2010–2035 Oklahoma Long Range Transportation Plan

PLAN DOCUMENT

Submitted to:

Oklahoma Department of Transportation

Submitted by:

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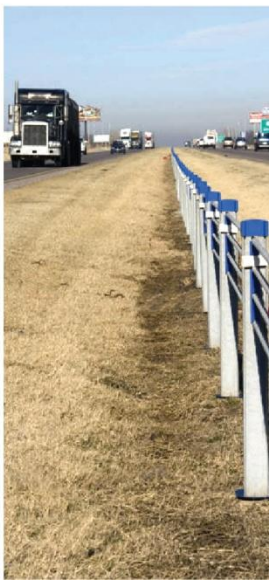

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2010–2035
Oklahoma Long Range Transportation Plan

Prepared for:

Oklahoma Department
of Transportation

Prepared by:

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Acronyms

ADA	Americans with Disabilities Act
ATA	American Trucking Association
BEA	Bureau of Economic Analysis
BLS	U.S. Bureau of Labor Statistics
BNSF	Burlington Northern Santa Fe Railway
BRT	Bus Rapid Transit
BSMPO	Bi-State Metropolitan Planning Organization
CAGR	Compound Annual Growth Rate
CART	Cleveland Area Rapid Transit
CBD	Central Business District
CEQ	Council on Environmental Quality
COTPA	Central Oklahoma Transportation and Parking Authority
CPTS	Cimarron Public Transit System
CST	Cherokee Strip Transit
CTC	Centralized Traffic Control
CVIEW	Commercial Vehicle Information Exchange Window
FAA	Federal Aviation Administration
FAF	Freight Analysis Flows
FAQ	Frequently Asked Question
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTZ	Foreign Trade Zones
GARVEE	Grant Anticipation Revenue Vehicles
GDP	U.S. Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GSP	Gross State Product
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
HSR	High Speed Rail
HTF	Highway Trust Fund
IDL	Inner Dispersal Loop
INCOG	Indian Nations Council of Governments
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
KCS	Kansas City Southern Railway Co.
KDOT	Kansas Department of Transportation

KI BOIS	Kiamichi Bois
LATS	Lawton Area Transit System
LOS	Level of Service
LRT	Light Rail Transit
MA	Metropolitan Areas
MKARNS	McClellan-Kerr Arkansas River Navigation System
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
MTTA	Metropolitan Tulsa Transit Authority
NASTRAC	National Surface Transportation Commission
NCPD	National Corridor Planning and Development
NEPA	National Environmental Policy Act
NHS	National Highway System
OCARTS	Oklahoma City Area Regional Transportation
OCGI	Oklahoma Center for GeoSpatial Information
OCS	Oklahoma Climatological Survey
ODEQ	Oklahoma Department of Environmental Quality
ODOT	Oklahoma Department of Transportation
OSU	Oklahoma State University
OTA	Oklahoma Turnpike Authority
PTC	Positive Train Control
RWIS	Road Weather Information System
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act—A Legacy for Users
SHS	State Highway System
SRTS	Safe Routes to School
STIP	*FFY2011-2014 Statewide Transportation Improvement Program*
STRACNET	Strategic Rail Corridor Network
STRAHNET	Strategic Highway Network
TE	Transportation Enhancement
TEA-21	Transportation Efficiency Act for the 21st Century
TIC	Transportation Improvement Corridor
TIGER	Transportation Improvements Generating Economic Recovery
U.S.	United States
UPRR	Union Pacific Railroad
USDOT	United States Department of Transportation
v/c	Volume-to-Capacity
VMT	Vehicle Miles Traveled
WIM	Weight in Motion

Chapter 1 Introduction

The following chapter provides background on the *2010–2035 Oklahoma Long Range Transportation Plan* (2035 Long Range Plan). It explains how it fits with other Oklahoma Department of Transportation (ODOT) planning and programming documents. It also gives an overview of public involvement activities utilized during the transportation planning process.

Background

The 2035 Long Range Plan presents recommendations and strategies designed to provide Oklahoma with a multimodal transportation system that offers the traveling public and businesses competitive, safe, convenient, affordable, reliable, and environmentally responsible mobility choices. This Plan presents the guiding transportation recommendations for ODOT for the next 25 years. Updated every five years to remain consistent with ODOT's long-term vision, the Plan was last updated in 2005.

The federal Safe Accountable Flexible Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU), was signed into law in 2005. It requires each state to carry out a continuing, cooperative, and comprehensive statewide transportation planning process providing for consideration and implementation of projects, strategies, and services that will address the following planning factors:

- Support the economic vitality of the United States, states, and metropolitan areas
- Increase the safety and security of the transportation system for motorized and non motorized users
- Increase the accessibility and mobility options available to people and for freight
- Protect and enhance the environment, promoting energy conservation, and improving the quality of life
- Enhance the integration and connectivity of the transportation system, across and between modes throughout the State for people and freight
- Promote efficient system management and operation
- Emphasize the preservation of the existing transportation system

Other factors that the Plan should consider include, but are not limited to, funding uncertainties, potential air quality concerns, and how best to address climate change and energy dependency. Also important are links between the 2035 Long Range Plan and the ODOT *FFY-2011 through FFY-2018 Construction Work Plan* (8-Year Construction Work Plan) and *FFY 2011-2014 Statewide Transportation Improvement Program* (STIP). The latter two documents are project-oriented, whereas the Long Range Plan presents recommendations.

The 2035 Long Range Plan is being completed during a time when the current federal transportation law, SAFETEA-LU, has expired and is operating under continuing congressional resolutions. New federal legislation will not likely be passed until 2011 or later. The process of formulating elements of the reauthorization law has begun. This authorization effort is particularly complicated by the confluence of several different issues, including the insolvency of the Highway Trust Fund and the reports of two national commissions on the future of the nation's transportation program and alternative finance strategies.

Coordination with Metropolitan Planning Organizations

Preparation of the 2035 Long Range Plan was coordinated with Oklahoma's Metropolitan

Planning Organizations (MPO) through MPO representation on the Plan's Advisory Committees. Likewise, ODOT is involved in the development and review of the metropolitan area transportation plans to ensure that MPO long range plans will be consistent with the State's 2035 Long Range Plan. The Plan incorporates, by reference, the Long Range Transportation Plans for the Ft. Smith, Lawton, Oklahoma City, and Tulsa areas. A summary of these plans will be published along with the State's 2035 Long Range Plan. Separate plan documents will be available from each of these organizations.

The metropolitan area plans will be available at the following addresses:

- *Oklahoma City Regional Transportation Study*
  Association of Central Oklahoma Governments
  21 East Main Street, Suite 100
  Oklahoma City, OK 73104
  www.acogok.org
  405-234-2264
- *Tulsa Metropolitan Area Long Range Transportation Plan*
  Indian Nations Council of Government
  Two West 2nd Street, Suite 800
  Tulsa, OK 74103
  www.incog.org
  918-584-7526
- *Lawton Metropolitan Area Long Range Transportation Plan*
  Lawton Metropolitan Planning Organization
  103 Southwest 4th Street
  Lawton, OK 73501
  www.lawtonmpo.org
  580-581-3375
- *Bi-State MPO 2030 Transportation and Mobility Plan*
  Bi-State Metropolitan Planning Organization
  1109 South 16th Street
  Fort Smith, AR 72902
  www.bistate.mpo.org
  479-785-2651

These metropolitan areas have varied schedules for their plans, and plan forecast years vary between 2030 and 2035. Updates are scheduled for 2010 in Oklahoma City and Tulsa. Ft. Smith and Lawton are expected to release updated plans in 2011.

In addition to embodying compatible goals, the MPO long range plans share other common attributes and requirements:

- Multiple planning factors are addressed
- State and regional transportation improvement programs are consistent with long range plans
- Long range plans are intermodal
- Development of long range plans includes public involvement

Coordination with the State Transportation Improvement Program (STIP)

During both series of public meetings on the 2035 Long Range Plan, residents had an opportunity to review and discuss the STIP. The STIP must be developed for all transportation expenditures expected during the following four years for projects involving federal funding. Transportation improvement programs prepared by the MPOs for the urban regions are included in the STIP. The public meetings held in November 2009, and August and September 2010 enabled participants to comment on the transportation projects scheduled by ODOT for the upcoming federal fiscal years.

Coordination with the 8-Year Construction Work Plan

ODOT administers an eight-year construction program which assists the Department in scheduling and conducting the complex engineering, environmental, and right-of-way processes necessary to complete construction projects in a timely fashion. The first four years of the 8-Year Construction Plan are represented in the STIP.

The final round of public meetings in 2010 also provided residents with an opportunity to receive information on ODOT's 8-Year Construction Work Plan. Division engineers from throughout the State were available to answer questions from meeting participants about the Plan.

Public Involvement Activities

An early task in the long range planning process was the development of a Public Involvement Plan customized for this plan. The Public Involvement Plan was developed after consideration of the general ODOT's Public Participation Plan and is consistent with that Plan. The public involvement activities included using an advisory committee structure, as well as other formal and informal gatherings and mass media approaches. Chapter 2 covers additional information about this topic.

Organization of this Plan Document

The 2035 Long Range Plan includes the following chapters:

Chapter 2 Public Involvement Activities and Results describes ODOT's public involvement plan which included a broad-based public outreach to diverse audiences and stakeholders across the State to meet federal participation requirements and to help ensure the 2035 Long Range Plan reflects the needs and concerns of ODOT's constituencies. This chapter summarizes the results of public meetings and Advisory Committee sessions as well as input from surveys and the project website.

Chapter 3 Policy Content describes the policy context for developing the 2035 Long Range Plan. It not only includes potential changes in federal transportation and related policies, but also new directions in key elements of ODOT's transportation services provision, such as possible changes in financing strategies. This chapter provides a sense of the dynamic environment within which ODOT officials find themselves when working to provide the State's residents, freight carriers, and travelers with a strong transportation system.

Chapter 4 Socio-Economic, Demographic, Land Use, and Travel Characteristics summarizes the demographic and socio-economic characteristics for Oklahoma, primarily focused at the county or ODOT division level. This chapter presents data on current population and employment, identifies trends that have developed over the past five to fifteen years, and discusses future projections to 2035. The chapter also discusses land use in Oklahoma and concludes with a summary of the State's travel and vehicle fleet characteristics.

Chapter 5 Oklahoma Economic Conditions and Freight Transportation identifies logistics opportunities and improvements necessary to sustain the State's future economic development; and describes economic trends that should be considered when making decisions about freight transportation investments. This chapter includes a summary of the State economy by geographic area and industry, current and projected freight and commodity flows by mode, and identification of key growth sectors that would benefit from improvements to the State's intermodal transportation system.

Chapter 6 Transportation Mode Inventory and Utilization is an integral component of the 2035 Long Range Plan. This chapter provides an inventory of transportation modes and current transportation conditions throughout Oklahoma. This Plan element focuses on both person or passenger and freight transportation facilities. The chapter also discusses the State's Intelligent Transportation System (ITS).

Chapter 7 Current System Strengths and Weaknesses addresses major strengths and weaknesses of statewide intermodal transportation, defined by current conditions, anticipated future needs, funding, and other resource challenges. The chapter also considers the institutional and policy environment within which continued construction, operation, and maintenance of transportation infrastructure and services are provided. The strengths and weaknesses assessment was developed through consultation with various model experts from ODOT, other agencies, and industry representatives. Interview data from Advisory Committee members was also utilized. The assessment provides a baseline for developing future policy concepts and implementation strategies.

Chapter 8 Long Range Plan Development identifies recommendations and strategies that can enhance Oklahoma's intermodal transportation system, maximize the State's comparative logistics advantages, and support the State's economy and opportunities for economic development. The strategies cited in this chapter are described in the context of the policy framework outlined in Chapter 3.

Continuing Efforts

The Plan represents the culmination of an effort to outline important State transportation priorities and recommendations to guide Oklahoma as the State moves ahead through the next 25 years. The completion of the plan development process also marks a beginning for transportation professionals and users to renew efforts in service of the ODOT mission "to provide a safe, economical and effective transportation system for the people, commerce and communities of Oklahoma." ODOT looks forward to meeting the transportation challenges of the decades ahead and appreciates the participation and interest of the people of Oklahoma in developing the 2035 Long Range Transportation Plan.

Chapter 2 Public Involvement Activities and Results

Approach

The ODOT 2035 Long Range Plan Public Involvement Plan included a broad-based public outreach to diverse audiences and stakeholders across the State, not only to meet federal participation requirements but also to ensure that the transportation plan reflects the needs and concerns of ODOT's constituencies and that there is support for its implementation. The Public Involvement Plan was prepared at the outset of the 2035 Long Range Plan process and was consistent with ODOT's Public Participation Plan last updated in 2007.

Using the Public Involvement Plan, ODOT staff members reached out to stakeholders using traditional means, such as hosting a total of 21 public meetings and convening advisory committees. ODOT also offered the public new ways to communicate with the Department—for example, gathering comments online, developing a survey, and utilizing an extensive e-mail and mail contact list of almost 2,000 people. The results of the effort provided ODOT with a representative sample of the public's attitudes toward transportation and their thoughts about policies.

This chapter explains the public involvement concepts that were developed at the beginning of the 2035 Long Range Plan process. It follows with a report on how those concepts were implemented during the Plan process and a description of the results.

Overview of Public Involvement

The Public Involvement Plan centered on targeted meetings with the Advisory Committees and supported by strategic rounds of public meetings throughout Oklahoma. The statewide community meetings facilitated broad participation and encouraged the high level of involvement. The meetings occurred in eight different geographic sectors of the State, coinciding with ODOT's Field Division offices.

In developing the 2035 Long Range Plan, these meetings were supported by technical fact finding and educational updates on Oklahoma's transportation, shared with the Advisory Groups and the public at-large via a dedicated website, newsletters, multi-media announcements, and more. **Figure 2-1** shows schedule for public involvement activities.

The Public Involvement Plan was developed to comply with the federal requirements of Title VI and the *Americans with Disabilities Act*. ODOT and the technical team identified strategies to seek fair treatment and meaningful public involvement of all population segments. The Plan was devised to ensure accessibility to information and meeting participation for all individuals.

Results

ODOT conducted a thorough public outreach as part of the 2035 Long Range Plan. The outreach activities met federal requirements in that several techniques were utilized to receive, consolidate, and consider public comments through various avenues. These included meetings, surveys, mailings, website access, and advisory committees.

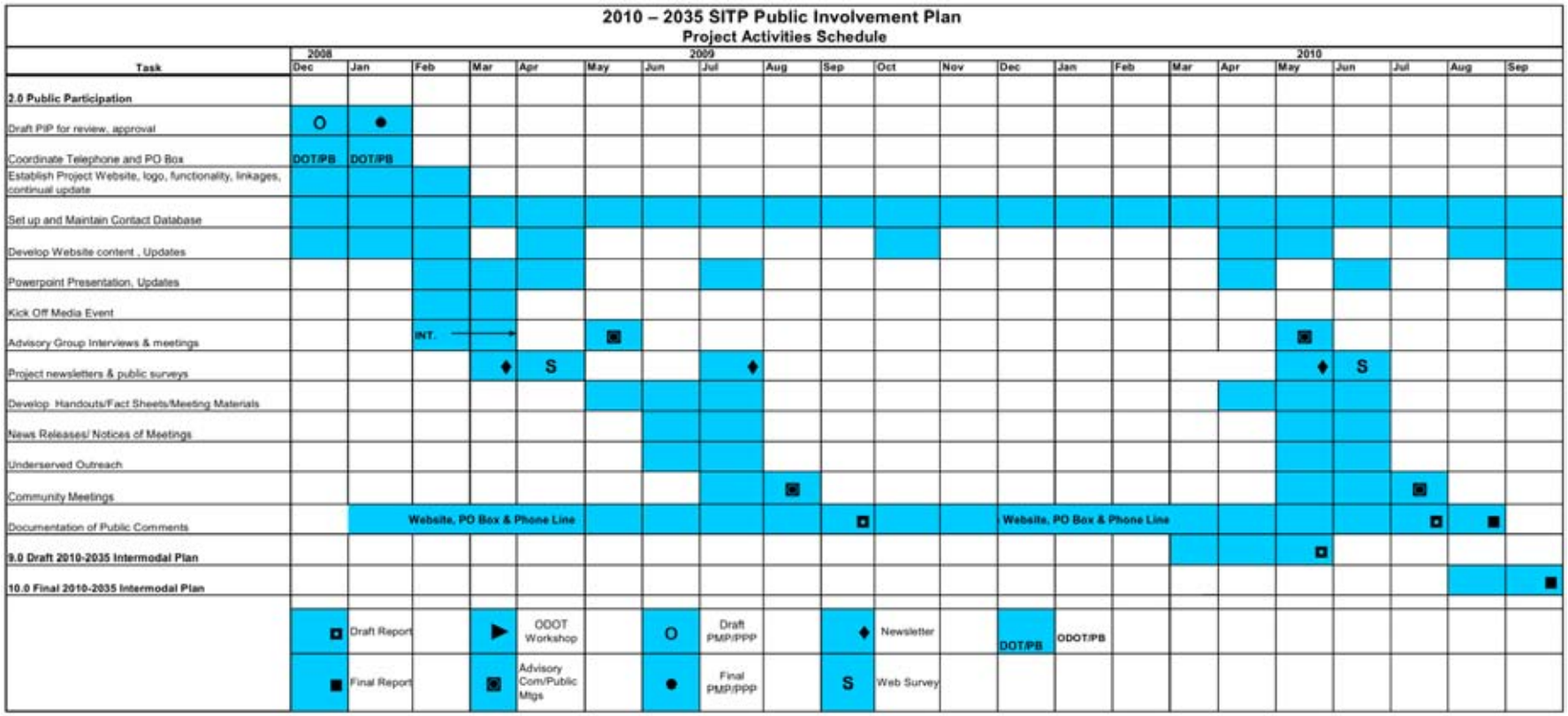


Figure 2-1. Public Involvement Schedule

Stakeholder Coordination

Initial Objective

The public involvement activities were designed to include early identification of participants to serve on four Advisory Committees. The Advisory Committees were created to provide a comprehensive review of tribal, freight, personal/passenger, and technical transportation issues to be considered in the 2035 Long Range Plan.

Several meetings of the Advisory Committees were planned, and the process was structured to maximize dialogue and encourage collaboration among participants. The Advisory Committee meetings were open to the public, providing interested individuals with another opportunity to obtain information and progress reports on the study. A list of Advisory Committees and their participants is included in Table 2-1 through Table 2-4:

- **Table 2-1. Tribal Travel Advisory Committee**
- **Table 2-2. Personal Travel Advisory Committee**
- **Table 2-3. Freight Advisory Committee**
- **Table 2-4. Technical Advisory Committee**

Results

A structured interview was conducted with individual committee members prior to a series of meetings with the Advisory Committees, regarding what they saw as the challenges and opportunities for transportation between 2010 and 2035. Seventy-eight Advisory Committee members submitted written responses to interview questions. The initial formation of the Advisory Committees and subsequent meetings generated the following themes:

Overall predominant themes/comments included:

- Emphasis on roadways, bridges, and highways
  - Of the 30 respondents, 25 ranked "Roadways" as the most important related to mobility and 16 ranked "Public Transit" second (specific question asked of the Personal and Tribal Travel Committees).
  - Of the 48 respondents, 43 ranked "Highways" as the most important factor for economic development while 26 ranked "Freight Railroads" second (specific question asked of the Freight and Technical Committees).
  - Of the 51 respondents, 17 ranked "Increased maintenance on existing roadways" as the most important factor in enhancing personal and passenger mobility while 9 ranked "Improved/ additional bus services" first (specific question asked of the Personal, Technical, and Tribal Committees).
  - Of the 48 respondents, 20 ranked "Increased maintenance of existing roadways" as the first priority to enhance goods movement, followed by 10 who ranked "Widen existing highways" second (specific question asked of the Freight and Technical Committees).
  - The majority of respondents ranked "Increased maintenance of roads and bridges" as the most important funding priority related to movement of people and goods.
  - Of the 15 respondents, 11 indicated "No" when asked if they are satisfied with the ability of the system to support their supply chain logistics system (specific question asked of the Freight Committee).

Table 2-1. Tribal Travel Advisory Committee

Advisory Committee Member	Company or Entity Name
Jay Adams	ODOT Tribal Programs
Ray Ball	Kaw Nation of Oklahoma
James Battese	Miami Tribe of Oklahoma
Ben Chaney	Muscogee Creek Nation
Michael Lynn	Cherokee Nation
Art Muller	Citizen Potawatomi Nation
Will Owens	The Comanche Tribe
Mike Talley	Chickasaw Nation
Chuck Tsoodle	Kiowa Tribe of Oklahoma
R.J. Walker	Osage Nation

Table 2-2. Personal Travel Advisory Committee

Advisory Committee Member	Company / Entity Name
Isaac Akem	FHWA Planning
David Batson	Airport Express
Bonnie Buchanan	Jefferson Lines
Rick Cain	OKC/COTPA/Metro Transit
Bill Cartwright	Metropolitan Tulsa Transit Authority
John Dougherty	ODOT AmTrak Operations
Matthew Dowty	Oklahoma Passenger Rail Association
Patricia Fennell	Latino Community Development Agency
Beverly Graham	United We Ride
Randy Hogan	ODOT Transit Programs
Col. Dean Jackson	Oklahoma Alliance for Public Transportation
Rick Johnson	ODOT Enhancement Programs
Jean Jones	Oklahoma Department of Rehabilitation Services
Pete Kramer	Oklahoma Bicyclist Association
Pam Lankford	Oklahoma Airport Operators Association
C.M. Lin	Southwestern Oklahoma State University
Marla Mayberry	Tulsa Urban League
Ernestine Mbroh	ODOT Safe Routes to Schools
Matt Parsel	Stillwater Public Schools, Transportation Director
Cody Ponder	University of Oklahoma Transit Services
Bob Rusch	ODOT Bridge Division
Fred Schmitt	Greyhound Bus Lines
Charla Sloan	KI BOIS Area Transit System
Evan Stair	Passenger Rail Oklahoma/Northern Flyer Alliance
Charles Wesner	Oklahoma for New Trans Alternatives Coalition (ON TRAC)
Charlie Williams	Oklahoma Motorcycle Riders Foundation
Barbara Young	Oklahoma Good Roads

Table 2-3. Freight Advisory Committee

Advisory Committee Member	Company / Entity Name
Daryl Andrews	US Army Field Artillery School
Richard Andrews	ODOT–Project Management
Tim Armer	Indian Nations Council of Governments
Dan Case	Oklahoma Trucking Association
Pat Cedeno	Watco Railroads (Watco Companies, Inc.)
Glenn Cheatham	ODOT Waterways Branch
Terry Detrick	American Farmers & Ranchers
Scott Dewald	Oklahoma Cattlemen's Association
Bill Ford	Shawnee Milling (Agriculture MFG)
Joe Neal Hampton	Oklahoma Grain & Feed Association
Scott Keith	Will Rogers World Airport
Charles Kimbrough	Oklahoma Department of Commerce
Joe R. Kyle	ODOT Rail Division
John P. Kyle	Oklahoma Rail Association
Paul Matthews	Oklahoma Highway Users Federation
Marchie McCartney	State of Oklahoma Transportation Commission
David McCorkle	McCorkle Truck Lines
Capt. Craig Medcalf	Department of Public Safety
Joseph Lew Meibergen	Johnston's Port #33
Jeff Mulder	Tulsa International Airport
Ken O'Donnell	BiState MPO
Terry Peach	Oklahoma Department of Agriculture
Lori Peterson	Oklahoma Farm Bureau
Robert Portiss	Port of Catoosa
Gen. David Ralston (Ret)	SW Oklahoma Regional Planning
Larry Ramsey	Federal Motor Carrier Safety Association
Doug Rex	Association of Central Oklahoma Governments
Jim Rodriguez	Oklahoma Aggregates Association
Steve Savage	Arrow Trucking
Cathy Scheirman	Tinker AFB
Dean Schirf	Greater OKC Chamber of Commerce
Alan Stevenson, PE	ODOT Intelligent Transportation Systems
Wes Stucky	Oklahoma Aeronautics Commission
Wendy Taylor	Tulsa Metro Chamber of Commerce

Table 2-4. Technical Advisory Committee

Advisory Committee Member	Company / Entity Name
Rich Brierre	Indian Nations Council of Governments
Kim Cooper-Hart	Oklahoma Sustainability Network
Ken Crawford	The University of Oklahoma–Climatological Survey
Ron Cupp	Oklahoma State Chamber of Commerce
Gary Evans	ODOT Director of Operations
Justin Hodges	Hodges Trucking/Chesapeake Energy
John Johnson	Association of Central Oklahoma Governments
Gordon Johnson	Oklahoma Turnpike Authority
Ken LaRue	ODOT Transit Division
Kris Marek	Oklahoma Department of Tourism
Larry Nichols	Devon Energy
Elizabeth Romero	FHWA Planning
Bob Rose	ODOT Division 7, Duncan
Ray Sanders	ODOT Project Management
Shannon Sheffert	ODOT Local Government
Casey Shell	ODOT Division 4, Perry
Harold Smart	ODOT Traffic Engineering
Carolyn Stager	Oklahoma Municipal League
Scott Stegmann	ODOT Environmental Programs
Dawn Sullivan	ODOT Environmental Programs
Tim Tegeler	ODOT Roadway Design
Eddie Terrill	ODEQ–AQ
Mike Thralls	State of Oklahoma Conservation Commission
Gayle Ward	Association of County Commissioners of Oklahoma
Trish Weedn	Oklahoma Association of Regional Councils

Technical Advisory Committee themes and comments included:

- Of the 21 respondents, 20 ranked "Highways" as the most important factor for economic development while 16 ranked "Freight Railroads" second or third.
- Of the 21 respondents, nine ranked "Increased maintenance of existing roadways" as the first priority to enhance person and passenger mobility followed by seven who ranked "Rail transit service within metropolitan areas" second.
- The factors that place barriers to traveling across the state were "Lack of connection between travel modes" and "Lack of integrated transit system."
- Of the 21 respondents, 15 indicated that "Increased maintenance of existing roadways" was the first, second, or third most important action that could be taken to enhance goods movement.
- The majority of respondents ranked "Increased maintenance of roads and bridges" as the most important funding priority related to goods movement.

Freight Advisory Committee themes and comments included:

- Of the 27 respondents, 23 ranked "Highways" as the most important factor for economic development while 20 ranked "Freight Railroads" second or third.
- Of the 26 respondents, 13 indicated that "Increased maintenance of existing roadways" should be given first priority in funding decisions while seven gave "New or wider highways" second priority.

Personal Travel Advisory Committee themes and comments included:

- Of the 25 respondents, 20 ranked "Roadways" as the most important factor for mobility while 21 ranked "Public Transit" second or third. An additional eight ranked sidewalks third.
- Of the 24 respondents, eight indicated that "Better maintenance of pavement and bridges" would do the most to improve safety followed by six who said "Longer merge lanes onto interstate" would help.
- The factors that place barriers to traveling across the state were "Lack of connection between travel modes" and "Lack of integrated transit system."
- The "Barriers to travel within a community" included "Inadequate bus service," "Lack of bike paths, bike lanes, et al.," and "Highway construction."
- Of the 26 respondents, 13 indicated that "Increased maintenance of existing roadways" should be given first priority in funding decisions while seven gave "New or wider highways" second priority.

Tribal Advisory Committee themes and comments included:

- Of the five respondents, two ranked "Increased maintenance on existing roadways" as the most important factor for mobility while three ranked "New or expanded highways" as second.
- Respondents identified the following barriers to traveling across the state: "Lack of connection between travel modes", and "Lack of connection between urban and rural transit providers."
- All five respondents said "Increased maintenance of existing roadways" should be given first priority in funding decisions.

Emerging Plan Goals

Following a presentation of interview results and the federal planning factors (following) at the first round of Advisory Committee meetings, the comments from the four groups were analyzed to refine Plan goals that addressed the federal statewide plan

requirements and were customized to reflect Oklahoma needs and values. The State planning factors from SAFETEA-LU include:

- Support economic vitality
- Increase the safety of the transportation system
- Increase the security of the transportation system
- Increase accessibility and mobility of people and freight
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and economic development patterns
- Enhance the integration and connectivity of the transportation system
- Promote efficient system management and operation and,
- Emphasize the preservation of the existing transportation system.

Figure 2-2 shows the Plan goals, organized by themes that emerged following consultation and coordination with Advisory Committee members. The theme is stated first, followed by goals related to the theme. (This grouping is loosely organized and is not intended to be exclusive or rigid in its structure.)

SAFETEA-LU

The federal *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* was signed into law in August 2005.

2035 Oklahoma Long Range Transportation Plan
Themes and Goals

Theme: Safety and Security

Goals:

Increase the safety of the transportation system for motorized and non-motorized users

Improve safety for all modes

Increase the security of the transportation system for motorized and non-motorized users

Theme: Travel Options for People

Goals:

Increase accessibility and mobility options available to people

Enhance integration and connectivity of the transportation system

Theme: On the Move … New Issues and Ideas

Goals:

Protect and enhance the environment

Promote energy conservation

Improve the quality of life

Theme: System Preservation and Operation

Goals:

Emphasize the preservation of the existing transportation system

Promote efficient system management and operation

Enhance integration and connectivity of the transportation system across and between modes throughout the state for people and freight

Theme: Freight and the Economy

Goals:

Enhance integration and connectivity of the transportation system

Support economic vitality

Figure 2-2. 2035 Long Range Plan Themes and Goals

Focus on Traditionally Underserved Populations

Initial Objectives

The Public Involvement Plan gave special emphasis to involving traditionally under-served populations. These populations typically include low income, cultural, racial, or ethnic populations who often experience barriers to participation in the public decision-making process. The following actions were planned to identify under-represented populations and to encourage their participation:

- Analyzing U.S. Census demographic data
- Coordinating with planning agencies to identify organizations representing such populations
- Coordinating with community and neighborhood groups
- Hosting additional public outreach activities for traditionally under-served populations.

Results

Langston University assisted ODOT in identifying concentrations of traditionally under-served populations. As a result of this work, communication and supplemental meeting locations were selected to offer additional opportunities to interact with the identified groups. The university was responsible for satisfying the requirements of the *Americans with Disability Act of 1990* (42 USC 12.01 et seq.) as it pertains to all printed and electronic materials. The university provided five hard copies and two electronic copies of all deliverables as follows:

- A report identifying geographic regions of the state with higher than average population densities of historically under-served populations. The report included four statewide maps showing age distribution, income levels, education levels, and population by ethnicity.
- A report of recommended strategies for outreach to historically under-served populations.

Information regarding meetings was sent to a variety of stakeholders and was available online. For the survey, a Spanish version was available online and at the public meetings. Vietnamese versions were also brought to select meeting venues. The project website was accessible to those with disabilities. While the original goal for public meetings was to hold eight throughout the state, ODOT identified the need for additional outreach, holding a total of 14 public meetings in November 2009 and another seven in August 2010.

Of the 291 people who took the survey that was available online and at the public meetings, the following socio-demographic breakdown shows wide participation:

- By gender
  - Female: 40 percent
  - Male: 60 percent
- By race
  - White: 73 percent
  - Black: 11 percent
  - Native American: 10 percent
  - Asian: 1.5 percent
  - Other: 4.5 percent (includes 3 percent who identified themselves as Hispanic)

A comparison of the demographic characteristics of the survey participants compared to the State's profile (see Table 4-4, Race and Ethnicity of the Oklahoma Population, 1990–2007) shows the respondents to be fairly representative of the overall State. African American survey participation is higher (11 compared to 7.5 percent statewide) as is Native American (10 versus 6.8 percent statewide). White is comparable (73 versus 74.9 percent statewide) and so is Asian/Pacific Islander (1.5 versus 1.7 percent).

Awareness Building Activities

Initial Objectives

One of the purposes of the Public Involvement Plan for the 2035 Long Range Plan was to build awareness in the State about the Plan process. ODOT used tools, including a project logo, press releases, unique website, and speakers bureau, to attract and engage different segments of the public.

Results

Project Identity and Branding—A logo was created to identify the long range plan process and its consistency with ODOT's overall mission. This clear, consistent image provided positive reinforcement and easy identification of project components. The image was developed at the initiation of the project, used on all written materials, and displayed at public meetings (**Figure 2-3**).

Kickoff/Press Releases—At the initiation of the project, ODOT prepared a press release to attract media attention statewide for help with distributing information about the project and to promote interest in participating in the planning process.

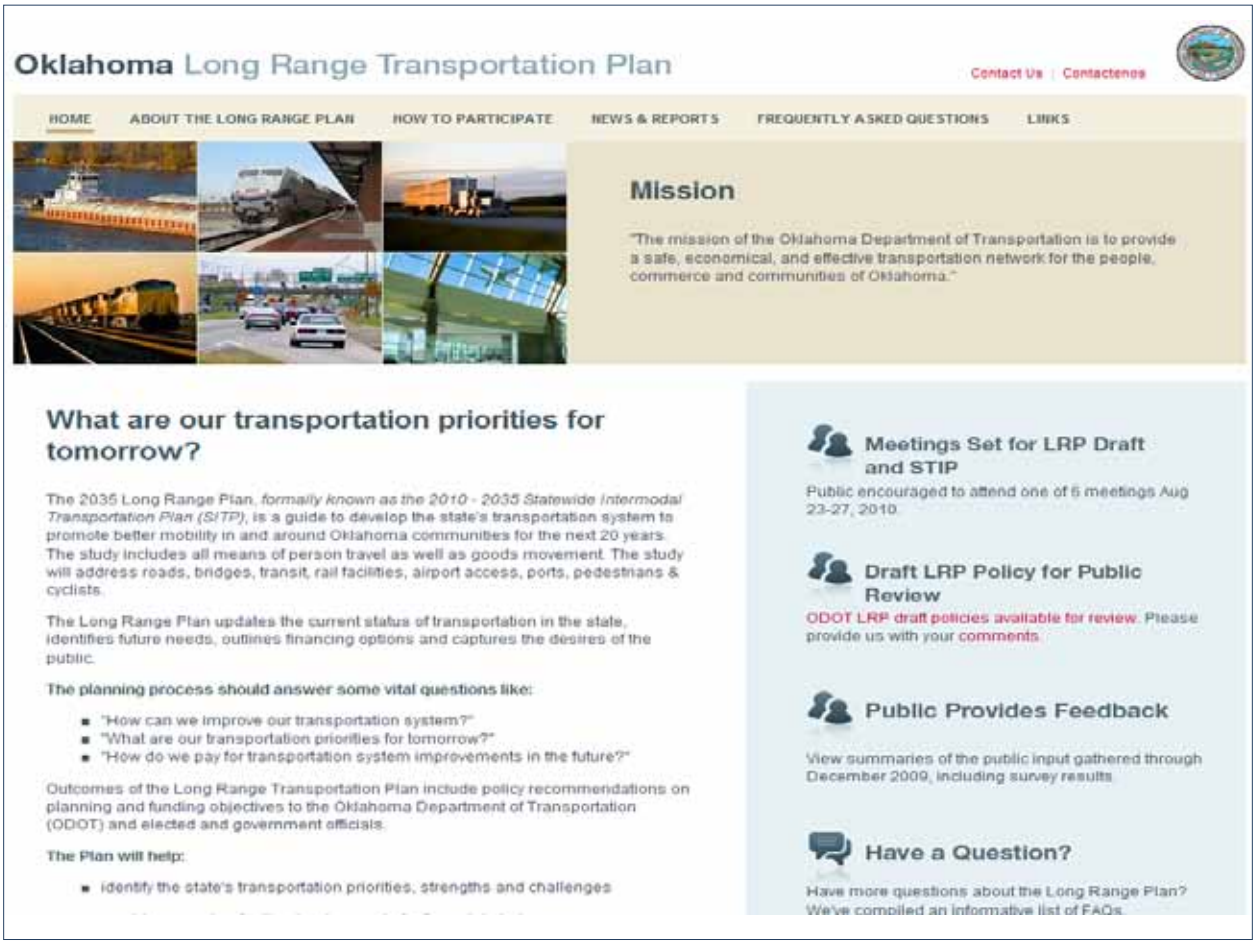


Figure 2-3. 2035 Long Range Plan Website

Information went to all daily newspapers with large circulation, minority newspapers, weekly publications, special interest publications, and television, both broadcast and cable, and radio programs statewide for each major milestone and round of public meetings. Project updates were included in the press releases. The same information was posted on the project website (Figure 2-3). All direct media contact was coordinated with ODOT's Media and Public Relations Division.

Website—The Public website (www.oklongrangeplan.com) provided current project information and allowed access to project reports and newsletters (Figure 2-3). The site was linked to the homepage of the ODOT website: www.ODOT.org. Stakeholder organizations were invited to provide a link from their websites. The website provided general information about the project and its progress.

The site was designed to solicit comments and host surveys for the general public. The website provided users with an opportunity to add their names to the mailing list or submit comments to the project team. A project schedule and postings of upcoming meetings was maintained. From the launch of the website to the project conclusion, more than 3,000 hits were recorded. By the end of 2010, a total of 247 online comments were recorded.

Speakers Bureau—ODOT maintained a list of speakers to respond to requests to attend neighborhood, business, and special interest group meetings. To provide consistency, a presentation and associated materials were prepared. Presentation materials focused on the project's purpose and need, the planning process, the public involvement program, and schedule.

Community Outreach

Initial Objectives

One of the Public Involvement Plan goals was to connect with the community and make groups and individuals aware that the Department wanted to engage the community in the 2035 Long Range Plan process. To accomplish this outreach, ODOT used a stakeholder database, meeting notices, public meetings, and other communication tools.

Results

Database—ODOT created and maintained a database of contacts and an e-mail distribution list. Through this database, people were sent information, such as the announcements of the public meetings, summaries of the public feedback received, and survey results. As of October 2010, ODOT had a database of 1,100 e-mail contacts and another 500 mail contacts.

Meeting Notices/Newspaper Ads—Three press releases were issued announcing the first round of 14 public meetings that were held in November 2009, the launch of the Long Range Plan website, and the announcement of the second round of seven public meetings in August 2010. A paid public notice placed in newspapers of general circulation was also issued prior to the November meetings.

Public Meetings—ODOT conducted 14 public meetings between November 2 and November 17, 2009, across the state. They held another seven public meetings between August 23 and August 27, 2010.

- About 263 members of the public attended the November 2009 meetings (excluding staff), and nearly 100 comment forms were submitted at or after the meetings.
- Approximately 220 meeting attendees also indicated their desired focus of transpor-

tation efforts by indicating their preference for five strategies.

- Of the five themes/categories (see Figure 2-2), the highest percentage (29 percent) was placed in the Travel Options for People.
- The second highest percent (23 percent) was in the Safety and Security category.
- The Preservation and Operation category earned 18 percent.
- The categories of New Issues and Ideas (address transportation needs for aging population, new funding options) and Freight and the Economy (improve State-owned rail corridors, consider special lanes for truck traffic) garnered 17 and 13 percent, respectively.
- The majority of comments were supportive of policies to support increased transit, rail, and improved bicycle facilities, followed by support for specific roadway projects.

► Another 94 members of the public attended the August 2010 meetings, and 64 comments were received through the website by the end of September. Some of the themes revealed by the public included

- Expand and interconnect a public transit system that includes both bus and rail and that links rural, urban, and tribal communities
- Incorporate sidewalks and bicycle lanes into transportation projects
- Enhance coordination between ODOT and other entities, such as the Oklahoma Turnpike Authority and Fort Sill
- Find new sources of funding or dedicate a funding source to transportation
- Address increasing freight traffic by improving both truck and freight rail system and facilities.

Education and Feedback

Initial Objectives

Offering opportunities for education and feedback was an important part of the public involvement process. To accomplish this education/feedback goal, the Department elected to use project newsletters, fact sheets, web-based surveys, web comment pages, comment forms, and distribution of Plan reports.

Results

Newsletter—A newsletter was published after the first quarter of the project. This was utilized to provide electronic and hard copy notice to interested individuals that the project had been initiated with Advisory Committee participation and public meetings scheduled throughout the State. Following this publication, it was determined that maintaining the website with information about the project status, including regular updates to the Frequently Asked Questions (FAQ) section of the website, would be a more efficient and effective way to communicate with many interested individuals. As a means of addressing non-computer users, all public libraries and city clerks were included in the stakeholder mailing list. Individuals on this list received status reports from ODOT at the half and three-quarter marks of the project and were asked to share information with other contacts, including users and customers.

Fact Sheets/Handouts—Start-up activities included the development of a one-page introduction to the process, featuring the role of ODOT, explaining the Long Range Transportation Plan, the Statewide Transportation Improvement Program, and how to be involved in the process. These sheets were published in English, Spanish, and Vietnamese and were distributed at the public meetings.

Web Based Survey—A web-based survey was developed to ask questions regarding transportation needs, problems, investment strategies, and public outreach. The survey was an important tool used to gather initial public feedback on a variety of topics. It was available online and at the initial round of 14 public meetings in Spanish, Vietnamese, and English. The survey was available to the public between October 26, 2009, and December 1, 2009. It took an average of 10 to 15 minutes to complete.

- About 291 surveys were submitted
  - Approximately 164 submitted responses at the initial round public meetings or mailed in surveys following the meetings.
- General summary
  - Emphasize maintenance of roads and bridges
  - Utilize resources for new/wider highways
  - Include rail transportation and increased Amtrak service as an option for passenger travel
  - Insufficient coordination between urban and rural transit providers and lack of connection between modes is a significant barrier to travel across the state
  - Transportation improvements need to be paid for. Most preferred methods indicated by respondents were: increased diesel tax, new dedicated sales tax, increased gas tax
- Predominant themes/comments
  - Emphasis on maintenance of roads and bridges
  - New passenger rail service and expansion of current Amtrak service
  - New or wider highways
  - Coordination between urban and rural transit providers
  - Better connections between freight modes of transportation.
  - Better connections between passenger modes of transportation
  - Concern about how to pay for needed transportation improvements
- As part of the long range plan survey, respondents were allotted a section to make other comments. Of the 291 people submitting surveys, 106 made specific comments within their survey. The most popular topics were the following:
  - Twenty-five respondents support repairs/widening/fixing of roads
  - Twenty-five respondents support rail service
  - Eleven respondents support bus/transit service
  - Ten respondents opposed any tax or fee increase to improve transportation in Oklahoma
  - Six respondents called for focus on multiple transportation modes when planning new or improved routes

Web Comment Page—Comments were solicited through the website and commenter's received an automatic response thanking them and indicating that a response would be forthcoming to any question. By the end of 2010, ODOT received 247 online comments. Many comments were about the Long Range Plan; approximately 30 comments were received about specific projects related to the STIP or the 8-Year Construction Plan. All questions were answered either by e-mail or U.S. postal mail, in reply with the method in which the question was received.

