 Osage Hills	1	SH 171	1
SH 36	1	SH 199	1
SH 44	2	SH 325	2
SH 47	2	US 59	2
SH 48	4	US 60	2
SH 53	1	US 62	1
SH 54	4	US 64	5
SH 55	1	US 70	1
SH 56	5	US 75A	2
SH 58A	1	US 77	11
SH 63	2	US 177	4
SH 66	1	US 266	1
SH 66 Business	2	US 271	7
SH 71	1	US 281	1
SH 74	4	US 283	1

Source: ODOT, http://www.okladot.state.ok.us/ /hqdiv/p-r-div/nhs/index.htm

As shown in Table 2.35, SH 31, SH 33, SH 56, SH 128, US 64, US 271, and US 77 have at least five load posted bridges. Figure 2.20 is a map showing the 53 counties that contain load posted bridges.

Figure 2.21 Counties Containing Load posted Bridges



Source: ODOT 2004

As shown in Figure 2.20, only 24 of the 77 counties within Oklahoma do not contain load posted bridges and these counties are predominately in the western portion of the state.

As a result of load posted bridges, trucking companies must determine the axle configuration and maximum truck weight before a route can be planned for a specific destination. Multiple destinations compound the process. This may slow the delivery of freight as vehicles make detours around load posted bridges or take alternate and less direct routes. This results in inefficiency and higher fuel, vehicle maintenance, and labor costs. As more and more bridges become structurally deficient, more and more of them will become load posted. The cost of freight movement on the roadways within the state will increase accordingly.

2.3.1.4 Traffic Congestion

Level of Service (LOS) is a way to describe traffic congestion. It is a qualitative measure describing the operating conditions within a traffic stream based on service measures such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. This quantitative measure ranges from LOS A to LOS F with the former being the best and the latter being the worst traffic condition. LOS A represents free flow operations at the highest posted speeds where there is ample freedom to maneuver and localized incidents do not affect traffic flows. LOS B implies that free flow speeds are maintained with slight restrictions. The general driving comfort level is still high and localized incidents have little or no effect on traffic flows. LOS C provides for free flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. More driver care and vigilance are required and localized traffic flow deterioration and queues begin to occur. At LOS D, speeds begin to decline, driver psychological and physical comfort levels deteriorate, freedom to maneuver is noticeably

limited, and minor incidents create queues. LOS E describes the condition when roadway capacity has been reached, volatile operations occur, maneuverability is extremely limited, and minor incidents create traffic breakdowns. LOS F represents complete breakdown in traffic flows with large queues and where the capacity of a facility can be temporarily reduced by the in-flow of traffic.

Statewide LOS

The ODOT 2005–2030 Statewide Intermodal Transportation Plan has identified 17 preliminary Transportation Improvement Corridors and Congress has designated four National High Priority Corridors in the state. ODOT developed the 17 preliminary corridors by taking the current Needs Study Traffic and using historical growth factors to update the projected traffic to 2030. This result is described in more detail in Chapter 3 – Future of the Intermodal System.

Oklahoma City LOS

The Texas Transportation Institute (TTI) 2004 Urban Mobility Report presented details on the trends, findings, and solutions that can be used to address the nation's growing transportation problems. Trend data from 1982 through 2002 for 85 urban areas was analyzed to provide a local and national perspective on the growth and extent of traffic congestion.

Oklahoma City was classified in the Report as a large urban area – over 1,000,000 and less than 3,000,000 in population. According to the Report, the annual delay per traveler in 1992 for Oklahoma City was seven hours and the travel time index was 1.04. In 2002, the annual delay per traveler was 14 hours and the travel time index was 1.11. This represents a 100 percent increase in annual delay per traveler and a 6.7 percent increase in the travel time index over the 1992 values. Annual delay per traveler is defined as the extra travel time for peak period travel during the year divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.). Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) are used as the comparison threshold. Travel time index is defined as the ratio of travel time in the peak period to the travel time at free-flow conditions. A value of 1.35 indicates a 20-minute free-flow trip takes 27 minutes in the peak. The annual travel delay in 2002 hours for the total urban area of Oklahoma City is 8,090,000 hours, the excess fuel consumed was 14,000,000 gallons, and the congestion cost was $143,000,000. Excess fuel consumed is defined as the increased fuel consumption due to travel in congested conditions rather than free-flow conditions. Congestion cost is defined as the value of travel time delay (estimated at $13.45 per hour of person travel and $71.05 per hour of truck time) and excess fuel consumption (estimated using state average cost per gallon).

Tulsa LOS

According to the Texas Transportation Institute (TTI) 2004 Urban Mobility Report, the annual delay per traveler in 1992 for the City of Tulsa was six hours and the travel time index was 1.05. In 2002, the annual delay per traveler was 14 hours and the travel time index was 1.11. This represents a 133 percent increase in annual delay per traveler and a 5.7 percent increase in the travel time index over the 1992 values. The annual travel delay in 2002 hours for the total urban area of Tulsa is 5,976,000 hours, the excess fuel consumed was 10,000,000 gallons, and the congestion cost was $105,000,000.