Comment Form—A one-page comment form was distributed at all meetings open to the public. Participants were invited to respond and return the form at the meeting or mail or fax it to the Planning and Research Division at ODOT.

Comments were summarized by category and provided to the appropriate team members for incorporation into the technical work, as appropriate.

Distribution of Reports—Copies of Draft Plan Policies were posted on the website in late 2010 and also distributed at Public Meetings. The 2035 Long Range Plan summary and document will be available on the Department's website, at the State Library, and at ODOT upon project completion.

Other—Copies of PowerPoint presentations were developed and presented at public meetings, and other printed materials were also provided. For members of the public who wished to speak to ODOT staff about the Plan, an ODOT Long Range Plan contact person was identified, and business cards and telephone contact information were circulated at public meetings and other informal gatherings. Similarly, ODOT offered information as to how to contact the Long Range Plan public involvement coordinator at the Department by U.S. postal mail.

Conclusion

The public outreach and public involvement methods utilized by ODOT resulted in a varied and robust view of public sentiment. Rather than relying solely on public meetings to capture public feedback, ODOT used other tools as well that helped synthesize public opinion. In total, more than 1,000 people attended a meeting or provided comments during the outreach process. Through a public e-mail and mail contact list, over 1,500 people were kept up-to-date on new developments with the 2035 Long Range Plan.

Chapter 3 Policy Context

Purpose

Planning and decision making occurs within a much larger policy environment that influences how these decisions are made and on what these decisions focus. This is certainly true in transportation where transportation investment and operations decisions are often linked to non-transportation goals and objectives. For example, the history of federal environmental legislation as it relates to transportation planning and decision making is one where actions in the transportation sector have been used as a means of accomplishing environmental goals—clean air, water quality, noise reductions, etc.

In some sense, the use of transportation "levers" to achieve other policy goals is not surprising in that transportation investment enables many other societal goals to be accomplished. It is hard to imagine a strong and healthy economy without having a transportation system that provides cost-effective mobility and accessibility to generators of economic development. And similarly, transportation system and facility construction, and operations affect environmental quality and, thus, the linkage between environmental and transportation policy exists.

Transportation investment is often viewed as a means to an end. Thus, national and state policies aimed at creating jobs, fostering economic developing, enhancing environmental quality, or creating livable communities rely on transportation investments.

This chapter describes the policy context for the development of the ODOT 2035 Long Range Plan. This context not only includes potential changes in federal transportation and related policies, but also new directions in key elements of ODOT's provision of State transportation services for the State, such as possible changes in financing strategies. This chapter provides a sense of the dynamic environment within which State DOT officials often find themselves when trying to provide the State's residents and travelers with a strong transportation system.

This chapter next discusses likely federal initiatives that could affect state DOT programs, with the understanding that many of the policies and programs that could affect ODOT are yet to be developed, such as the reauthorization of the federal transportation law. The following section covers changes to the *National Environmental Policy Act* (NEPA) process that either have been proposed or have a good possibility of happening. Such changes could significantly affect the way ODOT undertakes environmental analysis. The next section presents information on transportation finance strategies, and the likely challenges facing state DOTs over the next several years. The final section focuses on the impacts on ODOT and ultimately the State's transportation system.

Federal Policies Affecting Transportation

Federal policies and funding programs have an important influence on how state DOTs conduct their business. Historically, this influence has been one primarily of providing federal aid in support of a state's transportation capital program. Although the relative contribution of federal funding as part of Oklahoma's transportation program has varied over the past two decades, federal funding continues to make up an important component of what ODOT is able to program as part of its transportation investment strategy. In addition, federal policies and regulations have an important influence on transportation program priorities. The following

areas include important initiatives that could influence ODOT's financial ability to invest in the State's transportation system.

Reauthorization of SAFETEA-LU

The current federal transportation legislation, SAFETEA-LU, expired on September 30, 2009. It is likely that new legislation will not be passed until 2011. Several groups have begun the process of formulating the specifics of such a reauthorization law. As usual with such important legislation, a wide range of interest groups, political organizations, and constituencies will be involved in the process of developing a final bill. Thus, it is too early to say what a new federal transportation law will mean in terms of new initiatives or requirements on state DOTs and MPOs. This authorization effort is particularly complicated this time by the confluence of several different issues, including

- The insolvency of the Highway Trust Fund
- The use of federal funds as part of an economic stimulus package that some might perceive as the early down payment of a new federal transportation law (and thus not have as high a level of authorized federal funding as one would expect in a normal federal authorization)
- Interest in tying transportation and climate change legislation together (see below)
- The reports of two national commissions on the future of the nation's transportation program and corresponding finance strategies
- An Administration that will have its own agenda of what a national transportation policy should entail.

Although the specific language of a new federal transportation law will be crafted through negotiations, it does seem likely that new legislation will include some initiatives in the following areas:

- Focusing attention on ***rehabilitation and preservation*** of the existing transportation system. This policy focus reflects what has happened in recent transportation legislation, and it is likely that Congressional interest will continue to emphasize keeping the existing transportation system in good condition and achieving reasonable performance levels. This policy focus will likely be emphasized by most of the transportation professional and trade organizations that will be part of the advocacy process for the next transportation act.
- Establishing a ***performance measurement orientation*** in federal transportation programs. Many states have adopted a performance-oriented approach toward transportation planning and program implementation. There is a great deal of interest among Congressional staff in applying such an approach to the national program.
  - The National Surface Transportation Policy and Revenue Study Commission report of 2008 called for a "comprehensive performance-based approach" to a national transportation program.
- Providing for a ***stronger focus on transportation system safety.*** SAFETEA-LU emphasized the important linkage between transportation safety and planning. The requirement for states to develop a strategic highway safety plan was the first step in what may be others to relate safety priorities to overall project prioritization.
- Part of a performance-oriented approach will be greater interest in a ***strategic asset management program*** that provides decision makers with the most up-to-date information on the condition of the state's

and metropolitan area's transportation system. It is not clear at this time whether specific approaches will be required through legislation, but there is a chance that a basic structure for a comprehensive asset management program could be mandated.

- Encouraging states and metropolitan areas to explore a ***range of funding options*** for transportation system investment. This could include an expansion of previous efforts on innovative financing and a study or pilot program to lay the foundation for a mileage-based fee to augment or replace the federal gasoline tax.
- Experimenting with ***innovative pricing strategies*** to achieve the most efficient utilization of transportation assets. The federal government has been encouraging "experiments" in road pricing (the Urban Partnership program, for example). Many policy makers have come to the conclusion that there will never be enough funding to build all of the infrastructure that might be required to handle future transportation demands and, thus, are looking at road pricing as a means of "managing" the system better. In addition, pricing can be a source of funding for capitalizing transportation facilities and in maintaining a stream of revenues to cover operations and maintenance costs.
- Establishing a more direct relationship between ***transportation investment and economic benefits.*** In part, this is due to the recent focus on an economic stimulus package aimed at creating jobs. However, Congress, in previous legislative debates, has been interested in efforts to target transportation investment at those actions having the greatest economic benefit. It would not be surprising if the next transportation authorization explicitly called for an evaluation process that estimated the economic benefits of federally funded projects.
- Linking transportation planning and investment more closely to desired ***environmental policy outcomes,*** such as climate change (operationalized as reducing greenhouse gas [GHG] emissions). One can likely expect that state DOTs and MPOs will be required in their plans and perhaps capital programs to show the impact of recommended actions on GHG emission levels and more widely on general environmental quality.
- Enhancing the role of ***freight transportation*** in transportation planning and investments. One of the trends over the past two to three federal transportation laws has been an increasing interest in improving the productivity of freight operations in the United States. SAFETEA-LU provided an intermodal freight funding program, but all of the funding was earmarked.
  - It is likely that additional funding will be provided to encourage states and metropolitan areas to invest in projects whose primary benefit will be to improve freight flows.
- Fostering a ***multimodal perspective in transportation planning and decision making.*** The federal government is going to be much more interested in a multimodal perspective to transportation than has occurred over recent years. Thus, for example, national initiatives in high speed rail and livable communities reflect a desire to look at multimodal approaches to providing mobility and accessibility in the nation's communities.
- Making the ***project development process more cost- and time-effective.*** Previous transportation laws and the National Surface Transportation Policy and Revenue Study Commission focused on reducing the

amount of time it takes to get projects through the project development process. This interest will likely continue in upcoming policy initiatives.

- Preparing for the transition to a ***new transportation financing strategy.*** Much research and many studies have concluded that the current reliance on petroleum-based gas taxes for highway finance is starting to create significant problems in generating sufficient revenues to support the nation's transportation system. Depending on which study is consulted, the gas tax is expected to provide reasonable levels of funding for the next 15 to 25 years; then some other finance strategy will be necessary. Many believe that some form of distance-based tax structure is likely to be the replacement. It will not be surprising if Congress, in the next transportation bill, authorizes demonstrations and studies to examine the process of augmenting or replacing the federal gas tax with other revenue sources, such as mileage-based user fees.

Economic Stimulus Package

The economic stimulus package (also known as the *American Recovery and Reinvestment Act of 2009*) is one of the most recent examples of the relationship between transportation investment and other policy goals. As of March 2010, the federal government had authorized over $26 billion for just over 12,000 highway projects in this program. In Oklahoma, $465 million of economic stimulus funds have been used for highway investment.

ODOT has been very proactive in both following and influencing development of transportation aspects of this economic stimulus package. ODOT procured a design and construction management support service and had developed a list of projects to submit to the U.S. Department of Transportation (USDOT) in anticipation of the stimulus package funding. Oklahoma has also had one of the best records nationally for allocating this funding in the most efficient and effective manner possible. As additional economic stimulus funds become available, ODOT is well positioned to secure additional dollars for the transportation needs of the state. ODOT was awarded $48 million in Transportation Improvements Generating Economic Recovery (TIGER) program funds for the I-244 bridge over the Arkansas River in Tulsa in the Spring of 2010. ODOT submitted one of 51 projects nationally to be awarded TIGER funds, from over 1,400 applications.

Environmental and Climate Change Legislation

In general, the current state of the economy is likely to have a dampening influence on passing legislation that will result in more costly actions and procedures. Thus, it is not expected that any significant new environmental legislation will occur in the short term, although changes in federal guidance (that is, guidance on how these laws should be interpreted) will likely occur. There are three areas—air quality, energy, and climate change—where some changes might be expected.

Air quality Significant changes to the Clean Air Act and its amendments are not expected in the short term, with the possible exception of requiring a more stringent assessment of GHG emissions and, thus, the development of emission inventories. Over the longer term, there is a strong federal commitment to keeping air quality standards in place for non-attainment and air quality maintenance areas. One likely scenario will be the addition of GHGs more explicitly into current *Clean Air Act* requirements.

Energy Energy conservation and fuel substitution will be an important focus of policy debate in many Congressional sessions to come. In many ways, this topic is closely linked to GHG emissions in that reducing such emissions is often viewed from the perspective of providing cleaner fuels. The federal government is likely to advocate the use of "green technologies" in a range of policy areas, and transportation will be one of the highlighted opportunities. For example, one of the first actions in the energy/climate change area taken by the new Administration was to rescind the ban on California's efforts to introduce clean vehicle standards. Over time, the conversion of the motor vehicle fleet to non-petroleum-based fuels creates an important challenge to states dependent on the gas tax for a substantial portion of their transportation revenues.

Another initiative—and one that has been part of previous federal legislation—will be a continued interest in streamlining environmental procedures and processes. This is an issue that has been raised by many different constituency groups and has found strong support among members of Congress. It seems likely, therefore, that efforts will be made in future federal law to promote a more efficient environmental and project development process.

Climate Change Given that the transportation sector contributes approximately 28 percent of the U.S. GHG emissions, it is likely that transportation will be a focus of national efforts to reduce GHG emissions. There are two aspects of climate change that could see some action. The first focuses on efforts to reduce transportation-related GHG emissions, either through vehicle and fuel technology changes or through strategies to reduce vehicle miles traveled. These efforts are referred to as *mitigation* actions. The second focus, and one that is recently receiving policy attention in a significant way, is one that targets climate *adaptation* strategies. That is, with changing climatic conditions over time, what steps if any need to be taken to re-think how transportation infrastructure is developed, provided, and operated?

It is unclear at this point what policy direction the federal government will take on climate change. Much discussion has been given to carbon price or cap-and-trade programs. In such programs, prices increase for goods and services that generate GHG emissions and, given basic economic principles, consumer demand then adjusts to these higher prices. Over the longer term, suppliers are motivated to produce products with lower GHG emissions. Expected GHG reductions depend on the specifics of how a national program is established, with most pending bills designed to achieve 60 to 80 percent GHG reductions by 2050 (some bills peg the reductions to 1990 levels while others are pegged to more recent years).

Although substantive action on a carbon pricing policy has yet to occur, it seems highly likely that the transportation sector (that is, the transportation planning process and perhaps the National Environmental Policy Act [NEPA] process) will be required to undertake new planning efforts and perhaps a conformity-like assessment of investment actions that are part of a capital investment program. In addition, future federal legislation may increase the share of federal funds for transit, intercity rail, bike/pedestrian, and highway/bridge preservation, while limiting the funds available for highway capacity expansion.

National Environmental Policy Act Provisions

The NEPA process is one of the most influential federal legal and regulatory requirements in the transportation project development process. Changes to this process, either in streamlining the different procedural steps or in adding new requirements, will likely have a significant effect on the state DOTs' capital programs development.

The NEPA process will continue to be the basic framework for assessing the environmental impacts associated with transportation projects. The federal government is not likely to make any significant changes to the impact categories that are part of this process although, as noted earlier, efforts will be made to make this process more "efficient." In addition, impacts relating to climate change are already being considered as part of NEPA guidance. For example, the Council on Environmental Quality (CEQ) issued proposed guidance on February 18, 2010, for the consideration of the effects of climate change and GHG emissions changes in the NEPA process. According to this draft guidance, "… environmental analysis and documents … should provide the decision maker with relevant and timely information about … the relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation and adaptation measures." Other key provisions of this draft guidance include the following:

- Agencies should determine which climate change impacts warrant consideration.
- Agencies should determine through the scoping process whether climate change considerations warrant emphasis or de-emphasis.
- Sensitivity, location, and timeframe of a proposed action determine the degree to which consideration of these predictions or projections is warranted.
- Impacts may include effects on the environment, on public health and safety, and on vulnerable populations who are more likely to be adversely affected by climate change.
- Observed and projected effects of climate change that warrant consideration are most appropriately described as part of the current and future state of the proposed action's "affected environment."
- Climate change effects "can include the impact on the integrity of a development or structure … increasing the vulnerability of a resource, ecosystem, or human community … and magnifying the damaging strength of certain effects of a proposed action."
- Focus of analysis should be on the aspects of the environment that are affected by the proposed action and the significance of climate change for those aspects of the affected environment.

Importantly, in cases where adaptation to the effects of climate change is considered significant, aspects of these changes should be identified in the agency's final decision, and adoption of a monitoring program should be considered. Monitoring strategies should be modified as more information becomes available and best practices and other experiences were shared.

NEPA GHG impact analysis could be complicated further by the need to consider cumulative and indirect impacts of project alternatives on the global climate. This is notwithstanding the evidence that major, large-scale transportation projects (e.g., 100-mile highway corridors) would account for a tiny fraction of a percent of state, U.S., or global GHG. If such NEPA analysis is required, state

DOTs will face the challenge of doing the required analysis and communicating its relevance effectively to the public, as well as identifying GHG mitigation measures that can be incorporated into project alternatives.

It should be noted that officials at the Oklahoma Climatological Survey (OCS) have been mandated by the Oklahoma legislature to provide climate information and expertise which could be of value to the public as well as to State policy and decision makers. In a 2008 report, the OCS agrees that the earth's climate is warming, it will continue to do so, and that Oklahoma will be affected. The OCS has recommended that four specific initiatives be aggressively pursued:

- The State should undertake a comprehensive assessment of Oklahoma's social and economic vulnerability to climate variability and climate change.
- OCS recommends immediate funding of the Oklahoma Water Resources Board's Comprehensive Water Plan Study to identify existing as well as projected needs for water.
- OCS encourages efficiency programs to reduce the State's growing demand for energy.
- OCS recommends investment in renewable energy technology and production.

Clearly, there are similarities in potential initiatives with transportation. They include the ever-important linkage to the State economy and the prospects for increased vehicle and fuel efficiencies.

Funding and Finance

With the federal transportation program and many states' programs facing funding shortfalls, it is likely that much of many government levels' policy attention over the next several decades will be on finding the resources to support transportation system investment.

Current Situation with Federal Funding

Congress established the Highway Trust Fund (HTF) in 1956 so that federal taxes on gasoline and other motor fuels could be used to help build and maintain a national highway system. This was an extremely successful approach to creating an interstate system that is a standard for the world. The HTF was created as a user-supported fund. Simply, the revenues of the HTF were intended for financing highways, with the taxes dedicated to the HTF paid by highway users. When a portion of the funds was allocated for mass transit, no structural adjustment was made.

Today, issues like inflation in construction costs; increasing costs of urban and other congestion-related improvements, including fixed-rail transit; and escalating freight demands accompanied by the ever-increasing maintenance and operation requirements, mean the current levels of the HTF taxes are grossly inadequate for funding major maintenance, much less system improvements. A permanent solution to the dwindling capacity of the HTF to provide the federal share of project funding has not yet been found. To date, Congress has transferred General Revenue funds to the HTF to meet the requirements of the federal-aid program and has neither increased the federal gas tax nor identified other funding sources to make the HTF solvent. When these stresses are combined with pressures to improve fuel efficiency, a move to alternative fuels and decreased vehicle miles traveled, new transportation financing solutions are needed. Increasingly around the United States, states and metropolitan areas are creating their own sources of additional funding for transportation, primarily because they cannot wait for the

federal government to develop a more permanent solution.

Federal Policy and Revenue Commissions

SAFETEA-LU recognized that the issue of transportation funding was going to require new ideas and approaches in the next reauthorization cycle. As a result, two separate commissions were authorized with mandates to examine and recommend changes to the structure of federal transportation finance. Both Commissions have reported their findings. Interestingly, in both cases, a very strong recommendation was made to increase the federal gas tax.

National Surface Transportation Infrastructure and Financing Commission

Section 11142(a) of SAFETEA-LU established the National Surface Transportation Infrastructure Financing Commission (Financing Commission). The Financing Commission was charged with analyzing future highway and transit needs and the finances of the HTF and then making recommendations regarding alternative approaches to financing transportation infrastructure.

When the Financing Commission released its final report, the leading statement was, "The nation's surface transportation system is in a 'physical and financial crisis' because current revenue is insufficient to maintain and improve this country's highways, public transportation systems and intermodal connectors."

The Financing Commission made several observations:

- Transportation system demands are outpacing required investment.
- Maintenance costs are competing with necessary expansion of the system.
- The fuel tax, which has been the key federal funding source for our system, is no longer sufficient at current rates.
- More direct user charges should be explored.
- Not only is more investment in our system needed, but more intelligent investment complemented by better operation of the system is highly desired as well.

One of the most telling aspects of this report was the concept that relying principally on the federal fuel tax "may not be a sustainable strategy in the long run" because as fuel economy continues to rise, "the fuel taxes that are the backbone of the federal transportation revenues will continue to shrink relative to use and needs of the system."

National Surface Transportation Policy and Revenue Study Commission

The National Surface Transportation Policy and Revenue Study Commission (Study Commission) was the second congressionally chartered entity created in SAFETEA-LU to develop recommendations for Congress on how best to meet the nation's surface transportation needs. The report, released in January of 2008, covered both policy and revenue recommendations. The report included documentation of the nation's surface transportation challenges and an assessment that the nation's unmet annual surface transportation needs total in the range of $225 to $340 billion. The Study Commission's finance recommendations were based on this needs assessment and assumed the historic 40 percent federal share of these investments.

The report called for a new independent commission, the National Surface Transportation Commission (NASTRAC). NASTRAC would identify the federal investment share of a national surface transportation plan

and recommend a financing proposal (removing much of the existing control from Congress.) As this new structure would be mode neutral, the Study Commission proposed to allow HTF revenues to be used for all surface transportation projects, including passenger and freight rail activities. The Study Commission also endorsed a series of new freight and passenger rail fees that presumably would be deposited in the fund, which would then be called the Surface Transportation Fund. Under the Commission's proposal, Congress and the President would be given an opportunity to reject or accept the NASTRAC transportation plan and financing proposal.

To achieve the Study Commission's short-term investment goals, the report proposed to increase the federal motor fuels user fee annually by five to eight cents per gallon per year over the next five years. Under this proposal, the cumulative increase would be between 25 to 40 cents per gallon. The motor fuels user fee would then be indexed to inflation following this ramp-up period. The Study Commission also endorsed other financing alternatives, including congestion pricing, tolling, public-private partnerships, and freight-based user fees. Furthermore, the report recognized the need for states to increase their surface transportation investment levels. For the long-term, the Study Commission called for a study to guide the transition from a fuel-tax supported system to a vehicle-miles-tax financing mechanism by 2025.

Neither of these Commission's recommendations has yet to be acted upon by Congress.

In the absence of national level progress in increasing the funding amount dedicated to transportation purposes, many states and metropolitan areas are adopting their own sources of funding. These include the use of tolls, regional sales taxes dedicated to transportation, and public-private partnerships, among others.

Potential Funding Strategies

A variety of funding strategies exist for states to add to the transportation revenue base other than raising motor fuel taxes. Some of these strategies have been used for many years, while others are relatively new to the transportation sector.

Tolling

Tolling has been increasingly acknowledged nationally as one strategy to increase available revenues. Many urban areas are either converting high occupancy vehicle (HOV) lanes to high occupancy toll (HOT) lanes or adding new priced lanes. Of particular interest is the use of congestion pricing in urban areas not only to provide revenue but also to encourage mode shifts, reduced trips, and changes in travel patterns.

The Oklahoma Turnpike Authority (OTA) has the authority to collect and bond against toll revenues. Some states have turned to existing toll agencies to expand their responsibilities or extend their jurisdiction to provide more resources to the transportation system. Others have used toll revenues as a means of leveraging more federal or private investment in the road network. Although sometimes politically difficult to do, fostering the development of a tolled road network could be an important component of a state's future road system.

Bonding

Issuing tax-exempt bonds can be an effective strategy to accelerate the delivery of needed transportation projects. While toll revenue bonds must be issued by the OTA, between 2004 and 2008, ODOT used Grant Anticipation

Revenue Vehicles (GARVEE) bonds (leveraging future federal funds) to provide the capital to implement projects. Additionally as of 2010, the Oklahoma Capital Improvement Authority issued bonds for the Department to support transportation projects. Other states issue fuel-tax-backed bonds or simply issue general obligation bonds to move projects along before inflation erodes the present value of transportation funding. Bonding, however, is only a partial solution to a capital finance strategy if the same revenue sources that repay the bonds would have been used for pay-as-you-go projects.

Public-Private Partnerships

In its simplest form, a public-private partnership is an agreement between public and private sector parties that transfers infrastructure delivery functions to private entities. The most successful partnerships have included the transfer of both risk and responsibility together. For example, the private partner in a toll road has the potential to profit from the venture but also risks a loss if toll revenues do not equal projections.

Many reasons have been offered as to why a DOT should consider using a public-private partnership approach. One reason is to transfer the financial risks associated with building and operating a new facility, including financing, construction (new and extensions), operations and maintenance, and revenue generation (assuming a tolled facility). Another reason has been to increase the financial resources available for accelerating capital program implementation. Most public-private partnership projects that are privately financed use a combination of debt (e.g., bonds or loans) and equity (e.g., private capital investment in the project). This provides the potential for increased flexibility in financing to increase leverage. Depending on the restrictions of the public sector, this approach may close the "gap" on under-funded projects without raising taxes. Restrictions on public sector debt capacity have been another reason why some public agencies have entered into public-private partnerships.

Of value to the transportation community are projects where the private sector provides financing, design, construction, operation, and maintenance of new facilities. The repayment to the private party for providing these services may be of three varieties: (a) through revenues collected, such as tolls, (b) by receiving periodic payments from the public entity usually designated as availability payments, or (c) a combination of the two. The strategy of availability payments leaves the risk of an adequate revenue stream on the public sector but provides additional leverage as full payments are made if the private sector partner meets availability and other performance criteria. The requirements are the same if the private entity is paid through a direct revenue stream, but the immediate leverage for the public sector is less.

Increasing Fuel Taxes and Other Fees

The SAFETEA-LU commissions and many other national organizations have recommended an increase in the federal gas tax as the most obvious means of increasing the level of funding for highway transportation, in some cases by substantial amounts. Many have argued the same for states as well. Fuel taxes have been the mainstay of highway programs for decades and are viewed by the general public as a necessary means for providing transportation infrastructure. In addition, any increase in federal funding will most likely require an increase in matching funds at the state level.

Although acknowledging the political difficulty in doing so, many of those who participated in the

outreach effort for the development of this Plan recommended an increase in the State's gas tax. The rationale for doing so was primarily that the public was used to this form of user fee, the institutional structure was set up to collect any additional funds that would come from this source, and there was a perceived fairness that those who use the system are paying for its upkeep. Currently, Oklahoma has one of the states' lowest fuel tax rates at $0.13 per gallon for diesel fuel and $0.16 per gallon for gasoline plus a $0.01 environmental fee.

Vehicle Miles Traveled (or Distance-based) Fees

One of the longer term limitations of relying on a motor fuels tax for transportation funding is that increasing vehicle fuel economies and changes to alternative fueled vehicles will result in declining transportation revenues. A consensus seems to be building that converting from a pure motor fuel consumption tax basis to a system of charging for vehicle miles traveled (VMT) is a likely strategy for future highway finance. Other countries and several states have been examining such a strategy over the past several years. Not only will such a strategy serve as a replacement funding source for declining gas tax revenues, but some argue that creating a stronger link between driving and the fees paid could promote more efficient system use.

A number of studies and pilot programs of a distance-based financing strategy have been underway across the U.S. A pilot program in Oregon is the most advanced, having completed both a concept study as well as an actual test program with drivers. This demonstration program was a secure, confidential system where VMT data were collected via satellite by geographic zone, and this information was then transferred to a sensor at a fueling station and fees calculated. Interestingly, this system provided for possible congestion pricing. It provides an ability to charge differential prices by location and by time of day.

The implementation of a national distance-based highway finance strategy will be complex and will clearly require national leadership. The challenge will be determining what technology will be necessary to provide for consistent collection of distance traveled information across the nation, and how the nation can transition from the current approach to a new strategy within the next 20 to 30 years. Such an approach will also be a challenge to individual states with respect to each state's own means of collecting highway revenues.

Impact of an Evolving Policy Context on ODOT

The most important short-term, and most likely long-term, challenge to the ODOT will be obtaining the necessary funding to support the State's transportation system. Although the federal government might continue to emphasize "innovative financing" and public-private partnerships, even if used in Oklahoma, they would not provide the funding levels necessary to support the State's transportation needs.

The impact on ODOT and on the development of the Plan of the evolving policy context as described in previous pages falls into several categories:

- It is an understatement to say that the transportation finance "picture" in the U.S. is unclear. With states and MPOs often looking at capital programs exceeding the federal authorization limits, this uncertainty becomes an important element of how a statewide transportation plan is developed. For example, one approach is to develop a "tiered" plan that focuses on those programs

and projects for which funding is known to be available over the life of the plan and then develop different investment scenarios depending on the addition of a certain level of funding. This tiered approach provides the most flexibility in focusing on the most important State transportation needs.

- Many states have taken a position that the federal transportation program, albeit an important one for their own state's needs, is so uncertain and unreliable that they need to develop a "menu" of financing options that can support a state's transportation program in times when federal funding is in a state of flux. Some elements of such a menu were mentioned in the previous section and could become the focus of discussions in Oklahoma on what types of finance strategies might make most sense.
- Both in the economic stimulus package and in the discussions currently surrounding the re-authorization of the federal transportation law, an important focus on performance measurement and program monitoring is suggested to establish greater accountability for the transportation funding that has been provided. This could have an important implication to ODOT in terms of having in place the database systems necessary for tracking the performance categories.
- Given the scarce resources to fund the State's transportation needs, and given likely requirements to allocate dollars in the most cost beneficial manner, it is important that ODOT have in place the information systems and prioritization procedures that reflect the desired transportation system performance. ODOT should establish and maintain protocols that assist the State in measuring where the best investment can occur while keeping in mind that it is necessary to remain flexible to respond to the requirements of pending federal surface transportation legislation.
- In the short term, few significant changes to federal environmental laws, either substantive additions or removals of requirements, are expected, except in one area—climate change. It is unclear at this time what changes may occur with respect to climate change, but it is likely that, at a minimum, impacts of transportation programs and projects on GHG emissions will be required as part of the project evaluation process (such as NEPA procedures). These are also likely to be required in state and regional transportation plans.
- Congress and the Administration have indicated an orientation to urban or metropolitan needs. This is likely to manifest itself in targeted funding programs at urban areas, with various roles and responsibilities for the relevant MPOs. The relationship between the state DOTs and MPOs will be a very important foundation for developing capital transportation programs in urban areas that meet the goals of both the state and the urban areas.
- As noted in the discussion of likely themes for reauthorization legislation, the attention to freight movement and, in particular, investments in the transportation system enhancing the productivity of freight operations will likely increase over the next several years.
- The nation is likely to transition to some form of distance-based finance strategy over the next 20 to 30 years. It is likely too soon for ODOT to conduct any detailed analyses on what might occur or the types of programmatic structures that could be put in place. However, at a minimum, a need exists to start the education process of key decision makers that such a transition is likely to occur.

Chapter 4 Oklahoma Demographic, Socio-economic, Land Use, and Travel Characteristics

Introduction

Transportation systems are a vital and necessary part of society. From a rudimentary network of footpaths to the most sophisticated urban multi-modal systems, transportation networks enable people to gain access goods and services. As societies grow and evolve, more complex demands for people and goods movement require more sophisticated transportations systems. This Plan anticipates these needs. As such, it is essential to monitor changes in the population's demographic and socio-economic characteristics as well as the physical development patterns of where people live and work. Keeping abreast of changes enables ODOT to meet existing transportation needs better and establish transportation plans which will support future growth and economic development.

This chapter summarizes the demographic and socio-economic characteristics for Oklahoma, primarily focused at the county or ODOT division levels as shown in **Figure 4-1.** It presents data on the current population and employment, identifies trends that have developed over the past five to fifteen years, and discusses future projections to 2035. The chapter also discusses land use in Oklahoma and concludes with a summary of the State's travel and vehicle fleet characteristics.

Population

Population Growth

Between 1990 and 2000, Oklahoma's population grew from 3,145,585 to 3,450,654, about one percent annually. During this same decade, the national population grew by 1.3 percent annually. From 2000 to 2007, the State's population growth decreased slightly to 0.7 percent per year, which mirrors a similar drop in the U.S. population growth to approximately one percent per year.

Source: ODOT

Figure 4-1. Map of Counties in ODOT Divisions

In the future, the projected population for Oklahoma in 2035 is 4,307,600. This is an increase of 24.8 percent since 2000, which will account for 1.1 percent of the U.S. projected population of 389,531,000. With U.S. population projected to grow by 38.4 percent from 2000 to 2035, these numbers illustrate that population growth in Oklahoma is expected to be slower than the U.S. as a whole.

Table 4-1 presents population and population projection for 1990, 2000, 2007, 2030, and 2035 for the eight ODOT Divisions. Oklahoma has four Metropolitan Areas (MA): Oklahoma City MA, Tulsa MA, Lawton MA, and Ft. Smith MA.[1] An MA is defined as a large population nucleus (a place with a minimum of 50,000 persons or a Census-Bureau-defined urbanized area), along with adjacent counties, that has a population with a high degree of economic and social integration. **Table 4-2** lists the metropolitan counties within each MA.

Table 4-3 displays the historic, current, and projected population data for the four MAs. The Oklahoma City MA, the largest of the four, included over 1,175,727 residents in 2007 and is projected to increase to 1,345,400 in 2035.

Table 4-1. Population by ODOT Division

ODOT Division	Total Population				
	1990	2000	2007	2030	2035*
Division 1	266,468	300,406	317,048	397,400	413,500
Division 2	209,612	227,762	233,156	284,800	295,000
Division 3	411,546	463,116	497,047	574,700	591,400
Division 4	899,275	986,633	1,050,309	1,169,000	1,195,400
Division 5	139,165	134,901	130,442	153,100	156,300
Division 6	76,853	77,974	75,898	99,200	103,200
Division 7	301,861	314,351	318,508	368,300	377,300
Division 8	840,805	945,511	985,715	1,146,100	1,175,500
State	3,145,585	3,450,654	3,608,123	4,192,600	4,307,600

Source: Oklahoma Department of Commerce (1990–2030).
*State and most local authorities will not develop 2035 population projections until data from the 2010 Census become available. 2035 projections were estimated by assuming that the projected growth rate for 2025-2030 would continue in 2030-2035.

Table 4-2. Metropolitan Areas

MA	Metropolitan County
Oklahoma City	Canadian, Cleveland, Logan, McClain, Oklahoma, and Pottawatomie
Tulsa	Creek, Osage, Rogers, Tulsa and Wagoner
Lawton	Comanche
Ft. Smith	Sequoyah

Source: ODOT.

Table 4-3. Metropolitan Area Population and Population Projection

MA	2000 Population	2007 Population Estimate	Growth per Year 2000 to 2007	2030 Population Projection	2035 Population Projection*
Oklahoma City	1,083,346	1,175,727	1.2 %	1,312,900	1,345,400
Tulsa	803,235	848,580	0.8 %	970,300	993,400
Lawton	114,996	113,931	-0.1 %	139,200	142,700
Ft Smith	38,972	40,926	0.7%	52,600	54,900

Source: Oklahoma Department of Commerce (1990–2030).
*State and most local authorities will not develop 2035 population projections until data from the 2010 Census become available. 2035 projections were estimated by assuming that the projected growth rate for 2025-2030 would continue in 2030-2035.

Non-metropolitan areas consist of either micropolitan or rural counties. Micropolitan counties must have at least one urban cluster of at least 10,000 but less than 50,000 population, while rural counties have below 50,000 with no urban cluster. **Figure 4-2** shows the counties considered metropolitan, micropolitan, and rural.

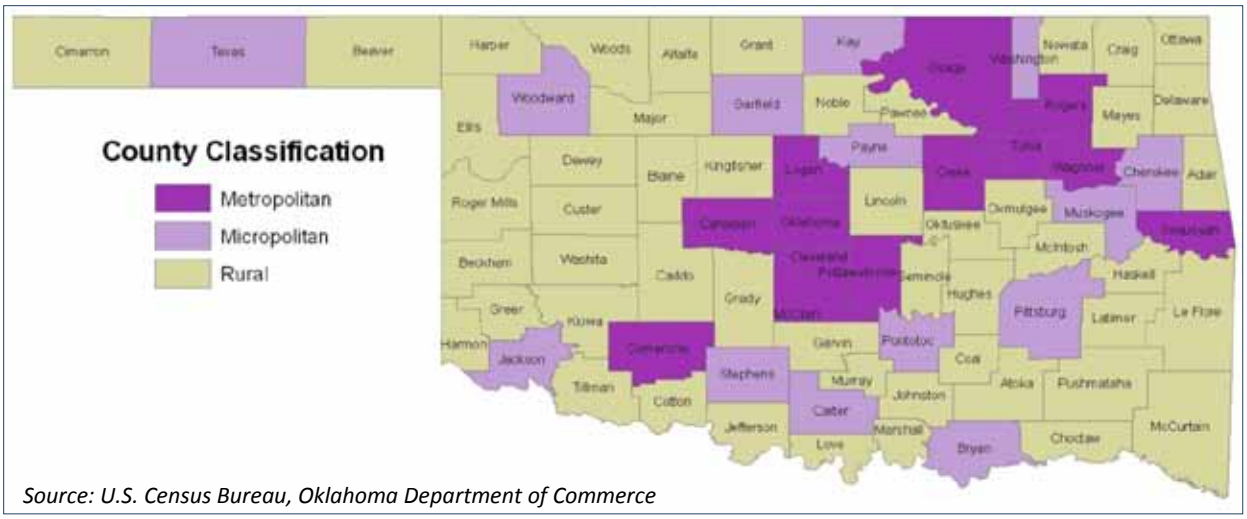
As Table 4-3 indicates, Oklahoma's population is highly concentrated in metropolitan areas. Nearly 2.2 million people out of a statewide total population of approximately 3.6 million were estimated to reside in MAs in 2007. This reflects a long-term historical trend of shifting the State's population from non-metropolitan to metropolitan areas. Oklahoma's metropolitan area population increased from approximately 43 percent of State population in 1950 to approximately 61 percent in 2000. Current projections for 2030 and 2035 estimate that approximately 59 to 60 percent of the State's population will live in metropolitan areas.

Figure 4-3 illustrates the annual population growth rates for counties in Oklahoma between 1990 and 2000. The map highlights areas of particularly high growth in the counties near the MAs in the eastern part of Oklahoma and low to growth or decline in the primarily rural counties in the western portion of the State.

Figure 4-4 illustrates the growth rates for counties in Oklahoma between 2000 and 2007. The map shows how the growth trends found in the previous decade have stabilized in the following seven years.

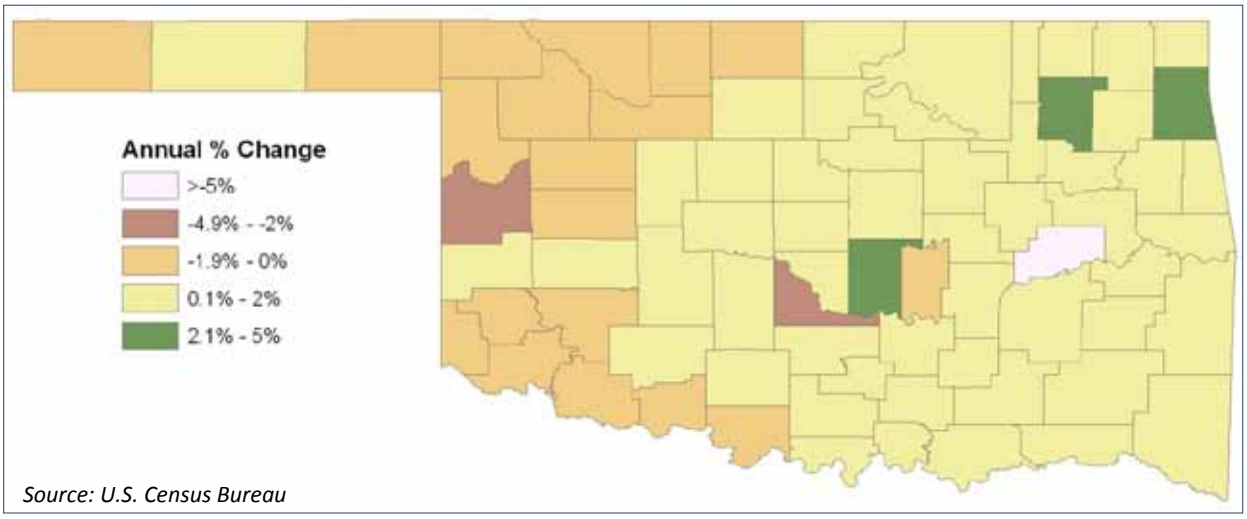
Birth Rates, Life Expectancy, and Migration

In the decades prior to 2000, the birth rate[2] declined in both Oklahoma and the nation. However, between 2002 and 2007, the trend started to reverse and the birth rate increased in both Oklahoma and the U.S. In Oklahoma, the rate rose from 68.8 to 74.7 births per 1,000 women of childbearing age (15 to 44 years), and in the U.S. it rose from 64.8 to 68.4. Life expectancy both in Oklahoma and the nation has significantly increased over the past decades. In 1970 the national life expectancy rate was 70.8 years, which has steadily increased to 78.1 years in 2008. Although life expectancy in Oklahoma increased from 71.5 years in 1970 to 75.1 years in 1990, it has remained at this level through 2007.[3]



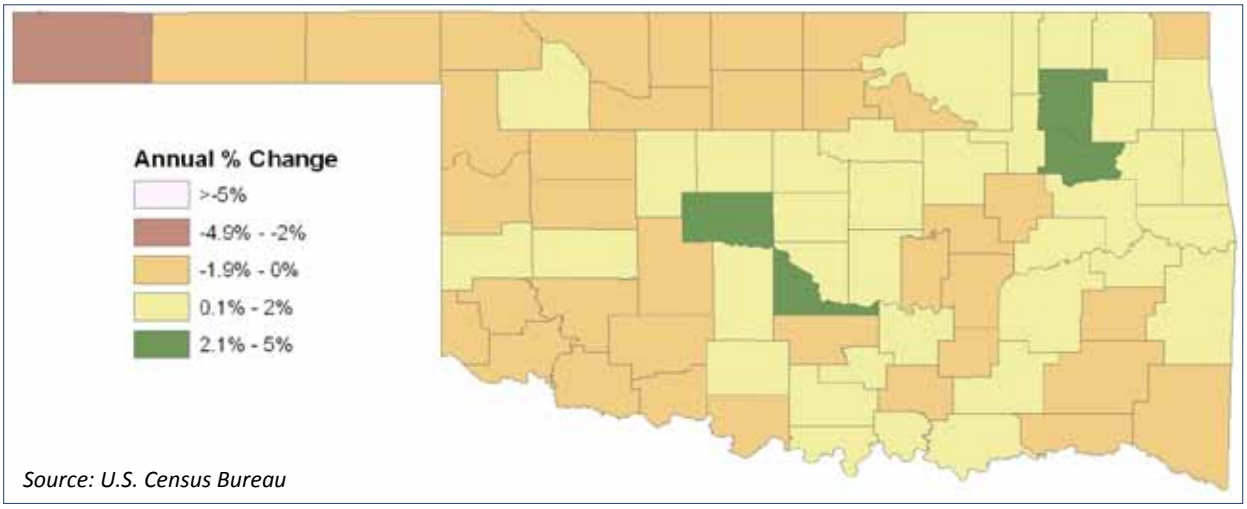
Source: U.S. Census Bureau, Oklahoma Department of Commerce

Figure 4-2. County Population Classification



Source: U.S. Census Bureau

Figure 4-3. Annual Population Change by County, 1990 to 2000



Source: U.S. Census Bureau

Figure 4-4. Annual Population Change by County, 2000 to 2007

Migration in and out of Oklahoma has historically had significant influence on the State's population, although it is highly unpredictable. During economic growth periods in Oklahoma, most notably the oil boom between 1975 and 1983, the State received an increased inflow of population. In the period between 1970 and 1980, a total of 293,500 more people came than left, the migration accounting for nearly two-thirds of Oklahoma's total increase. Brief economic downturns inevitably have resulted in increased out-migration; but overall, Oklahoma has demonstrated stable to small positive gain in migration into versus out of the State in recent years.

Race and Ethnicity

Race, usually classified as White, African American, Native American, Asian/Pacific Islander, or Other, and ethnicity are considered separate and distinct identities. Thus, in addition to their race or races, individuals are categorized by membership in one of two ethnicities: Hispanic or Not Hispanic.

In 1990, the population in Oklahoma was predominately White, with the largest minority group being Native American. In the past 17 years, both of these groups have experienced declining growth, while the percentage of Asian/Pacific Islander and Other minorities is increasing. "Other" minorities includes any other responses to race, such as two or more races, multiracial, mixed, interracial, or a Hispanic/Latino group (not a race group because considered ethnicity). During this same time period, the percentage of African Americans has remained steady. Individuals with Hispanic origin are the fastest growing minority group in Oklahoma. **Table 4-4** presents the percentage race and ethnic composition of Oklahoma's population from 1990 to 2007.

Table 4-4. Race and Ethnicity of the Oklahoma Population, 1990-2007

Race	1990	2000	2007
White	82.2%	76.6 %	74.9 %
African American	7.2 %	7.4 %	7.5 %
Native American	8.2 %	8.1 %	6.8 %
Asian /Pacific Islander	1.0%	1.4 %	1.7 %
Other	1.3 %	7.4 %	9.1 %
Ethnicity	1990	2000	2007
Hispanic Origin	2.6 %	5.1 %	7.2 %
Non-Hispanic Origin	97.4 %	94.9%	92.8 %

Source: U.S. Census Bureau.

Minority groups in Oklahoma are primarily urban residents. With the exception of Native Americans, the majority of each minority population resides in metropolitan areas. Detailed data are presented in **Table 4-5.**

Table 4-5. Distribution of Race and Ethnicity by Metropolitan/Non-Metropolitan Areas, 2007

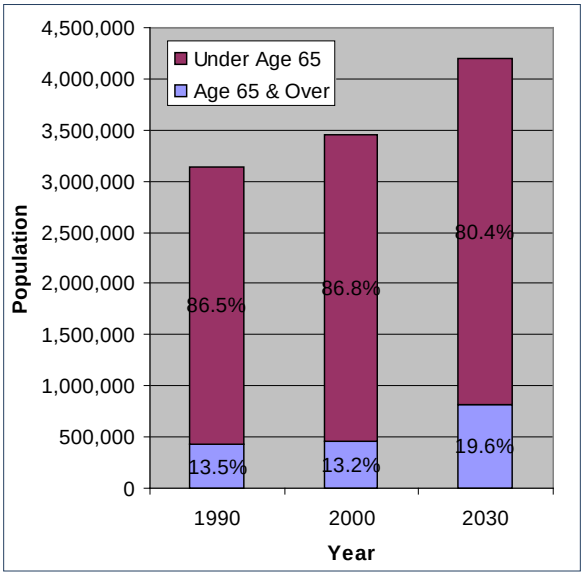
Race	Metropolitan	Non-Metropolitan	Total
White	46.2 %	28.7 %	74.9 %
African American	6.1 %	1.4 %	7.5 %
Native American	2.9 %	3.9 %	6.8 %
Asian/Pacific Islander	1.4 %	0.3 %	1.7 %
Other	5.7 %	3.4 %	9.1 %
Ethnicity	Metropolitan	Non-Metropolitan	Total
Hispanic Origin	5.1 %	2.1 %	7.2 %
Non-Hispanic Origin	57.2 %	35.6 %	92.8 %

Source: U.S. Census Bureau.

Age Distribution

Oklahoma has experienced notable growth in its aging population. In 1990, the median age in Oklahoma was 33. This has increased to 36 in 2007. The 1990 U.S. Census shows that 13.5 percent of the State's population was age 65 or older and 25.9 percent were under 18 years. These percentages have remained

fairly constant until present. However, while Oklahoma's total population is estimated to grow by approximately 19 percent between 2007 and 2035, the population of individuals age 65 and over is predicted to increase by over 60 percent from 2007 to 2030.[4] **Figure 4-5** displays the projected growth in the 65 and over age group. Oklahoma's age 65 and over population comprised 13.5 percent of total population in 1990 and 13.2 percent in 2000, compared to 12.6 percent and 12.4 percent in 1990 and 2000, respectively, for the entire U.S. According to Census Bureau projections, the percentages for Oklahoma and the U.S. will be roughly the same in 2030—19.6 percent in Oklahoma and 19.3 percent for the U.S.



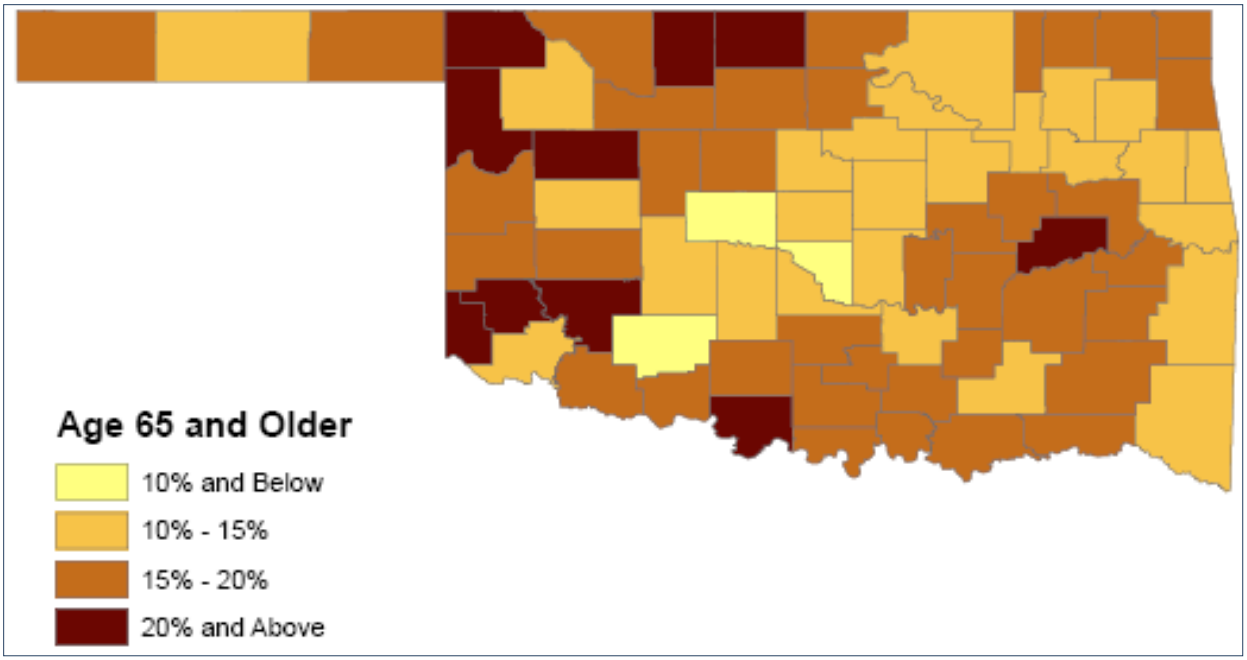
Source: U.S. Census Bureau.

Figure 4-5. Population Age 65 and Over from 1990 to 2030

Figure 4-6 illustrates the percentages of individuals age 65 and over by county. The map indicates that counties with the highest proportions of elderly (20 percent or more) are in rural areas. Counties with age 65 and over populations between 15 and 20 percent are in rural or micropolitan areas. Although actual numbers of older residents are higher in metropolitan areas (because total population is higher), an aging population is notably more typical of rural and micropolitan areas.

An indication of Oklahoma's aging population can be found when examining the growth rate of Oklahomans age 15 years and under. Between 1990 and 2000, this age group grew by 0.4 percent per year. This growth occurred in metropolitan areas. For non-metropolitan areas, the age group declined by 0.1 percent annually.

Between 2000 and 2005, the group age 15 and under declined by 0.7 percent annually for the State as a whole. Decline occurred in both metropolitan and non-metropolitan areas. A similar trend can be found in the proportion of youth to the total Oklahoma population, which has declined steadily since 1990. In 1990, 22.5 percent of the State's population was less than 15 years of age, by 2000 the figure had dropped to 21.2 percent and in 2005 the number had further decreased to 19.9 percent. The decline of this demographic occurred in both metropolitan and non-metropolitan areas.



Source: U.S. Census Bureau

Figure 4-6. Oklahoma Population, Age 65 and Over by County, 2000

Transportation Implications of an Aging Population

As the aging population increases, it is important to consider the elderly's specialized mobility needs. There are a growing number of older individuals driving more miles and later in life. Measures to accommodate elderly drivers include installing larger signs with larger letters, establishing protected left-turn signal phases at high-volume intersections, improving intersection design, enhancing traffic control measures (particularly in work zones), and developing more visible roadway delineation, among others. The aging population who no longer drives may rely increasingly on public transportation. These individuals may also require special assistance from transit providers which make it more difficult to meet elderly needs. While reliable, fixed-route systems are unable to offer demand-responsive transportation opportunities.

Older users who are unable to walk long distances are limited to services and activities in close proximity to transit stops. Demand-response and paratransit services, on the other hand, attempt to fulfill this challenge by offering types of door-to-door service between origins and destinations.

Education

In 1990, 74.6 percent of Oklahoma's population were high school graduates (compared to 75.2 percent in the U.S.), and 17.8 percent had a bachelor's degree or higher (20.3 percent in the U.S.). By 2000, 84.2 percent of the population was high school graduates (U.S., 80.4 percent) and 22.2 percent had a bachelor's degree or higher (U.S., 24.4 percent). In 2007, 84.8 percent of the State's population held a high school diploma or an equivalency (U.S., 84.5 percent), and those with a bachelor's degree or higher had increased to 22.8 percent (U.S., 27.5 percent). **Table 4-6** presents data on educational attainment from 1990 to 2007.

Table 4-6. Education Attainment for Ages 25 to 64, 1990 to 2007

Educational Attainment	Year		
	1990	2000	2007
Less than High School	25.4 %	15.8 %	15.2 %
High School	30.5 %	33.1 %	33.1 %
Some College	21.3 %	22.3 %	22.3%
Associate Degree	5.0 %	6.6 %	6.7%
Bachelor's Degree	11.8 %	15 %	15.2%
Graduate/Professional Degree	6.0 %	7.3 %	7.6%

Source: U.S. Census Bureau.

Employment

Oklahoma employed over 1.6 million people in 2007, with 1.56 million non-farm employees. The largest employer for the State is consistently the government, both state and local. **Table 4-7** shows the trends from 2000 to 2007 for non-farm employees.

Oklahoma's unemployment rate closely follows economic cycles of boom and bust within the State, but it is less dependent on national economic trends. This is illustrated by Oklahoma's 1.6 percent job growth rate in 2007 while the national economy slowed. In early 2008, 21 states reported job losses while Oklahoma continued to create jobs.[5]

The State's employment figures account for individuals in the labor force—those individuals actively seeking work. The unemployment rate has fluctuated around four percent between 1990 and 2007 but has consistently been lower than the national rate, as shown in **Table 4-8.**

As shown by **Figure 4-7,** unemployment rates are expected to increase over the short term, peaking at 8.0 percent in 2010, as various sectors of the economy continue to contract. The Oklahoma economy is expected to have begun its rebound in the latter half of 2010, which will lead the State's job growth at an average annual increase of 3.3 percent through 2014.

Long-term economic growth relies on available labor, which is measured by the labor force participation rate. Growth in the labor force is influenced by an increase in labor force participation and population growth.

Both the nation's and Oklahoma's labor force participation rates have remained relatively constant since 2000, at approximately 66 percent and 64 percent, respectively. While Oklahoma's labor force participation rate is consistently below the national rate, the difference is approximately two percent.

Income and Poverty Status

Table 4-9 shows the change in median household income and poverty for Oklahoma. Between 2000 and 2007, the median household income in Oklahoma increased from $33,417 to $41,551. During the same time period, the percent of individuals in poverty also increased from 13.8 percent to 15.8 percent.[6] Comparatively, the median household income for the United States rose from $41,994 in 2000 to $50,233 in 2007, while the percent of individuals in poverty across the nation rose from 11.3 percent to 12.5 percent. While the percent of those in poverty in Oklahoma has decreased for the past three years after a notable spike in 2005 and 2006, the 2007 rate was significantly higher than that of 2000.

On the whole, the poverty rate in non-metropolitan Oklahoma is higher than in metropolitan areas. In 2007, non-metropolitan areas experienced a poverty rate of 18.5 percent compared to a rate of 14.3 percent for metropolitan areas. Nevertheless, pockets of high poverty rates are found in metropolitan areas. In 2007, Oklahoma County had the State's highest poverty rate of 22.1 percent.

Table 4-7. Oklahoma Employment, 2000 to 2007

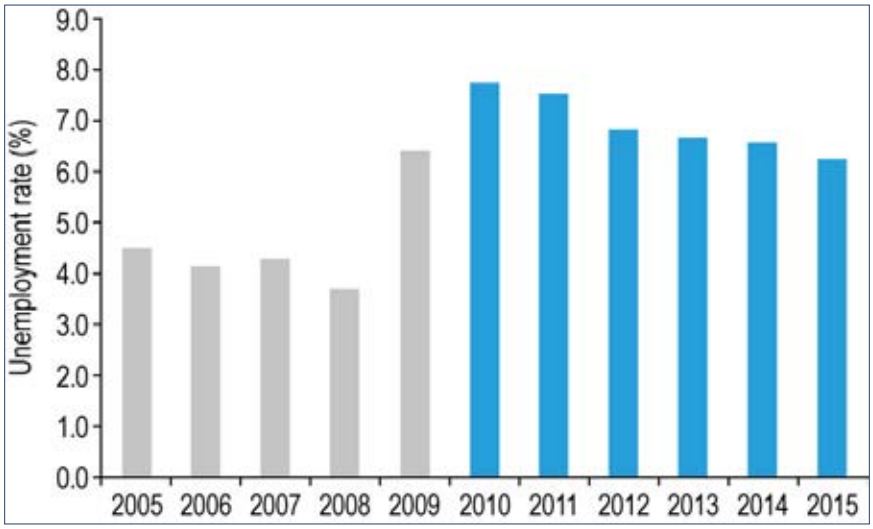
Employment	2000	2001	2002	2003	2004	2005	2006	2007
Total Non-farm Employment	1,480	1,494	1,474	1,445	1,461	1,499	1,540	1,566

Source: Bureau of Economic Analysis (BEA), 2009 (in thousand persons).

Table 4-8. Percentage Employment in Oklahoma, 1990 to 2007

Year	In Labor Force	Employed	Unemployed (Oklahoma)	Unemployed (U.S.)
1990	62.5 %	57.1 %	4.2 %	5.6 %
2000	63.9 %	59.7 %	3.7 %	4.0 %
2005	64.4 %	61.8 %	4.3 %	5.1 %
2006	64.4 %	61.9 %	3.8 %	4.6 %
2007	63.3 %	60.5 %	4.3 %	4.6 %

Source: Oklahoma Employment Security Commission; U.S. Department of Labor, Bureau of Labor Statistics.



Source: Global Insight Regional Economic Forecast Services, February 2009 (projected rates); Oklahoma Employment Security Commission, 2010 (past rates)

Figure 4-7. Projected Unemployment Rate for Oklahoma

Table 4-9. Median Income and Poverty Rates in Oklahoma 2000 to 2007

	2000	2001	2002	2003	2004	2005	2006	2007
Median Household Income	$33,417	$34,912	$35,313	$35,634	$37,109	$37,020	$38,753	$41,551
Percent in Poverty (individuals)	13.8 %	14.4 %	14.5 %	14.7 %	14 %	16.4 %	16.7 %	15.8 %

Source: U.S. Census Bureau.

Transportation Implications of Increasing Poverty Rates

The rise in the percent of the State's individuals considered in poverty suggests an increase in the transit-dependent population. With less disposable income, individuals or households may not be able to afford a personal automobile and be more reliant on public transportation for their mobility needs.

ODOT is undertaking a transit study as part of this Plan. It will identify ways the State's existing public transit systems can coordinate services across providers more effectively to offer passengers additional mobility choices across the State.

Land Use Trends

Land use is so closely interrelated with transportation systems that it is difficult to determine which has a stronger effect on shaping the other. Since each land use type has specific accessibility requirements and transportation provides the accessibility, development will take place along transportation corridors that provide suitable access. Likewise, as more development occurs in an area, suitable transportation systems are necessary to accommodate the activities generated by such development.

Oklahoma is primarily rural. Of the State's 77 counties, 29 have more than two percent of their land base classified as urban, and only seven counties have more than five percent of their land base classified as urban. For the ODOT Divisions, two ODOT Divisions (Division 4 and Division 8) have less than 95 percent of their lands classified as rural. **Table 4-10** shows the percentage of population living on urban versus rural land by ODOT Division.

The State generally classifies counties as urban or rural. Urban areas consist of the metropolitan and micropolitan counties within Oklahoma.[7] Rural areas include the rural counties. This classification takes into account the population or population density of these areas.

Urban Areas

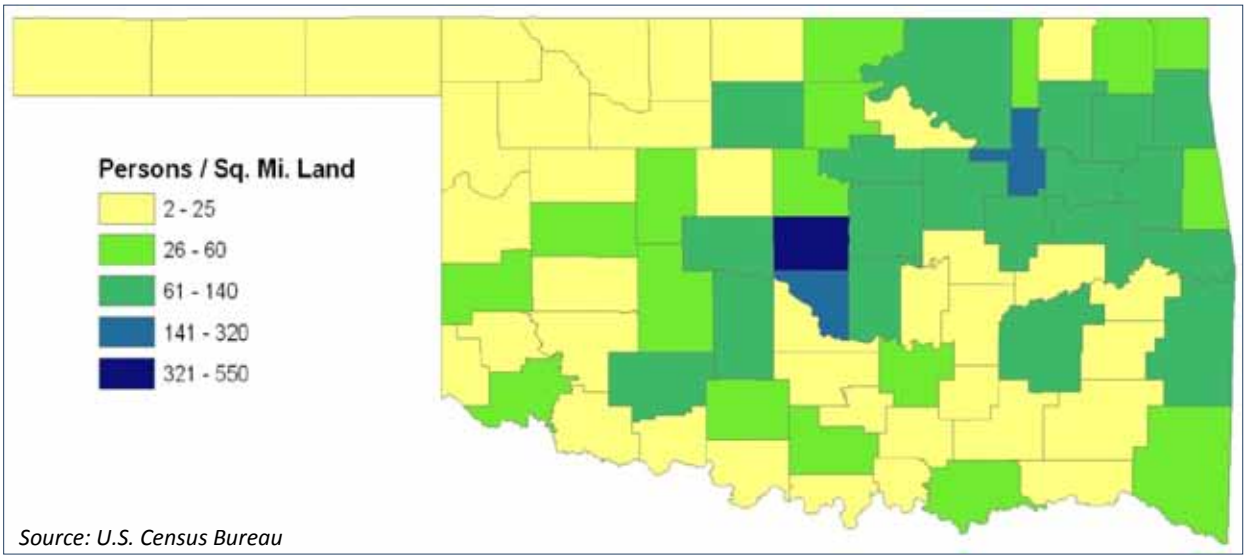
Oklahoma's population has shifted significantly to these urban areas over the past 15 years. **Figure 4-8** illustrates the population density for Oklahoma counties in 2007. The metropolitan areas of Oklahoma City and Tulsa have noticeably higher population densities than the rest of the State. Other urban areas include counties classified as micropolitan counties, which include the smaller cities in Oklahoma. Figure 4-8 shows the population densities for the smaller urban areas.

Table 4-11 shows the total population and population projections for urban counties by ODOT Division. With the exception of Texas County, all urban areas are projected to experience between one and two percent population growth between 2007 and 2035. Texas County is predicted to increase in population by four percent.

Table 4-10. Percentage of Population on Urban versus Rural Land by ODOT Division

ODOT Division	2000		2005		2015 Projected		2025 Projected		2030 Projected	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Division 1	45.3	54.7	45.4	54.6	45.4	54.6	45.3	54.7	45.2	54.8
Division 2	21.1	78.9	21.1	78.9	21.0	79.0	20.8	79.2	20.8	79.2
Division 3	57.8	42.2	58.7	41.3	59.7	40.3	60.1	39.9	60.3	39.7
Division 4	79.3	20.7	79.3	20.7	79.3	20.7	79.4	20.6	79.3	20.7
Division 5	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
Division 6	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
Division 7	51.1	48.9	51.7	48.3	52.4	47.6	52.7	47.3	52.8	47.2
Division 8	80.6	19.4	80.6	19.4	80.3	19.7	79.9	20.1	79.7	20.3

Source: Oklahoma Department of Commerce.
Data are not available in this format for subsequent years.



Source: U.S. Census Bureau

Figure 4-8. 2007 Population Density by County

Table 4-11. Population Projection for Urban Counties by ODOT Division

ODOT Division	Urban Counties (Metropolitan and Micropolitan)	Population of Urban Counties					
		2000	2007	2015	2025	2030	2035*
1	Sequoyah, Wagoner, Cherokee, Muskogee	208,435	224,161	241,200	262,500	272,400	282,700
2	Bryan, Pittsburg	80,487	83,934	89,100	95,300	98,400	101,600
3	Cleveland, McClain, Pottawatomie, Pontotoc	336,420	372,758	386,000	412,100	424,300	437,000
4	Canadian, Logan, Oklahoma, Payne, Garfield, Kay	956,152	1,020,420	1,053,200	1,107,200	1,131,800	1,157,000
5	Jackson	28,439	25,686	31,000	32,700	33,400	34,100
6	Texas, Woodward	38,593	39,564	49,100	56,300	59,800	63,600
7	Comanche, Carter, Stephens	203,799	204,670	219,700	230,900	235,900	241,000
8	Creek, Osage, Rogers, Tulsa, Washington	794,740	831,215	874,800	922,800	942,600	962,800

Source: Oklahoma Department of Commerce (1990–2030).
*State and most local authorities will not develop 2035 population projections until data from the 2010 Census become available. 2035 projections were estimated by assuming that the projected growth rate for 2025-2030 would continue from 2030 to 2035.

The following section describes the overall land use vision and patterns occurring in the metropolitan areas.

Oklahoma City The *2000–2020 Oklahoma City Comprehensive Plan* builds on the guidelines presented in prior city comprehensive plans and focuses on stronger mandates to revitalize the central area of Oklahoma City, improve its appearance, and restore a sense of community. For urban growth areas, the Plan specifically encourages "development at higher residential densities than in the past" and encourages infill and mixed-use development and development along or within major activity corridors and major activity centers. Infill development is also recommended for traditional neighborhoods, along with context-appropriate revitalization and adaptive reuse. The Plan states that its primary goal is to support the central role of the downtown area for employment, culture, urban residential, and entertainment.

Guidelines and recommendations contained in the *2000–2020 Oklahoma City Comprehensive Plan* actively encourage a change in the direction of growth trends in Oklahoma City. By encouraging higher densities and infill development, the Plan seeks to rein in urban sprawl and create a better sense of community.

Tulsa The City of Tulsa is in the process of updating the *Tulsa Metropolitan Area Comprehensive Plan—Vision 2000,* which was completed in 1987. This regional plan guides development decisions and land use priorities in the greater Tulsa area. Vision 2000 supports areas of mixed use development and initiatives to support the central business district (CBD) as the regional center for commercial, office, and employment activity. The plan also recommends cluster development as opposed to strip development and calls for designating corridors or special development zones to support a fixed guideway system. Pedestrian needs are supported by recommending a pathway system that connects schools, shopping, and key activity areas. The plan also recommends improving facilities to encourage walking as the principal travel mode downtown.

Lawton Current land use patterns in Lawton are characterized by strip commercial development along major roadways, high levels of multi-family residential development, and sprawled single-family suburban residential development. The *2008 Lawton Growth Management Plan* found that these land use influences and trends will continue for the foreseeable future because of economic factors, such as tax revenue and existing zoning codes. Research for the growth management plan found that fiscal inflexibilities associated with Oklahoma's municipal finance laws allow for area cities to encourage and develop strip-like commercial corridors as their primary source of sales tax revenues for their community's operations. The Plan also states that over the past 20 years, Lawton has primarily focused on developing new residential and commercial areas at its urban fringe. As a result, downtown districts began declining in property value, community significance, and overall quality.

Fort Smith The *Fort Smith Comprehensive Plan (2002)* guides the City of Fort Smith in planning land use, development, and local transportation facilities for the City and its extraterritorial jurisdiction in Arkansas. However, Fort Smith's city limits and extraterritorial jurisdiction end at the Oklahoma State line, and other authorities are responsible for planning in Le Flore and Sequoyah Counties, Oklahoma, which represent that portion of the Fort Smith Metropolitan Statistical Area located within Oklahoma. The planning area for the Bi-State Metropolitan Planning Organization (BSMPO) includes a

significant portion of those two Oklahoma counties. The Oklahoma cities of Arkoma, Moffett, Muldrow, Pocola, Roland, and Spiro lie within the BSMPO planning area. A proposed expansion of BSMPO boundaries would incorporate the cities of Poteau and Sallisaw, Oklahoma, into the planning area.

The *BSMPO Planning Area 2030 Land Use Plan* defines commercial corridors. Commercial corridors are designated along I-40 in the Roland and Muldrow areas, State Highway 64B through Muldrow, State Highway 112 in Arkoma and Pocola, and U.S. 271/State Highway 9 in Spiro.

Commercial centers are also designated in Moffett and south of the intersection of US-271/State Highway 9 with State Highway 112 North in Pocola. The remainder of the planning area in Oklahoma is designated for residential use and development.

Public Transportation and Land Use

Four urban public transportation organizations operate in Oklahoma: Oklahoma City METRO Transit and Metro Transit of Norman serve the Oklahoma City MA; Metropolitan Tulsa Transit Authority serves the Tulsa MA, and the Lawton Area Transit System, serving the Lawton MA. The Oklahoma City and Tulsa systems are established and have recently considered transit needs in the future. The Lawton Area Transit System service is the newest of the four and began operating in April 2002. All four public transportation organizations offer transportation for the general public and specialized services for the elderly and disabled. Additional information regarding the two largest systems follows.

Oklahoma City Between June 2004 and December 2005 the Oklahoma City MA and the Central Oklahoma Transportation and Parking Authority developed a fixed-guideway transit study, called the *2030 System Plan Vision.* The study revisited some of the issues and recommendations of the *Oklahoma Fixed Guideway System Study* conducted by ODOT and ACOG in the mid-1990s. The Vision Plan evaluated nine transit technologies to identify which would be most suited to the Oklahoma City MA: conventional bus service, HOV lanes, bus rapid transit (BRT), light rail transit (LRT), historic streetcar, modern streetcar, commuter rail, heavy rail, and monorail.

The plan recommends improved connectivity between transit modes throughout the region. In particular, this would be achieved through a new downtown intermodal transit station where commuter rail, BRT, downtown streetcar, and local bus service would combine within the proposed I-40 redevelopment corridor. These transit improvements would allow for better connectivity of Oklahoma City's activity centers, enhance economic development opportunities, and improve mobility. These improvements have the potential for affecting land uses supportive of more mixed-use and higher-density developments.

Tulsa In September 2003, the Metropolitan Tulsa Transit Authority undertook a study to identify opportunities for the Tulsa transit system to be more responsive to existing transportation patterns to increase ridership, improve cost efficiency, and improve ridership productivity. As the project commenced, it was expanded to include a longer-range element of improved transit service in the Tulsa region and to add a regional service element to the program.

A second study, initiated by the Metropolitan Tulsa Transit Authority in October 2006, evaluated the feasibility of mass transit between Broken Arrow and Tulsa. Specifically,

the study considered commuter rail, BRT, and HOV dedicated bus lanes.

The project team found that both commuter rail and BRT merited further review and analysis based on both fiscal and technical practicality. The result of the long range planning effort provides an opportunity to reshape development and land use patterns.

Rural Areas

In 2007, 22.3 percent of Oklahoma's population resided in rural areas. Between 2000 and 2007, 39 of Oklahoma's 77 counties lost population. All but five of the counties which lost population were rural counties.[8] Between 2007 and 2035, it is estimated that one county will lose population and 11 counties will experience minimal gains, less than 0.25 percent annual growth. **Table 4-12** presents population and population projections for Oklahoma to 2035.

Recent Growth Trends and Projected Growth Areas

Over the past seventeen years, Oklahoma's population has shifted from rural to urban areas. **Table 4-13** presents a breakdown for the years 1990, 2000 and 2007 and the data clearly shows an urbanizing trend for Oklahoma residents. Of additional note to the 2007 urban figure of 77.7 percent, approximately 20 percent of these numbers lived in micropolitan counties.

Population growth has also been focused in metropolitan areas. While the State's population growth between 2000 and 2007 was 0.7 percent annually, the population in metropolitan counties increased by 0.8 percent annually. In addition to the growth experienced in Tulsa and Oklahoma Counties, the counties adjacent to the Arkansas border and the Texas border have experienced population growth in response to economic development in the two adjacent states.

Travel and Vehicle Data

Table 4-14 and **Table 4-15** present travel characteristics for Oklahoma and the U.S. between 1980 and 2007. Both tables indicate a significant increase in the numbers of vehicles on the road, the number of drivers, highway capacity, and vehicle miles of travel (VMT). Between 1980 and 1990, the VMT in Oklahoma increased by 7.3 percent. The following decade, the VMT increased by 44 percent, and again by 8.2 percent between 2000 and 2007.

Similarly, the percent increase of VMT across the nation was 40.4 percent between 1980 and 1990, 28.1 percent between 1990 and 2000, and 10.3 percent between 2000 and 2007. Between 1980 and 2007, VMT increased by 67.6 percent for Oklahoma and 99.6 percent for the U.S. **Figure 4-9** shows the percent change for VMT for Oklahoma and the United States.

When comparing VMT to the number of licensed drivers, the figures follow the same trends for both Oklahoma and the U.S., although Oklahoma's growth is significantly lower than the nation. Between 1980 and 2007, the number of licensed drivers increased by 16.6 percent in Oklahoma and 41.9 percent in the U.S.

Table 4-12. Population Projection for Rural Counties by ODOT Division

ODOT Division	Rural Counties	Population of Rural Counties					
		2000	2007	2015	2025	2030	20351
Division 1	Adair, Haskell, McIntosh, Okmulgee	91,971	92,887	107,700	119,400	125,000	130,800
Division 2	Atoka, Choctaw, Latimer, La Flore, McCurtain, Marshall, Pushmataha	147,275	149,222	166,200	179,800	186,400	193,400
Division 3	Coal, Garvin, Hughes, Johnston, Lincoln, Okfuskee, Seminole	126,696	124,289	137,700	146,400	150,400	154,400
Division 4	Grant, Kingfisher, Noble	30,481	29,889	33,600	36,000	37,200	38,400
Division 5	Beckham, Blaine, Custer, Dewey, Greer, Harmon, Kiowa, Roger Mills, Tillman, Washita	106,462	104,756	112,300	117,200	119,700	122,200
Division 6	Alfalfa, Beaver, Cimarron, Ellis, Harper, Major, Woods	39,381	36,334	39,000	39,200	39,400	39,600
Division 7	Caddo, Cotton, Grady, Jefferson, Love, Murray	110,552	113,838	121,000	128,600	132,400	136,300
Division 8	Craig, Delaware, Mayes, Nowata, Ottawa, Pawnee	150,771	154,500	176,400	194,700	203,500	212,700

Source: Oklahoma Department of Commerce (2007–2030).

[1]The State of Oklahoma and most local authorities will not develop 2035 population projections until data from the 2010 Census become available. The 2035 projections were estimated by assuming that the projected growth rate for 2025-2030 would continue in 2030-2035.

Table 4-13. Population Statistics for State, Urban and Rural Areas

	Oklahoma	Urban Areas	Rural Areas
1990 Population	3,148,035	2,371,694	776,341
1990 Percent of State Total	100.0 %	75.4 %	24.6 %
2000 Population	3,450,654	2,647,065	803,589
2000 Percent of State Total	100.0 %	76.7 %	23.3 %
2007 Population	3,608,123	2,802,408	805,715
2007 Percent of State Total	100.0 %	77.7 %	22.3 %
1990-2000 Annual Percent Change	0.9 %	1.1 %	0.4 %
2000-2007 Annual Percent Change	0.7 %	0.8 %	~0

Source: Oklahoma Department of Commerce.

Table 4-14. Travel Characteristics for Oklahoma

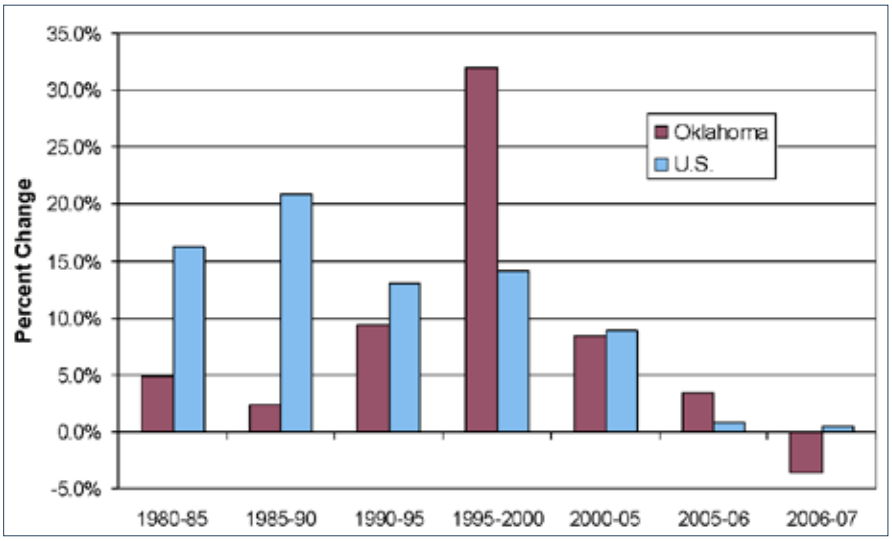
Year	Population	Registered Vehicles	Licensed Drivers	Miles of Road	Annual Vehicle Miles Traveled (in thousands)
1980	3,025,487	2,717,363	2,016,965	108,776	27,331,000
1985	3,271,333	3,067,681	2,187,408	110,407	28,657,000
1990	3,145,585	3,100,908	2,288,997	111,330	29,335,000
1995	3,308,000	3,361,753	2,357,733	112,518	32,070,000
2000	3,450,654	3,587,263	2,320,524	112,634	42,343,000
2005	3,536,000	3,756,014	2,413,559	112,938	45,922,000
2006	3,579,212	3,815,059	2,286,322	113,085	47,510,000
2007	3,608,123	3,786,391	2,351,969	112,922	45,819,700

Source: ODOT HPMS data, Oklahoma Tax Commission, Oklahoma Department of Public Safety.

Table 4-15. Travel Characteristics for the U.S.

Year	Population	Registered Vehicles	Licensed Drivers	Miles of Road	Annual Vehicle Miles Traveled (in thousands)
1980	228,289,000	161,490,159	145,000,000	3,859,837	1,527,295,000
1985	238,948,000	177,133,282	157,000,000	3,863,912	1,774,826,000
1990	248,790,925	193,057,376	167,000,000	3,866,926	2,144,362,000
1995	263,909,000	205,427,212	177,000,000	3,912,344	2,422,823,000
2000	276,059,000	225,821,241	191,000,000	3,951,101	2,764,484,000
2005	296,410,400	247,421,120	201,000,000	4,011,628	3,009,218,000
2006	298,988,100	250,851,833	202,810,438	4,033,011	3,033,753,000
2007	301,621,157	247,264,605	205,741,845	4,048,518	3,049,027,000

Source: U.S. Census Bureau, U.S. DOT, FHWA.



Source: PB, FHWA.

Figure 4-9. VMT Percentage Change, Oklahoma and U.S. from 1980 to 2007

Comparing individual driving characteristics, Oklahoma trends differ from the U.S. During 1980, each licensed driver in Oklahoma accounted for 13.6 VMT, which increased to 19.5 VMT in 2007. For the nation as a whole, licensed drivers accounted for 10.5 VMT in 1980, which increased to 14.8 VMT in 2007.

Similarly, in 1980 Oklahomans owned approximately 1.3 vehicles per licensed driver and there was 0.9 vehicle per person. By 2007, this had increased to 1.6 vehicles per licensed driver and 1.1 vehicles per person. For the nation as a whole in 1980, approximately 1.1 vehicles per licensed driver and 0.7 vehicle per person existed. By 2007, the number of vehicles per licensed driver had risen modestly to 1.2, and the number of vehicles per person decreased to 0.8. Thus, Oklahoma has more vehicles per licensed driver and more per person than the national average.

Accident Characteristics

Between 1980 and 2000, the number of crashes in Oklahoma fluctuated, as did the number of fatal accidents. **Table 4-16** shows this. However, the fatality rate per million miles traveled decreased dramatically from 3.6 to 1.6. Between 2000 and 2006, the total number of accidents decreased steadily but the number of fatalities fluctuated, as did the fatality rate per million miles traveled.

Preliminary data released for 2007 indicate that crash fatalities decreased 1.4 percent between 2006 and 2007. This puts Oklahoma's fatal crash rate at 1.04 per 5,000 persons or 1.38 per 5,000 licensed drivers.

Table 4-16. Crash Data for Oklahoma, 1980 to 2006

Year	Total Crashes	Fatal Crashes	Fatalities per Million VMT
1980	77,660	832	3.6
1985	81,073	661	2.6
1990	71,438	567	2.2
1995	77,712	601	2.1
2000	78,645	586	1.6
2005	75,511	708	1.7
2006	75,408	668	1.6

Source: Oklahoma Highway Safety Office.

Speeding was the highest cause of fatal crashes; Oklahoma County had the highest number of fatal crashes by county, and Oklahoma City had the highest number of fatal crashes by metropolitan area. However, only 28.7 percent of fatal crashes occurred in urban areas.

The Oklahoma Highway Safety Office releases an annual summary of crash data which provides figures for the total number of crashes, crashes by type, persons involved, and location. These reports consistently find that significantly more total crashes occur in the State's urban areas but that more fatal crashes occur in rural areas. For example, 71.3 percent of fatal crashes in 2007 occurred in rural Oklahoma, and 73.2 percent of total crashes in 2005 occurred in urban counties. Another trend being found is that crashes attributed to using a cellular telephone while driving is increasing steadily.

State Commuting Trends

The 2000 Census indicated that 23.8 percent of Oklahoma's employed residents worked in one county and lived in another. In Wagoner County, located southeast of Tulsa, 75.5 percent of workers commuted to other counties for work and 24.5 percent worked in Wagoner County. As such, Wagoner County claimed the highest percent of commuters working in another county and the lowest percent of individuals working in their county of residence.

Oklahoma County received the highest number of workers commuting into the county; most commuters were traveling from Cleveland and Canadian counties. Correspondingly, Cleveland County had the highest number of workers commuting to work in other counties.

The 2000 U.S. Census shows 81.8 percent of Oklahoma workers drove alone to work, 11 percent carpooled, 0.5 percent used public transit, 2.1 percent walked, and 1.7 percent used some other form of transportation to work. The remaining 2.9 percent of workers worked from home.

A report released by the Oklahoma Department of Commerce in 2006 noted that between 1970 and 2000, the number of workers in the State increased 62 percent while the number of commuters crossing county lines to work grew 241 percent. The report indicated that Tulsa's Central Business District (CBD) had a daytime population of 33,590 but only 3,506 permanent residents, and Oklahoma City's CBD had a daytime population of 24,115 but only 3,995 permanent residents. Recent increases in

downtown housing may change this, which the 2010 census will reveal.

Other commuting statistics available from the U.S. Census Bureau's *2007 American Community Survey for Oklahoma* indicate that 92.4 percent of Oklahomans drove to work in a car, truck, or van; 80.5 percent drove alone; and 11.9 percent carpooled. Oklahoma posted relatively low figures for alternative commuting modes, with 0.5 percent having used public transportation, 1.9 percent having walked, and 1.3 percent having used other modes. The remaining 3.9 percent worked at home.

Oklahoma Vehicle Fleet Characteristics

According to the Federal Highway Administration, of the registered private and commercial vehicles in Oklahoma in 2007, 50.1 percent were automobiles and 49.2 percent were trucks. Within the truck category, 50.0 percent were classified as pickups, 12.0 percent were vans, 26.0 percent were sport utility vehicles, and less than one percent was classified as other. Between 1997 and 2007, the total number of registered trucks increased by approximately three percent. Within the truck category, the proportion of pickups decreased by 12.0 percent, the proportion of vans decreased by two percent, and the proportion of sport utility vehicles increased by 12.0 percent.