2.3.1.5 Summary

This section has described existing roadway (excluding toll roads) conditions and problems associated with roadway surface conditions, bridge deficiencies and load postings and level of service concerns.

Roads in poor surface condition increase the depreciation of vehicles, the need for repairs, tire wear, and fuel consumption. Roads in poor surface condition may also result in slower driving speeds and increased traffic congestion, which increases travel time and associated labor costs. Without adequate funding, the roadways and bridges in Oklahoma will continue to deteriorate faster than they can be repaired. There is not enough funding to catch up with the road maintenance backlog.

More than 60 percent of on-system bridges and 40 percent of off-system bridges in Oklahoma are either structurally deficient or functionally obsolete. Many of the bridges are at least 80 years old and the rate of bridges aging significantly exceeds the rate of replacement. There are a large number of structurally deficient and functionally obsolete bridges along Interstate 35 and Interstate 40. These highways serve as major north-south and east-west routes across the entire state of Oklahoma. Over 100 structurally deficient and functionally obsolete are within the Oklahoma City Metro Area and over 70 are within the City of Tulsa Metro Area. These cities are regional freight distribution centers within Oklahoma. Structurally deficient bridges are often posted to only carry lower weight vehicles. As a result, trucking companies must determine the axle configuration and maximum truck weight before a route can be planned for a specific destination. Multiple destinations compound the process. This may slow the delivery of freight as vehicles make detours around load posted bridges or take alternate and less direct routes. This results in inefficiency and higher fuel costs, vehicle maintenance, and labor costs, which eventually leads to higher costs to the consumer. Functionally obsolete bridges no longer meet current highway design standards and reduce traffic safety. As vehicles slow down as they approach bridges with narrow roadways, inadequate under clearances, or poor alignment, increased traffic congestion and longer travel times may be the result.

ODOT has identified 17 transportation improvement corridors and Congress has designated four national high priority corridors within the state. The funding to improve capacity of the roadway segments within these corridors have priority which will improve the statewide level of service. In Oklahoma City, the annual delay per traveler in 1992 was seven hours. In 2002, the annual delay per traveler was 14 hours. This represents a 100 percent increase over the 1992 values. In Tulsa, the annual delay per traveler in 1992 was six hours. In 2002 the annual delay per traveler caught up to Oklahoma City at 14 hours, representing an increase of 133 percent.

Plans and other key initiatives addressing many of the above issues are described in the next chapter 3 – Future of the Intermodal System.

2.3.2 Oklahoma Turnpike System

Within the state, the Oklahoma Transportation Authority (OTA) operates and maintains 10 Turnpikes traversing over 600 miles as shown on Figure 2.21. During calendar year 2003 (the latest available data), daily vehicle miles of travel was approximately 7.5 million. This represents 11.5 percent of the vehicle miles traveled on the Oklahoma state road network. Possible constraints discussed below include 1) the existing roadway conditions, 2) existing and projected level of service and 3) toll booth operations.

Figure 2.22 Turnpikes in Oklahoma

2.3.2.1 Existing Roadway Conditions

The OTA actively maintains the turnpike system and at present cites few, if any, road surface or bridge condition issues. This may in part be because the average system age is 30 years with the oldest facility – the Turner Turnpike being 51 years old and the newest facility – the Creek Turnpike being 12 years old. Vehicle weight and size restrictions similar to ODOT's are enforced although permits can be issued for larger vehicles after engineering review and working with the applicant. There are no restrictions placed on farm equipment although they are encouraged to obtain a "pikepass" if the vehicle or trailer being towed is 12 feet wide or wider because the "pikepass" lanes are wider than standard tollbooth lanes. The OTA has also been able to keep up with maintenance and upkeep because of strong revenue generation. The adopted 2005 OTA budget has $250 million in programmed expenditures over the 2005 to 2009 period according to information obtained from the OTA Deputy Director.

All but two of the turnpike facilities have bridge clearances of 15.5 feet. The Turner Turnpike has clearances of 14.5 feet and the Will Rogers Turnpike has clearances of 15 feet. These variations are not anticipated to be a constraint to goods movement.

2.3.2.2 Existing Level of Service (LOS)

The level of service or degree of congestion experienced by users is vital to keeping a strong customer base. Based on information from the OTA Deputy Director, the existing network operates at a high level of service with "unimpeded flow" (LOS A or B) during off peak periods and only occasional reductions (LOS C) in that condition during peak periods.

2.3.2.3 Toll Booth Operations

The OTA currently has "non stop" tolling at all toll booth locations. This is possible through the "pikepass" program which allows electronic toll collection. At about 50 percent of the locations geometric restrictions require that traffic slow to 30 mph. The remaining locations offer open road tolling whereby drivers do not have to slow down as long as they have valid and readable windshield tag and transponder and are in the correct lanes. Plenty of advanced signing is provided to alert customers of lane options ahead of toll booths.

2.3.2.4 Summary

The State Turnpike system offers good levels of service and road conditions with few if any problems presently. Although some survey respondents expressed some frustration with delays at toll booths, the option of open road tolling offers substantial relief. The OTA network of turnpikes does not present any major constraints to the ongoing operation of the surface transportation system. It should be noted that as the use of tolling increases as a means to expand the State system, the customer's tolerance for extra fees may become a factor in reducing truck based commerce. Trucking companies interviewed indicated that increases in toll payments were cutting into their ability to make profits.

2.3.3. Freight Rail System

Currently, 21 freight railroads operate in Oklahoma: three Class I railroads, one regional railroad, 12 local line, and five switching and terminal lines. The State of Oklahoma supports rail transportation with ownership of several railroad rights-of-way encompassing approximately 900 miles of track. Most of these facilities are leased to railroad companies although a few are not in operation. State-owned railroad rights-of-way include trackage leased by: Union Pacific; Stillwater Central; Farmrail; Arkansas-Oklahoma; Wichita, Tillman & Jackson; Austin, Todd & Ladd; and South Kansas & Oklahoma.

Class I railroads operating in the state include the BNSF Railway Company (BNSF), Union Pacific (UP), and Kansas City Southern (KCS). BNSF shares trackage with Amtrak passenger rail services between Oklahoma City and Fort Worth, Texas.

BNSF's rail network in Oklahoma consists of four different operating divisions within the BNSF system. BNSF operates 1,475 route miles within the state. Its primary customers include General Motors, Nestle Purina, Continental Carbon, Budweiser, Valero Refinery, Williams Refinery, and Georgia Gulf. The primary commodities transported by the BNSF in Oklahoma with either origins or destinations in the state are non-metallic minerals, chemicals, and grain. Coal bound for Texas electric utilities is a major commodity of BNSF's interstate traffic through Oklahoma.

Oklahoma is part of UP's north-south corridor linking the Midwest with the Gulf Coast. The railroad operates 921 miles of track in the state. Commodities shipped by UP originating in Oklahoma include wheat, cement, and aggregates. UP customers include Oklahoma Gas & Electric, Grand River Dam Authority and Great Lakes Carbon, Dolese Brothers, Lone Star Industries and Farmland Industries.

KCS operates primarily north-south in the eastern portion of Oklahoma, providing the shortest route between Kansas City and the Gulf of Mexico. KCS achieved its goal of creating the "NAFTA Railway," connecting the heartland of the United States to central Mexico. KCS operates 139 route miles in Oklahoma. The majority of the KCS traffic in Oklahoma is interstate traffic, having neither an origin nor destination within the state.

2.3.3.1 Rail Intermodal Facilities

There has been much discussion regarding the desire to add rail intermodal facilities in Oklahoma and increase freight activity to support existing and new business. There are two major existing intermodal facilities in the region one just north of Fort Worth and west of Alliance airport and a second at the Argentine yard in Kansas City. Typically such facilities are designed to serve an area within a 250 mile radius. As Figure 2.22 shows, the Oklahoma market is covered quite well with these two existing facilities. The lack of such a major intermodal facility in Oklahoma is therefore not a constraint. The prospect of having such a facility in the state is very slim given current operations.

Figure 2.23 Coverage Area of Major Intermodal Facilities Serving Oklahoma

*Source: PB, NationalAtlas.gov

Coverage Area of Major Intermodal Facilities Serving Oklahoma

Legend

Existing Kansas City Intermodal Facility

Existing Alliance Intermodal Facility

2.3.3.2 Network Connectivity

Most of the major rail freight flows in and through Oklahoma are north to south. An exception is the BNSF's "Transcon" line between California and Chicago crossing the northwestern portion of the State. There isn't much demand for west to east rail traffic in Oklahoma and as such, west to east rail lines are not as readily available; especially in the southern part of the state. The existing Class One rail network is sufficiently established as far as any State connectivity needs are concerned now and into the future.

2.3.3.3 Short Line Railroads

Class One Railroads encourage Oklahoma's continued support of Short Line railroads within the state to enhance the service to Oklahoma's rail customers. The ability of Short Lines to upgrade their infrastructure to accommodate 286,000 pound rail cars is very important because of the increased use of such rail cars.

2.3.3.4 Railroad Operations & Geometrics

A lack of double track on the Class One mainlines will restrict future capacity of through train movements not only in Oklahoma but throughout the country. The BNSF's north to south line from Wichita to Fort Worth through Oklahoma City is approaching capacity for a single track railroad and will need to have some double track construction occur if rail freight traffic is to increase on this line. Although not in Oklahoma, congestion on the Class One railroads in the vicinity of the Port of Houston can have some impact on goods moving from Oklahoma to the Houston area. The Houston capacity issues are being addressed by others. Similar issues with the east-west transcontinental route outside of Oklahoma are also being addressed.

Overhead clearance restrictions have an impact on the ability to move "double-stack" intermodal traffic; but such restrictions are not presently an issue in Oklahoma.