As a whole, all truck classes have lower fuel efficiency than passenger vehicles. The trend towards purchasing trucks over passenger vehicles, and in particular sport utility vehicles, illustrates the tendency of consumers to give scant consideration to vehicle fuel economy ratings when fuel prices are relatively low. However, with the exponential jump in oil prices through 2007 and 2008, anecdotal evidence points to a sharp decline in the demand for low fuel efficiency vehicles; a significant increase in the demand for smaller, more fuel efficient passenger vehicles; and a marked interest in alternative fuel vehicles.

In 2008, Oklahoma demonstrated its commitment to encouraging consumers to purchase alternative fuel vehicles by passing legislation. It provided a one-time income tax credit for clean-burning fuel motor vehicles placed in service after 1990 and qualified electric motor vehicles (battery electric and hybrids) placed in service after 1995. Additional legislation in 2008 legalized the operation of medium-speed electric vehicles on Oklahoma roads with a posted speed limit of 45 miles per hour or less.

In 2009, the Oklahoma Legislature passed HB 1952. It authorized the Department of Central Services to build alternate fuel stations for state agencies and vehicle fleets of schools and city and county governments. Oklahoma currently has 28 alternative fuel stations.

Chapter 4 Endnotes

[1] Shared MA with Arkansas.

[2] The birth rate used here is the "general fertility rate," which is the total number of live births per every 1,000 women of childbearing age (15 to 44 years).

[3] U.S. Department of Health and Human Services, National Center for Health Statistics

[4] Data are not currently available to show the age distribution trends through 2035.

[5] Oklahoma State University, 2008 Economic Outlook

[6] The Oklahoma poverty level in 2007 was $20,650 for a family of four. The federal poverty level for a family of four in 2007 was approximately $21,300.

[7] See Figure 4-2.

[8] Rural is classified as a county with a population less than 50,000 with no urban cluster. See Figure 4-2.

Chapter 5 Oklahoma Economic Conditions and Freight Transportation

Background Economic Information

Overview of Oklahoma Economy

The Oklahoma economy has evolved significantly over the past two decades. Since the oil price collapse in the mid-1980s and the subsequent economic slowdown, Oklahoma has become less dependent on its natural economic resource bases of energy and agriculture. Although they remain an important part of Oklahoma's economy, other sectors, such as services and manufacturing, have grown in relative importance. As a result, the Oklahoma economy has become more diverse than it was 20 years ago.

In 2008, the Gross State Product (GSP[1]) of Oklahoma was $108 billion, accounting for one percent of U.S. Gross Domestic Product (GDP). Five industries contributed to more than half of the State's GSP. The five largest contributors to Oklahoma's real GSP by rank in 2008 are[2] government (15 percent), manufacturing (13 percent), retail trade (9 percent), real estate (8 percent), and healthcare (7 percent). The State's real GSP increased at a compound annual growth rate (CAGR) of 2.91 percent from 1999 to 2009 as compared to the nation's real GDP growth of 1.83 percent during this period. It should be noted that during the latter half of this time period, 2004 to 2009, Oklahoma's real GSP continues to grow at a faster pace as compared to the U.S., as shown in **Figure 5-1.**

Employment

According to the U.S. Bureau of Labor Statistics (BLS), total non-farm employment in Oklahoma increased over the past decade at a CAGR (2001–2008) of 1.3 percent. Growth of Oklahoma employment has outpaced the nation's, which registered a CAGR of 0.8 percent over the same period. High oil prices and mining sector expansion are partly responsible for the State's higher employment growth, as are the State's expanding service sectors.

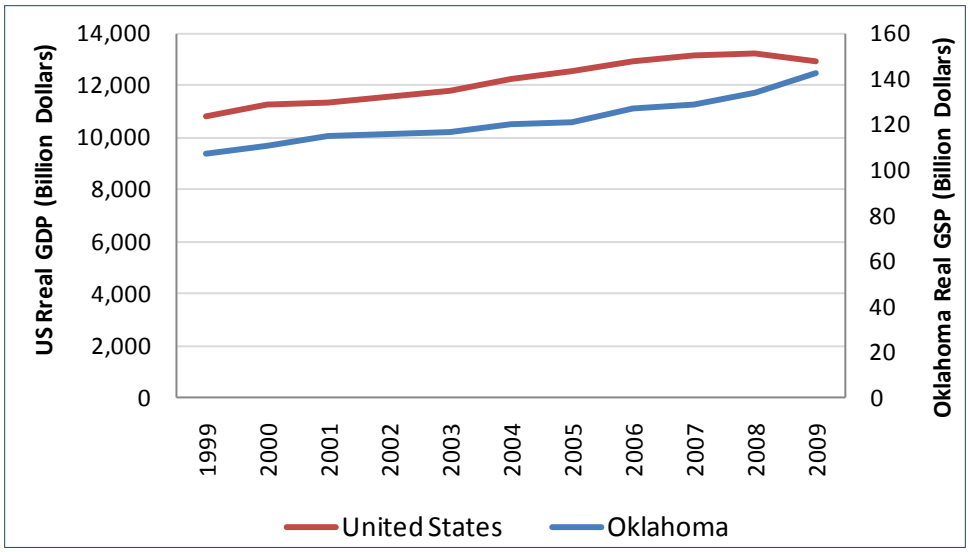
In 2009, a total of 1.7 million persons worked in Oklahoma, and over 95 percent of this group worked non-farm jobs (**Figure 5-2)**. The largest employer is health care and social assistance, while state and local government, manufacturing, professional and business services, and retail trade continue to be a major source of the State's employment. While agriculture is an important contributor to State GSP, the industry is not labor-intensive.

Major Industries

Agriculture Industry

Oklahoma is one of the nation's largest producers of livestock and wheat, generating $5.8 billion in value of agricultural products in 2007.[3] Over the past decade, Oklahoma's agriculture sector has become increasingly diversified. While it has traditionally been dominated by wheat and cattle production, the swine and poultry industries have grown rapidly over the past decade, becoming the nation's second and third largest producers of the respective commodities.

Based on the *2007 National Agricultural Statistics Survey*, there were approximately 86,500 farms in Oklahoma, a slight increase from the 84,000 figure recorded in 1997. Farm acreage has exhibited little change over the period. Despite the relative stability in physical size and number of operations, the industry has been changing in terms of its structure. It has been increasingly shifting ownership from small independent farming to large corporate-based farming.



Source: Bureau of Economic Analysis (BEA) database.

Figure 5-1. Oklahoma Gross State Product and U.S. Gross Domestic Product, 1997 to 2009

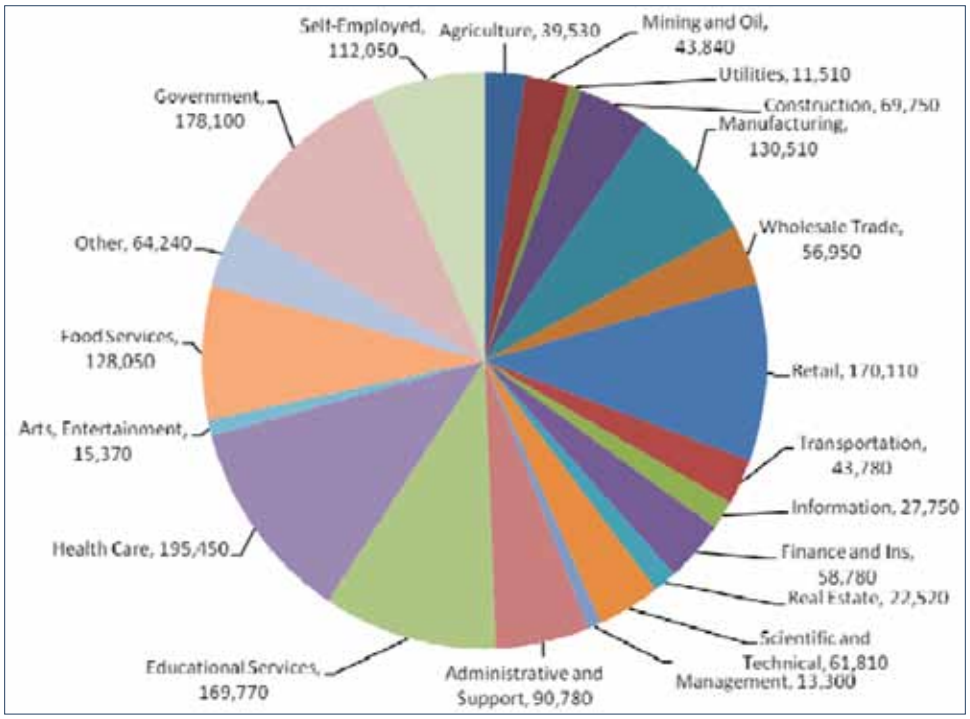


Figure 5-2. 2009 Employment by Industry

Oil and Gas

Since the oil-price collapse in the 1980s, Oklahoma's economy greatly reduced its reliance on the "boom and bust" oil and gas sector through its diversification into aerospace, finance and other industries. Oil and gas mining currently makes up three percent of the State's employment, a much lower share than its 8.7 percent in 1982.

Over the past eight years, the oil and gas sector experienced strong growth as a result of high oil prices. The value of the sector's economic activity increased at an average annual rate of 7.5 percent, employment at 4.1 percent, and the average number of active drilling rigs increased from 129 in 2000 to 200 rigs in 2008. However, this positive trend did not carry through 2009, as falling oil prices (that began in the last quarter of 2008) affected State drilling activity. During the first quarter of 2009, the number of active oil rigs in Oklahoma fell to 150.[4]

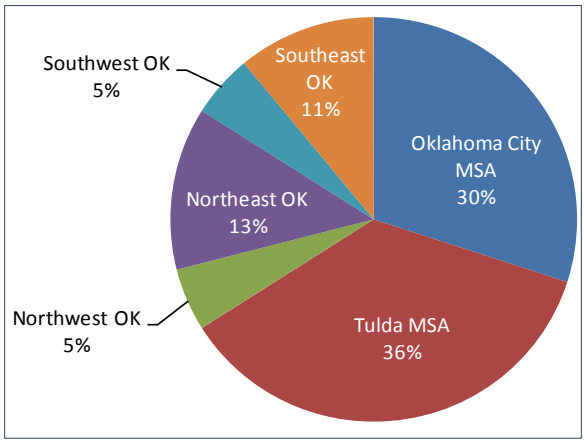
Minerals Mining

In addition to oil and gas, Oklahoma has abundant mineral resources, such as coal, sand, gravel, gypsum, granite, limestone, and salt. Over the past 20 years, the mining industry in Oklahoma has changed. Coal production has significantly declined from the peak production period of the early 1980s, while limestone, sand, and gravel have emerged as dominant commodities within the mining sector. Although not as prominent a sector as in the 1980s, Oklahoma's minerals mining industry (not including oil and gas) is an important contributor to GSP, generating $1.8 billion[5] in 2007.

Manufacturing

In 2007, the manufacturing sector contributed 11 percent, or $15.5 billion to Oklahoma's GSP. The sector is dominated by the manufacturing of energy and aerospace machinery, fabricated metal products, and food processing, particularly that of meat products.

In 2007, 4,444 manufacturing establishments operated in the State.[6] The Oklahoma City and Tulsa MSAs are home to over 65 percent of these establishments (**Figure 5-3**). While machinery and fabricated metal product manufacturing are concentrated in the two major MSAs and the northeastern part of the State, food manufacturing is more concentrated in the agricultural northwestern and southeastern parts.



Source: Oklahoma Economic Development Council (OEDC).

Figure 5-3. Geographical Distribution of Manufacturing Establishments in Oklahoma, 2007

Over the past decade, the real value of economic activity generated from Oklahoma's manufacturing sector increased at a CAGR (1997–2008) of 2.6 percent, slightly outpacing the nation's overall 2.4-percent growth. This growth in economic value was largely bolstered by the expansion of high-value goods manufacturing, such as aerospace and industrial machinery.

Transportation and Warehousing

According to the U.S. Census, 2,630 transportation and warehousing establishments exist in the State, employing over 64,000 people or three percent of Oklahoma's labor force in 2006. Distribution facilities are especially abundant in the Oklahoma City metropolitan area, where the major highways of I-44, I-40 and I-35 intersect, offering connections to the State's major north-south and east-west corridors.

Over the recent years, distribution center development increased in south central Oklahoma, in Garvin and Carter Counties. This growth is largely supported by the rapidly growing U.S. consumer market, to which these counties are proximately located. Within Carter County, the City of Ardmore has become a particularly attractive retail center and warehousing site, as it offers direct access to the Texas market via I-35, Burlington Northern Santa Fe Railroad (BNSF), as well as a 2,900-acre industrial airpark.

Entertainment, Arts, and Recreation

Oklahoma's booming entertainment, arts, and recreation industry has become an important State revenue source. The popularity of Oklahoma's entertainment industry has spurred growth among Native American tribes to develop bigger and more elaborate casinos to capture market share. In 2008, Oklahoma's gaming revenues amounted to $ 2.5 billion, a 22.5 percent increase from the previous year.[7]

This significant jump is primarily attributed to the passage of State legislation that allowed tribes to use Class III games, such as slot machines and card games. The industry's contribution to the State is estimated to be $178 million in 2008.[8]

Military Related

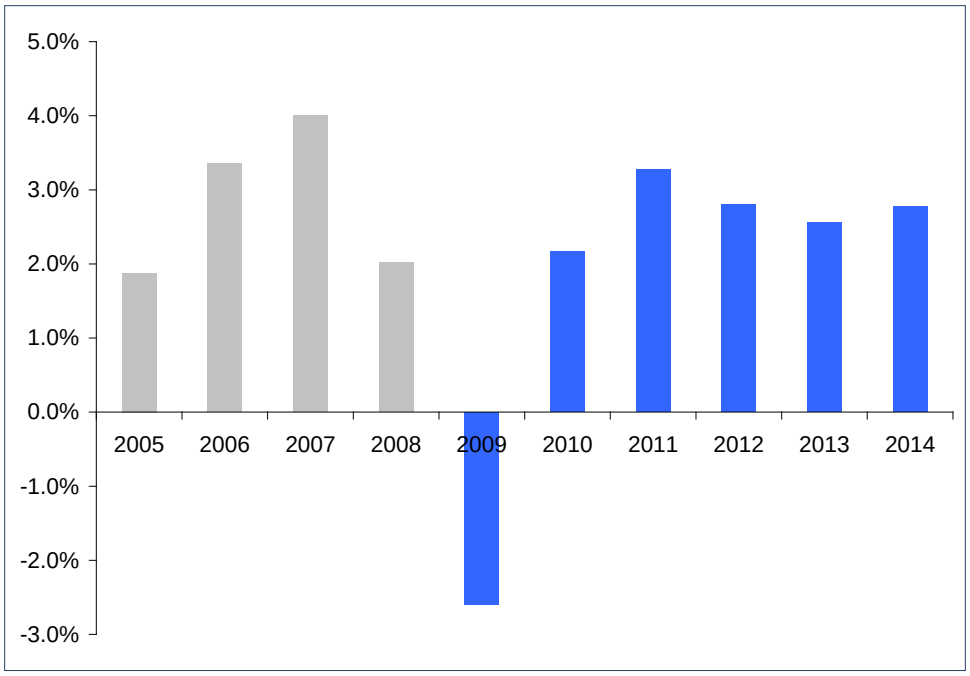
The military is one of the State's largest employers in Oklahoma, providing approximately 38,400 jobs in 2008. The State has three air force bases—Altus in the southwest, Tinker in Oklahoma City, and Vance in Enid—as well as the Fort Sill army post in Lawton.

Economic Forecast, 2008 to 2035

Overview

IHS/Global Insight's Regional Economic Service estimates that the economy of Oklahoma will recede in 2009, decreasing by 2.6 percent before resuming a 2.2-percent growth the following year, as shown in **Figure 5-4.** Overall, Oklahoma's downturn is expected to be less severe than that of the nation because of the relative stability of the State's housing market, which did not experience the same tremendous boom as much of the U.S. in the past decade. The strong military presence in the State also lends a buffer to the local economy, providing relatively stable employment and external monetary resources in the form of federal defense spending.

Over the long run, the Oklahoma economy is estimated to grow at a moderate pace, with real GSP projected to increase at a CAGR of 2.5 percent and employment at 0.9 percent from 2015 to 2038. The local economy will continue its course of diversification away from its dependence on natural resources. The strongest growth, both in terms of contribution to GSP and employment, will be led by expansion of the service sectors, specifically professional and business, healthcare, and finance.



Source: IHS Global Insight Regional Economic Forecast Services, February 2009

Figure 5-4. Oklahoma Gross State Product, 2005 to 2015 (Short-term)

Freight Flows

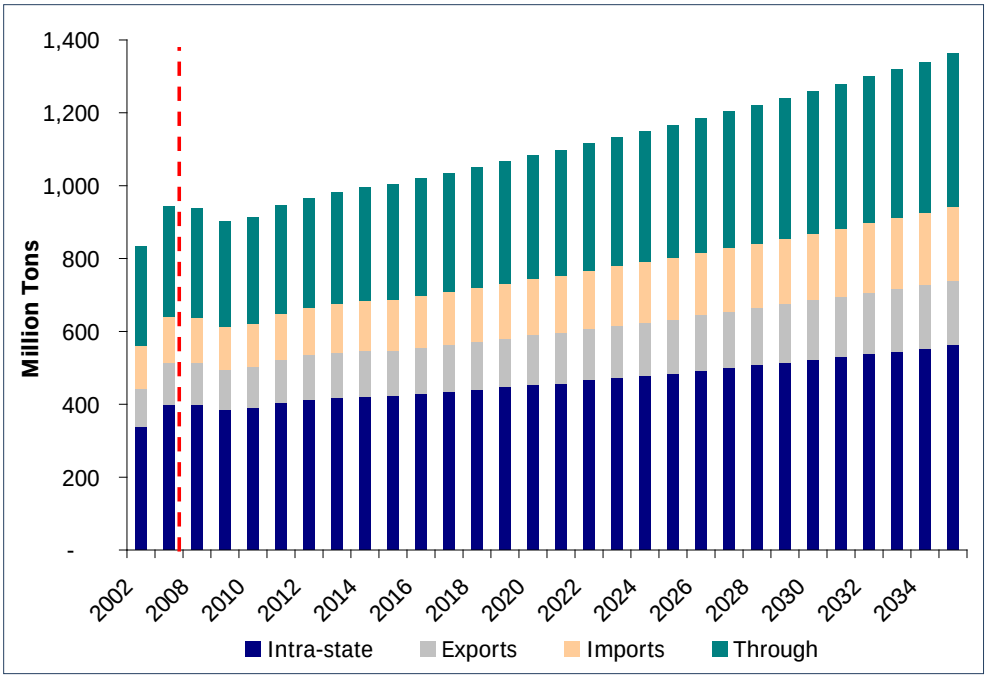
This section converts the economic forecast in the previous section into the current and projected quantities of goods moving into ("imports"), out of ("exports"), and within the State ("intra-state"). The analysis includes coverage of freight flows that neither originate nor terminate in Oklahoma, but use Oklahoma transportation corridors to move goods through the State. All freight flows will be described as movements between the Oklahoma City metropolitan area, Tulsa metropolitan area, and remaining regions of State (defined herein as "Remainder of State"[9]) and a set of 14 origin and destination regions in the U.S. and abroad. These will be specified at the individual commodity and modal level.[10] Establishing a current "as-is" picture of current goods movement flows, as well as a "to-be" picture of future trends, is necessary to understand which intermodal corridors or facilities may need future reconstruction or expansion to maximize the State's long-term economic growth.

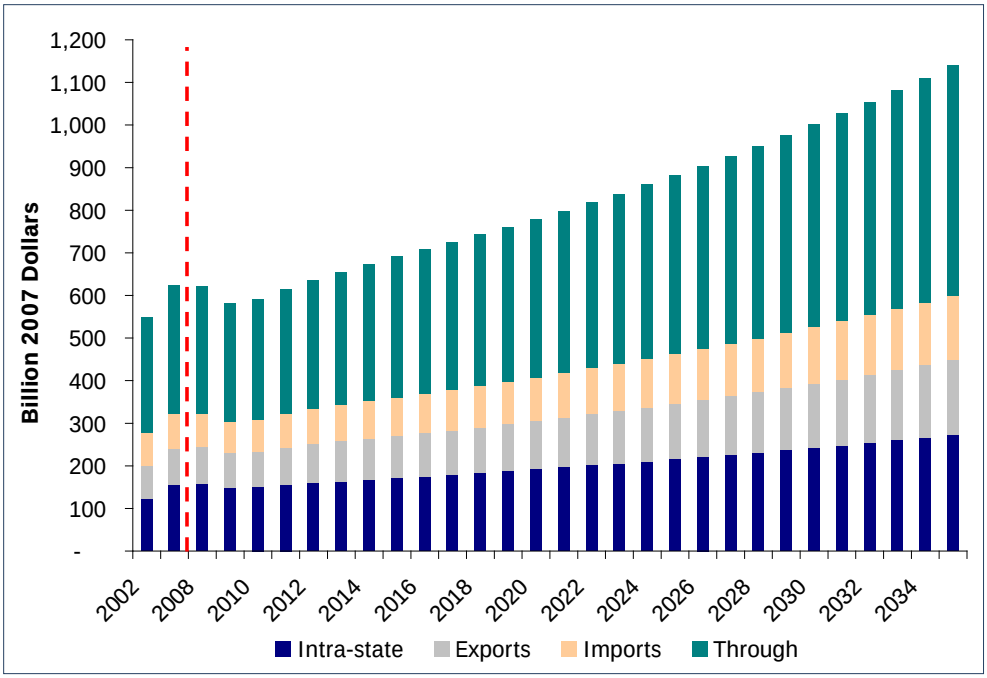
Current and Future Freight Volume

The total quantity of freight flows moving into, out of, within, and through Oklahoma on all transport modes, measured in gross tonnage and 2007 dollars, is shown in **Figure 5-5.** Freight flows totaled 945 million tons in 2007, the last year of available historical data, with a value of $624 billion.

On a tonnage basis, goods that were produced and consumed within Oklahoma, or intra-state flows, comprised 42 percent of all 2007 flows to/from/within/through the State, while exports and imports comprised 12 and 13 percent, respectively (**Table 5-1**).

Total through traffic (i.e., traffic not originating or terminating in Oklahoma) across all modes accounted for roughly one-third of total State flows. Excluding pipeline flows, through traffic accounted for 42 percent of total freight tonnage.





Source: Federal Highway Administration, IHS Global Insight, and PB Analysis.[11]

Figure 5-5. Historical and Projected Freight Flows to/from/within Oklahoma, 2002-2035

Table 5-2 shows the annual growth rates in freight flows expected over the short term (2007–2010), medium term (2010–2020), and long-term horizons (2020–2035), along with the historical growth rate experienced from 2002 to 2007. Over the 2007 to 2010 period, total Oklahoma-specific freight flow tonnage is projected to decline 1.1 percent per year resulting from the current economic downturn and global financial crisis. The Oklahoma economy should rebound beginning in 2010, with several above-average years of growth to compensate for the depth of the current economic downturn. As a result, freight tonnage is expected to increase at a 1.7-percent annual growth rate from 2010 until 2020, slightly higher than the long-term rate of 1.5 percent per year over the 2020 to 2035 period.

Major Destination Regions for Oklahoma Exports

Over 115 million tons of goods were shipped from Oklahoma to states and countries beyond the State's borders in 2007. Annual export tons are projected to increase 34 percent over the forecast period to reach 155 million tons in 2035.

Table 5-2 shows the breakdown of Oklahoma exports by final destination region.[12] Oklahoma's main trading partners are its neighbors Kansas, Texas, and Arkansas, which constituted 72 percent of Oklahoma's export destinations in 2007. Roughly 25 percent of all exports, when measured in tonnage, are destined for Kansas. Together, Houston and Dallas receive approximately 17 percent of all exports, almost as much as the 18 percent that goes to the rest of Texas. Arkansas received 16 percent of Oklahoma's 2007 exports.

Modes of Transportation for Oklahoma Exports

Because the majority of Oklahoma exports are destined for nearby states, trucks (which are most often used for short distance movements within 300 miles) transport the largest volumes of exported goods relative to rail, water, or air. Oklahoma export volumes moving on trucks are expected to increase 2.2 percent per year over the forecast period, nearly doubling from 55 tons in 2007 to 103 tons in 2035.

Other modes are also expected to grow. Pipeline volumes should increase slowly over the forecast horizon, growing from 41 million tons in 2007 to 52 million tons in 2035. Rail movements of freight tonnage are expected to expand at the slowest rate of all transportation modes, increasing 0.5 percent per year. Goods moving via water and air are expected to feature the fastest growth of all export modes, with each mode increasing at a 3.3 and 3.4 percent ,respectively, annual pace. See **Table 5-3** for projected Oklahoma export volumes by mode.

Total Future Freight Flows by Mode

As shown in **Table 5-4** and **Table 5-5,** the majority of goods flowing to/from/within/through Oklahoma move on the State highway network using trucks, with 51 percent of total freight tonnage and 76 percent of freight value moving via truck in 2007. Truck tonnage flows are projected to grow at a 1.7 percent annual pace over the forecast horizon. By 2035, truck flows are expected to account for 57 percent of total goods movement tonnage moving to/from/within/through Oklahoma.

Table 5-1. Total Freight Tonnage by Trade Type, 2007-2035

Trade Type	2007	2010	2020	2035
Intrastate	42.3%	42.7%	41.9%	41.4%
Exports	12.3%	12.3%	12.6%	13.2%
Imports	13.4%	13.2%	14.2%	14.9%
Through	32.1%	31.9%	31.2%	30.5%
TOTAL	100.0%	100.0%	100.0%	100.0%

Source: Federal Highway Administration, IHS Global Insight, and PB Analysis.

Table 5-2. Annual Growth Rates in Freight Tonnage to/from/Within Oklahoma, Selected Periods

Trade Type	2002-2007	2007-2010	2010-2020	2020-2035
Total	2.5%	-1.1%	1.7%	1.5%
Intra-state	3.4%	-0.8%	1.5%	1.4%
Exports	2.0%	-1.1%	2.0%	1.8%
Imports	1.2%	-1.6%	2.5%	1.8%
Through	2.1%	-1.3%	1.5%	1.4%

Source: Federal Highway Administration, IHS Global Insight, and PB Analysis.

Table 5-3. Projected Oklahoma State Exports to Destination Region

Destination Region	2007	2010	2020	2035	Share of Total Exports, 2007	Annual Growth, 2007 to 2035
Kansas	29.5	27.5	33.2	42.0	25%	1.3%
Rest of Texas	21.4	21.2	25.0	31.3	18%	1.4%
Arkansas	18.2	17.8	23.0	31.3	16%	2.0%
Dallas-Ft. Worth, TX	16.2	16.0	20.1	28.3	14%	2.0%
Southwest	6.1	5.7	6.3	7.4	5%	0.7%
Missouri	5.3	5.1	6.5	9.7	5%	2.2%
Southeast	4.4	4.3	5.4	7.3	4%	1.8%
Midwest	3.4	3.2	3.6	4.1	3%	0.7%
Houston, TX	3.2	3.5	3.9	4.5	3%	1.2%
Grain Belt	3.1	2.8	3.5	4.3	3%	1.2%
International	2.0	2.0	2.5	3.4	2%	1.9%
Northeast	1.7	1.6	2.1	2.8	1%	1.7%
Mexico	0.8	0.8	0.9	1.2	1%	1.4%
Pacific Northwest	0.5	0.4	0.5	0.7	0%	1.5%
Total	115.9	112.0	136.6	178.3	100%	1.6%

Source: Federal Highway Administration, IHS Global Insight, and PB Analysis (in million tons).

Table 5-4. Projected Oklahoma State Export Volumes by Mode

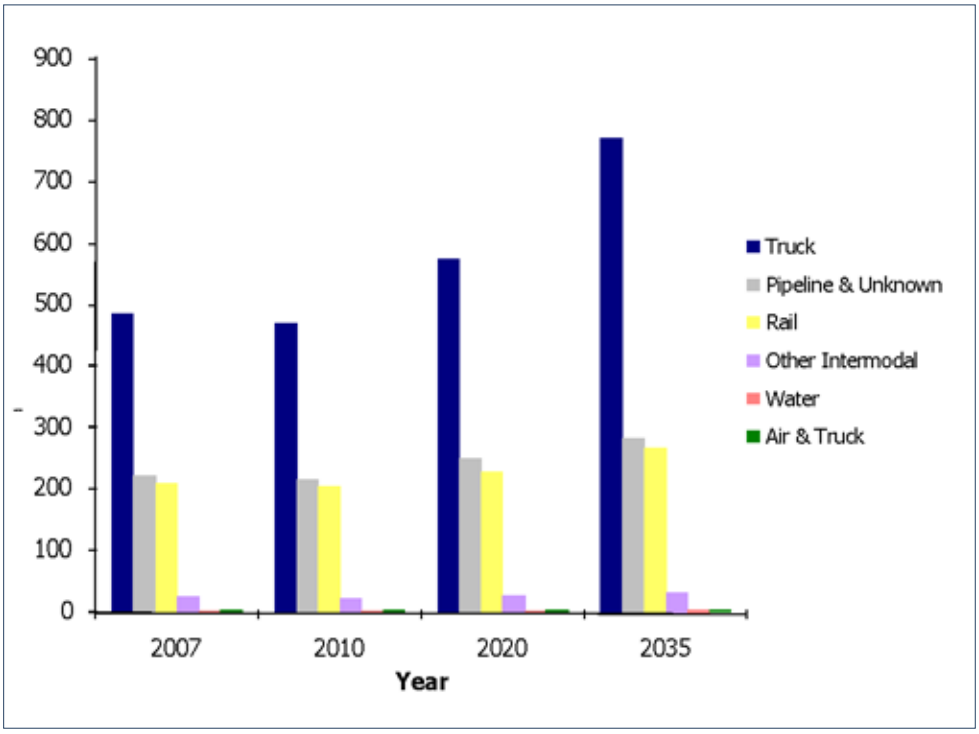
Transportation Mode	2007	2010	2020	2035	Annual Growth, 2007 to 2035
Truck	55.4	54.8	70.4	102.7	2.2%
Pipeline and Unknown	41.0	38.3	45.0	52.0	0.9%
Rail	17.4	16.7	18.6	20.3	0.5%
Truck and Rail	1.6	1.7	1.9	2.1	1.0%
Water	0.4	0.4	0.5	0.9	3.3%
Other Intermodal	0.1	0.1	0.2	0.3	2.1%
Air and Truck	0.02	0.02	0.03	0.05	3.4%
Total	115.9	112.0	136.6	178.3	1.6%

Source: Federal Highway Administration, IHS Global Insight, and PB Analysis (in million tons).

Table 5-5. Projected Freight Flows to/from/within/through Oklahoma by Mode

Transportation Mode	2007	2010	2020	2035	Share of Total, 2007	Annual Growth, 2007 to 2035
Truck	484.5	467.5	573.6	769.5	51%	1.7%
Pipeline and Unknown	220.0	213.5	247.3	280.9	23%	0.9%
Rail	212.1	206.0	230.1	269.1	22%	0.9%
Other Intermodal	26.1	24.1	27.3	32.9	3%	0.8%
Water	1.7	1.7	2.1	2.8	0%	1.7%
Air and Truck	0.11	0.10	0.14	0.23	0%	2.7%
Total	944.5	912.8	1,080.6	1,355.5	100%	1.3%

Source: Federal Highway Administration, IHS Global Insight, and PB Analysis (in million tons).



Source: Federal Highway Administration, IHS Global Insight, and PB Analysis (in million tons).

Figure 5-6. Projected Freight Flows to/from/within/through Oklahoma by Mode

Pipeline and rail are the second and third most important transportation modes from a tonnage perspective. Both modes are expected to grow at a slower pace than freight on the highway and road network.

The rail network is most competitive for long-distance freight flows (such as coal imports from Wyoming). The rail network will likely be unable to gain significant market share from trucks over the forecast period. This is because most of the expected growth in freight flow centers on either shipments within Oklahoma or between neighboring states, and on high-value or time-sensitive products like agricultural products, durable goods or chemical products.

Goods movement flows over water to/from the Port of Catoosa in the Tulsa MSA are expected to grow at a 1.7-percent annual pace from 2007 to 2035. Airborne freight is expected to grow at a 2.7-percent rate per year over the forecast period. Along with trucks, these two modes are expected to grow the fastest of all transportation modes over the forecast period.

Figure 5-6, on the previous page, illustrates that the majority of goods flowing to/from/within/through the State of Oklahoma in 2007 were transported on the highway network using trucks. By 2035, truck flows are expected to account for 57 percent of total goods movement tonnage moving to/from/within/through Oklahoma. Growth of each mode, and in intermodal goods movement, is expected over the next 25 years.

Opportunities for Development

Given Oklahoma's current and trending economy, the characteristics of its freight flows and the current intermodal transportation network, economic growth sectors that are most likely to benefit from strategic intermodal improvements have been identified in this section.

Agricultural Commodity Processing

As noted in previous plan sections, food processing is one of the targeted industry clusters for economic development in Oklahoma. Although many major agribusiness firms are enterprises that also include retail-end activities, such as meat packing and processing, at the time of writing, much of this processing of Oklahoma agricultural output continues to be done outside the State. Should the value-added food processing business grow in Oklahoma, increased value-added/perishable processed foods will necessitate a greater shift toward fast and reliable transport. Increasingly efficient supply chain systems, including efficient truck distribution and air freight transport, may become more important.

Industrial Livestock Production

Oklahoma may need to consider the specific transportation needs of vertically integrated swine and poultry production, which has become a major economic presence in the Panhandle. This may include increased or improved rail freight service in these areas, as well as a more comprehensive supply chain study—where producers of swine and poultry and food manufacturers are surveyed and more detailed information on their existing transportation patterns, perceived transportation needs and identified logistics challenge are obtained. This information would greatly aid in the targeted development of road or rail enhancements for this industry.

Opportunities for a specialized high-volume truck to rail hub facilities for livestock should be investigated. This should include the potential for a direct tie-in with UPPR's routing through

the Panhandle and through the poultry-producing eastern counties.

Aerospace and Electronics Manufacturing

Given Oklahoma's competitive labor costs, proximity to major military logistics centers, and current specialization in aircraft and aerospace equipment, military communication systems, and various electronic appliances and components production, continued growth in this sector is likely to occur. This growth will supply local demand from the State's military industry. Reliable airports and highway networks will be necessary to solidify Oklahoma's competitiveness as a national supplier.

Alternative Energy

With the State tax incentives offered to alternative energy development, this alternative energy sector is well-poised to expand over the next few decades. As wind energy farms are most likely to be concentrated in the northern and western parts of the State, away from the inland waterway system, transport of oversized and overweight loads via truck becomes an increasingly more important need to be addressed.

Retail, Warehousing, and Distribution

Warehousing and distribution activities in the southern counties along I-35 have increased significantly over the recent years because of the robust growth of the Texas market. The Ardmore and Durant areas have been highly successful at attracting some retail distribution centers, such as Dollar Tree, Wal-Mart distribution, and Big Lots, though most large retailers still locate near large consumer markets, such as Texas.

Oklahoma's advantage lies in its central location. Oklahoma will benefit from close coordination of its transportation plans with those of bordering states, so that volumes of north-south truck and rail freight can be consistently accommodated. Improved east-west highway links, including enhanced highway capacity for trucks between these distribution centers and Oklahoma's sub-regional economies, are crucial to the increasing viability of this retailing, warehousing, and distribution sector.

Entertainment, Arts, and Recreation

The Oklahoma entertainment, arts, and recreation industry has been expanding rapidly over recent years, gaining tremendous market share in the Southern U.S. Most notably, the casinos located close to the Texas border have tremendous potential to become regional destinations, as gaming remains illegal in Texas.

Conclusion

Long-term economic growth in Oklahoma is projected to average 2.5 percent per year, lower than in past decades. This projection is in line with national trends. These suggest that the U.S. economy will expand at a slower pace in the future relative to recent decades, as the economy reflects the effects of high trade and budget deficits. Oklahoma's future economic growth is expected to be led by service industries, such as professional services, healthcare, and finance.

Because of the moderation in GDP growth and diversification from heavy industries, such as oil and gas, mining, and agriculture, freight tonnage on the Oklahoma transportation network is expected to increase at a slower pace than that seen over the 2002 to 2007 period. Freight tonnage to/from/within/through the State on all transportation modes is projected to increase at a 1.3-percent annual rate over the 2007 to 2035 forecast period.

The largest increases in goods movement are expected to occur on the highway, airport, and water networks. Highway freight tonnage is expected to increase its share of total freight tonnage from 51 percent in 2007 to 57 percent in 2035, driven mainly by strong growth in imports and exports. The State's growth in exports is expected to be concentrated in agricultural products, durable goods, and live animals. Freight tonnage is also expected to grow fastest in areas of the State outside of the Oklahoma City and Tulsa MAs, as defined in the FHWA's FAF database.

Annual truck traffic on I-35, I-40, and I-44 is projected to grow at a 1.6-percent annual pace over the 2007 to 2035 forecast period. By 2035, roughly 13,000 and 14,500 trucks are expected to use I-35 and I-40, respectively, on average each day throughout the State; and 8,500 trucks are expected to use I-44. This compares with roughly 8,500, 9,500 and 5,300 vehicles in 2007.

Rail demand is expected to grow at a 0.9 percent annual rate from 2007 to 2035, with the largest growth occurring on the Class I network in the center of the State, passing through the Oklahoma City MSA. Other rail-highway hubs will be needed to serve industrial livestock productions in eastern Oklahoma and the Panhandle.

Goods movement on water is expected to increase at 1.7 percent annually, or 65 percent over the forecast period. Air freight is also expected to grow by 2.7 percent annually, or over double in the next 28 years.

Chapter 5 Endnotes

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

[2] http://www.okcommerce.gov/Data-And-Research/Economic-Data - accessed Nov 23, 2010.

[3] United States Department of Agriculture, National Agricultural Statistics Services 2007 Census

[4] IHS Global Insight Regional Economic Service

[5] National Mining Association, "The Economic Contributions of U.S. Mining in 2007", Feb 2009

[6] Oklahoma Economic Development Council

[7] Casino City Indian Gaming Industry Report, 2008

[8] IHS Global Insight Regional Economic Service

[9] Please note that the Oklahoma City metropolitan area, Tulsa metropolitan area and remainder of state regions in this section of the report are slightly different from the Metropolitan Statistical Area (MSA) definition as defined in the economic section. Please refer to Appendix A for further details.

[10] Historical estimates from 1997, 2002, and 2007 presented throughout this section are based on the FHWA's Freight Analysis Flows (FAF^2) database. Oklahoma state-level production projections by commodity are based on Global Insight industrial production forecasts (updated in January 2009) and PB analysis. Future regional allocations of state production, as well as final destination regions, are based on FAF^2 projections. Modal share forecasts are based on FHWA FAF^2 and PB analysis. For more information regarding forecast methodology, see Appendix A.

[11] The Oklahoma freight flows forecasts were generated using the Federal Highway Administration's Freight Analysis Flows (FAF) database, which provides historical trade flow data and forecasts for a set of 121 U.S. and international regions and 43 commodity groups. Because the FAF forecast was developed in 2005 based on 2002 data, these forecasts were adjusted to reflect current economic conditions. Additional information regarding the methodology used to adjust the FAF forecast is presented in Appendix B.

[12] Destinations are listed in the table as states, subparts of states, state clusters, country or international, according to the following definitions. The Dallas-Ft. Worth and Houston metropolitan areas are defined as their own regions; the "Rest of Texas" region includes all other parts of the state. The Southwest region includes Arizona, California, Colorado, New Mexico, Nevada, and Utah. The Southeast region includes Alabama, Mississippi, Louisiana, Florida, Georgia, Louisville, Kentucky, Tennessee, North Carolina, South Carolina, and Virginia. The Midwest includes Indiana, Illinois, St. Louis, Missouri, the remainder of Kentucky, Detroit, Michigan, Ohio, West Virginia, and Wisconsin. The Northeast region includes Washington, DC, Maryland, Pennsylvania, Delaware, New Jersey, New York, Connecticut, Massachusetts, New Hampshire, Rhode Island, Vermont, and Maine. The Grain Belt includes Minnesota, Iowa, North Dakota, South Dakota, Nebraska, and the remainder of Michigan. The Pacific Northwest includes Wyoming, Montana, Idaho, Oregon, and Washington. International designation includes Canada, Southwest Asia, Northeast Asia, Central and South America, Europe, and the rest of the world. Definitions are based on PB analysis of FHWA FAF data and are used in the remainder of this report.

Chapter 6 Transportation Mode Inventory and Utilization

Introduction

This chapter documents an inventory of transportation modes and current transportation conditions throughout the State. It includes all passenger and freight modes. The data sources for this chapter include ODOT, Federal databases, interviews with modal representatives, and other transportation industry sources.

The transportation mode inventory and utilization focuses on two main sections: (1) person/passenger transportation facilities and (2) freight transportation facilities. This chapter also discusses the Intelligent Transportation System (ITS) in Oklahoma. The person/passenger transportation section focuses on highways and toll facilities, public transit, aviation, bicycle and pedestrian facilities, and ridesharing and telecommuting. Within the freight section, modal discussion includes trucking, freight rail, intermodal connections (truck, rail, ports, etc.), ports and waterways, and air cargo. The ITS section focuses on an inventory and discussion of existing and proposed ITS improvements.

Passenger Transportation Facilities

Oklahoma maintains an extensive transportation network for moving people throughout the State. This section includes an inventory and analysis of the following passenger transportation modes:

- Highways
- Public transportation
- Aviation
- Bicycle and pedestrian
- Ridesharing and telecommuting

Highways

Introduction to the Oklahoma Highway System

Highways and roads are the vital arteries allowing people and goods to move from place to place locally, within the State, and to adjoining states and throughout the nation. Oklahoma's highway system includes major roadways that cover a total of 12,882 miles. The system includes 12,280 miles of non-toll roads owned by the State and maintained by ODOT and 602 miles of toll roads owned and operated by the OTA.

The Oklahoma highway system[1] includes routes designated as interstate, U.S. highways, or state highways as well as interchanges and bridges on these facilities.