2.3.3.5 Summary

Oklahoma has a lack of rail intermodal or transload facilities, yet this is primarily a result of adjacent facilities in North Texas and Kansas City which adequately serve the needs of the state. There are also adequate north/south and east/west Class One rail lines available to the state's rail customers. Oklahoma should continue its support of the Short Line railroads and support infrastructure upgrades for the ever expanding use of the larger 286,000 pound railcars. Another potential constraint to rail traffic that must be monitored is the BNSF north/south line that operates through Oklahoma City as it is approaching capacity.

2.3.4. Airports

Two major international airports serve Oklahoma—Will Rogers World Airport, in Oklahoma City, and Tulsa International Airport, in Tulsa. Three regional airports located in Enid (Woodring Regional Airport), Lawton (Lawton-Fort Sill Regional Airport), and Ponca City (Ponca City Regional Airport) serve as commercial passenger links in their respective regions. In addition to these five commercial airports, 122 general aviation airports located around the state serve public and private aircraft. The Oklahoma City and Tulsa airports serve the vast majority of state passenger traffic and all cargo activity.

The state also has a considerable military/Air Force presence including Tinker Air Force base/Oklahoma City air logistics center; Altus Air Force base in Altus, Oklahoma; Vance Air Force base, Enid, Oklahoma; and US Air National Guard, Tulsa, Oklahoma. The opportunities for military logistics centers are discussed in Chapter 5.

Will Rogers World Airport is located in the southwest corner of Oklahoma City. With two main runways (both 9,800 feet) and a crosswind runway (7,800 feet), the airport presently serves commercial passenger, cargo, general aviation, and Air National Guard customers. Airlines that serve the airport include: American, American Eagle, Atlantic Southeast, Champion Air, COMAIR, Continental, Delta, Delta Connection, Frontier, Great Plains, Northwest, Northwest Airlink, Southwest, and United. In 2003 Will Rogers served approximately 3,260,000 passengers.

Will Rogers Airport is connected to the highway system through an official National Highway System Intermodal Connector (Meridian Ave. & SH 152). The airport is located near Interstate Highways I-44, I-35, and I-40, providing considerable automobile access for air travelers, but is not located near the only existing passenger rail service, Amtrak's Heartland Flyer which originates in downtown Oklahoma City. In addition from downtown there is no direct bus service to the airport. From the new COTPA intermodal center (not connected to the Amtrak station) a trolley bus route connects to the Meridian Avenue hotel district. Travelers must transfer to a second bus to the airport. The recurring congestion noted on the Oklahoma freeway system should be addressed to allow continued reliable airport auto access.

Passenger traffic through Will Rogers Airport has declined slightly from 2000 to 2003. Will Rogers served approximately 3,260,000 passengers in 2003. The decline is principally the result of September 11 and is slowly building again.

Tulsa International Airport is located on a 4,000-acre tract on the north edge of Tulsa, with 1,000 acres available for development. The airport has two main runways (10,000 feet and 7,400 feet) with a 6,100-foot crosswind runway, and serves commercial passenger, cargo, general aviation, and Air National Guard customers. Airlines serving the airport include: American, Atlantic Southeast, Champion Air, Chautauqua, COMAIR, Continental, Delta, Northwest, Skywest, Southwest, and United. American operates a major aircraft maintenance center at Tulsa International. In 2003 the Tulsa airport served approximately 2,747,200 passengers.

Tulsa International, which is also connected by an official National Highway System Intermodal Connector (SH 11), has direct access to I-44 and I-244 facilitating automobile access for air travelers. Tulsa Transit operates a bus route from downtown to the airport from 5:30 am to 5:30 pm with 90 minute headways. The trip from downtown is about 40 minutes.

2.3.4.2 Air Cargo

Air freight services at Will Rogers include Emery, Federal Express, United Parcel Service, Airborne, and Burlington. The airport is also designated as a Foreign Trade Zone, with the availability of general purpose warehouses and a U.S. Customs Port of Entry office. Its location near Interstate Highways I-44, I-35, and I-40, provides considerable access for truck freight transport. It is also located near rail services in Oklahoma City and is approximately 90 miles from the Port of Catoosa in Tulsa.

Will Rogers Airport handled approximately 35,571 tons of cargo and mail in 2003, with total tonnage projected to decrease by approximately 1,000 to 34,556 tons in 2004. As noted in section 2.1, the amount of cargo and mail passing through the airport declined from 2000 to 2003.

Air freight services at Tulsa International include Airborne Express, American Airline Cargo, Continental, Delta Dash, Menlo/Emery, Federal Express, Southwest, United Parcel Service, and the U.S. Postal Service. American operates a major aircraft maintenance center at Tulsa International. The airport is also designated as a Foreign Trade Zone, with the availability of general purpose warehouses and a U. S. Customs Port of Entry office. Tulsa International has access to I-44 through SH 11 (a designated NHS intermodal connector), providing easy access for truck freight transport. It is also located near rail services in Tulsa and is only minutes from the Tulsa Port of Catoosa.

Tulsa International Airport handled approximately 53,302 tons of cargo and mail in 2003 as noted earlier in section 2.1. The amount of cargo passing through the airport fluctuated slightly from 2000 to 2003 and is expected to increase by approximately 2,000 tons in 2004, but mail shipments have declined sharply since 2000 (69 percent) and have remained relatively stable the last three years.

Oklahoma's international airports remain important intermodal links in the state's transportation system. However, recent freight trends as measured in total freight tonnage seem to indicate a decline in activity for this transportation mode. The decline in cargo shipments at Will Rogers World Airport can be largely explained by changes in the aircraft being used by the airlines. Several commercial airlines flying into Will Rogers have shifted to using more "regional" size jets that do not have the capacity to carry cargo. These jets typically carry 70 to 90 passengers and only have cargo capacity for passengers' luggage. In addition, increased security since 2001 has also inhibited carrying cargo on passenger jets.

2.3.4.3 Summary

The shift to more regional carriers at Oklahoma's major airports will inhibit the growth of the air cargo business because of the cargo limitations of the type of aircraft being used. Oklahoma will either have to attract more national/international carriers, which will also increase air passenger traffic or establish a new regional/national cargo hub to take advantage of its airport capacity and attractive geographic location. The outsize air cargo market is growing and is international in scope. Geographically Oklahoma is well positioned for this market; however, the runways at the two main airports need to be at least 12,000 feet in length to satisfy the required cargo aircraft. Runways at both airports would have to be extended to take advantage of this opportunity.

2.3.5. Inland Waterways

The McClellan-Kerr Arkansas River Navigation System is 445 miles long and begins at the Mississippi River in Rosedale, Mississippi, and ends at the Port of Catoosa in Tulsa. Every year, 13 million tons of cargo are transported on the McClellan-Kerr waterway by barge. Commodities range from sand and rock to fertilizer, wheat, raw steel, refined petroleum products, and sophisticated petrochemical processing equipment.

There are two public port facilities that serve Oklahoma: the Port of Muskogee, located in Muskogee, and the Tulsa Port of Catoosa, located in Tulsa. Both are administered by city-county port authorities. In addition, private port facilities are located in or near Inola, Waggoner, Webbers Falls, and Sallisaw. Five locks are located in Oklahoma, at Spiro, Sallisaw, Gore, Porter, and Inola. All lock chambers are 110 feet wide by 600 feet long.

2.3.5.1 Roadway Access

A list of projects identified to enhance access to the port system was recently presented by the Waterways Branch of ODOT. The estimates are grouped into three geographical areas. The first area is around and serving the Port of Catoosa. The second area serves Johnston's Port 33 and a potential new facility at Lock and Dam #18. The third area is the Port of Muskogee. Cost estimates have been developed for each project within each geographic area. At this time no final actions have been taken regarding these projects. They do represent needs to keep road access to the port system at competitive levels.

Area 1 Port of Catoosa

- Four-Lane SH 167 from I-44 to the port entrance. - $15,000,000
- Four-Lane SH 266 from the port entrance to I-44 (Will Rogers Turnpike) - $23,000,000
- Four-Lane SH 266 from the port entrance to US 69 with capacity upgrades - $20,000,000

Area 2 Johnston's Port 33 and potential new facility at Lock & Dam 18

- Improvements to SH 412P (2-lanes with 12' shoulders) - $7,500,000
- Interchange at US 412 / SH 412P junction - $6,000,000
- Improvements to Coweta Road from US 412 to Muskogee Turnpike - $29,000,000
- Improve interchange and provide access at Coweta Road and Muskogee Turnpike - $7,000,000
- Bridge at Lock & Dam #18 - $20,000,000
- Improvements to roadway from Coweta Road to new bridge - $15,000,000

Area 3 Port of Muskogee

- Four-lane bridge over SH 165 / Muskogee Turnpike - $5,000,000
- Various roadway improvements east of bridge over turnpike / SH 165 - $2,000,000
- Emergency access through west rail yard - $1,000,000

2.3.5.2 Rail Access

Each of the public port facilities has rail access through various short line railroads which also connect to either UP or BNSF mainlines. This can facilitate container on barge operations in the future. Railroad access to the public ports is not a constraint at this time.

2.3.5.3 The Channel, Locks & Dams

The Oklahoma inland waterways, locks and dams are the responsibility of the US Army Corps of Engineers (ACOE). All dredging in the waterway channels has to be permitted, justified, paid for and executed by the ACOE, and Oklahoma ports are dependent on them to move this work forward. ODOT is working with the ACOE to help them assign a higher priority to removing the high spots in the channels to allow deeper (11.5 foot) draft barges through the system and to widen the channel to 300 feet between Muskogee and Catoosa (the Verdigris section) to allow two-way operation. In addition adding tow haulage equipment to the locks will allow barge strings to move through the locks without a tow boat and increase throughput and reduce towing costs. The issue here is really federal funding and congressional action – the federal government collects user fees on diesel fuel for the tow boats, but the money is accumulating in the treasury because it is not being authorized for spending by Congress. So, ODOT has to encourage their legislative delegation to help push through authority to allow ACOE to spend these funds for what they were intended.