Various ways exist to describe the highway network. One highway classification method that takes into account jurisdiction and intensity of use is the federal and state designation system. This is a hierarchical method that includes interstate, U.S. highway, state highway, turnpike, and local city and county designations.

The facilities serving the highest traffic volumes are interstate, U.S. highways, and state highways, while local government roadways support less traffic on smaller facilities. The Federal Highway Administration has identified a subset of this group as the National Highway System (NHS). The NHS consists of major roadways, such as interstates, some U.S. and state highways, strategic arterials (STRAHNET),[2] and intermodal connectors. Oklahoma's turnpikes are also part of the NHS. **Figure 6-1** depicts the NHS throughout Oklahoma.

In addition to the roads and highways under the jurisdiction of the State, approximately another 110,000 miles of public roads exist within the

State. These are the responsibility of local city and county governments.

Existing Oklahoma Highway System Description

Within this system, there are seven interstates, 26 routes designated as U.S. Highways, over 200 state numbered routes (or state highways, eight of which are a part of the NHS), and 10 turnpikes (also part of the NHS).

Interstates

Table 6-1 includes the seven Interstate highways in Oklahoma. Four of the seven Interstates are spurs or connectors to other regional Interstate routes. One of these spur/connector Interstates, I-444, is an unsigned auxiliary route, which offers an alternative from a route of the same number (I-244 in Tulsa).

U.S. Highways

Oklahoma has 26 designated U.S. highway routes. **Table 6-2** presents their beginning and end points, as well as their mileage within Oklahoma.

State Highways

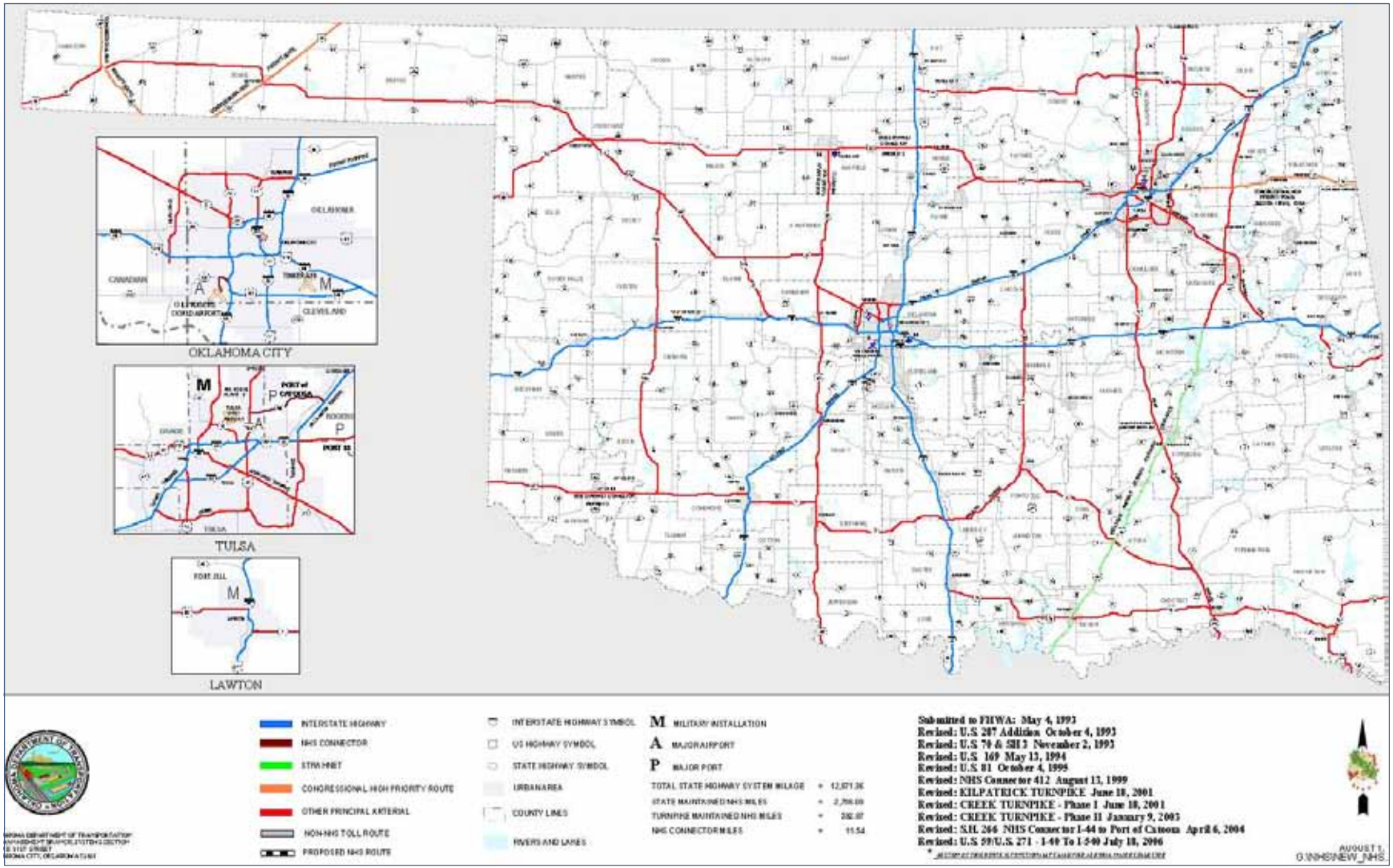
Over 200 state highways fall within Oklahoma. The six state highway routes in Oklahoma listed on the NHS are shown in **Table 6-3.**

Turnpikes

The roadways in **Table 6-4** are designated turnpikes within Oklahoma and are also part of the NHS. The OTA operates and maintains all the State's turnpikes. Each allows for payment by cash or by electronic debit account established by the vehicle owner. Electronic toll users are frequently given separate lanes to travel at high speed through toll plazas. Toll accounts are administered by OTA under the PikePass program.

Existing Oklahoma Highway System Use and Performance

Automobiles are the dominant means of transportation in Oklahoma. Trends and usage of the State's highways and roads can be understood, in part, through looking at VMT.[3] This section discusses the entire Oklahoma highway system and related traffic volumes and performance characteristics by looking at general VMT for the State as a whole and trends on the State's highways over the past few years. **Table 6-5** presents miles of roadway and VMT within Oklahoma between 2003 and 2007. During this four-year period, VMT increased by 0.21 percent,[4] although fluctuations for various intervening years occurred.



Source: ODOT, http://www.okladot.state.ok.us/hqdiv/p-r-div/maps/nhs/2006nhs.pdf, retrieved September 8, 2010.

Figure 6-1. Oklahoma's National Highway System

Table 6-1. Summary of Interstates within Oklahoma

Interstate Highway	Boundaries	Mileage in Oklahoma
I-35	Regional trunk Interstate that connects Laredo, Texas, with Duluth, Minnesota, and runs north-south through the middle of Oklahoma. Within Oklahoma, I-35 connects the cities Thackerville, Ardmore, Pauls Valley, Purcell, Norman, Moore, Oklahoma City, Guthrie, Perry, and Blackwell.	235 miles
I-235	A north-south spur of I-35 that connects I-35 and I-40 in downtown Oklahoma City to I-44 north of downtown. Also called the Centennial Expressway.	5 miles (spur)
I-40	Regional trunk Interstate that connects Barstow, California, with Wilmington, North Carolina, and runs east-west across the middle of Oklahoma. Within Oklahoma, it connects the cities Erick, Sayre, Elk City, Clinton, Weatherford, El Reno, Oklahoma City, Midwest City, Shawnee, Henryetta, and Sallisaw.	331 miles
I-240	A circumferential connector that runs between I-44 and I-40 in Oklahoma City. The entire length of I-240 overlaps a portion of SH-3, the longest state highway in Oklahoma.[5]	16 miles (connector)
I-44	Regional trunk Interstate that connects Wichita Falls, Texas, with St. Louis, Missouri, and runs diagonally northeast-southwest across Oklahoma. I-44 connects the cities of Lawton, Oklahoma City, Tulsa, and a number of smaller communities. The sections of this Interstate within Oklahoma comprise three turnpikes/ tolled segments: the H.E. Bailey Turnpike, the Turner Turnpike, and the Will Rogers Turnpike (these are separately discussed further in the report).	329 miles
I-244	Connects with I-44 to form the northern and western legs of the "Inner Dispersal Loop or IDL" in Tulsa (the loop around Tulsa). This interstate is also known as the Martin Luther King Jr. Memorial Expressway and the Red Fork Expressway.	15 miles (connector)
I-444	An unsigned, auxiliary route of the Interstate System, with both ends joining I-244 in downtown Tulsa. I-444 creates the eastern and southern sections of the IDL.	2.5 miles

Source: ODOT.

Table 6-2. Summary of U.S. Highways in Oklahoma

Highway	Southern/Western Terminus	Northern/Eastern Terminus	Mileage in Oklahoma
US-54	El Paso, TX	Pittsfield, IL	56.1
US-56	Springer, NM	Kansas City, MO	71.0
US-59*	Laredo, TX	Lancaster, MN	218.3
US-60	Brenda, AZ	Virginia Beach, VA	352.8
US-62	El Paso, TX	Niagara Falls, NY	406.0
US-64	Teec Nos Pos, AZ	Whalebone Jct., NC	588.7
US-69	Port Arthur, TX	Albert Lea, MN	263.4
US-70	Globe, AZ	Atlantic, NC	294.6
US-75	Dallas, TX	Noyes, MN	251.4
US-77	Brownsville, TX	Sioux City, IA	268.3
US-81	Fort Worth, TX	Pembina, ND	230.6
US-83*	Brownsville, TX	Westhope, ND	36.5
US-169	Tulsa, OK	Virginia, MN	75.1
US-177*	Madill, OK	South Haven, KS	229.4
US-183	Refugio, TX	Presho, SD	219.8
US-259	Nacogdoches, TX	Page, OK	98.8
US-266*	Henryetta, OK	Warner, OK	43.4
US-270	Liberal, KS	Pine Bluff, AR	477.4
US-271	Tyler, TX	Fort Smith, AR	159.6
US-277*	Carrizo Springs, TX	Newcastle, OK	124.1
US-281	Brownsville, TX	Dunseith, ND	256.6
US-283	Brady, TX	Lexington, NE	203.7
US-287	Port Arthur, TX	Choteau, MT	41.3
US-377	Del Rio, TX	Stroud, OK	140.1
US-385*	Big Bend National Park, TX	Deadwood, SD	36.0
US-412	Springer, NM	Columbia, TN	502.6

Source: ODOT.

*denotes U.S. Highways that are not a part of the NHS.

Table 6-3. State Highways comprising the National Highway System within Oklahoma

State Highway	Boundaries	Mileage in Oklahoma
SH-3	The longest state highway in Oklahoma, traveling diagonally through Oklahoma from the Panhandle to the far southeastern corner of the state. Only certain portions of SH-3 are on the NHS in Oklahoma.	616.5
SH-7	Located in the southern-central portion of the State, running from I-44 in Lawton to US-69/US-75 in Atoka.	150.0
SH-11	Runs across the north-central portion of the State from US-281 north of Alva to I-244/US-412 in Tulsa. Only a small section of SH-11 around Tulsa is on the NHS map.	208.0
SH-15	Two, once-connected, state highways. The western portion is located on the western end of the State starting at the Texas border until it goes through the city of Woodward. The central portion is located between US-64/US-412 and SH-18 north of Pawnee. The highway section connecting the two sections is now US-412.	Western: 47.1 Central: 62.4
SH-266	Designated as an intermodal connector by the NHS and starts at an interchange with US-169 (Tulsa), curves northeast, and ends at I-44.	11.5 miles
SH-412/US-412	Boundaries and route are the same as US-412.	502.6 miles

Source: ODOT.

Table 6-4. Turnpikes Located within Oklahoma

Turnpike	Boundaries	Route Mileage
Cherokee Turnpike	Extends east from US-412 at Locust Grove to US-412 west of West Siloam Springs.	32.8
Chickasaw Turnpike	Extends southward from SH-3 near Ada to SH-7 immediately west of Sulphur.	17.3
Cimarron Turnpike	Extends from I-35 and US-64 east of Enid to Tulsa. There is additionally an 8.5-mile spur which connects to Stillwater and Oklahoma State University.	67.5
Creek Turnpike	Connects the Turner Turnpike to the Will Rogers Turnpike.	33.2
H.E. Bailey Turnpike	Connects Oklahoma City to Randlett just north of the Texas state line.	94.6
Indian Nation Turnpike	Connects Henryetta to US-70 near Hugo.	105.2
John Kilpatrick Turnpike	Extends from the interchange of the Turner Turnpike and I-35 in Oklahoma City to I-40.	25.3
Muskogee Turnpike	Connects Webbers Falls to Tulsa.	53.1
Turner Turnpike	Connects Oklahoma City with Tulsa.	86.0
Will Rogers Turnpike	Extends from Tulsa to the Missouri state line.	88.5

Source: ODOT.

Table 6-5. Travel Characteristics for Oklahoma

Year	Miles of Road	Vehicle Miles Traveled (in thousands)
2003	112,576	45,725,000
2004	112,713	46,443,000
2005	112,938	45,922,000
2006	113,085	47,510,000
2007	112,922	45,819,700

Source: FHWA.

System Condition

Every two years, ODOT publishes a *Needs Study and Sufficiency Rating Report* (Needs Study) that describes the physical and operating condition of the state highway system (SHS). The 2009 Needs Study identifies nearly 3,000 miles of highways (including 79 miles on interstates) and 1,464 bridges that are currently inadequate[6] to handle the demands placed upon them. As noted earlier, there are over 12,000 miles included in the SHS, so this means that roughly one-quarter of the system's roads are not in adequate condition.

The Needs Study also documents that 1,464 bridges (or about 20 percent of the State's 7,600) are inadequate, as a result of being functionally obsolete or structurally deficient. The Department projects capital improvement needs will outpace its expected budget by more than a 2:1 ratio.[7] The Department has been able to make progress in addressing the system's needs as a result of increased State funding from approximately $200 million to $400 million per year between 2000 and 2009.

Traffic Congestion

Level of service (LOS) is a common measure used by the transportation profession to measure traffic congestion. It describes the operating conditions within a traffic stream based on service measures, such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. The measures range from LOS A, the best condition, to LOS F, 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 can occur without affecting traffic flows.
- LOS B implies that free flow speeds are maintained with slight restrictions.
- LOS C provides for free flow speed, but freedom to maneuver within the traffic stream is noticeably restricted. More driver care is required and queues begin to occur.
- At LOS D, speeds begin to decline, driver comfort levels deteriorate, freedom to maneuver is noticeably limited, and minor incidents create queues.
- LOS E describes the condition when the roadway capacity has been reached, volatile operational events occur, maneuverability is extremely limited, and incidents create breakdown in traffic flow.
- LOS F represents complete breakdown in traffic flows with large queues, and the capacity of a facility can be temporarily reduced by the in-flow of traffic.

The Department's goal is to maintain LOS C or D on the SHS.

ODOT analyzed projected future LOS in the development of the 2035 Statewide Transportation Plan to reassess the highways previously identified as necessary to meet future capacity needs. (In the previous *2030 Statewide Transportation Plan,* 17 Transportation Improvement Corridors [solely within the State of Oklahoma] and 4 National High Priority Corridors were described as facilities that would address anticipated future highway traffic volumes.) As a result of this evaluation, the list of Transportation Corridors and High Priority Corridors has been updated to reflect progress in improving the corridors over the past five years and to illustrate remaining improvement needs. This information is contained in Chapter 7.

High Priority Corridors

Beginning with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Federal transportation legislation designated certain highways as High Priority Corridors.[8] These corridors are eligible for special

discretionary funding from the National Corridor Planning and Development (NCPD) program. To receive a high priority designation, the corridor must be on the 160,000-mile NHS and the route designated by Congress. Thus, most High Priority Corridors are part of the interstate, U.S. highway, or SHS. High Priority Corridors are congressionally designated and are of national significance as they are evaluated and improved according to their economic importance to the region and nation.

There are 87 High Priority Corridors across the nation, 4 of which are in Oklahoma. These 4 corridors are essential to economic productivity of people and goods movement. **Figure 6-2** depicts the location of these priority corridors. They include the following:

- US-287 in Cimarron County is nationally known as the Ports-to-Plains Corridor and runs between Texas and Colorado in the Oklahoma panhandle.
- US-54 in Texas County is nationally known as the SPIRIT Corridor and runs between Texas and Kansas in the Oklahoma panhandle.
- I-35 Corridor from Texas to Kansas.
- US-412 East-West Corridor from Tulsa, Oklahoma, to Memphis, Tennessee.

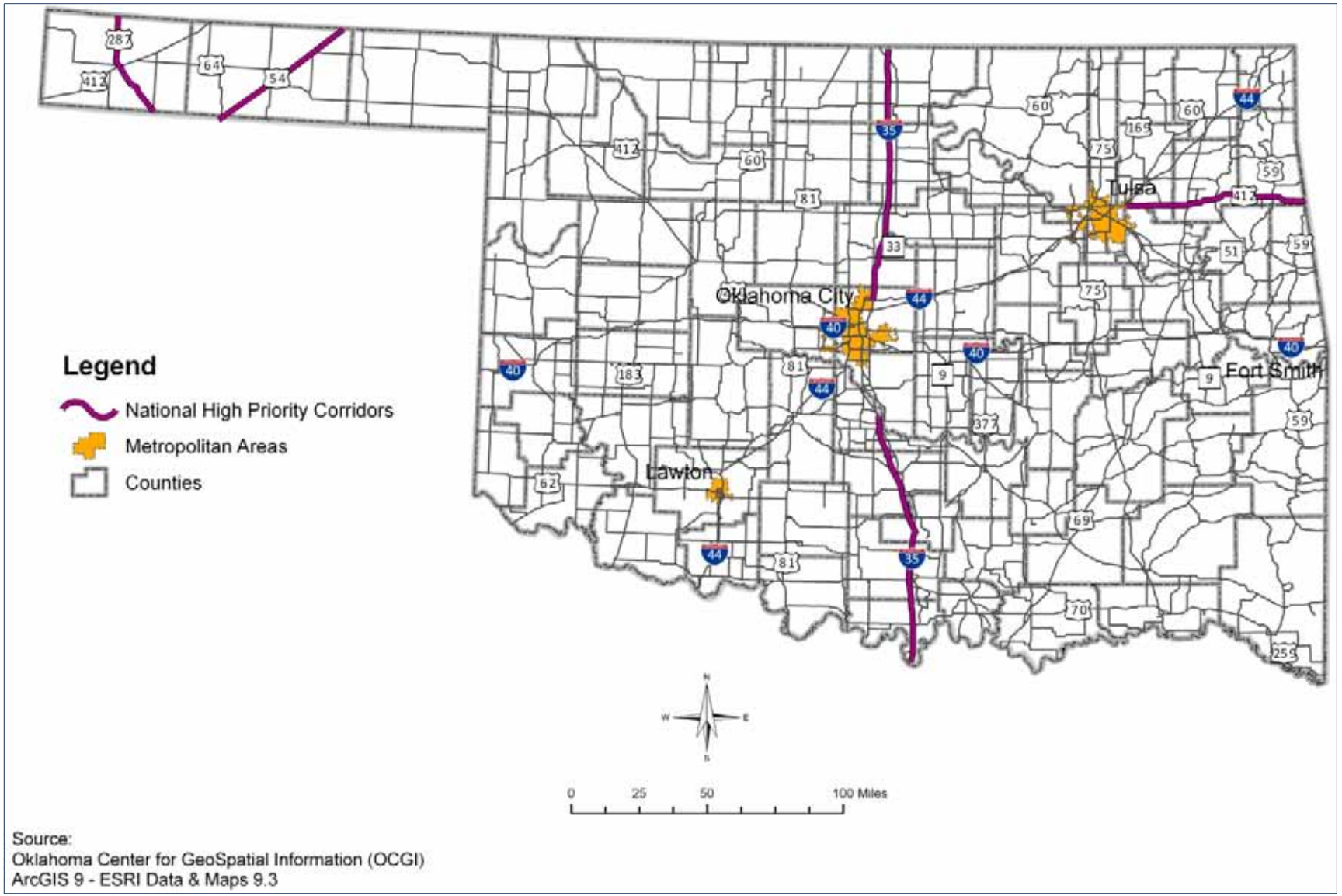
Public Transportation

This section discusses the ridership and service characteristics of Oklahoma's public transit agencies. It summarizes the 4 urban[9] public transportation systems, 19 rural[10] transit systems operating in 67 counties throughout Oklahoma, and various tribal transit operations. The type of public transportation service that each agency provides varies—fixed-route transit, demand response, and paratransit.[11] Some agencies may include one or a combination of these services. A description of these services follows:

- ***Fixed-route transit*** offers services on a fixed schedule, on a specific route (same origin/destination consistently), with vehicles stopping at specific locations along the route. The four urban public transportation agencies in Oklahoma use bus fixed-route services.
- ***Demand response transit*** is a service provided on an as-needed (or demand response) basis, where the user (or agent) calls the transit operator to dispatch and pick up the passenger. Multiple passengers can be picked up for one trip and taken to different destinations. Small buses, vans, or cars may be used to transport passengers. Demand response services are provided by a variety of urban and rural transit agencies throughout Oklahoma.
- ***Paratransit*** is a flexible means of passenger transportation with wheelchair-accessible vehicles that can include demand response, shared-ride taxis, and carpooling or vanpooling.

Urban Public Transportation

Urban public transportation systems serve communities with populations of 50,000 or more.[12] There are four urban public transportation agencies in Oklahoma, including Oklahoma City METRO Transit (OKC METRO Transit), a part of the Central Oklahoma Transportation and Parking Authority;[13] Cleveland (County) Area Rapid Transit (CART) for the Norman area; the Metropolitan Tulsa Transit Authority (Tulsa Transit); and the Lawton Area Transit System (LATS). All four of the transportation agencies offer bus transportation for the general public and specialized services for the elderly and disabled.



Source: Oklahoma Center for GeoSpatial Information (OCGI); ArcGIS 9–ESRI Data & Maps 9.3.

Figure 6-2. National High Priority Corridors in Oklahoma

OKC METRO Transit operates 23 interconnecting routes, including 2 express routes, within a 485-square-mile area of the Oklahoma City metropolitan area. OKC METRO Transit offers three downtown trolley lines (blue, red, and orange), Metrolift (special services for the elderly and persons with disabilities), and a trolley service in Edmond. OKC METRO Transit has 49 fixed-route buses in direct operation and 17 demand response vehicles. Transit services are available weekdays from 5:30 a.m. to 7:00 p.m., Saturdays from 6:00 a.m. to 6:30 p.m., and Sunday trolley service is from 11:00 a.m. to 9:00 p.m. Fixed route buses do not operate on holidays.

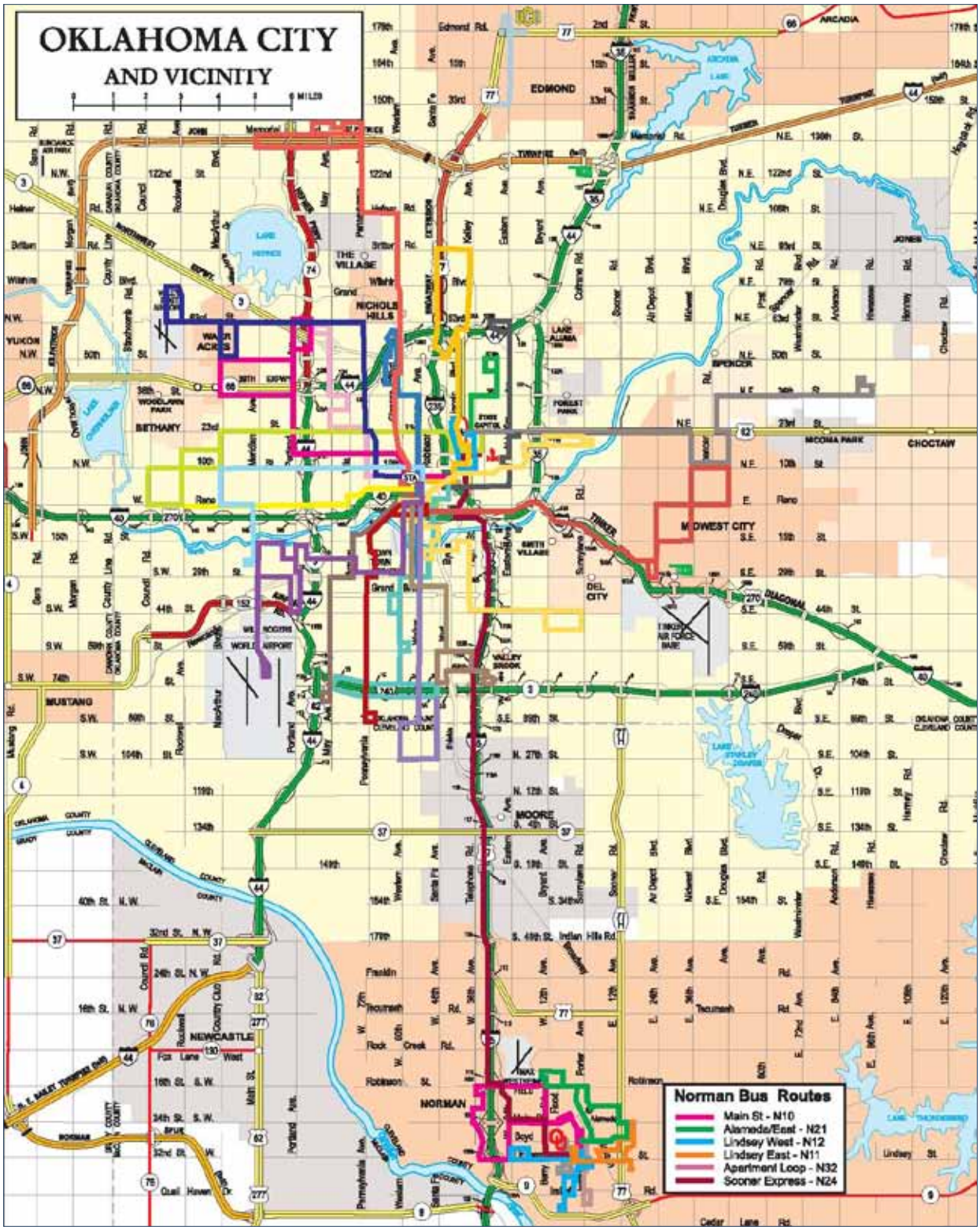
Figure 6-3 shows the Oklahoma City and vicinity's public transportation routes. This includes the routes from CART for Norman. Average daily fixed-route ridership is approximately 9,646 passengers, and average daily demand-response ridership is approximately 153 passengers.

Tulsa Transit is the public transportation provider for the city of Tulsa and outlying areas with a service area of over 261 square miles.[14] Tulsa Transit operates 25 fixed-route bus routes serving Tulsa, Broken Arrow, and areas of Jenks and Sand Springs. There are 62 fixed-route buses, including one 135-foot hybrid bus in circulation. Operational hours are Monday through Friday, 5:00 a.m. to 7:30 p.m., and Saturday from 6:00 a.m. to 7:00 p.m. Tulsa Transit also provides paratransit services for elderly and disabled transit riders. There are 40 mini buses, vans, and sedans to accommodate paratransit passengers. On average, there are approximately 10,000 fixed-route passengers per day and around 900 to 1,000 paratransit riders per day. In spring 2010, Tulsa Transit anticipated coordinating transit services with Pelivan Transit (a rural transit agency in Northeastern Oklahoma). The coordination between Tulsa Transit and Pelivan Transit will address the portion of service overlap in northeast Oklahoma and offer patrons enhanced services through the partnered provider. **Figure 6-4** shows the transit routes within the Tulsa vicinity.

LATS serves over a 42-square-mile service area for the Lawton-Fort Sill community. LATS has five fixed-route transit routes, with counter-routes for each of the five transit routes. Four of the five routes have a clockwise and then a counterclockwise route, and the fifth route has an east and a west route. Fixed-route service runs Monday through Friday from 6:00 a.m. to 7:00 p.m. and Saturday from 9:00 a.m. to 9:00 p.m. There are a total of ten fixed-route vehicles in service. LATS offers two vans and one 15-passenger van for paratransit service for the elderly and disabled. There are approximately 1,150 daily passengers, including 30 paratransit users. **Figure 6-5** shows the transit routes for the Lawton-Fort Sill area.

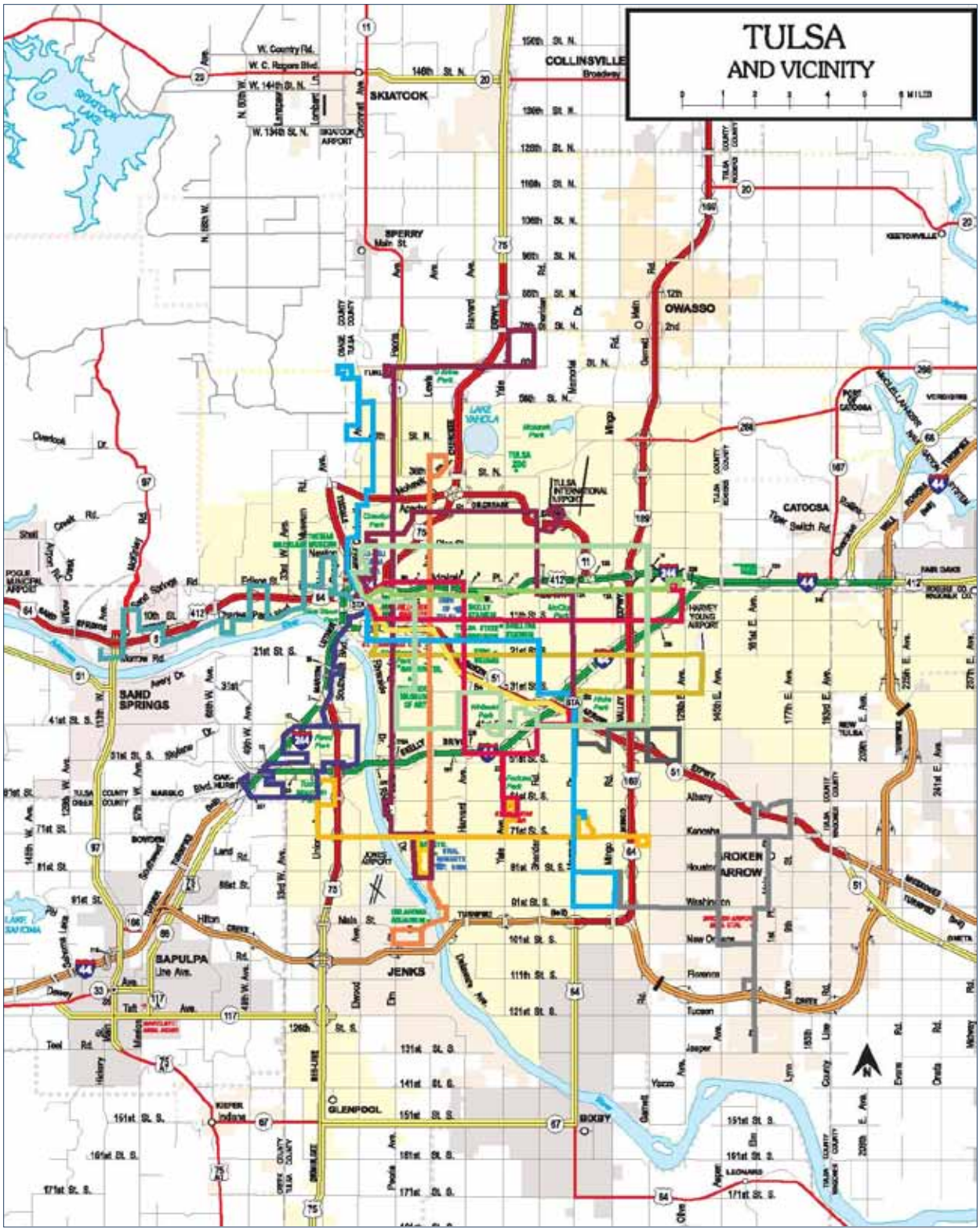
CART operates five city routes and two shuttle routes using buses, replica trolley buses, and paratransit vans. The service area includes the Norman City Limits (192 square miles) and limited service to Lexington, Noble, Moore, and Oklahoma City (via an express route). Metro Lift provides curb-to-curb service for persons with disabilities. CART also provides transit services to the University of Oklahoma Norman campus during the academic year.

CART service runs from Monday through Friday, 7:00 a.m. to 9:30 p.m., and Saturday from 10:00 a.m. to 9:00 p.m. CART operates 28 vehicles and daily transports approximately 126 demand response riders and 4,312 bus riders. Figure 6-3 shows the CART transit area as it connects with OKC METRO.



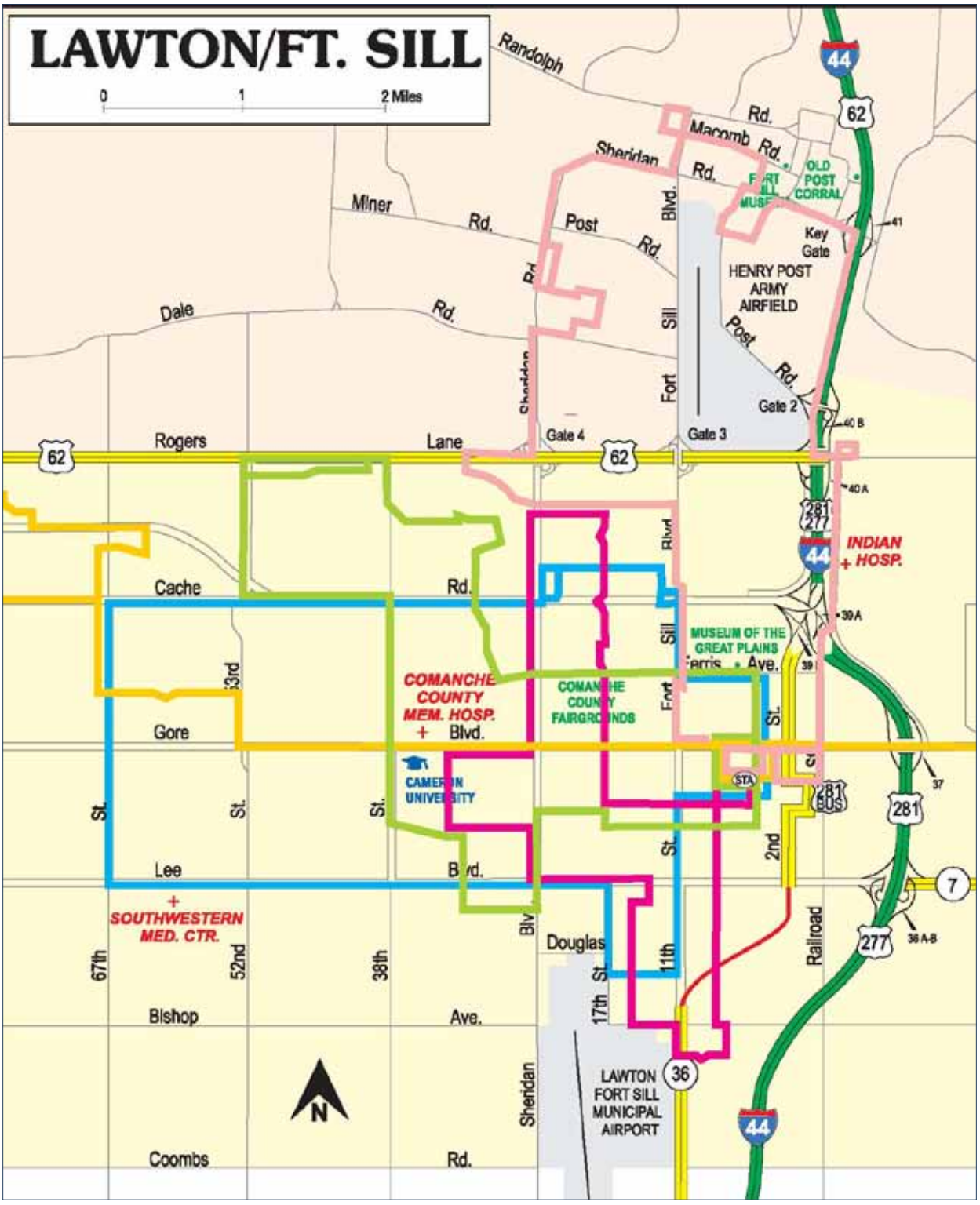
Source: ODOT.

Figure 6-3. Transit Service Area for OKC METRO Transit and CART



Source: ODOT.

Figure 6-4. Services Provided by Tulsa Transit



Source: ODOT.

Figure 6-5. Transit Services in Lawton-Fort Sill

Table 6-6 summarizes service and ridership statistics between 2003 and 2007 for the four discussed urban transit agencies. Data for 2003–2004 do not show information for CART separately from OKC METRO Transit.

Overall, the Oklahoma transit agencies have experienced a 9 percent increase in revenue miles since 2003. This increase is largely attributable to increased revenue miles for Tulsa Transit, with incremental increases from the other three agencies. While passenger miles decreased between 2003 and 2004, they have shown continued growth since then. Between 2003 and 2007, total passenger miles decreased by nearly 10 percent, and passenger trips decreased by nearly 4 percent. These three measurements, combined with information from the service provider agencies stating that services have been cut back since 2003 because of budget constraints, may suggest that fewer trips are being taken.

Table 6-6. Urban Transit Information, Statistics, and Trends[1]

Transit System	Calendar Year	Revenue Miles	Passenger Miles	Total Passenger Trips
OKC METRO Transit and CART	2003	4,449,554	21,417,847	4,121,656
Tulsa Transit		4,242,608	15,969,788	3,047,825
LATS		N/A	N/A	N/A
CART[2]		N/A	N/A	N/A
Subtotal		8,692,162	37,387,635	7,169,481
OKC METRO Transit and CART	2004	4,564,017	14,047,797	3,978,366
Tulsa Transit		3,625,788	16,026,860	3,058,672
LATS		595,540	N/A	225,932
CART[2]		N/A	N/A	N/A
Subtotal		8,785,345	30,074,657	7,262,970
OKC METRO Transit	2005	3,749,854	13,838,138	2,672,509
Tulsa Transit		3,991,352	13,961,309	2,482,071
LATS		586,266	1,428,465	263,686
CART		439,467	2,180,124	964,107
Subtotal		8,766,939	31,408,036	6,382,373
OKC METRO Transit	2006	3,656,363	14,993,773	2,903,844
Tulsa Transit		4,230,443	14,929,794	2,661,245
LATS		589,814	1,681,675	310,200
CART		495,237	2,197,446	968,433
Subtotal		8,971,857	33,802,688	6,843,722
OKC METRO Transit	2007	3,624,663	14,982,611	2,839,806
Tulsa Transit		4,722,540	14,238,301	2,563,571
LATS		596,105	1,903,389	352,337
CART		529,582	2,593,609	1,140,913
Subtotal		9,472,890	33,717,910	6,896,627

Source: National Transit Database, 2009.

[1]According to the National Transit Database, passenger miles are the miles that transit vehicles are scheduled to or actually travel while in revenue service, plus deadhead miles (miles a vehicle travels when out of revenue service). Revenue Miles are the miles that transit vehicles are scheduled to or actually travel while in revenue service. Revenue miles exclude deadhead, operator training, vehicle maintenance, and charter service miles.

[2]CART was not separate from OKC METRO Transit (COTPA) until after 2003. National Transit Database data was not provided until 2005 for CART.

Rural Transportation

ODOT's Transit Programs Division is responsible for administering the Federal Transit Administration's (FTA) Non-urbanized Area Formula Grant Program (Section 5311). The Section 5311 Program is designed to provide financial assistance to eligible local public transportation providers in rural areas and communities with a population of less than 50,000. Eligible local recipients of Section 5311 Program funds include local public agencies, nonprofit organizations, and Native American tribes. Presently, 19 community public transportation providers operate in Oklahoma. Following are brief descriptions of each rural agency. **Figure 6-6** shows rural transit services in Oklahoma.

Beaver City Transit has provided demand response transportation services to communities in Beaver County since 1989. The program serves the towns of Beaver, Balko, Gate/ Knowles, and Turpin, providing transportation for the elderly to nutrition centers and nursing homes and giving rides to children to and from school. The program operates two vehicles, one of which is accessible for the disabled. Service is provided during weekdays from 7:45 a.m. to 4:00 p.m. and during weekends for special events and holidays. This program serves approximately 2,500 citizens in Beaver County.

Call-A-Ride began operating in 1974 as a transportation service for senior citizens in Ada. In 1983 the program opened its service to the disabled and general public and expanded again in 1998 to include all of Pontotoc County. Call-A-Ride prioritizes serving the minority population, adolescents, and low-income families. Discounted fares are available to senior citizens aged 55 or older, persons with disabilities, and East Central University students. Primary service is demand response within Pontotoc County and the system transports users to major bus lines and Amtrak depots in surrounding counties. The program operates 20 vehicles, 15 of which are accessible to the disabled. Service is provided weekdays from 8:00 a.m. to 5:00 p.m. and commuting to work service is provided on weekends and holidays.

The ***Central Oklahoma Transit System*** offers demand response services to those within the city limits of Shawnee. The program operates seven vehicles, all of which are accessible to the disabled, and service is available weekdays and Saturday from 8:00 a.m. to 5:00 p.m.

Cherokee Strip Transit (CST), which began operating in 1995, is a demand response transportation system open to the public. The service area includes the towns of Garber, Covington, Billings, Fairmont, Breckenridge, Perry, Waukomis, Tonkawa, Ponca City, Blackwell, Kingfisher, Watonga, and Hunter. Incidental trips to nearby communities, Oklahoma City, and Tulsa are also provided, as needed. The program operates 31 vehicles, 11 of which are accessible to the disabled. Service is provided Monday through Friday from 8:30 a.m. to 5:00 p.m.

Cimarron Public Transit System (CPTS) has been providing public transportation to communities in Creek, Kay, Pawnee, and Osage counties since 1999. Demand response service is available in Bartlesville, Bristow, Pawhuska, Ponca City, and Sapulpa. The program operates 43 vehicles, 31 of which are accessible to the disabled. Operations are Monday through Friday from 8:00 a.m. to 4:00 p.m. (in some cases 5:00 p.m.).