The lack of funding noted above is largest issue today with the inland waterway system. Much of the fixed infrastructure (locks, dams and bridges over waterways) are over 50 years old, worn out and close to failure. ACOE has been pleading for well over a decade for more money to rebuild, but unsuccessfully. Further, they are spending heavily on maintenance to keep everything operating well beyond its useful design life, which saps their already strained budgets. This issue has not been a national priority in spite of the massive economic benefits, but will become so when, because of neglect, one lock on the system fails and shuts down commerce to an entire region of the country.

2.3.5.4 Summary

Access needs to the Oklahoma waterway system of ports, primarily from the roadway perspective appear to be a priority. Significant improvements are still needed to the waterway channel and the system of locks and dams. These facilities are under the jurisdiction of the ACOE and funding has been a consistent problem for years. Many of the commodities moving in and out of Oklahoma have historically moved on the waterway. Because of scheduling unpredictability, the commodities shifted to truck when fuel prices were lower and incremental cost increases for truck were rather nominal. The transport cost balance is tipping again in favor of barge service. If the waterway ports and barge service operators can better guarantee delivery schedules, more goods will shift back to the waterway system. Paramount to guarantees of schedule is an infusion of federal money to improve the existing waterway channel and its locks and dams.

2.3.6. Public Transportation

This section discusses Oklahoma's existing public transportation system and current opportunities/constraints for taking a larger role in further developing Oklahoma's economy. Comparison of ridership and service levels to other urban public transportation systems around the nation with similar population size to the two largest Oklahoma systems is provided, plus intermodal opportunities for public transit in the three largest Oklahoma urban areas. In addition, opportunities/constraints for the variety of services offered through ODOT's rural transit program are discussed along with those services provided by national intercity bus carriers and by Amtrak.

2.3.6.1 Urban Transit

There are four transit systems operating in Oklahoma classified as urban: the Central Oklahoma Transportation and Parking Authority (COTPA), Norman (CART), Tulsa Transit, and the Lawton Area Transit System (LATS). Summaries of service and ridership statistics between 2000 and 2002 were provided earlier. The information includes all fixed route, circulator and paratransit services.

Although total urban system revenue miles have increased by 33 percent between 2000 and 2002, total passenger trips have begun to level off even with the addition of service in Lawton (although small in comparison). Total passenger miles have been slowly increasing and are up 10 percent since 2000.

To measure Oklahoma's urban public transit successes several other cities (peer cities) around the US with similar population size were compared to the amount of urban public transit service offered in the state per population. From this data an average was calculated and analyzed against the statistics for both Oklahoma City and Tulsa.

The US Department of Transportation's National Transit Database (NTD) reports annually on service statistics for transit systems by urbanized area. From this data the comparison of Oklahoma City and Tulsa to 12 other cities within the 2000 NTD with similar population size is summarized for each city in Tables 2.36 and 2.37 respectively.

Table 2.36 Public Transportation Statistics Comparison for Oklahoma City, OK. (2000)

City , State	Population	Vehicle Revenue Miles (Millions)	Passenger Miles (Millions)	Operating Expense (Millions)	*Recovery Ratio
Jacksonville, FL	882,295	14.6	59.9	$48.1	27.9%
Louisville, KY-IN	863,582	11.1	57.6	$48.0	13.3%
Hartford, CT	851,535	11.3	88.7	$42.3	13.1%
Richmond, VA	818,836	6.9	51.2	$29.0	30.7%
Charlotte, NC-SC	758,927	10.1	74.4	$34.6	17.7%
Nashville-Davidson, TN	749,935	4.9	35.6	$24.7	27.0%
Oklahoma City, OK	**747,003**	**4.2**	**19.2**	**$15.6**	**20.2%**
Tucson, AZ	720,425	8.6	68.1	$37.5	20.0%
Dayton, OH	703,444	9.3	51.8	$51.7	13.0%
Rochester, NY	694,396	6.6	39.4	$39.0	39.6%
El Paso, TX-NM	674,801	8.0	68.8	$31.9	19.4%
Birmingham, AL	663,615	2.4	13.5	$14.0	18.3%
Omaha, NE-IA	626,623	4.0	15.0	$15.6	25.7%
Total Average	**750,416**	**7.8**	**49.5**	**$33.2**	**21.9%**

Sources: US DOT National Transit Database
* Recovery ratio = Fare revenues per operating funds expended

In 2000 Oklahoma City's transit system serviced 61 percent (or 30.3 million) passenger miles less than the average transit system serving a population of approximately 750,000 and 46 percent (or 3.6 million) vehicle revenue miles less than the same average population. However, recovery ratios are near the national average for a population of 750,000 of almost 22 percent thus suggesting that the existing system in Oklahoma City operates as efficiently as its peers and is supported by the public.

Table 2.37 Public Transportation Statistics Comparison for Tulsa, OK . (2002)

City , State	Population	Vehicle Revenue Miles (Millions)	Passenger Miles (Millions)	Operating Expense (Millions)	*Recovery Ratio
Albuquerque, NM	598,191	6.4	27.7	$25.2	14.1%
Allentown-Bethlehem, PA-NJ	576,408	5.0	21.5	$15.8	21.7%
Springfield, MA-CT	573,610	8.5	33.4	$25.9	17.5%
Akron, OH	570,215	6.9	22.8	$30.2	12.5%
Sarasota-Bradenton, FL	559,229	4.6	16.1	$12.6	8.9%
Albany, NY	558,947	7.2	43.1	$38.4	27.1%
Tulsa, OK	**558,329**	**5.0**	**18.4**	**$15.5**	**17.4%**
Fresno, CA	554,923	4.8	47.0	$25.9	25.5%
Concord, CA	552,624	5.0	20.8	$23.3	N/A
Raleigh, NC	541,527	3.4	19.7	$13.0	21.0%
Grand Rapids, MI	539,080	6.4	19.7	$21.2	13.3%
McAllen, TX	523,144	0.4	1.0	$1.4	12.8%
Toledo, OH-MI	503,008	4.4	23.0	20.6	22.5%
Total Average	**554,557**	**5.2**	**24.2**	**$20.7**	**16.5%**

Sources: US DOT National Transit Database.
* Recovery ratio = Fare revenues per operating funds expended.

Also in 2000 Tulsa's public transportation system serviced 24 percent (or 5.8 million) passenger miles less than the average transit system serving a population of approximately 555,000 and 4 percent (or 0.2 million) vehicle revenue miles less than the same average population. The recovery ratio is slightly above the national average for a population of 555,000 of just over 16 percent thus suggesting that the existing system in Tulsa is also operating as efficient as its peers and supported by the public.

By providing 24 percent to 61 percent less public transportation service to urban populations such as Oklahoma City and Tulsa, affects can be felt beyond issues of transportation. A lack of public transportation coverage can be directly connected to economic growth of a city and/or region. Businesses and corporations, as well as residents, often value a good public transit system and see it as an asset to locating their business or home in a particular place or city. Employers want their employees to be able to get to work and time is money for employers as well as employees. Having an accessible and convenient public transportation system that works can attract and "seal the deal" for business owners when looking to expand and/or locate to a new city. Just as critical is the lack of public transportation and that this void of transit can at times send potential economic opportunities looking for more attractive options/locations elsewhere.

2.3.6.2 Urban Transit Intermodal Connections

Currently COTPA operates 27 fixed routes in the Oklahoma Metro area, three of which provide express service. Tulsa Transit operates 15 fixed routes including two express routes. The Norman system (CART) has five routes and LATS also has five routes. The LATS system has one downtown transfer center where all routes converge to allow transferring. LATS also has one route serving Fort Sill – a major military base just north of downtown Lawton. Ten percent of the LATS ridership comes from Fort Sill.

COTPA has 15 park-and-ride locations operating informally at various churches, grocery stores, and retail store locations and Tulsa Transit's two express routes are each fed from an informal park-and-ride lot at similar type locations. The addition of formal park-and-ride networks within urban and suburban areas of Oklahoma City, Tulsa, Lawton, etc., may invite and encourage more riders with other choices to make public transportation their preferred commuting vehicle.

Facilities such as dedicated and formal park-and-ride locations can also help attract businesses and help grow the area economy due to the ease of access and security a formal park-and-ride network can provide. Such facilities breed opportunity at and around the park-and-ride station location for retail and mixed use development or can help with revitalization to a depressed area. Not only will opportunities grow at the park-and-ride stations but also along and at the destination point of the transit routes. Other benefits include opportunities to provide intermodal connections at park-and-ride facilities by combining transportation modes such as: bus and future rail stops, bus and van pool pickups, bus and passenger rail stations, etc. Ease of access, transferability and convenience are key ingredients to any successful public transportation system.

2.3.6.3 Rural Transit

As of FY 2004 there are 20 rural transit systems in operation across the State, as described in section 2.1. All systems provide a demand responsive service and in some cases offer route deviation. Ridership and service characteristics for each system were summarized earlier for FY 2003. During that year, over 1.9 million passenger trips were provided, with approximately 30 percent of those trips provided for elderly and disabled riders. A total of 10.4 million revenue miles were provided along with 18.1 million passenger miles. System wide, the average trip length per passenger was 9.2 miles, suggesting intercity and/or rural-to-city trip making.

Although there have been increases since FY 2000 in revenue miles (8.5 percent) and passenger miles (11 percent), these indicators have been in decline since FY 2001, as have total passenger trips.

It is worth noting that current total ridership is slightly above FY 2000 levels, disabled ridership is up 19 percent, and ridership for those classified as both elderly and disabled is up 20 percent. Two more systems started operation in FY 2004, one serves Oklahoma State University and the Stillwater community, and the second serves Bartlesville. Data for these new systems are not available at this time.

Many of the rural systems individually link together numerous communities and have extensive service areas. This explains the high average trip length of 9.2 miles. There are connections offered between the rural systems and the intercity bus and rail network. These existing

connections and rural links provide an excellent opportunity to implement a statewide transit network.