Source: ODOT.

Figure 6-6. Oklahoma Rural Transit Services

Delta Public Transit operates demand response services and a deviated fixed-route[15] service in Garvin, McClain, and Cleveland counties. Specific towns include Lindsay, Maysville, Pauls Valley, Blanchard, Newcastle, Washington, Dibble, Purcell, Byars, Rosedale, Wayne, and Lexington. The program operates nine vehicles, six of which are accessible to the disabled. Service is provided Monday through Friday from 8:00 a.m. to 5:00 p.m.

Enid Transit began operating in 1984 and provides fixed-route and paratransit services within the cities of Enid and North Enid. The system also offers intercity services to Oklahoma City transit facilities and Tulsa transit facilities, including the major bus station, train station, and airport, which in turn enables patrons to gain access to the greater OKC METRO Transit and Tulsa Transit services. There are 16 buses in operation, and all are accessible to the disabled. Service is provided Monday through Saturday from 6:00 a.m. to 10:00 p.m., with approximately 250 to 325 daily passengers.

First Capital Trolley provides demand response and deviated fixed-route scheduled service in Logan, Lincoln, and Payne Counties, including the city of Guthrie. Daily bus service is also provided to Langston University and Stillwater. The program operates 31 vehicles, most of which are accessible to the disabled. Service is provided Monday through Friday from 6:00 a.m. to 12:00 a.m., Saturday from 6:00 a.m. to 12:00 a.m., and Sunday from 6:00 a.m. to 2:00 p.m. On average, there are approximately 300 daily passengers.

JAMM Transit System provides demand response public transportation services in Johnston, Atoka, Murray, and Marshall Counties. The program operates 42 vehicles, most of which are accessible to the disabled. Service is provided Monday through Friday from 7:00 a.m. to 5:00 p.m., Saturday from 9:00 a.m. to 5:00 p.m., and Sunday on an as-needed basis. On average, there are 100 to 200 daily passengers using JAMM Transit.

The ***KiBois Area Transit System*** was established in 1983 to provide demand response service and was established to help meet the transportation needs of poor communities in Adair, Okmulgee, Cherokee, Haskell, Latimer, LeFlore, McIntosh, Sequoyah, Pittsburg, and Okfuskee counties. KiBois Area Transit routinely modifies its demand response services to meet the specific needs of its ridership. The program operates 156 vehicles, most of which are accessible to the disabled. Service is provided Monday through Friday (varying hours) and for dialysis treatments on Saturday. On average, there are about 560 daily passengers that ride KiBois Area Transit.

Little Dixie Transit began operating demand response transit services in 1983 for McCurtain, Choctaw, and Pushmataha counties and includes the communities of Hugo, Idabel, Antlers, Broken Bow, and Clayton. In 1999, the agency began offering non-emergency medical transportation services to eligible clients of SoonerRide. Two intercity routes to Oklahoma City and Dallas are available with advance reservations. The service to Dallas operates seven days a week and takes riders to Dallas-Fort Worth Airport, Dallas Love Field Airport, or Dallas Amtrak Station. Weekday operation runs from 6:00 a.m. to 6:00 p.m. The program operates 82 vehicles, 21 of which are accessible to the disabled.

Muskogee County Transit began operating in 1986 and serves communities in Muskogee County, including Muskogee, Haskell, Boynton, Taft, Fort Gibson, Warner, Porum, and Webber Falls. The agency operates demand response service, and a flexible-route service.[16] It is

available during the week in Muskogee. The program operates 29 vehicles, 10 of which are accessible to the disabled. Service is available Monday through Friday from 6:00 a.m. to 6:00 p.m. and Saturday from 10:00 a.m. to 6:00 p.m. Muskogee County Transit runs approximately 12,000 trips per month.

Oklahoma State University (OSU)–Stillwater Community Transit System began serving OSU and the city of Stillwater in 2003. The system offers seven fixed-route services: two on campus between student housing and class-rooms and five off-campus routes radiating from a central starting point on campus. Door-to-door paratransit service is also available. The program operates 17 vehicles, all of which are accessible to the disabled, and has an average of 4,000 users per day. Service is available from 6:30 a.m. to 10:30 p.m., Monday through Friday.

Pelivan Transit began operating in 1985 and serves northeastern Oklahoma, including the cities and surrounding areas of Claremore, Rogers County, Grove, Delaware County; Miami, Ottawa County; Owasso, Northern Tulsa County; Pryor, Mayes County; and Vinita, Craig County. Pelivan Transit provides transportation for the general public, tribal members, senior citizens, and disabled individuals. The Pelivan Transit fleet includes 67 vehicles in operation, including 7 leased vehicles from local tribes for tribal transit, and approximately 41 vehicles are accessible to the disabled. There are currently 42 routes in the service area that include city operations, trolley loop, intercity connects, employment routes, and variable distance routes for medical and other rider needs. Services in cities of Grove, Miami, Pryor, Owasso, Vinita, and Claremore run Monday through Saturday from 8:00 a.m. to 4:00 p.m. Services dispatched from Claremore run Monday through Saturday from 8:00 a.m. to 4:30 p.m. On average, there are 400 daily passengers using Pelivan Transit.

Pelivan Transit recently received federal funding through the Tribal Transit Program, Section 5311(c), to support area tribes in northeast Oklahoma that join the Pelivan Transit system. There will be a fully integrated tribal transit system through Pelivan Transit by June 2010. In spring 2010, Pelivan Transit coordinated with Tulsa Transit on services provided in northeast Oklahoma in areas where transit services may overlap. This enables Pelivan Transit patrons to travel between Tulsa and more rural locations within northeastern Oklahoma.

The ***Red River Public Transportation Service*** began operating fixed-route services in 1984 and serves selected cities within the counties of Roger Mills, Beckham, Custer, Washita, Kiowa, Tillman, Cotton, Jefferson, and Stephens. Demand response and contractual services are also available. The program operates 91 vehicles, 38 of which are accessible to the disabled. Service is available Monday through Friday from 8:00 a.m. to 4:00 p.m.

The ***Southern Oklahoma Rural Transportation System*** began operating in 1985. The agency offers demand response transit services in Bryan, Carter, Coal, and Love counties and offers limited demand response services in Johnston, Murray, Marshall, and Garvin Counties. The program operates 44 vehicles, 16 of which are accessible to the disabled. Service is available Monday through Friday from 7:30 a.m. to 4:30 p.m.

Southwest Transit began operating in 1983 and serves Greer, Harmon, and Jackson counties. Demand response service is primarily focused on the cities of Altus, Eldorado, Hollis, Granite, and Mangum. Service between Altus and Lawton is provided three times a week and is

available between Altus and Eldorado five times a week. Services are provided Monday through Friday from 8:00 a.m. to 5:00 p.m. and weekends from 2:00 p.m. to 6:00 p.m. The program operates 19 vehicles, 6 of which are accessible to the disabled.

The Ride was established in the city of Guymon in 1999 to provide demand response transit within the city limits. The program operates eight vehicles, all of which are accessible to the disabled. Service is provided Monday through Friday from 5:00 a.m. to 7:00 p.m. and Saturday from 8:00 a.m. to 6:00 p.m. There are approximately 275 daily passengers using The Ride.

Washita Valley Transit System began operating in 1997 and serves communities in Grady County. The program provides a daily demand response service in Chickasha. Bi-weekly demand response services are alternated between the towns of Rush Springs, Alex, Bradley, and Ninnekah on Monday and Wednesday and Minco, Tuttle, Amber, Pocasset, and Verden on Tuesday and Thursday. The program operates 12 vehicles, 7 of which are accessible to the disabled.

Table 6-7 provides summary data for rural transit ridership over a five-year period. **Table 6-8** provides ridership data for the individual rural transit systems. Overall, rural transit in Oklahoma has experienced growth in revenue miles and passenger miles since 2003. In particular, passenger miles have increased by 65 percent between 2003 and 2008. Since 2003, passenger trips have increased by 56 percent. Between 2006 and 2007, elderly trips, disabled trips, and elderly and disabled trips had a very slight decrease, but overall, rural transit statistics for Oklahoma showed an increase in numbers between 2006 and 2007. Elderly and disabled trips appeared to fluctuate during the five-year period (possibly resulting from changes in eligibility requirements over this time), while the increase in "other" reflects improved service for the general population.

Table 6-7. Rural Transit Information, Statistics, and Trends

Fiscal Year	Revenue Miles	Passenger Miles	All Passenger Trips	Elderly Trips[1]	Disabled Trips[2]	Elderly and Disabled Trips[3]	Other[4]
2003	10,411,000	18,194,621	1,983,854	350,948	236,681	126,323	1,269,902
2004	10,816,238	18,111,865	2,182,222	358,286	266,037	125,782	1,432,117
2005	12,407,985	21,053,792	2,618,931	369,014	276,553	136,824	1,836,540
2006	13,582,154	22,031,773	2,843,067	369,172	267,166	140,714	2,066,015
2007	14,424,574	22,199,032	2,891,260	333,254	264,791	136,085	2,157,130
2008	15,556,263	30,059,708	3,125,884	342,962	278,468	150,673	2,353,781

Source: ODOT.

[1]Elderly Trips are trips for passengers who are 55 or older

[2]Disabled Trips are trips for passengers who are disabled

[3]Elderly and Disabled Trips are trips for passengers who are both elderly and disabled

[4]Other trips are all passenger trips not including elderly, disabled, and elderly and disabled trips

Table 6-8. 2006 Summary of Rural Transit Ridership by Agency

Transit System	Revenue Miles	Passenger Miles	Total Ridership	Elderly Trips[1]	Disabled Trips[2]	Elderly and Disabled Trips[3]	Other[4]
Beaver City Transit	9,899	107,914	32,464	6,774	1,161	N/A	24,529
Call-A-Ride	437,456	598,854	103,653	12,295	20,791	3,744	66,823
Central Oklahoma Transit System	100,947	141,022	20,625	7,026	4,789	3,884	4,926
Cherokee Strip Transit	672,108	600,508	45,664	22,213	1,306	1,753	20,392
Cimarron Public Transit System	684,448	840,031	130,368	20,998	13,464	4,391	91,515
Delta Public Transit	105,921	166,500	49,631	19,255	10,171	2,553	17,652
Enid Transit	347,399	476,470	109,404	17,215	28,979	3,892	59,318
First Capital Trolley	881,521	772,659	73,462	5,539	1,763	4,018	62,142
JAMM Transit System	567,924	1,172,380	111,434	31,055	10,738	4,706	64,935
KiBois Area Transit System	3,615,583	5,455,342	528,724	77,624	45,299	19,604	386,197
Little Dixie Transit	1,676,367	2,353,599	197,747	15,383	21,360	19,806	141,198
Muskogee County Transit	651,930	770,464	107,356	16,490	8,951	16,781	65,134
OSU–Stillwater Transit	N/A[5]	N/A	560,252	N/A	N/A	N/A	N/A
Pelivan Transit	529,045	1,337,030	131,231	57,648	8,842	12,476	52,265
Red River Public Transportation Service	1,503,571	2,479,789	23,780	24,270	26,512	11,346	-38,348
Southern Oklahoma Rural Transportation System	819,586	1,896,570	184,991	24,924	38,400	122,254	-587
Southwest Transit	464,781	643,710	87,589	14,993	4,795	3,152	64,649
The Ride	109,134	156,378	62,844	5,066	10,996	5,059	41,723
Washita Valley Transit System	191,178	350,936	47,603	11,117	9,248	3,155	24,083

Source: ODOT.

[1]Elderly Trips are trips for passengers who are 55 or older

[2]Disabled Trips are trips for passengers who are disabled

[3]Elderly and Disabled Trips are trips for passengers who are both elderly and disabled

[4]Other trips are all passenger trips not including elderly, disabled, and elderly and disabled trips

[5] N/A is stated where data are not available.

In 2006, the OSU–Stillwater Community Transit System provided the highest total ridership while KiBois Area Transit System showed the greatest number of elderly and disabled served and highest number of revenue and passenger miles. Little Dixie Transit had the highest ridership of trips for passengers who were both elderly and disabled.

Tribal Transit

Several tribal transit services since 2006 using funds from the FTA's Tribal Transit Program, Section 5311(c), which helps promote public transportation on Indian reservations. These transit agencies include FasTrans, Cherokee Nation Health Department, Choctaw Nation of Oklahoma, Comanche Nation Transit, Mosque Creek Nation Transit, and Wichita and Affiliated Tribes. The following descriptions of each tribal transit agency may not represent the complete information on supply of services but, at this time, no formal mechanism exists for reporting service use.

FasTrans–Kiowa Transit was established in 1986 by the Kiowa Indian Tribe. The program serves approximately 84,696 residents in sections of Kiowa, Caddo, and Comanche Counties and offers fixed-route and demand response services within the cities Anadarko, Apache, and Carnegie. It also provides transportation between these cities and Lawton. FasTrans serves Meals on Wheels to homebound Kiowa Indian tribe members. The number of vehicles and daily ridership is not available.

Cherokee Nation Health Department operates demand response transit service in 14 counties in northeastern Oklahoma. Transit services are operated Monday through Friday for medical appointments. Daily ridership is estimated to be four to six persons, and service is available Monday through Friday from 8:00 a.m. to 5:00 p.m. The number of vehicles is not available.

Choctaw Nation of Oklahoma operates demand response and deviated fixed-route services for an area of 11,000 square miles in southeastern Oklahoma. This transit service operates nine vehicles Monday through Friday from 8:00 a.m. to 4:30 p.m., with approximately 45 passengers daily.

Comanche Nation Transit uses nine vehicles to provide fixed route and demand response services in rural and partial urbanized cities and towns of Lawton, Apache, Elgin, Cyril, Fletcher, Geronimo, Pumpkin Center, and Cache. This transit service operates Monday through Saturday and provides transportation to approximately 200 passengers daily.

Muscogee (Creek) Nation Transit provides demand response and deviated fixed-route transit services for the area within Creek Nation jurisdictional boundaries, which encompasses 11 counties. This transit service operates nine vehicles Monday through Friday from 5:00 a.m. to 5:00 p.m. Typical trip purposes include meals, medical, education, employment, and shopping. The number of vehicles and daily ridership is not available.

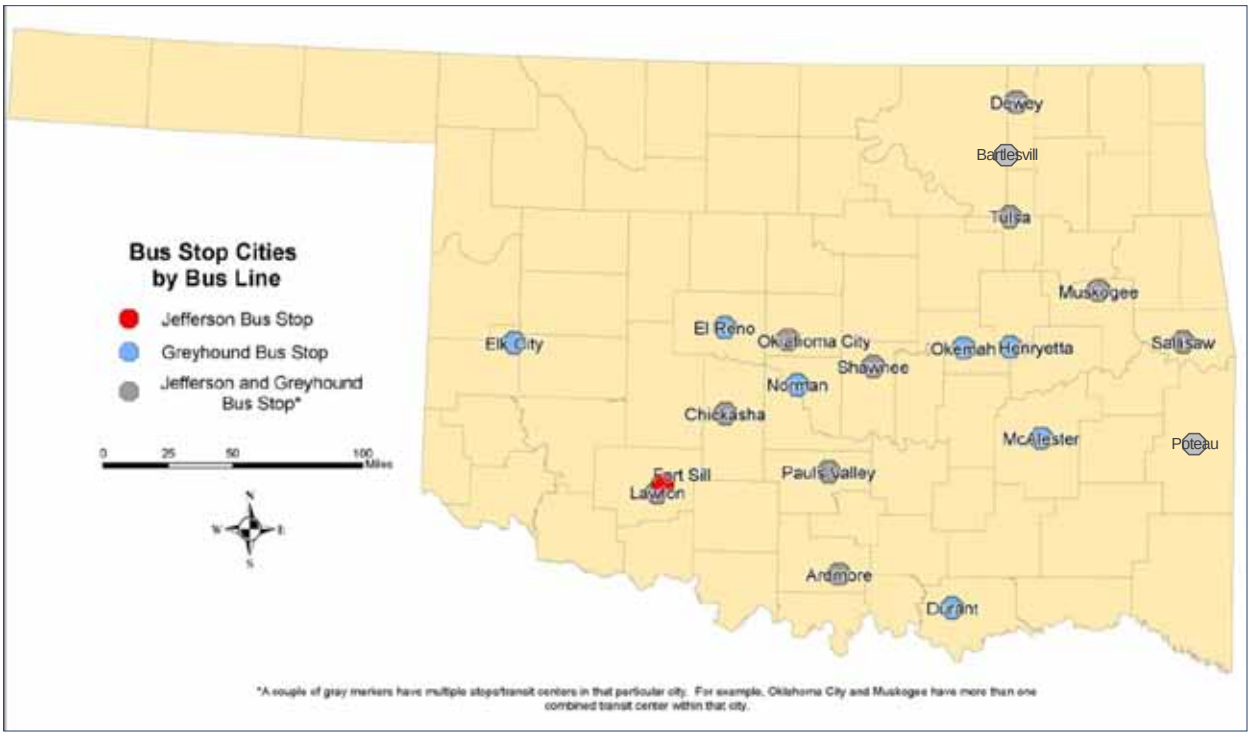
Wichita and Affiliated Tribes provide demand response and fixed-route transit service for all of Caddo County and a small area within the city of Chickasha. Daily ridership is estimated at 10 to 15 passengers for the one vehicle in operation. Service is available Monday through Friday from 11:00 a.m. to 4:00 p.m.

Intercity Transit

Private Bus Company Service

Oklahoma is served by two intercity bus companies—Greyhound Lines and Jefferson Bus Lines. **Figure 6-7** shows bus stops by city for these bus lines. Some bus stops are shared by both providers. A description of the bus companies follows:

Greyhound Lines provides inter- and intrastate travel throughout the United States and Canada. Bus routes serve communities along interstates and major highways. During 2008, the Greyhound fleet traveled approximately 5.8 billion passenger miles and carried almost 25 million people. In 1996, Greyhound entered into an extended cooperative agreement with Amtrak to provide train-to-bus service. Known as “Amtrak Thruway,” Amtrak passengers are able to purchase a Greyhound bus ticket in conjunction with their train ticket to reach cities not served by rail. Greyhound Lines presently serves the following communities in Oklahoma: Ardmore, Bartlesville, Dewey, Chickasha, Durant, El Reno, Elk City, Henryetta, Lawton, Mcalester, Muskogee, Norman, Okemah, Oklahoma City, Pauls Valley, Sallisaw, Shawnee, and Tulsa.



Source: Oklahoma Center for GeoSpatial Information (OCGI); ArcGIS 9–ESRI Data & Maps 9.3.

Figure 6-7. Oklahoma Intercity Bus Stops

Jefferson Bus Lines is a Minneapolis-based company which offers scheduled daily bus service throughout the central portion of the country. The company serves the following Oklahoma communities: Ardmore, Bartlesville, Chickasha, Fort Sill, Henryetta, Lawton, Muskogee, Norman, Okemah, Oklahoma City, Pauls Valley, Poteau, Sallisaw, Shawnee, and Tulsa. Greyhound is Jefferson's agent in Tulsa and Oklahoma City. Jefferson also shares the bus depots with Greyhound in Norman and Ardmore.

Passenger Rail

Amtrak, the national passenger rail company, operates the Heartland Flyer, which is a daily passenger rail service that follows a 206-mile route between Oklahoma City's Santa Fe train station and Fort Worth, Texas. Oklahoma communities served along the way include Norman, Purcell, Pauls Valley, and Ardmore. The train cars are accessible to the disabled. Currently, bicycle racks are not provided. The Amtrak fiscal year *2008 Fact Sheet* noted that ridership aboard Heartland Flyer trains increased nearly 18.5 percent in fiscal year 2008 to 80,892 passengers carried. Table 6-9 shows Heartland Flyer annual ridership for 2002 through 2008.

Table 6-9. Heartland Flyer Ridership, 2002 to 2008

	2002	2003	2004	2005	2006	2007	2008
Total Number of Passengers	52,584	46,592	54,223	66,968	64,078	68,245	80,892

Source: ODOT Rail Program Division, 2009.

Table 6-10 presents annual boarding and alighting data for the five Oklahoma stations served by the Heartland Flyer. Passenger boarding increased in both Oklahoma City and Norman between 2007 and 2008 and decreased in the three smaller communities. The increased activity in Norman and Oklahoma City overshadowed the decreased station activity elsewhere for a net gain in station usage of 16 percent.

Table 6-10 Heartland Flyer Station Activity

City	Boardings and Alightings		
	2007	2008	Percent Change*
Ardmore	9,642	8,607	-10.7%
Norman	11,033	13,414	21.6%
Oklahoma City	43,293	55,015	27.1%
Pauls Valley	6,357	5,942	-6.5%
Purcell	2,801	2,086	-25.5%
Total Station Usage	73,126	85,064	16.3%

Source: Amtrak.
*Totals may not sum to 100 percent due to rounding.

Figure 6-8 shows the Heartland Flyer Route through Oklahoma and into North Texas as it exists today. The Amtrak fiscal year *2008 Fact Sheet* stated that ODOT had requested a feasibility study for establishing passenger rail service between Oklahoma City and Tulsa. The study has not yet been released.[17] Additionally in 2008, the Kansas Department of Transportation (KDOT) requested that Amtrak perform a feasibility study for establishing passenger rail service along all or part of a corridor between Kansas City, Missouri, and Oklahoma City, via several Kansas and Oklahoma communities. Amtrak completed the study in March 2010. The next step involves selecting one or more of the four alternative routes and incorporating the study's data into a Service Development Plan. KDOT has received a $250,000 American Recovery and Reinvestment Act grant to create the Service Development Plan, a comprehensive business and operations plan for implementing expanded rail service. KDOT and ODOT are splitting equally the required local share of $250,000 for further planning work to occur on two of the alternatives.

The Heartland Flyer Route is designated as a part of USDOT's "Vision for High Speed Rail (HSR) in America."[18] There are 11 HSR Corridors nationwide, and the Tulsa to Oklahoma City and Oklahoma City to Fort Worth corridors are a part of the greater South Central Corridor seen in **Figure 6-9** (designated in 2000). HSR Corridors are designated based on ridership, public benefits, and cooperation between states, localities, and freight railroads. Since 2000, the South Central Corridor has been allocated $2.558 million from the FHWA and FRA to improve grade crossings along the corridor.

Aviation

Commercial Aviation

Two major international or world airports lie within Oklahoma—the Will Rogers World Airport and the Tulsa International Airport. Numerous regional, municipal, and private airports exist throughout the state, as shown in **Figure 6-10.**

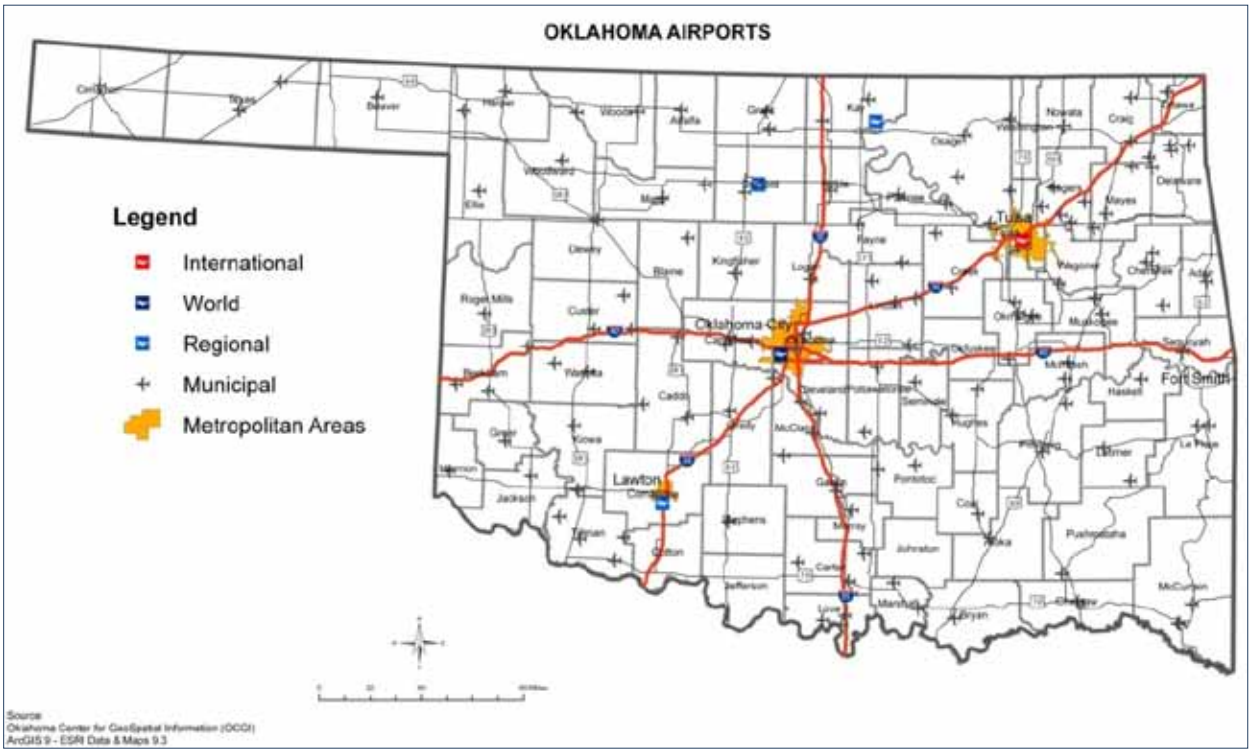
Will Rogers World Airport lies in southwest Oklahoma City and is the State's principal commercial airport. It hosts over 85 daily scheduled departures with non-stop service to 23 U.S. cities. The terminal has 17 gates and, in 2007, over 3.74 million passengers passed through the airport. Airlines currently serving Will Rogers World Airport include American, Continental, Delta, Frontier, Southwest, and United. The airport also supports cargo, general aviation, and Air National Guard services.

Source: ODOT.

Figure 6-8. Heartland Flyer Route

Source: Federal Railroad Administration.

Figure 6-9. High-Speed Rail Corridor: South Central Corridor



Source: Oklahoma Center for GeoSpatial Information (OCGI); ArcGIS 9–ESRI Data & Maps 9.3.

Figure 6-10. Oklahoma Airports

Over the past decade, Will Rogers World Airport has undergone extensive renovations. The original terminal building, constructed during the 1960s, was demolished. It was replaced with a larger, modern terminal with integrated concourses, improved security, and high ceilings. Current and near-future upgrades include constructing a new parking facility to increase parking capacity by 40 percent, constructing a new eight-gate concourse, and expanding retail, restaurant, and baggage areas.

Tulsa International Airport lies in northeast Tulsa. It hosts over 25 daily scheduled departures with non-stop service to 15 US cities. The terminal has 19 gates and in 2007, over three million passengers passed through the airport. Airlines currently serving Tulsa International Airport include American, Continental, Delta, Southwest, and United. The airport also supports cargo, general aviation, and Air National Guard services. The Tulsa International Airport is the global maintenance headquarters for American Airlines.

Over the past four years more than $34 million was spent on terminal construction that included new passenger and baggage checkpoint security systems in the center terminal, and new restaurants and retail shops. In January 2009, the Tulsa Airports Improvement Trustees approved the third phase of the passenger terminal expansion and rehabilitation project. Expected to be completed within the next three years, rehabilitation activities include replacing the inbound baggage conveyor system; raising the roof; electrical upgrades; and installing skylights, new sprinkler systems, new heating and air conditioning systems, and new lighting in the east and west concourses. Exterior construction plans include terminal roadway and signage improvements, and expanding the parking garage by 750 spaces.

Regional Airports

The ***Lawton-Fort Sill Regional Airport*** lies south of Lawton in Comanche County. It is served by American Airlines and used for commercial purposes; it also provides for military aviation from nearby Fort Sill and Sheppard Air Force Base. Enplanements at Lawton-Fort Sill Regional Airport were approximately 50,000 in 2007. The US Army reported 59 missions through the airport in 2007 and 46 missions in the first three months of 2008. The US Army also predicts a significant increase in military personnel through the airport as troops are returned and redeployed over the following years. In 2007 a master plan was developed to extend the airport runway by 1,400 feet to accommodate Air Force heavy transport aircraft.

Woodring Regional Airport is located in Enid, approximately 80 miles north of Oklahoma City. Scheduled passenger flights on Great Lakes Airlines to Denver and Liberal were discontinued in 2006 and the airport is now primarily used by military personnel from nearby Vance Air Force Base.

Ponca City Regional Airport lies in Ponca City, approximately 100 miles north of Oklahoma City. Scheduled passenger flights on Great Lakes Airlines to Denver and Dodge City were discontinued in 2006 and the airport is now primarily used for general aviation.

Table 6-11 summarizes airport activity between 2003 and 2008 for the previously described five airports. Overall, total enplanement and deplanement activities at Will Rogers World Airport increased by 14 percent between 2003 and 2008, although there was a slight decrease between 2007 and 2008. Deplanement activity at Will Rogers World Airport follows the same trend with an overall increase between 2003 and 2008 of 14.3 percent, and a decrease of 0.6 percent between 2007 and 2008. This slight

decrease may be due to changes in security measures or a change in services provided.

Passenger activity increased at Tulsa International Airport by a 16.2 percent between 2003 and 2008. Enplanements increased by 16.7 percent during this same period. However, while the percentage increase in enplanements remained positive for the years 2003 to 2007, the increase was at a smaller rate each year. Between 2003 and 2004 the increase was 7.2 percent, and by 2007 the annual increase was 0.5 percent over the previous year. Between 2007 and 2008, enplanements at Tulsa International Airport decreased by 1.1 percent.

Passenger enplanements at Lawton-Fort Sill Regional Airport increased by 22.5 percent between 2003 and 2007. This figure also hides a temporary decrease between 2005 and 2006, when enplanements decreased by 2.4 percent. However, both 2004 to 2005, and 2006 to 2007 enplanement activity increases were in the double digits, with 10.3 percent and 10 percent, respectively.

Enplanement activity at Woodring Regional Airport has fluctuated over the past four years. In 2003 to 2004 and 2004 to 2005, enplanements increased by 4.1 percent and 11.9 percent, respectively. The 2005 to 2006 year saw a decrease of 50 percent which was followed by no activity when Great Lakes Airlines suspended its service from the airport. Similarly, enplanement activity at Ponca City Regional Airport has consistently decreased every year to no activity when Great Lakes Airlines suspended passenger service in 2006.

General Aviation

Oklahoma has an extensive network of small airports. In 2008, 97 general aviation airports and 37 other public use airports were registered with the Federal Aviation Administration. While these airports potentially offer opportunities for aviation passenger connectivity in Oklahoma, they are mostly used for private corporate and recreational uses.

Table 6-11. Passenger Volumes for Selected Airports

		Will Rogers World	Tulsa International	Lawton-Fort Sill Regional	Woodring Regional	Ponca City Regional
2003	Enplaned	1,626,994	1,363,682	44,673	1,816	1,743
	Deplaned	1,633,120	1,373,260	38,250	1,080	1,923
2004	Enplaned	1,694,857	1,462,799	46,211	1,891	1,499
	Deplaned	1,685,026	1,432,964	41,046	1,427	1,686
2005	Enplaned	1,785,205	1,563,622	50,968	2,116	863
	Deplaned	1,790,459	*	*	*	*
2006	Enplaned	1,802,486	1,599,853	49,734	1,066	813
	Deplaned	1,810,403	*	*	*	*
2007	Enplaned	1,859,935	1,608,583	54,728	none	none
	Deplaned	1,877,200	1,609,962	*	none	none
2008	Enplaned	1,849,436	1,591,703	*	*	*
	Deplaned	1,866,157	1,589,062	*	*	*

Source: FAA.
*Data unavailable

Military Aviation

Oklahoma is home to a number of military bases. They include Altus Air Force Base in Altus; Kegelman Air Force Auxiliary Field in Cherokee; Vance Air Force Base in Enid; Fort Sill (in Comanche County); Muldrow Army Heliport in Lexington; Tinker Air Force Base in Oklahoma County; Sheppard Air Force Base near Lawton; and the Oklahoma Air National Guard in Oklahoma City and Tulsa.

Most of Oklahoma's commercial and general airports are minimally affected by military aviation activity. Only Lawton-Fort Sill Regional Airport, as described previously, maintains significance usage by military personnel.

Bicycle and Pedestrian

Bicycle and pedestrian facilities throughout Oklahoma consist of multi-use trails, bicycle routes, and sidewalks. Planning and implementation is usually done at the local government level, and/or through an MPO. However, statewide initiatives are important to supporting these efforts.

Statewide Initiatives

Statewide initiatives for bicycle and pedestrian facilities in Oklahoma have been implemented through Transportation Enhancement (TE) funds.[19] TE Funds offer communities the opportunity to expand transportation options including bike and pedestrian facilities. Federal funds under the TE program may be used for a maximum of 80 percent of the eligible project cost, and 20 percent must be provided by the organization or entity applying for the funds. The TE Funds have been used and available since 1993, and have helped fund nearly 200 trail and streetscape projects to facilitate bicycle and pedestrian activities. Since 2000, nearly $24 million of federal TE funds have been allocated for streetscape projects within Oklahoma. Since 2000, over $29 million of federal TE funds have been allocated to the State's trails projects.

Oklahoma Department of Transportation participates in the federally funded reimbursement program, Safe Routes to School (SRTS) that encourages students (kindergarten through 8th grade) and their parents to make biking or walking to school a routine activity instead of driving. Bicycling or walking to school relieves traffic congestion, preserves the air quality around schools, as well as promotes a healthier lifestyle for children. This program is made possible through federal funds at $1 million a year for five federal fiscal years 2005 to 2009. Oklahoma's 2009 to 2011 application cycle is now open for projects to receive funding. Money goes towards providing infrastructure and non-infrastructure-related activities, such as building sidewalks, paths, safer crosswalks, as well as educating the public on SRTS efforts and evaluating these programs' success.

A number of cycling organizations exist within Oklahoma that promote all aspects of bicycling within the state, such as developing bike paths and bike lanes, and educating the public about bicycle safety. They include, but are not limited to, the Oklahoma Earthbike Fellowship, the Oklahoma Bicycle Society, and the Oklahoma Bicycle Coalition.

Local government bicycle and pedestrian facilities

As indicated in the introductory remarks to this section, city and county governments and metropolitan planning organizations are also active in planning and maintaining bicycle and pedestrian facilities. Descriptions of these follow.

Fort Smith Metropolitan area

A regional pedestrian plan for the Fort Smith (AK) BiState MPO Area is not feasible because

of its geography. Major cities in the area are separated from one another by long stretches of undeveloped land, or highway corridors. In turn, these corridors do not have sufficient population or activity to generate the need for pedestrian or bicycle improvements.

The *Fort Smith Trails and Greenways Plan* was completed in 2004. This Plan shows 22 individual corridors that have been identified as potential pedestrian and/or multiuse trails. A total of nearly 88 miles of trails are proposed in the plan with a three-phased implementation schedule. The Plan will be the backbone for the development of other trails plans within the Bi-State MPO Area.

In 1998, the Ft. Smith BiState MPO, with the assistance of the Fort Smith Parks Commission, prepared a Bikeway Plan for the city of Fort Smith. This plan was adopted and became a part of the City's Master Street Plan to correspond with street planning activities that are enforced through the City's Subdivision Regulations. The city of Fort Smith's Bikeway Plan has adopted national bikeway standards and specifications as a part of their Plan.

Lawton metropolitan area

The city of Lawton adopted a Bicycle and Pedestrian Plan in 2008. However, the 2030 is in the process of developing the Lawton Metropolitan Area Bicycle and Pedestrian Plan. At present, the Lawton Metropolitan Area does not have designated walking or bicycle trails; the metropolitan planning organization continues to work with the city of Lawton and other stakeholders on implementation of the bicycle and pedestrian plan.

Oklahoma City metropolitan area

Bicycle and pedestrian transportation is an important part of the *Oklahoma City Area Regional Transportation (OCARTS) Plan.* Bicycle facilities are located in various urban, suburban, and recreational areas across Central Oklahoma. Within the OCARTS area, 17 local government entities have existing bicycle or multi-use trail facilities. In 2009, there were approximately 290 miles of existing and 725 miles of planned bicycle facilities in the OCARTS area.

Sidewalks and pedestrian facilities through the Oklahoma City metropolitan area are typically planned and built as required by municipal code and funded through local revenues or by private developers. However, many communities in the region do not require sidewalks to be constructed as part of the building permit or land development process; therefore pedestrian facilities are somewhat sporadic, hindering pedestrian connectivity within and between local entities.

Tulsa metropolitan area

Bicycle and pedestrian opportunities within the Tulsa Metropolitan Area are primarily through the Tulsa Area Trails System. The system is comprised of over 80 miles of interconnected bicycle and pedestrian trails. The *Tulsa Metropolitan Area Comprehensive Plan–Vision 2000,* which was completed in 1987, recommends a pedestrian pathway system that connects schools, shopping and key activity areas. The plan also recommends improving facilities to encourage walking as the principal travel mode downtown.

In 1999, the Indian Nations Council of Governments (INCOG) completed the *Tulsa Transportation Management Area Trails Master Plan.* This document provides recommendations for improving community access to outdoor resources by building a network of off-road multi-purpose paved trails. The plan identifies 44 corridors throughout the metro area that would comprise a 283-mile network of off-road multipurpose trails and a

207-mile system of on-road bikeways. The bicycle and pedestrian component of *Destination 2030, the Long Range Transportation Plan* for the Tulsa metropolitan area which was completed by INCOG in 2005, revisits the *Trails Master Plan* and calls for it to be implemented in its entirety.

Further information is available through the Oklahoma City, Tulsa, and Lawton MPO Plans or through the local city comprehensive plan and trails plan documents. Chapter One provides contact information for the MPOs.

Ridesharing and Telecommuting

Additional initiatives for commuting are occurring in Oklahoma through programs created by the MPO's, INCOG and ACOG in the Tulsa and Oklahoma City metropolitan areas, respectively. Both have programs to promote ridesharing and other forms of commute solutions. The Fort Smith Arkansas (Bi-State) and Lawton MPOs do not operate rideshare commuting programs.

INCOG has a website called the *Green Traveler* that encourages and facilitates users to choose "green" commuter routes including carpool matching, transit route guides, bike route guides, etc. The *Green Traveler* helps INCOG area residents choose better ways to commute, and provides a calendar tool to log daily carpooling trips, transit trips, bike trips, and walk and run trips to and from places with the use of a free account. The trips logged on the calendar calculate how many gallons of fuel were saved, how much the participant helped reduce air emissions, how much money was saved by choosing an alternative commute, etc. *Green Traveler's* newest feature matches transit routes to a user's location and destination through the *Green Traveler* website.

ACOG is has launched a rideshare program in mid-April 2009 called "Get Around OK". The program offers an online-based software called *GreenRide* that will allow users to enter their commuting preferences, start address, and customize their commute or carpool experience. All personal information is hidden for user protection and safety. This online system matches the users with other registrants to find a carpool with the same commuting pattern. There is an option to match within the user's company if that program is available, but it can also match outside of the employee's firm. Available transit options are also listed, as well as some park-and-ride lots, pedestrian routes, and bike routes. ACOG is currently working with approximately nine major corporations in the OCARTS area to become active stakeholders in this carpooling program.

Oklahoma residents can use one of the leading carpool websites in the nation called *eRideshare.com*, which is not affiliated with a particular city or area within the state. Users post their state, destination city with street, origination city with street, days available, contact and member identification, and any comments about the rideshare request. This site is active and has users in many of Oklahoma's cities including Oklahoma City, Tulsa, Lawton, Stillwater, Ponca City, Muskogee, Moore, Duncan, Durant, Edmond, Broken Arrow, Bartlesville, and a few other locations. Other carpooling/ridesharing websites that are available to Oklahoma carpoolers include *www.carpoolworld.com and www.zimride.com,* which is another free web-based system for users to seek out people in their area to find a carpool.

Freight Transportation Facilities

The trucking industry is the State's predominant mode used for freight movement. Although

trucks are the primary link in the intermodal chain, goods are moved via rail, air, and barge as well. Oklahoma's major freight transportation facilities emphasized in this section include[20] trucking, rail freight, intermodal, ports and waterways, and air cargo.

Freight movement patterns are typically designated as inbound, outbound, through, and intrastate (or within). **Figure 6-11** illustrates these freight movement patterns. Existing freight movements for Oklahoma exhibit the following characteristics:

- In 2007, total freight flows moving inbound, outbound, intrastate, and through Oklahoma totaled 945 million tons.
- In 2007, over 115 million tons of goods were shipped from Oklahoma (*outbound*) to states and countries outside of Oklahoma. Three percent of all tons exported from Oklahoma account for international trade.
- In 2007, over 126 million tons of goods were imported (*inbound*) into Oklahoma from other states and countries. Oklahoma's largest tonnage import volumes originated in the states of Texas (27 percent of total 2007 imports) and Kansas (10 percent).
- The majority of goods (399 million tons) produced within Oklahoma are shipped *intrastate* (or to local destinations within the state) for final consumption or use in other industries.
- Total *through* freight traffic accounted for 304 million tons of total state flows in 2007.

Figure 6-12 shows freight tonnages by mode of transportation (excluding pipeline) for 2010 and projected for 2035.

Trucking

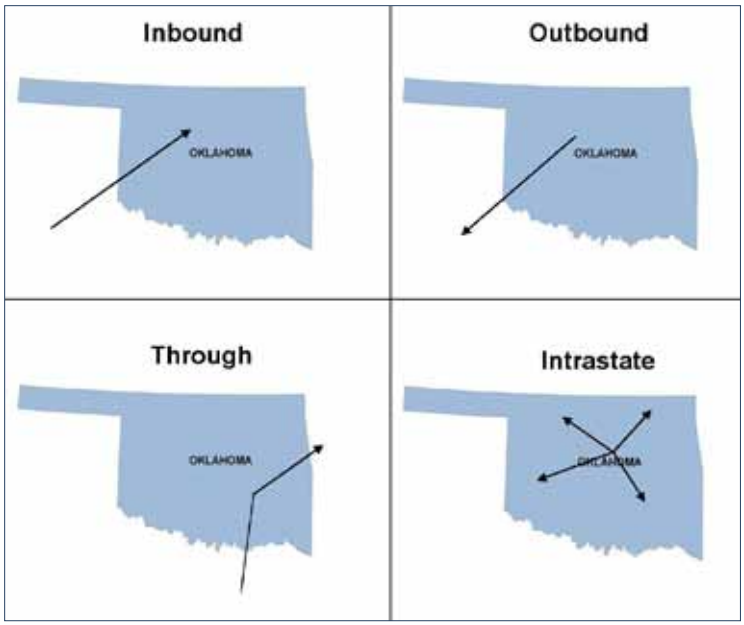
Trucks are the primary mode of transporting freight throughout Oklahoma compared to all other modes, moving 51 percent of total freight tonnage in 2007. In 2007, 55 million tons of freight was exported by trucks, and 43 million tons of freight was imported by trucks.

On a tonnage basis, the highest intrastate freight movement for Oklahoma occurs by truck with over 293 million tons of freight in 2007.

Truck Freight Movement

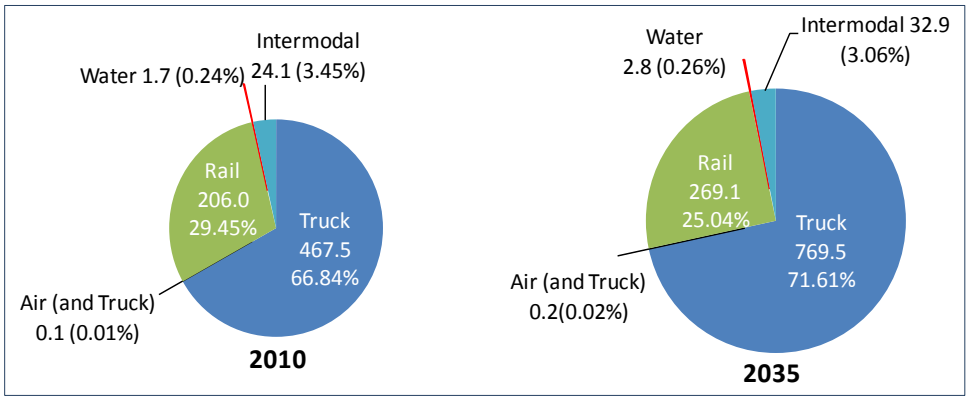
Since 2001, Oklahoma has seen a downward trend in outbound truck traffic as many manufacturers have closed or moved to other states. There are more inbound or intrastate haulers than outbound. **Table 6-12** shows through volumes for truck movements (that represent the high volume transport groups) through Oklahoma, including the origin and destination regions.[21]

Figure 6-13 shows designated Oklahoma highways for conventional commercial vehicles. **Figure 6-14** shows the percentage of average annual daily traffic for trucks in selected corridors.



Source: Oklahoma Center for GeoSpatial Information (OCGI); ArcGIS 9–ESRI Data & Maps 9.3.

Figure 6-11. Freight Movement



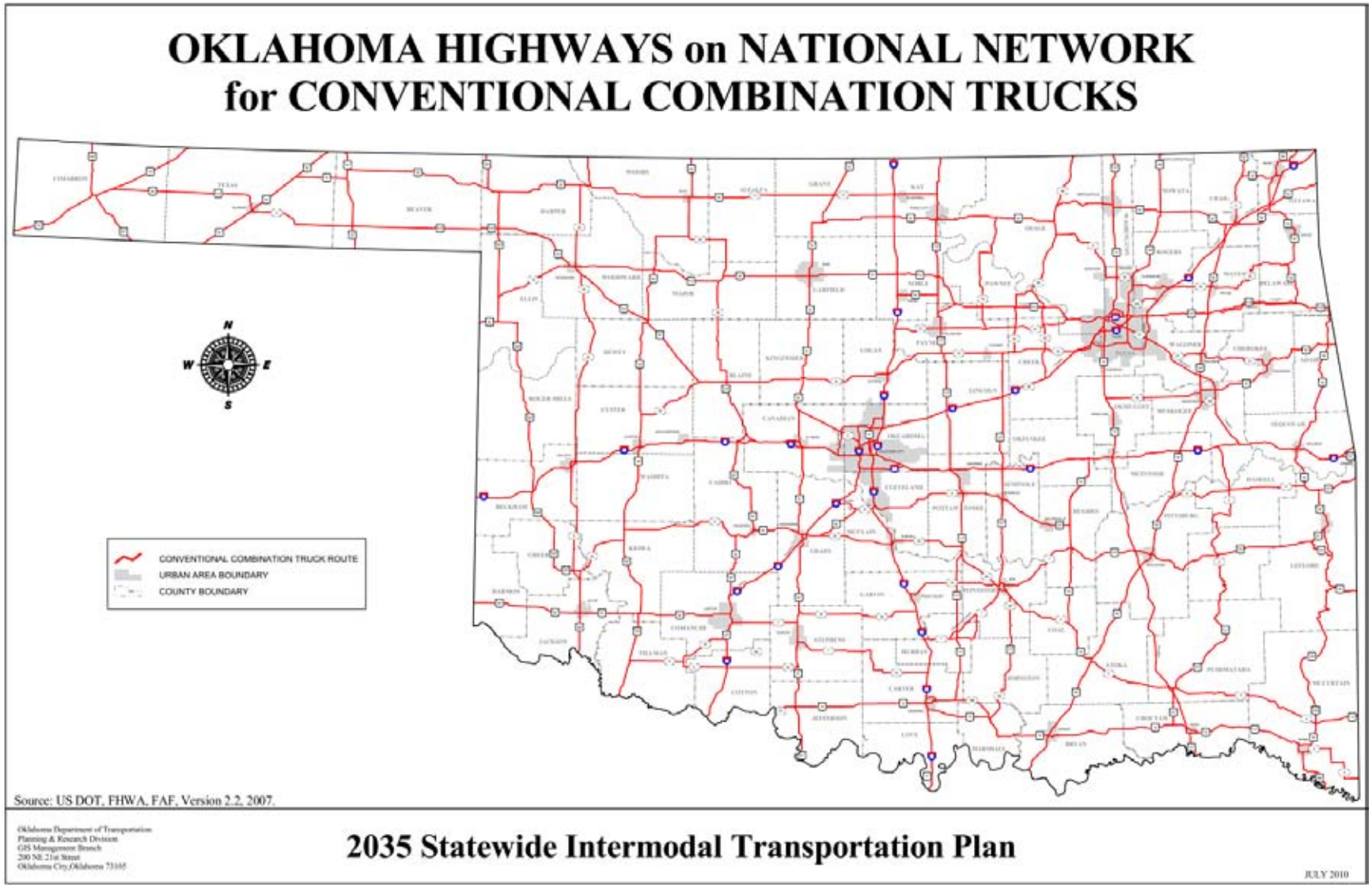
Source: Federal Highway Administration, HIS Global Insight, and PB Analysis.

Figure 6-12. Millions of Tons of Freight Transported in Oklahoma: Product moved to, from, within and through the State

Table 6-12. Top Truck Through Volumes by Origin and Destination Region

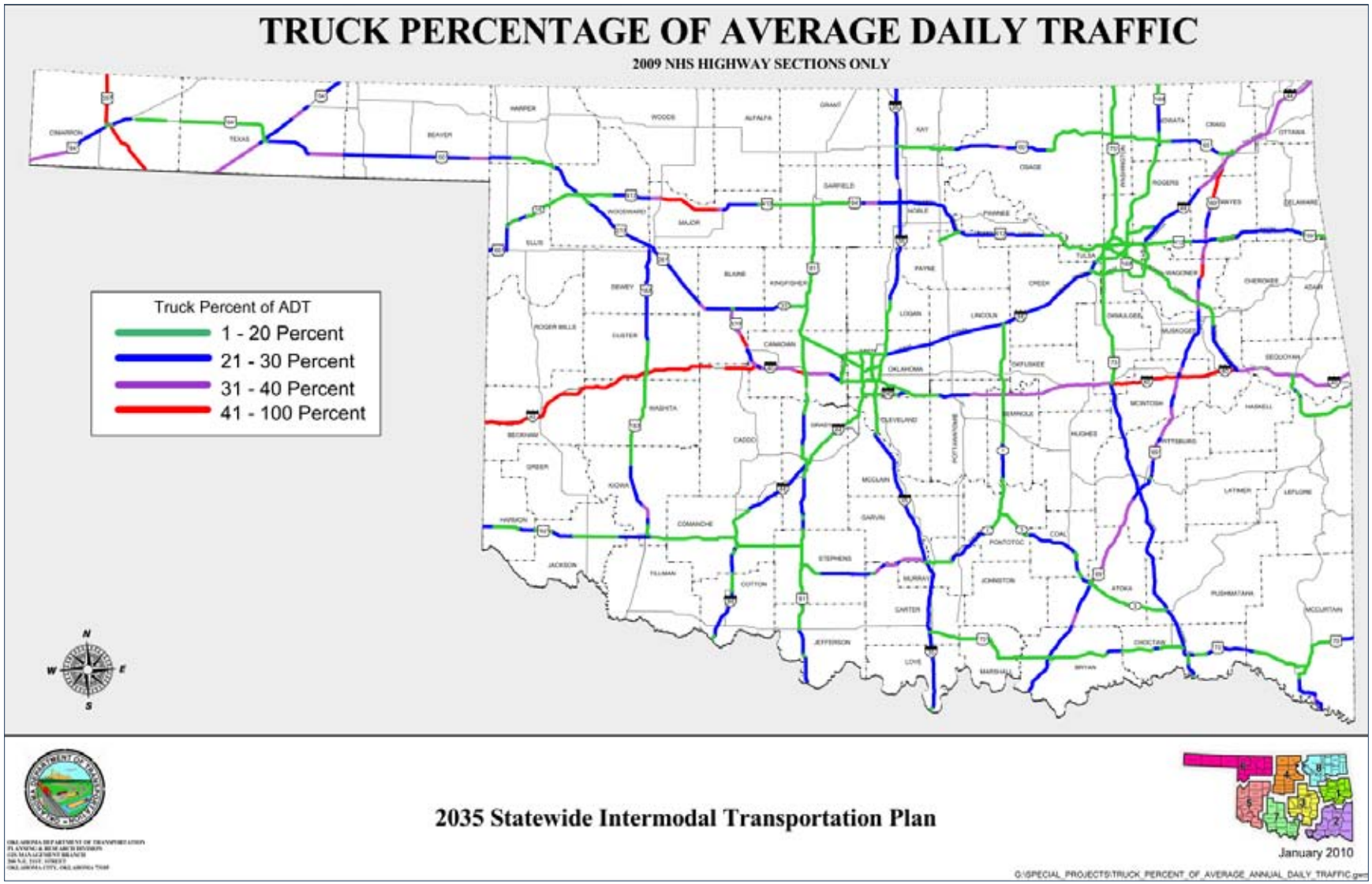
Origin Region	Destination Region	2007
Southeast	Southwest	13.5
Midwest	Southwest	8.7
Northeast	Southwest	6.5
Southwest	Midwest	5.7
Southwest	Northeast	4.8
Southwest	Southeast	4.6
Dallas-Ft. Worth, TX	Kansas	3.4
Kansas	Rest of Texas	2.9
Dallas-Ft. Worth, TX	Southwest	2.4
Rest of Texas	Kansas	2.4
TOTAL		54.9

Source: Federal Highway Administration, IHS Global Insight (million tons).



Source: ODOT.

Figure 6-13. Highways on National Network for Conventional Combination Trucks



Source: ODOT.

Figure 6-14. Truck Average Daily Traffic

Because of the economic downturn, truck traffic and goods movement has slightly decreased. To accommodate any truck movement growth, and to improve the safety and commercial vehicle regulation enforcement, there are current plans for eight new state-of-the-art commercial vehicle inspection stations (also called Ports of Entry) that will be discussed in the ITS Section of this chapter.

Table 6-13 and **Table 6-14** show Oklahoma's originating and terminating commodities shipped by truck for the years 2002 and 2007.

Truck Size and Weight Limitations

Table 6-15 shows the current truck size and weight limitations for Oklahoma. Trucks are regulated by their size and weight for both safety reasons and to help maintain the quality of the highways.[22]

Table 6-13. Statewide Truck Freight Trends: Tonnage Originating by Commodity: 2002 and 2007

Originating	2002	2007
Grains	7,141	10,024
Minerals	6,519	7,344
Agricultural Products	4,487	4,861
Chemicals & Products	3,943	4,201
Nondurable Goods	3,060	3,269
Metals & Products	2,887	3,167
Coal	2,693	3,007
Wood Products	2,664	2,998
Durable Goods	2,466	2,753
Gravel	1,882	3,099
Meat/Seafood	817	864
Live Animals/Fish	598	920
Petroleum Products	478	1,040
Vehicles	231	299
Crude Petroleum	0	4
Unknown/Other	6,835	7,506
Total Originating	46,701	55,356

Source: Federal Highway Administration (thousand tons).

Table 6-14. Statewide Truck Freight Trends: Tonnage Terminating by Commodity: 2002 and 2007

Terminating	2002	2007
Minerals	5,674	6,315
Agricultural Products	5,335	5,622
Grains	5,071	5,456
Metals & Products	3,363	3,573
Nondurable Goods	2,785	2,908
Durable Goods	2,056	2,297
Wood Products	2,041	2,300
Chemicals & Products	1,922	2,156
Gravel	1,564	2,457
Petroleum Products	1,264	1,667
Meat/Seafood	962	993
Vehicles	933	960
Coal	261	476
Live Animals/Fish	141	164
Unknown/Other	4,793	5,255
Total Terminating	38,165	42,599

Source: Federal Highway Administration (thousand tons).

The State specifies varying weights and sizes, depending upon the equipment. Single axle weight should not exceed 20,000 pounds (dual wheel). Two axle tandem should not exceed 34,000 pounds. Five axles should not exceed 80,000 pounds on Federal Highways, and six axles should not exceed 90,000 pounds on State Highways.

Overweight loads are only permitted to move during daylight hours, between one-half hour before sunrise and one-half hour after sunset. These vehicles are not permitted to move on six holidays of the year including New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day.

Table 6-15. Truck Size and Weight Limitations

Dimension	Feet	Inches	Variations/Special Application
Width	8	6	Pins used for safety precaution not to extend beyond overall width of 9 feet, or round baled hay at 11 feet
Height	13	6	
Length	45	0	Single truck or bus
	53	0	Semi-trailer operating in a truck tractor/semitrailer combination
	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 Safety, 2008; Oklahoma Statute Title 47.

As of July 1, 2006, Oklahoma entered into reciprocal contracts and agreements with Colorado, Florida, North Carolina, Utah, Virginia and Washington to require the same standards for truck escorts and pilot cars. All truck escort and pilot car operators must have proof of insurance of "not less than One Million Dollars ($1,000,000.00) combined single limit coverage for bodily injury and/or property damage as a result of the operation of the escort vehicle, the escorted vehicle, or both causing the bodily injury and/or property damage." If an operator chooses only to drive an escort vehicle or pilot car in Oklahoma, there is a restricted certification that can be received.

Rail Freight

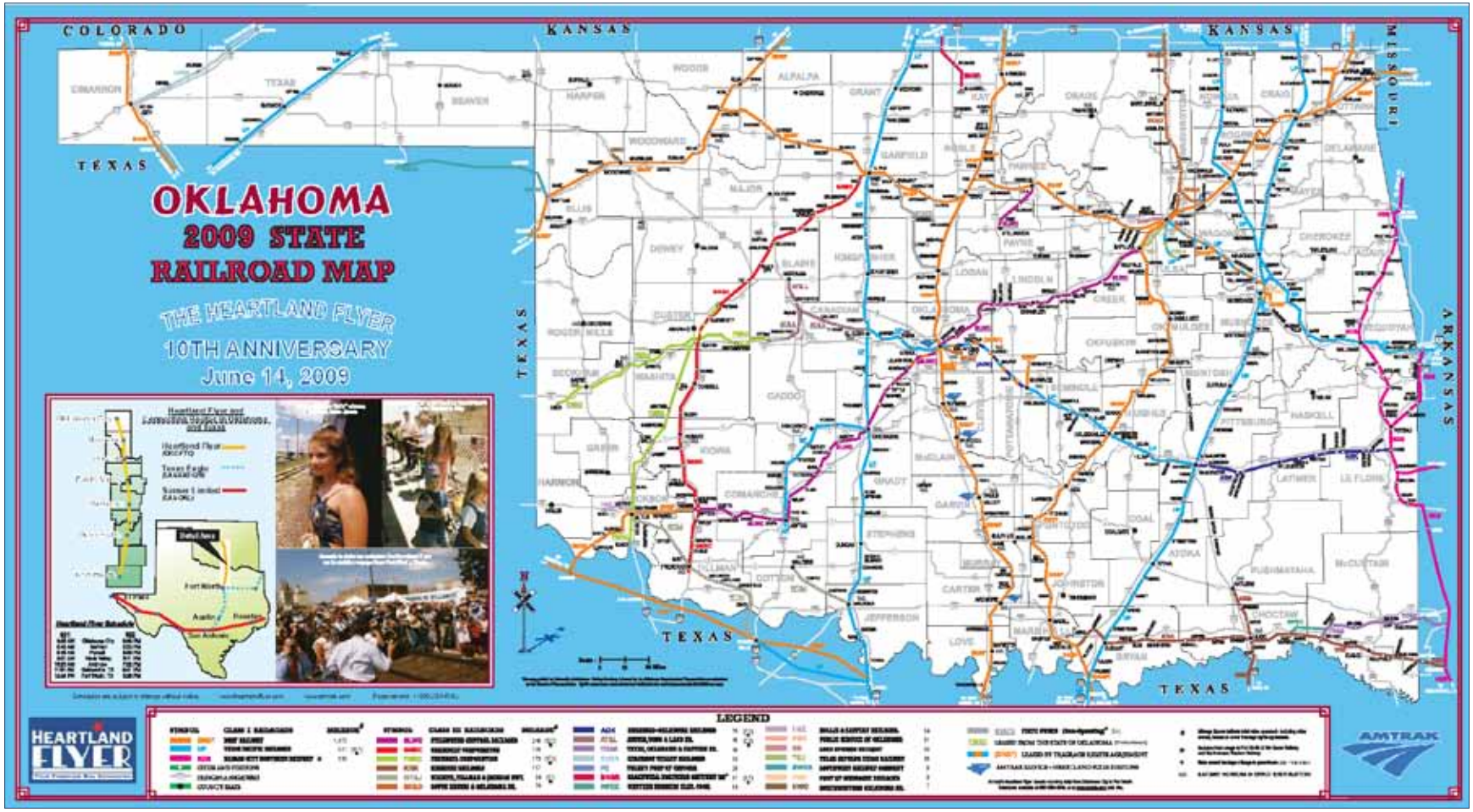
Oklahoma has 22 railroad companies operating throughout the state with approximately 3,746 miles of track. In 2007, Oklahoma ranked 17th in the nation for total rail mileage. There are three Class I railroads and 19 Class III railroads. Class I railroads are defined as those railroad companies with operating revenue of over $401.4 million after adjusting for inflation (based on the Bureau of Labor Statistics), and provide the majority of freight rail movement throughout the nation.[23] Class III railroads are rail carriers with annual gross revenues of less than $20 million, and make up most of the local and regional lines and switching and terminal lines.

The State of Oklahoma currently owns approximately 869 total miles of track. The state-owned tracks are leased by privately operated railroads, which may be Class I or Class III operations. **Table 6-16** shows Oklahoma's freight rail characteristics for 2002 and 2007. **Figure 6-15** shows the railroads within Oklahoma.

Table 6-16. Oklahoma Freight Rail Characteristics, 2002 and 2007

Characteristic	2002	2007
Number of Freight Railroads	20	22
Miles Operated	3,234	3,746
Class I	2,041	2,535
Class III	1,193	1,211
-Regional	78	78
-Local, Switching & Terminal (Other)	1,115	1,133
Total Carloads (thousands)	4,851	5,635
Total Tons (thousands)	222,551	284,177

Source: American Association of Railroads; ODOT Rail Division.



Source: Oklahoma Department of Transportation http://www.okladot.state.ok.us/hqdiv/p-r-div/maps/railroad/index.htm.

Figure 6-15. Oklahoma Centennial State Railroad Map

Class I Railroads

The Class I railroads include: Burlington Northern Santa Fe Railway (BNSF) with 1,475 miles of track (including trackage rights), Union Pacific Railroad (UPRR) with 921 miles of track (including trackage rights), and Kansas City Southern Railway Co. (KCS) with 139 miles of track (including trackage rights).

BNSF

BNSF Railway had 1,475 miles of track in 2007 in Oklahoma that includes trackage rights. **Figure 6-16** shows BNSF systems with various rail operating divisions throughout the State. Oklahoma has four operating divisions moving through the state including a small portion of the Powder River Division, the Kansas Division, the Texas Division and the Springfield Division. The Powder River Division brings coal from Wyoming's Powder River Basin through Colorado and across Oklahoma's panhandle to Texas' electric utility companies. The Kansas Division comes into northwestern Oklahoma from south central and southwest Kansas linking Kansas City to Amarillo, Texas, as a part of the BNSF's "Transcon" Chicago to Los Angeles corridor. The Texas Division connects Dallas-Fort Worth area with Kansas City through two north-south main lines through Oklahoma City and Tulsa. The Springfield Division connects Tulsa, Perry, Enid, and Avard through the northeastern part of the state to Kansas City and St. Louis.

UPRR

UPRR had 921 miles of track in Oklahoma in 2007. UPRR operations in Oklahoma (shown in **Figure 6-17**) primarily consist of a north-south corridors between the Midwest and the Gulf Coast. Grains are the main product moved through the state and sent to the ports for export.

Coal is also moved through the state to provide fuel for electric power generation facilities in the southern states. Wheat, cement and aggregate are a few important commodities originating in Oklahoma that are shipped by UPRR. The majority of UPRR's inbound north-south traffic from mid-western states culminates in northeast Oklahoma, where Wagoner and other cities and towns import coal for power plants.

The north-south lines to the west connect the Kansas wheat region to Texas ports. There are switching yards and other UPRR rail facilities in Muskogee, Tulsa, Enid, McAlester, Oklahoma City, and Chickasha.

KCS

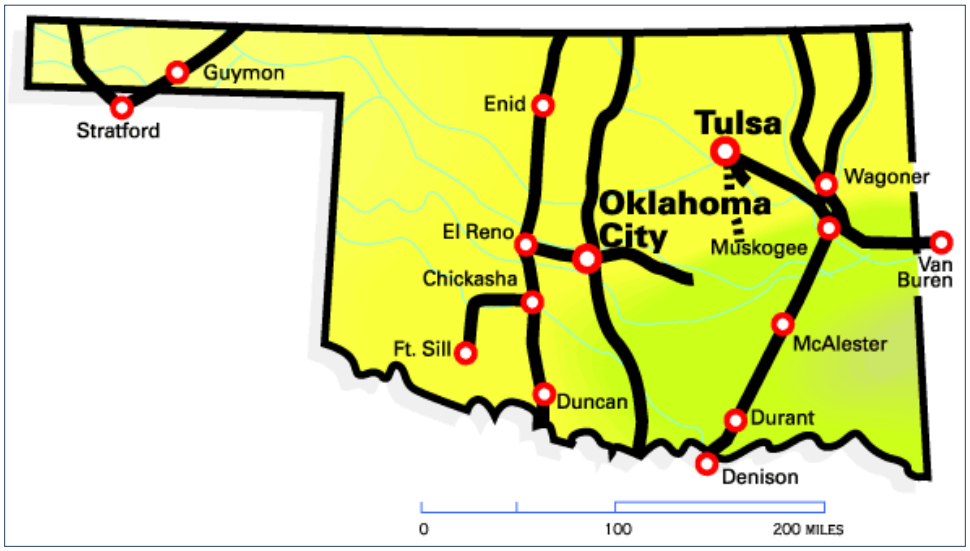
KCS owns 139 miles of track in eastern Oklahoma. It serves the central and southern United States, and has the shortest route between Kansas City and the Gulf of Mexico. KCS also has the second largest rail hub in the country in Kansas City. **Figure 6-18** shows the KCS system in eastern Oklahoma and neighboring states.

Class III Railroads

The Class III railroads provide important regional, local, switching, and terminal rail service across the state. The 19 Class III railroads in the Oklahoma provide critical rail service within the state. These railroads own and operate over 1,000 miles of rail line in Oklahoma and have trackage rights on and operate over many miles of Class I railroads. The pick-up, delivery, and customer service capability of these railroads are critical to the overall movement of Oklahoma's products and commodities that are moved by rail. Class III freight rail characteristics can be seen in Figure 6-15.

Source: BNSF Railway http://www.bnsf.com/tools/reference/division_maps/.

Figure 6-16. BNSF Division Map



Source: Union Pacific Railroad, http://www.uprr.com/aboutup/usguide/ok.shtml, 2009.

Figure 6-17. Union Pacific in Oklahoma

Source: Kansas City Southern Railroad, 2009.

Figure 6-18. Kansas City Southern Railway Company System

Railroad Imports and Exports

Railroads are the second most-used mode overall, for transporting freight throughout Oklahoma, with 22 percent of total freight tonnage in 2007. On a tonnage basis, the highest through freight movement for Oklahoma occurs by rail, (meaning, it does not stop within the state). In 2007, 17 million tons of freight were exported by railroads, and 22 million tons of freight were imported. Railroads handle imports and exports into and out of Oklahoma, including exporting 4.6 million tons of coal, and importing 16.6 million tons of coal in 2007. Railroads bring in the majority of coal used throughout the state. The railroads carry many other goods and commodities such as nonmetallic minerals, farm products, chemical shipments, petroleum products, lumber and wood products, and other goods and commodities. Chapter 5 provides additional details on the State's economy and goods movement. In 2007, 17,408,000 rail tons originated in Oklahoma with gravel, chemicals and products, and coal making up the top three commodities shipped. In the same year, 22,323,000 rail tons terminated by Oklahoma with coal, wood products, and minerals making up the top three commodities imported. **Table 6-17** shows commodities originating in Oklahoma that were shipped by rail for years 2002 and 2007. **Table 6-18** shows commodities terminating in Oklahoma that were shipped by rail for years 2002 and 2007.

Table 6-17. Statewide Rail Freight Trends: Tonnage Originating by Commodity: 2002 and 2007

Originating	2002	2007
Gravel	7,365	6,719
Chemicals & Products	2,751	2,940
Coal	2,261	3,988
Nondurable Goods	1,188	1,157
Vehicles	887	831
Minerals	645	532
Grains	382	703
Metals & Products	241	252
Wood Products	167	145
Agricultural Products	83	85
Petroleum Products	3	6
Durable Goods	0	49
Unknown/Other	61	1
Total Originating	16,034	17,408

Source: Federal Highway Administration (thousand tons).

Table 6-18. Statewide Rail Freight Trends: Tonnage Terminating, by Commodity: 2002 and 2007

Terminating	2002	2007
Coal	14,867	16,005
Wood Products	1,592	1,240
Minerals	1,050	928
Grains	898	1,142
Agricultural Products	770	887
Nondurable Goods	676	675
Gravel	455	415
Chemicals & Products	280	303
Metals & Products	220	280
Vehicles	149	104
Petroleum Products	142	144
Durable Goods	0	1
Unknown/Other	173	199
Total Terminating	21,272	22,323

Source: Federal Highway Administration (thousand tons).

Railroad Funding and Finance Issues

A Railroad Maintenance Revolving Fund was established through the passage of the "Railroad Rehabilitation Act" during the 1978 Oklahoma legislative session under Senate Bill 1534. The source of funding for the Revolving Fund comes from an Oklahoma Freight Car Tax that imposes a tax equivalent to four percent of the gross earnings of a freight car operating within the State.

Other funding sources come from lease agreements with operators and from a lease purchase agreement with UPRR for the purchase of a portion of rail infrastructure previously purchased by the state from another railroad. The lease purchase agreement with UPRR brings in the majority of funding for the Railroad Maintenance Revolving Fund, at $1.8 million annually, until 2011 when this lease purchase agreement has been satisfied. Approximately $761,000 is expected to be generated from the freight car tax on an annual basis. Portions of the Revolving Fund are allocated to state-owned railroad capital expenditures including acquisition, construction and reconstruction, repair, maintenance, operation of railroad and trackage, rail planning, and railroad assistance projects. As of 2002, the Revolving Fund allows ODOT to create loans to qualified railroad entities for financing the rehabilitation of railroads within the state. This loan program has not been used to date.[24]

Intermodal Freight

Intermodal freight connectors are the roads that connect major intermodal terminals to the highway network. Public roads leading to major intermodal terminals are designated NHS connectors by the U.S. Department of Transportation, in cooperation with state departments of transportation.

Oklahoma has multiple intermodal freight facilities including the Tulsa International Airport, the Will Rogers World Airport, the Port of Catoosa, the Johnston's Port 33 (Verdigris River near Muskogee), Ardmore Industrial Park and Airpark (discussed in the Air Cargo section), and Williams Pipeline Station. All these intermodal facilities transfer goods to multiple transportation modes, including barge, pipeline,

train, airplane, and truck via NHS Intermodal Connectors. These intermodal connectors are roadways that provide access between major intermodal facilities and the NHS. BNSF Railway previously had a truck/rail intermodal facility in Oklahoma City, but it was closed on May 1, 2005, because of declining demand. **Table 6-19** shows the intermodal connector facilities in Oklahoma, the type, the number of connectors, the connector description, and the length of the connector.

Oklahoma has four foreign trade zones (FTZ), which can be an important factor in considering needs and opportunities for developing intermodal transfer capabilities. The trade zones include FTZ No. 164 in Muskogee, FTZ No. 53 in Rogers County at the Port of Catoosa, FTZ No. 106 in Oklahoma City, and FTZ No. 227 in Durant. **Figure 6-19** shows the approximate locations of the four foreign trade zones.

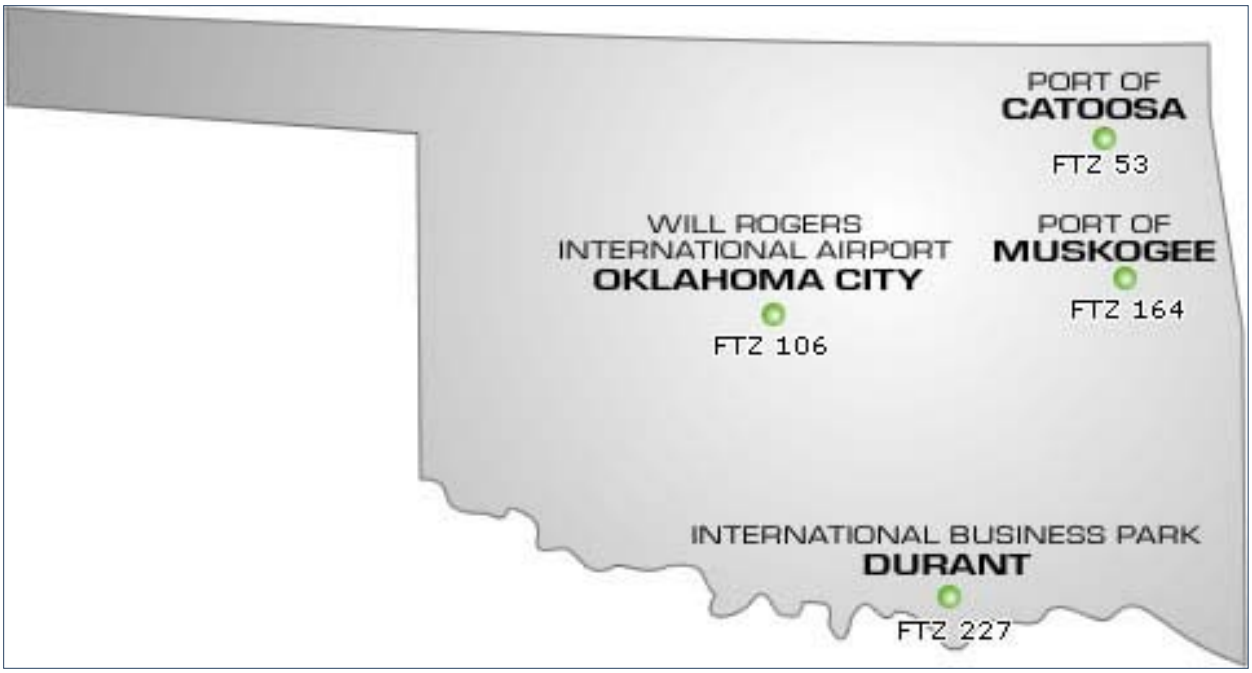
Brief descriptions of each foreign trade zone follows:

- ***Port of Muskogee Zone (FTZ 164)*** This zone lies on the McClellan Kerr Arkansas River system and the site includes several industrial facilities. The Port of Muskogee provides barge, rail and truck services to the one-million-square-foot Dal tile plant that receives several thousand tons of raw materials by barge each year.
- ***Tulsa Port of Catoosa Zone (FTZ 53)*** The zone is home to four industrial parks, including the Stillwater Industrial Park, Bartlesville Industrial Park, Mid America Industrial Park at Pryor Creek, and Tulsa International Airport. Also located on the McClellan Kerr Arkansas River Navigation System, the port provides rail, barge and truck transportation services from Oklahoma to ports around the world.
- ***Port Authority of the Greater Oklahoma City Area, at Will Rogers International Airport (FTZ 106)*** Over the past decade, this 90-mile radius service area has expanded beyond its original locations of Will Rogers World Airport and Biagi Warehouse to include eleven new sites, with more slated to come on line in the future. Also sponsored by this zone are several subzones for specific manufacturers.

Table 6-19. Oklahoma National Highway System Intermodal Connector Listing

Facility	Type	Connector No.	Connector Description	Connector Length
Johnston's Port 33 (Verdigris River near Muskogee)	Port Terminal	1	From US 412/NS 414, South 0.25, east 1 mile to Terminal	1.25
Port of Catoosa	Port Terminal	1	SR 266 (Port to US 169)	5.10
Port of Catoosa	Port Terminal	2	SR 266 (Port to I-44)	0.00
Tulsa International Airport	Airport	1	Served by Existing NHS Route	0.00
Will Rogers World Airport, OKC	Airport	1	Meridian Ave (Airport Rd to Terminal), Airport Rd (I-44 to Meridian Rd)	4.10
Williams Pipeline Station, Tulsa	Truck/Pipeline Terminal	1	21st St (33rd W Ave to Burlington Northern RR at 23rd St)	1.00

Source: Federal Highway Administration, http://www.fhwa.dot.gov/planning/nhs/intermodalconnectors/oklahoma.html (retrieved March 2, 2009).



Source: Oklahoma Department of Commerce, http://www.okcommerce.gov/index.php?option=com_content&task=view&id=244&Itemid=702, 2009.

Figure 6-19. Foreign Trade Zones in Oklahoma

- ***International Business Park in Durant (FTZ 227)*** This zone is located on the 320-acre industrial park in Durant, serving the southern and southeastern consumer markets. It lies adjacent to US-69/75 and is one hour away from the Dallas/Fort Worth Metroplex, eight hours from Laredo, Texas, and five hours from San Antonio and Houston, Texas. The I-35 corridor lies 45 miles west of the zone. FTZ 227 includes Subzone FTZ 227-A located in Ardmore. A recent boundary expansion of the zone now also serves Ardmore Industrial Park and Westport Industrial Park, both located in Ardmore. These locations have easy access off and on I-35, and are strategically situated between the Oklahoma City and the Dallas/Fort Worth metropolitan areas. This location has air freight capacity (including two runways), manufacturing facilities, many acres of developable land, and areas for intermodal docking (air, truck, and rail).[25]

Ports and Waterways

The McClellan-Kerr Arkansas River Navigation System (MKARNS) is a 445 mile-long waterway that runs between eastern Oklahoma and most of Arkansas that eventually flows into the Mississippi River. This channel currently has a depth of at least nine feet. There are plans underway to deepen the channel from nine feet to 12 feet to allow the barges 30 percent more loading capacity from the Port of Catoosa all the way through to the Mississippi River using the same amount of power as before. There are 13 locks and dams in Arkansas and five locks and dams in Oklahoma to help assist vessels climb up the MKARNS from the Mississippi River. Each lock chamber is 110 feet wide by 600 feet long. There are two major Oklahoma public port facilities on the MKARNS including the Port of Muskogee and the Tulsa Port of Catoosa.

According to Corps of Engineers data, in 2008 over 1.9 million tons of freight was exported compared to 2.6 million tons in 2005 by waterway, and over 1.8 million tons of freight was imported compared to 1.9 million tons in 2005.

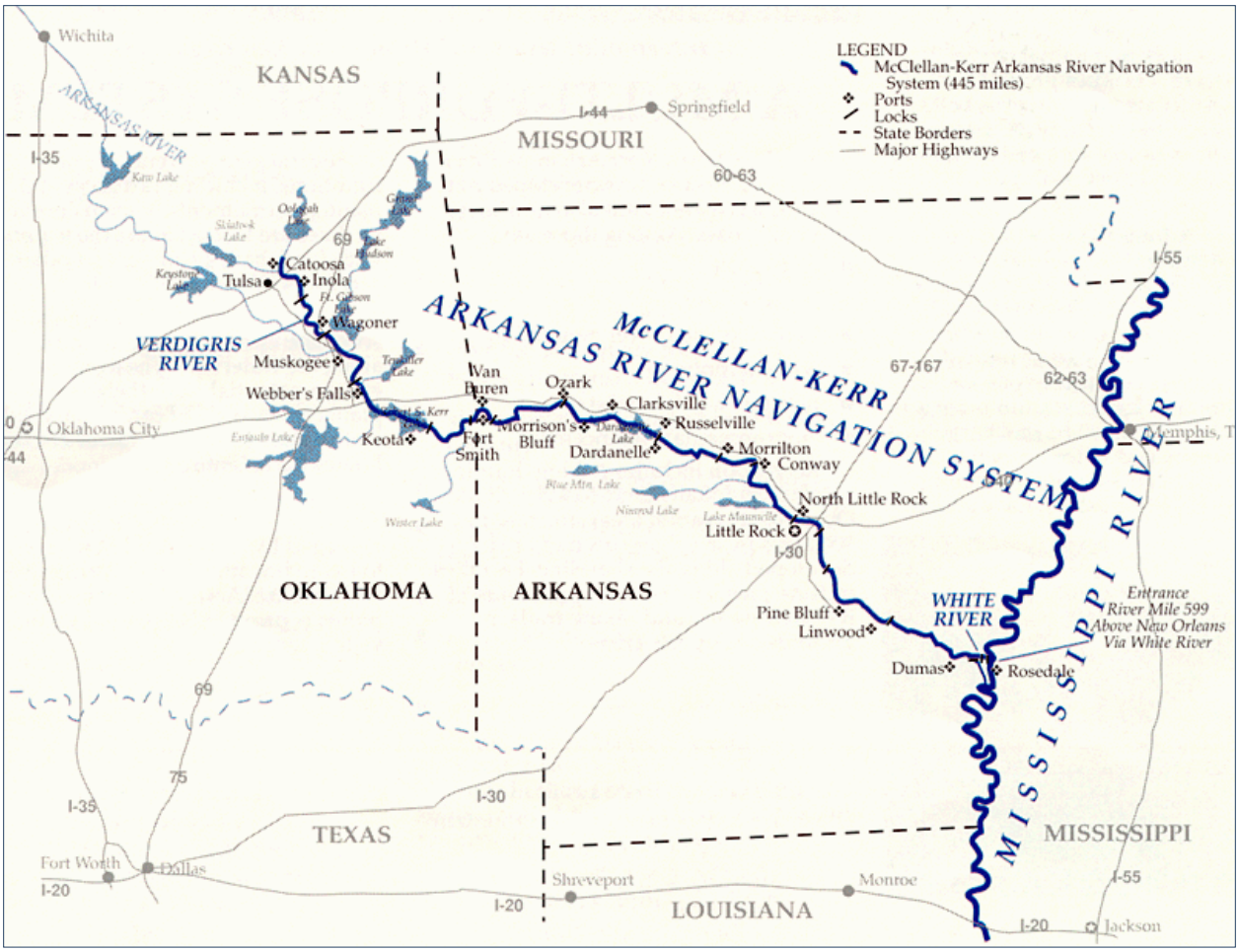
The trend from 2005 to 2008 shows a decrease in tonnage over the years. According to ODOT,[26] there are several factors that contributed to the short-term decline in goods moved via waterway. In the aftermath of Hurricane Katrina in 2005, numerous employees from the Port of New Orleans lost their homes. The Port Authority had to find suitable housing for their port employees, which took some time. The mouth of the Mississippi River in the Port of New Orleans is crucial for waterway freight movement, and because of the hurricane, many barges were delayed as they waited to be filled or emptied. Another explanation for the downward trend was due to record floods that took place in 2007 along the Mississippi River. The flooding caused navigation of this river to halt for a few weeks. Additionally during 2007, there was a lock that needed to be fixed on the MKARNS, causing another standstill in production. The Port of Catoosa had over 100 barges in their stilling basin and fleeting area. Some companies sent workers home during this time since production was stopped because of the maintenance.

Because of these closures, some industries switched to other means of transporting freight (rail or truck). One more reason for a declining trend in waterway shipments through the MKARNS is that some commodities have had poor growing seasons, including wheat and other grains.

The MKARNS is synonymous with the Arkansas River in Oklahoma from the Port of Muskogee downstream to the Arkansas border. Upstream of the Port of Muskogee, the MKARNS leaves the Arkansas River and joins the Verdigris River as it heads up to the Tulsa Port of Catoosa. There are 31 terminal facilities along the MKARNS within Oklahoma; however, most facilities are clustered along the Ports of Catoosa and Muskogee. Commodities shipped via the MKARNS include sand, gravel, and rock; miscellaneous minerals and building materials; petroleum products; coke and coal; iron, steel, and metal products; agricultural products; and chemicals and fertilizers. **Figure 6-20** shows the MKARNS as it comes from the Mississippi River, into Arkansas, and into Oklahoma. The various port facilities and locks and dams are marked on the map.