Table 2.38 shows increases in elderly and disabled trips for each fiscal year for rural transit systems. Yet, despite all the successes of these rural public transportation programs they have become limited due to a lack of funding. These systems are not expanding or enhancing there services as reflected by static annual revenue miles and passenger miles since 2001.

Table 2.38 Rural System Statistics by Federal Fiscal Year

Fiscal Year	Revenue Miles	Passenger Miles	All Passenger Trips	Elderly Trips	Disabled Trips	Elderly & Disabled Trips
2000	9,573,774	16,318,812	1,952,473	381,149	198,996	105,478
2001	10,686,490	19,871,507	2,039,139	373,063	208,541	111,993
2002	10,495,496	19,172,676	2,052,546	389,103	229,783	117,668
2003	10,411,000	18,194,621	1,983,854	350,948	236,681	126,323

Source: Transit Programs Division, Oklahoma Department of Transportation, August 2004

In addition, ODOT is no longer entertaining the development of new systems which imperils existing rural connections and limits connections between the rural areas and the metropolitan areas. This situation makes rural areas more auto dependent and potentially more isolated not only from a transportation stand point but also more isolated economically.

2.3.6.4 Intercity Bus Transit

Currently there are three intercity bus companies providing service in and through Oklahoma: Greyhound Lines, Jefferson Lines, and the T.N.M. & O. The primary market for such service is for interstate and intrastate travel. The bus companies offer routes that principally use the major roadways linking the larger urban areas where they can generate the most ridership. Their success is largely dependent on a well maintained and reasonably congestion free roadway system. At this time Greyhound Lines and its subsidiary, T.N.M. & O. are not experiencing difficulty with the road network. They also often provide intermodal facilities with urban public transit systems in large markets which when done correctly serve as development catalysts to the immediate area. At this time there is not enough demand in the Tulsa or Oklahoma City market to warrant any such intermodal facilities according to Greyhound.

2.3.6.5 Intercity Rail Transit

Since June of 1999 intercity rail – the Heartland Flyer – has been in service through Amtrak and the State of Oklahoma. Two trains operate per day, one in each direction along the BNSF rail line between Oklahoma City and Ardmore, with continuing service to Gainesville and Fort Worth, Texas as described in section 2.1. Ridership trends by fiscal year since 2000 are given in Table 2.39.

Table 2.39 Amtrak Heartland Flyer Ridership

Fiscal Year	Ridership	Percent Change Since 2000
2000	65,529	-
2001	57,799	(11.8%)
2002	52,584	(19.7%)
2003	46,592	(28.9%)
2004	54,223	(17.2%)

Source: Rail Programs Division, Oklahoma Department of Transportation (ODOT), August 2004

Although strong, ridership declined from 2000 to 2003 by almost 29 percent, fortunately this past year has seen ridership increase by 11.7 percent without a change in service level. Though 2003 ridership was down 28.9 percent compared to the first full calendar year of operation, available statistics do not reveal whether the decline is more pronounced in Oklahoma or Texas.

Ridership is also summarized by station and was presented earlier. The station activity data include all station boardings and alighting since service inception. Activity at the five Oklahoma stations accounts for 52 percent, whereas the two Texas stations account for the remaining 48 percent. This pattern suggests a strong link to North Texas, the Dallas – Fort Worth area, and the Fort Worth station, given connecting rail service east, west and south.

Opportunities to increase existing service ridership need to be explored and could include adding another train per day to entice more ridership to Oklahoma instead of just to Texas and more marketing campaigns for special events including college football games, Indian festivals and the Winstar casino. There is apparent interest on the part of the Winstar casino to build another Amtrak station for the Heartland Flyer. Teaming with local hotels and businesses should be encouraged to promote travel packages for such special events to help excite new ridership, share marketing costs and transportation costs from the closest station and the event. All parties would benefit from this type of marketing strategy resulting in: ridership increases for Amtrak, tourism for Oklahoma, the service and retail industries and the local economy in general.

Beyond the existing Heartland Flyer route, other ideas expressed to increase ridership and tourism include a Northern extension of the route to Kansas with a branch to Tulsa and creating a new Newton Kansas to Albuquerque route through Oklahoma which would double the ridership catchment area over the existing route. In the long term, studies show the designated San Antonio/Austin/Dallas-Fort Worth/Oklahoma City/Tulsa high speed rail route would attract additional ridership and significantly increase Heartland Flyer ridership.

2.3.6.6 Public Transit Summary

In conclusion Oklahoma's public transit systems need more funding and support from local and state officials to prevent stagnation of the transit systems and state and local economies. Federal transportation dollars can be won to help grow existing rural and urban systems. Oklahoma's urban transit systems have a level of service significantly lower than most US urban centers of similar population size. They lack formal park-and-ride networks as well as dedicated connections with rural transit providers. This lack of service coverage and funding is limiting the success of public transit in the state and limiting Oklahoma's economy and growth. Increase in ridership from rural transit operators and from passenger rail suggests that Oklahoma has potential to be a leading transit and intermodal state. With careful planning and marketing these opportunities for growth can be captured and the positive impacts will be felt not just by the transit providers but by the public and state and local economies.