Port of Muskogee

The Port of Muskogee lies in the city of Muskogee and provides industrial park facilities with access to multiple modes of transportation. There is the Port Industrial Park with 144 acres of industrial park land, and the Port of Muskogee/John T. Griffin Industrial Park with 117 acres. Industrial roads connect the Port to the Muskogee Turnpike and SH-165. The Turnpike and SH-165 provides access to US-69, which provides access to I-40 and I-44. Commercial trucking companies that serve this Port include J.B. Hunt, Yellow Freight, Dalworth Trucking, Arrow Trucking, and a few others. There is a rail marshalling yard and an internal track system within the Muskogee switching limits of the UP Railroad. Overhead and mobile cranes are available for transloading shipments among barge, trail, and truck. Davis Field Airport lies nine miles south of the Port, and Tulsa International Airport is 45 air miles north of the Port. The Port of Muskogee has 94,000 square feet of dockside warehouse.



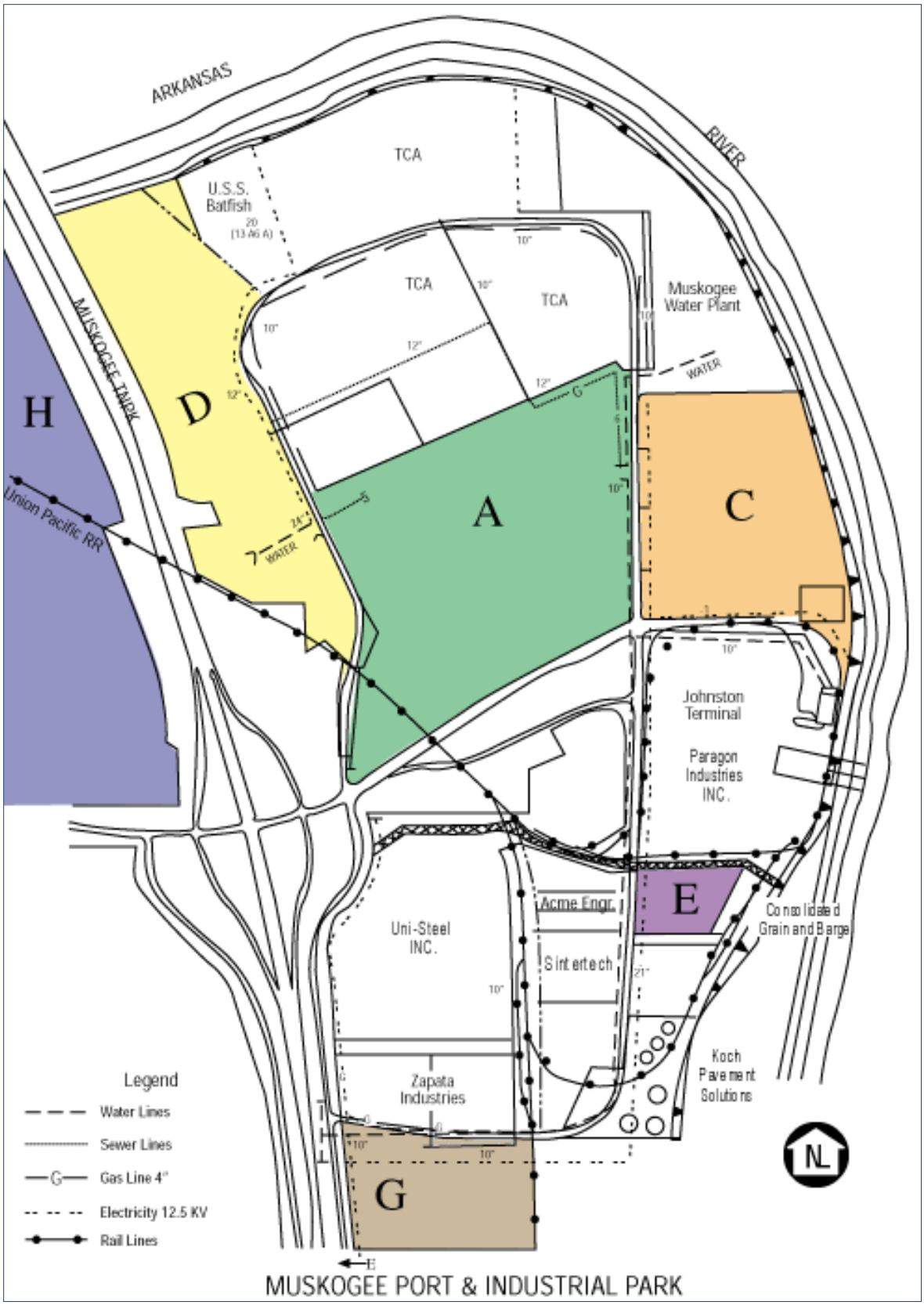
Source: Port of Muskogee, http://www.muskogeeport.com/7_maps/content/maps_regional.html, 2009.

Figure 6-20. The McClellan-Kerr Arkansas River Navigation System

According to the Corps of Engineers, total tonnage transported through the Port of Muskogee has increased from 500 million tons in 2000 to approximately 700 million tons in 2008. **Figure 6-21** shows the layout of the Port of Muskogee Terminal.

Tulsa Port of Catoosa

The Tulsa Port of Catoosa is one of the nation's largest inland river-ports, located at the head of the MKARNS. It is owned by the city of Tulsa-Rogers County Port Authority in Catoosa, with approximately 2,000 acres of industrial park space with multi-modal access. Industrial facilities located within the Port of Catoosa include manufacturing, distribution, and processing of goods. The Port has five public terminals including a general dry cargo dock, roll-on/roll-off low water wharf, dry bulk terminal, grain terminals, and the bulk liquids terminals are all privately owned and operated. Barges, trains, and trucks serve the Port of Catoosa. The Port owns two locomotives for its 12-mile short-line railroad system that serves the terminals and private industries. The Port also owns two switch-boats that move barges between docks.



Source: Port of Muskogee http://www.muskogeeport.com/7_maps/content/maps_sites.html, 2009.

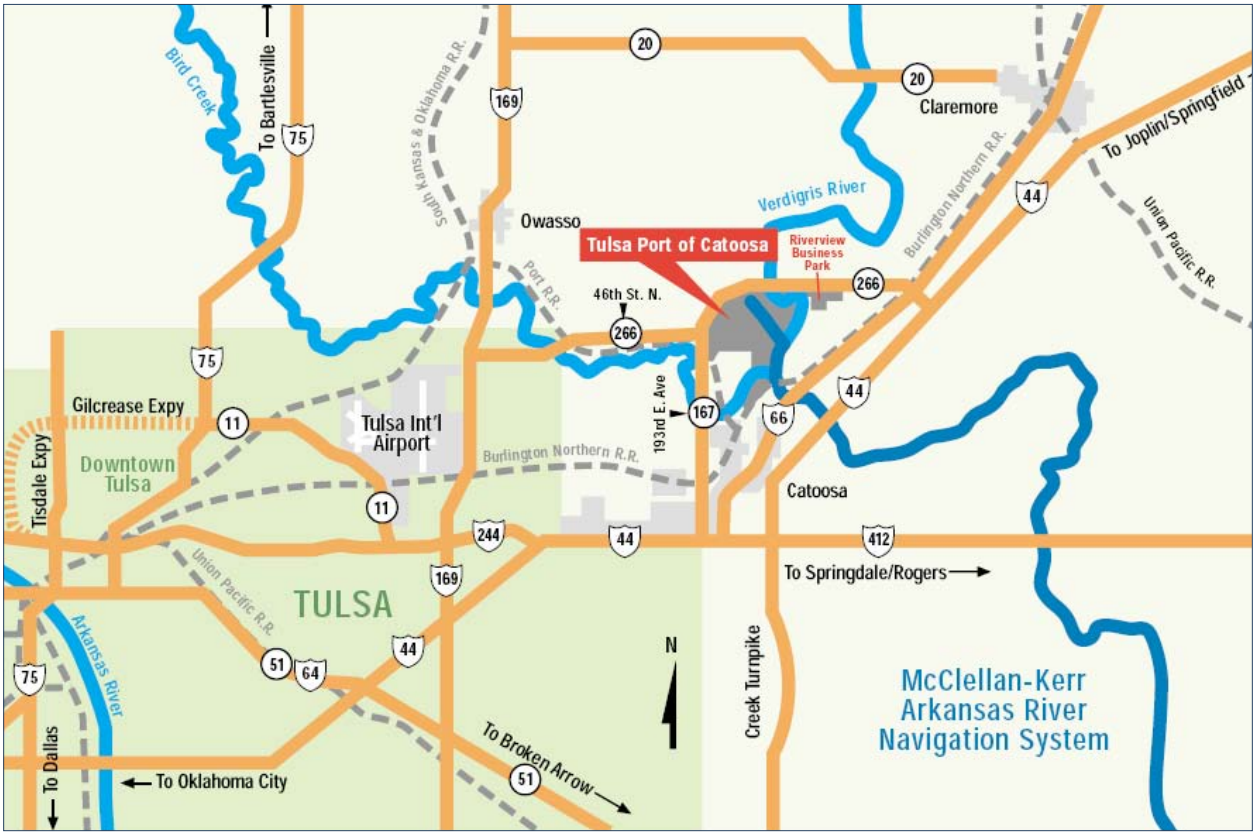
Figure 6-21. Port of Muskogee Industrial Park

The Port of Catoosa is served by various nationwide trucking shippers, and averages over 450 trucks per day. There is easy access on and off of I-44 and SH-169. Class I railroads serve the Port including BNSF directly, and UPRR through a short-line switch on the South Kansas and Oklahoma Railroad. The Tulsa International Airport is seven miles from the Port, and provides freight cargo shipping. **Figure 6-22** shows the location of the Tulsa Port of Catoosa and its relative location to various highways, airports, and railroads.

According to the Tulsa Port of Catoosa, reported shipping levels were strong at the beginning of 2009, with combined inbound and outbound of more than 236,000 tons in January and 254,900 tons in February. This is a number that has not been seen in years past. There is a slow-down in certain materials being shipped such as steel, pipe, and other dry bulk materials because of the economy. From 2000 to 2008, total tonnage decreased approximately seven percent.

Air Cargo

There are five total commercial service airports in the state including the Will Rogers World Airport in Oklahoma City, the Tulsa International Airport in Tulsa, the Lawton-Ft. Sill Regional Airport, Enid Woodring Regional Airport, and Ponca City Regional Airport. The Will Rogers World Airport and the Tulsa International Airport are the State's main air cargo facilities. The other three facilities are regional airports, and provide mostly commercial passenger links to larger airport facilities (see Figure 6-10 earlier in this chapter).



Source: Tulsa Port of Catoosa, http://www.tulsaport.com/PDFs/tulsa_proxmap.pdf, 2010.

Figure 6-22. Tulsa Port of Catoosa

Additionally, an industrial airpark lies in Ardmore that will soon provide air cargo facilities. In 2007, 18,000 tons of freight were exported by air, and 28,000 tons of freight were imported.

All airports in Oklahoma consist of commercial service airports, regional business airports, district airports and community airports. Figure 6-10 shows these airports' locations.

The Will Rogers World Airport in Oklahoma City is the larger of the two main air cargo facilities. This international airport lies on the southwest side of Oklahoma City with access to I-44, I-35, and I-40. This Interstate access makes it convenient for truck freight transport. The airport has approximately 7,800 acres of land with three operating runways, two 9,800-foot parallel runways and one 7,800-foot crosswind runway, and is in a Foreign Trade Zone. A diagram of the Will Rogers World Airport can be found in Appendix A.

The following companies have cargo operations at the Will Rogers World Airport:

- UPS
- FedEx
- Airborne Express
- Air 1st
- Ameriflight
- Martinaire
- Empire
- Mountain Air Cargo, Inc.

The Tulsa International Airport is a 4,388-acre complex that services over five million passengers and visitors each year. It is located approximately five miles northeast of Tulsa's center, with direct access to I-244 via SH-11, a NHS Intermodal Connector. US-169 and I-44 also provide access to the airport for freight movement. The airport has three paved runways: two main runways at 7,376 feet and 10,000 feet, and one crosswind runway at 6,101 feet.

Tulsa International Airport averages 353 aircraft operations a day, based on 2007 yearly statistics. The airport provides convenient access to highways and two major railroads for freight operations. The Tulsa International Airport is designated as a Foreign Trade Zone and is located approximately ten minutes from the nation's largest inland sea port, the Tulsa Port of Catoosa. American also operates a large aircraft maintenance center at Tulsa International.

The following companies have cargo operations at the Tulsa International Airport:

- American Airlines Cargo
- Continental Airlines Cargo
- FedEx
- Southwest Airlines
- UPS
- United States Postal Service

As introduced in the Intermodal Freight Section, the Ardmore Industrial Park offers intermodal freight facilities, including the Ardmore Industrial Airpark. This airpark is not yet in service, but has 2,955 acres including 1,677 acres of undeveloped land. Airpark facilities are equipped for air cargo operations including two runways at 5,000 and 9,000 feet. The airpark is currently recruiting cargo operators. The location of this facility is directly east of I-35 in the city of Ardmore.

Table 6-20 shows Will Rogers World Airport and Tulsa International Airport air cargo statistics from 2000, and from the past four years starting in 2005. The cargo trends are difficult to explain consistently because there are special products that get shipped via air cargo that skew the numbers over time. An example of this would be oil that may be shipped by plane. Oil sometimes flies out one time per year, and

Table 6-20. Cargo at Oklahoma Commercial Airports, 2005 to 2008[27]

Airport	2000	2005	2006	2007	2008
Will Rogers World	49,369	34,943	35,728	35,808	36,024
Tulsa International	52,367	53,576	56,027	59,907	65,167
Total	101,736	88,519	91,755	95,715	101,191

Source: Will Rogers World Airport and Tulsa International Airport, 2009 (tons).

then does not fly out some years. This inconsistency can distort the air cargo trend picture. As for mail trends, from 2005 to 2008 the numbers have significantly declined. This is largely due to the way the United States Postal Service reports mail. When the post office chooses FedEx to ship, the items are boxed up and given to FedEx which treats the goods as cargo instead of mail. When the items are reported, it goes to the cargo designation instead of mail. In 2009 and thereafter, cargo data will be reported as a combined number with mail cargo data for all airports in Oklahoma. There appears to be a significant decrease in cargo activity between 2000 and 2005 for Will Rogers Word Airport. In the 2005 report for ODOT's Statewide Intermodal Transportation Plan, the cargo data after 2001 begin to decrease, mostly attributed to the terrorist attacks on September 11, 2001 that affected the country's economy. The decrease in cargo shipments for the Will Rogers World Airport can be attributed to the changes in the aircrafts being used by the airlines. Numerous commercial airlines flying into Will Rogers have shifted to more "regional" size aircrafts, and do not have capacity for cargo except for the passengers' cargo. Additionally, since the increased security in 2001, passenger aircrafts are not allowed to carry additional cargo.

Given Oklahoma's level geography and navigable waterways, it is ideal to transport cargo by trucks, trains, or barge more so than by air. There are efforts to include more air cargo development into intermodal hubs near the airports in Oklahoma City, Tulsa, and Ardmore over the next 10-15 years.[28] Nevertheless, growth in air freight transport is expected in the next 25 years, as this mode fills a special niche for shipping high value, time-sensitive products.

Intelligent Transportation System (ITS)

ITS involves the use of electronics, computers, and communications equipment to collect information, process it, and take appropriate actions. ITS technology is used to help improve safety, mobility, enhance security and to increase agency efficiency. ITS infrastructure includes dynamic message signs, cameras, weather sensors, detectors, and weigh in motion (WIM) sensors.

Existing Intelligent Transportation Systems

Various ITS components have been deployed in Oklahoma including dynamic message signs, closed circuit television cameras, web cameras, vehicle detectors, Road Weather Information System (RWIS), fiber optics, traffic and weather websites, and work zone tools. Oklahoma has utilized public-private partnerships to install fiber optic cables, placing approximately 940 linear miles of fiber optics around the State. This technology supports the RWIS, cameras, signs, etc. This is unique to Oklahoma, as many other states have not gone through this process yet.

Another ITS element is the Smart Work Zones program where signs dynamically calculate and

display the time delay that traffic can expect as a result of construction. There are currently seven Smart Work Zones in Oklahoma. By providing information, the Smart Work Zones program system enhances safety of both the road users and the workers.

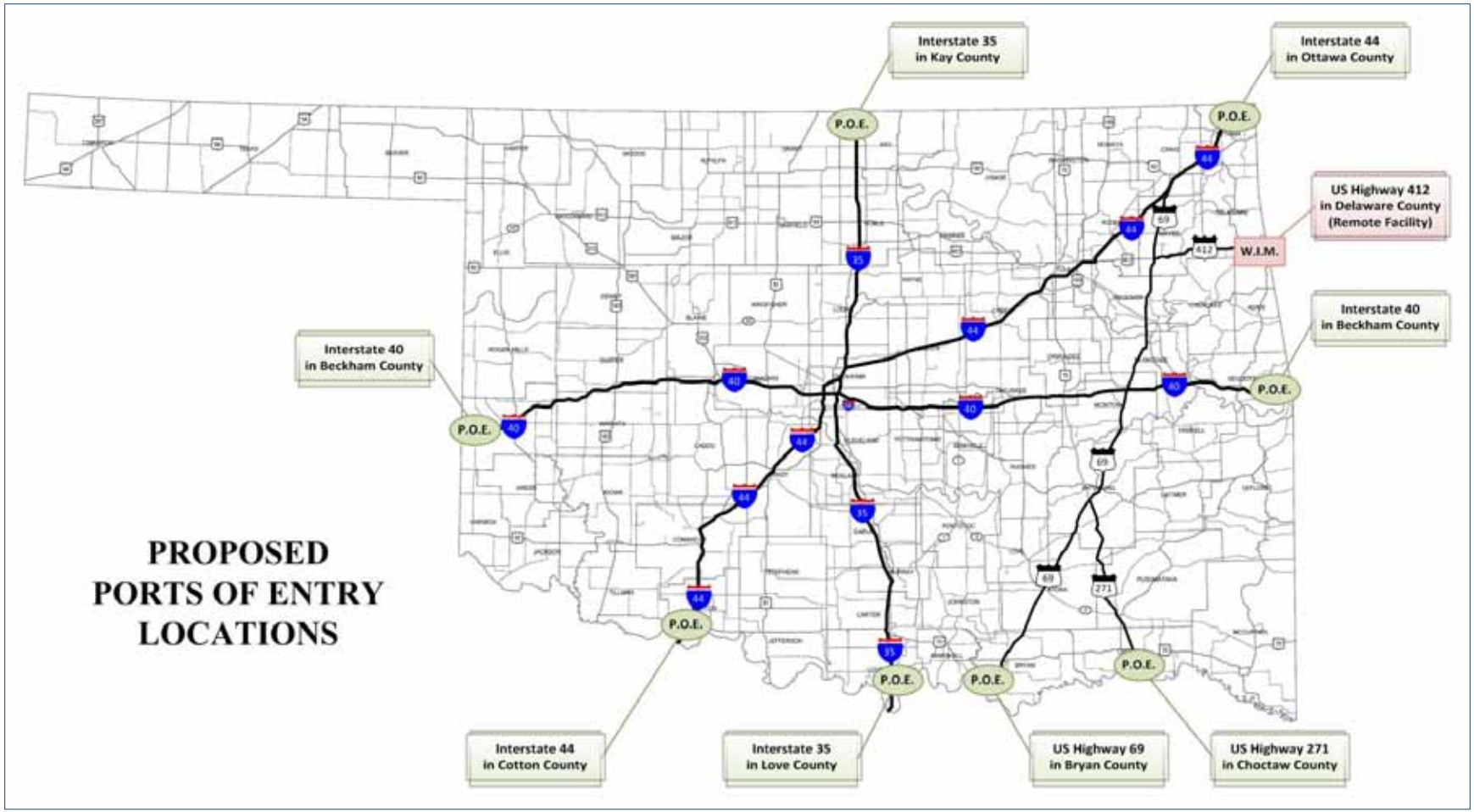
ITS applications are also used for commercial vehicles at commercial vehicle inspection stations to make inspection checks to ensure safety and compliance throughout the State. Currently, seven commercial vehicle weigh stations operate throughout Oklahoma. These seven stations were originally built in the 1960s, and operated using the latest telephone technology available at the time. A considerable number of improvements have been made to the roadways, trucks, and technology since then. Within the past few years, Oklahoma implemented the use of CVIEW (Commercial Vehicle Information Exchange Window), where Oklahoma-based carriers' credentials, status, and screening information can be available in all states; and where information on carriers based in other states is available in Oklahoma. Plans are underway for new state-of-the-art weigh stations (**Figure 6-23**) discussed in the following section.

Proposed Intelligent Transportation Systems

The ITS projects that are proposed for the State include installing more dynamic message signs in both the Oklahoma City and Tulsa areas. There are eight signs proposed for Oklahoma City and 12 more for Tulsa.

Plans to modernize the commercial vehicle inspection system are underway by constructing eight new weigh and screening stations. These stations, also referred to as Ports of Entry, will be virtual or fixed WIM stations to be placed at major entry and exit points on the highways in and out of the State including at both east and west borders on I-40, as well as locations on I-35, I-44, US 271 near Hugo, and US 69 near Colbert. The remote station will be placed on US-412 near the Arkansas border. Funding is available for this $58 million project.

Three stations are in the design phase and construction is scheduled to commence by early 2011. After these are built, feedback from the users (commercial vehicle operators) and enforcement officers will be recorded to improve the next phases of development. The new facilities will have some main lane WIM stations and some ramp WIM stations as well. The weigh stations will also have enclosed inspection bays, allowing for a greater number of safety inspections to take place, in a safe location. The new plan's objective is to leverage enforcement and safety of commercial vehicles with best available technology.



Source: ODOT, Project Management Division.

Figure 6-23. Proposed Ports of Entry Locations: Commercial Vehicle Weigh and Screening Stations

Chapter 6 Endnotes

[1] "Oklahoma's highway system" or the "state highway system" refers to Interstate, U.S. and Oklahoma (State) highways within the State of Oklahoma; it also includes several turnpikes.

[2] STRAHNET Routes stand for the Strategic Highway Network, which are important to the Nation's defense purposes.

[3] VMT is the number of miles traveled by vehicle, in a specific area and time, or total trip distance by vehicle.

[4] Percent increase was found by calculating the percent change between 2003 and 2007.

[5] SH-3 is approximately 616.5 miles.

[6] Adequacy of a roadway or bridge is determined by considering and evaluating a number of factors, including but not limited to: surface width and type, shoulders, drainage, foundation, traffic volumes and congestion levels.

[7] According to the 2009 Needs Study, roads and bridges under ODOT jurisdiction are projected to accumulate capital improvements needs of $27.5 billion over the next 20 years. Estimated revenue that can be applied to highway capital improvement projects over the same period will total $10.6 billion. Over the Study timeframe, total projected revenues amount to 39% of needs, resulting in a shortfall of $16.9 billion.

[8] High Priority Routes (or corridors) are designated by the Department of Transportation, due to their national importance for economy, defense, and overall mobility. Federal funding helps states allocate money for projects and maintenance on these specific corridors.

[9] Urban public transportation serves communities with a population of 50,000 or greater.

[10] Rural systems serve areas with populations less than 50,000.

[11] Transit service definitions were obtained from the National Transit Database glossary: http://www.ntdprogram.gov/ntdprogram/Glossary.htm#F

[12] The urban public transportation systems described below are a part of the Metropolitan Planning Organization areas for Oklahoma City (OKC METRO Transit and CART), Tulsa (Tulsa Transit), and Lawton (LATS) respectively. An overview of the services is described here. Further information is available from the respective MPO Long Range Transportation Plans which will be inserted in, and made a part of this Statewide Long Range Plan.

[13] The Central Oklahoma Transportation and Parking Authority (COPTA) is the governing body over OKC METRO Transit.

[14] National Transit Database (NTD), 2007, based on 2000 Census data.

[15] Deviated fixed-route service operates a bus or van along a fixed-route and keeps to a timetable, but the bus or van can deviate from the route to go to a specific location, such as a house, child care center or employment site. Once the stop is made, the vehicle goes back to the place along the route that it left.

[16] A flexible route has one defined stop, such as a connection point to a standard fixed-route bus, with flexible-route service traveling anywhere within its defined service area to drop off and pick up at any address.

[17] ODOT is conducting an internal review of the study.

[18] Section 1010 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) created a program to fund safety improvements at highway-rail grade crossings at "designated" intercity high speed rail intersections, or High Speed Rail Corridors.

[19] TE Funds include 12 community-focused activities (including bicycle and pedestrian), and is backed by SAFETEA-LU legislation.

[20] Pipeline is considered a mode of transporting freight, as seen in Chapter 5 of the 2035 Long Range Plan, however this mode will not be highlighted in this chapter.

[21] The rest of Texas region includes all regions of the state, excluding the Dallas-Ft. Worth and Houston metropolitan areas. The Southwest region includes Arizona, California, Colorado, New Mexico, Nevada, and Utah. The Southeast region includes Alabama, Mississippi, Louisiana, Florida, Georgia, Louisville, Kentucky, Tennessee, North Carolina, South Carolina, and Virginia. The Northeast region includes Washington, DC, Maryland, Pennsylvania, Delaware, New Jersey, New York, Connecticut, Massachusetts, New Hampshire, Rhode Island, Vermont, and Maine. The Midwest includes Indiana, Illinois, St. Louis, Missouri, the remainder of Kentucky, Detroit, Michigan, Ohio, West Virginia, and Wisconsin. The grain belt includes Minnesota, Iowa, North Dakota, South Dakota, Nebraska, and the remainder of Michigan. The Pacific Northwest includes Wyoming, Montana, Idaho, Oregon, and Washington. International regions include Canada, Southwest Asia, Northeast Asia, Central and South America, Europe, and the rest of the world. Definitions based on PB analysis.

[22] 23 U.S.C. 127(a), as implemented in 23 CFR 658.21, "Procedures for reduction of funds." Reduction of state funding could occur if size/weight limitations are not followed and enforced.

[23] The Association of American Railroads, September 10, 2009.

[24] Source: ODOT Rail Division, January 12, 2010.

[25] Source: http://www.okcommerce.gov/index.php?option=content&task=view&id=3046&Itemid=668 http://www.ardmoredevelopment.com/page.php?page=1040

[26] ODOT Waterways Branch provided insight on the declining tonnage trends.

[27] Includes cargo shipped by all cargo carriers such as FedEx, UPS, and Airborne Express, which are not included in the FAF data presented in Chapter 5. Therefore, the airport statistics are higher than those presented for 2007 in Chapter 5.

[28] According to the Governor's Council for Workforce and Economic Development in the Oklahoma's Aerospace Industry Workforce: 2007 Report; http://www.ok.gov/OAC/documents/ODOC-0126%20Aerospace%20Report%204.pdf

Chapter 7 Current System Strengths and Weaknesses

Introduction

This chapter addresses major strengths and weaknesses of the State's intermodal transportation, as defined by current conditions, anticipated future needs, funding and other resource challenges, and the institutional and policy environment within which continued construction, operation, and maintenance of transportation infrastructure and services are and will be provided. The assessment of strengths and weaknesses has been developed through ODOT and other agency inventory information, and feedback from interviews with advisory group members. Physical and operational conditions and their contribution to transportation programs of national significance, such as the NHS, are considered. This assessment provides a baseline for developing future solutions and implementation strategies.

The context for evaluating the strengths and weaknesses of Oklahoma's transportation system is found in the following concepts, which were used by ODOT as the starting point for development of the State's 2035 Long Range Plan. These statements about the purpose of the Plan reflect consideration of federal guidelines and the State's transportation needs:

- Adopt a "preservation first" strategy for investment priorities
- Increase mobility and accessibility options
- Provide sufficient revenue for the transportation system
- Increase transportation system safety for automobiles, trucks and motorcycles, pedestrians, and bicyclists
- Increase transportation system security
- Improve the quality of life
- Enhance the transportation system to support economic activities
- Protect and enhance the environment
- Enhance integration and connectivity of the transportation system

Objectives arising from these goals, and relevant to the identification of transportation system strengths and weaknesses, include:

- Orientation toward economic development goals and how the transportation system and ODOT can work in tandem with other state, local, and private interests to advance economic development possibilities
- Encouragement of improvements to enhance and build on logistics, warehousing, and distribution center developments in southern Oklahoma and elsewhere in the state, and to improve the overall efficiency of goods movement for Oklahoma shippers
- A corridor approach, continuing work on the Transportation Improvement Corridors identified in previous plans
- Stakeholder outreach and public involvement, including updating contacts with selected stakeholders and involving advisory groups that represent transportation system providers and users for the movement of both passengers and goods

Also, there are new, more recent objectives based on defined local needs and SAFETEA-LU requirements. A series of statewide planning factors, which are codified in 23 USC 135(c)(1)(A-G), address the following:

- Supporting the economic vitality of the United States, states, and metropolitan areas
- Increasing the safety and security of the transportation system for motorized and non-motorized users
- Increasing the accessibility and mobility options available to people and for freight

- Protecting and enhancing the environment, promoting energy conservation, and improving the quality of life
- Enhancing the integration and connectivity of the transportation system, across and between modes throughout the state for people and freight
- Promoting efficient system management and operation
- Emphasizing the preservation of the existing transportation system

Other factors include, but are not limited to, funding uncertainties, potential air quality concerns, and how best to address climate change and energy dependency. Also important are links between selected projects and other high-priority state and national initiatives.

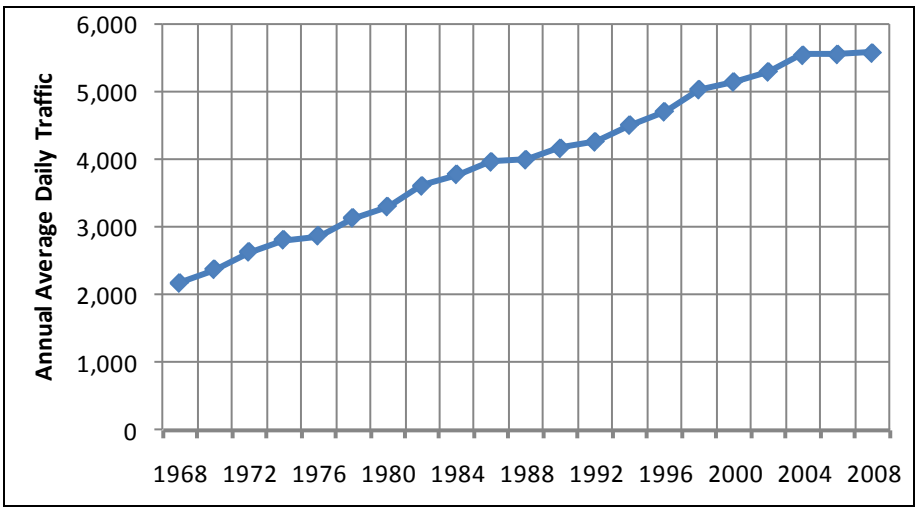
ODOT initiated the 2035 Long Range Plan process by discussing the aforementioned priorities with the Advisory Committees and the public. After a series of meetings, the 2035 Plan goals solidified around the following themes: safety and security, travel options for people, new issues (environment, energy, and livability), system preservation and operation, and freight and the economy. Chapter 2 provides additional details about the public involvement process for the Plan. The Plan goals are stated as follows:

- Increase the safety of the transportation system for motorized and non-motorized users
- Improve safety for all modes
- Increase the security of the transportation system for motorized and non-motorized users
- Increase accessibility and mobility options available to people
- Enhance integration and connectivity of the transportation system
- Protect and enhance the environment
- Promote energy conservation
- Improve the quality of life
- Emphasize the preservation of the existing transportation system
- Promote efficient system management and operation
- Enhance integration and connectivity of the transportation system, across and between modes throughout the state for people and freight
- Support economic vitality

State Highway System and Designated State Corridors

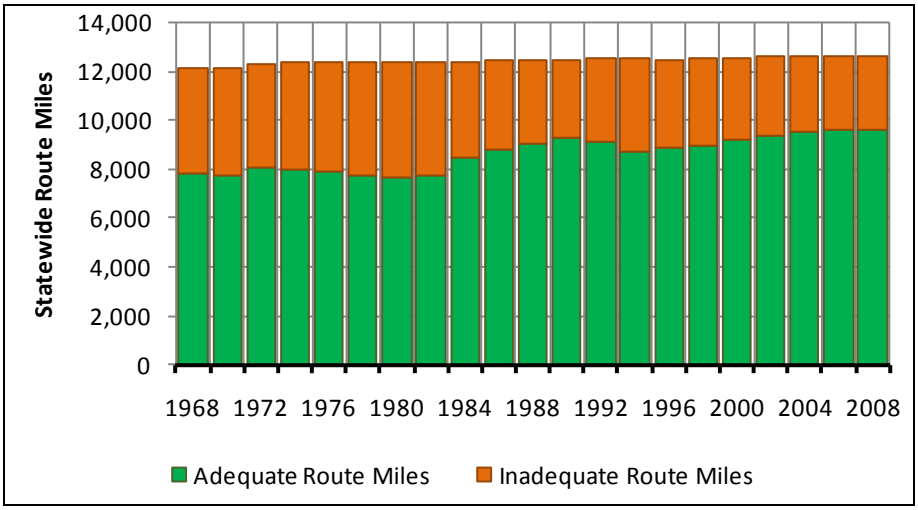
An understanding of the historic extent, use, and condition of the State Highway System (SHS) provides a first step in identifying its strengths and weaknesses. One source of this information is the biennial *Needs Study and Sufficiency Rating Report.* **Figure 7-1** illustrates the 1968 to 2008 record of traffic using the SHS and shows a strong, sustained growth trend with a gradually declining growth rate over this period. This growth leveled off in 2004. Annual traffic has changed little during subsequent years, but traffic volumes likely will resume growth upon national and state economic recovery.

The SHS itself has changed little in route length over this 40-year period, but the number of system lane-miles has grown as needed to support traffic growth. The percentage of inadequate miles has decreased from 30 percent in 1994 to 23.5 percent in 2008. Total route miles by sufficiency category are illustrated in **Figure 7-2.** In the 2009 *Needs Study and Sufficiency Rating Report*, the sufficiency rating reflects road design adequacy, physical condition, and level of service, with a maximum score of 100 points. A score below 70 results in the road being considered inadequate.



Source: 2009 Needs Study and Sufficiency Rating Report, Oklahoma DOT.

Figure 7-1. Annual Average Daily Traffic on the Oklahoma State Highway System



Source: 2009 Needs Study and Sufficiency Rating Report, Oklahoma DOT.

Figure 7-2. 1968-2008 Oklahoma State Highway System Route Miles, by Sufficiency Category

Types of State Highway System Improvements

According to the 2009 Needs Study, ODOT's experience in addressing SHS deficiencies has seen the average construction cost per mile increase approximately nine times between 1968 and 2008. The cost to construct a mile of two-lane highway with 8-foot paved shoulders on a new alignment is now nearly $1.9 million compared to $204,000 in 1968. A contributing factor to this increase is that the urban area proportion of deficient mileage has grown from 10 percent in 1968 to 20 percent in 2008, and the cost of improving urban roads is higher than the cost of improving rural roads.

Future Improvement Needs for the State Highway System

The Needs Study includes a 20-year projection of funding needs in light of the aforementioned deficiencies, together with proposed additions to the SHS. The 20-year funding need for identified deficient roads is $27.5 billion, but only $10.6 billion in known revenue sources for that purpose is forecasted, resulting in a shortfall of $16.9 billion. After adding 20-year continuing SHS maintenance needs and the costs and funding sources for highway engineering and administration, the total cost becomes $43.7 billion, offset by projected revenues of $19.6 billion, leaving an unfunded balance of $24.1 billion.

State Highway System Strengths and Weaknesses

Strengths

- Despite funding challenges, ODOT has been able gradually to reduce the backlog of inadequate roads on the SHS. This includes work to date regarding widening, alignment improvements, and maintenance of roads and bridges, especially with GARVEE projects.
- Over 211 miles of interstate pavement have been rehabilitated or reconstructed since 2003, and an additional 90 miles are included in ODOT's 8-Year Construction Work Plan. The interstate system, which carries most of the vehicle miles of travel in the state, is 92 percent adequate.
- Between 2004 and 2010, ODOT reconstructed or rebuilt 111 of 150 load-posted bridges on the SHS.
- The installation of median barriers has reduced crossover collisions and fatalities on high-volume, high-speed four-lane highways. A before and after study of 50 miles of roadway where cable barriers were installed over the past decade revealed an 84-percent decrease in crashes (63 before, 10 after) and a 94-percent decrease in fatalities (18 before, one after). A total of four years of data (two years before cable barrier installation, two years after) were reviewed in the ODOT study.
- There were 646 fatal collisions on Oklahoma roadways in 2009. The number of fatalities on all public roadways in the State decreased by four percent from 2007 to 2009. Fatalities on the State Highway System (non-toll interstates, U.S., and State Highways) decreased 16 percent between 2007 and 2009.
- The SHS has a great deal of redundancy—particularly in the urban regions—allowing for rerouting of traffic during construction or incidents. This redundancy may be something to develop further on the rural system.
- Through the use of ITS, there have been multiple ways to communicate valuable information to roadway users, including weather conditions, wide load hazards, and potential traffic delays.

Weaknesses

- There is a large projected shortfall in funding future improvement needs. In addition, the

nature of SHS improvement needs may change over time.

- Maintenance and improvement or replacement of bridges is an ongoing major challenge, especially with regard to truss bridges, which typically have load and clearance restrictions that will be increasingly problematic.
- At the beginning of 2010, there were 796 structurally and 600 functionally obsolete bridges on the SHS. This represents about 20 percent of all the bridges on the SHS.
- Almost 4,700 miles of Oklahoma highways are rural two-lane highways without paved shoulders. (Total number of non-toll miles is 12, 280 miles.)
- Development along the SHS in urban and suburban areas can result in multiple commercial driveways ("curb cuts"), which create more travel demand and safety issues with conflicting turn movements. Without adequate access management, a proliferation of commercial driveways causes traffic congestion and the crash rates generally increase.
- Population shifts throughout the state are a challenge. Travel needs change as changes occur in the places where people live, work, shop, or travel. The current SHS reflects travel patterns of the past but must reflect future needs. Road connectivity and capacity will need to keep pace with these changes.

Transportation Corridors

Definitions

Three types of transportation corridors are identified in the 2035 Long Range Plan:

- ***Transportation Improvement Corridors*** These are highway corridors where projected traffic volumes indicate additional capacity will be needed by 2035.
- ***National High Priority Corridors*** These are Congressionally identified corridors of national significance. Funding was provided either directly or indirectly for these corridors in the current (SAFETEA-LU) and the two previous (ISTEA and TEA-21) multi-year surface transportation authorizations. There are four National High Priority Corridors in Oklahoma:
  - US-287 (Ports-to-Plains Corridor) from Texas to Colorado in Cimarron County.
  - US-54 (SPIRIT Corridor) from Texas to Kansas in Texas County/Western Oklahoma.
  - I-35 from Texas to Kansas.
  - US-412 from Tulsa to Memphis, Tennessee.
- ***Freight Operational Improvement Corridors*** These corridors represent highways with high truck traffic but do not indicate capacity needs by 2035. However, the efficiency of these corridors is compromised by conditions such as stops in towns and cities, bridge deficiencies, geometrics, urban speed zones, school zones, at- grade rail crossings, worn pavement, or other operating conditions that reduce the efficiency of freight movements. These highways can benefit from corridor studies and selective improvements, such as bypasses; ITS for driver information on traffic flows, weather conditions, etc.; bridge upgrades; rail grade separations; signal timing; and geometric roadway improvements. Freight Operational Improvement Corridors identified for Oklahoma include:
  - US-54 from Texas to Kansas in Texas County/Western Oklahoma.
  - US-69 in Eastern Oklahoma from the Oklahoma/Texas state line near Durant northeast to I-44 near Vinita.

Transportation Improvement Corridors

The Transportation Improvement Corridors (TIC) are highway corridors projected to need capacity upgrades by 2035. TICs were first identified in the *1995–2020 Statewide Intermodal Transportation Plan.* The 2000–2025 and 2005–2030 Statewide Intermodal Transportation Plans continued this policy. The 2030 Long Range Plan elaborated on the designation of the TICs by underscoring that additional consideration should be given to obtaining right-of-way for the ultimate corridor configuration.

Delineation of TICs in the 2035 Long Range Plan used the same methodology as applied for the 2030 LRP:

- Current traffic volume data (2008) by highway control section were used, along with historical traffic growth factors, to calculate future traffic volumes (2035).
- LOS C capacities were determined for each existing highway (two-lane, four-lane, four-lane divided) by terrain type (level, rolling, mountainous) for each highway control section.
- Calculated 2035 volumes were compared to the LOS C capacities for each existing highway control section. This resulted in a volume-to-capacity (v/c) ratio.
- LOS C has a v/c ratio of 1.0 and results in a satisfactory LOS. Highway sections exceeding LOS C (greater than 1.0) were considered as candidates for TICs.
- Final delineation of corridors also considered the following factors:
  - Judgment that congestion is resulting from a genuine capacity problem that would require more lanes rather than a capacity problem that could be alleviated by reconstruction and improvement of existing lanes with better geometrics and traffic management characteristics.
  - Judgment on logical termini: corridors defined with lengths that could demonstrate independent utility and not result in a mixture of highway segments with differing lanes and transition points; connect from highway junction-to-highway junction or city-to-city. Thus, some non-congested segments are included in defined corridors.
  - Judgment on constructability: some congested areas are scenic highways or have some other factor that would preclude addition of capacity.
  - Judgment that some capacity problems could be alleviated with localized capacity additions and definition of a corridor was not needed.

As a result of these analyses, the 18 corridors identified as TICs in the 2030 Long Range Plan are retained for inclusion in this Plan. No new corridors were identified.

The TICs may coincide with National High Priority Corridors but generally are separate. With the exception of US-54 located in the Oklahoma panhandle, where they are the same, description and analysis is described under National High Priority Corridors. It is anticipated that selected portions of the identified corridors will need to be improved over the next 25 years.

The State Transportation Improvement Corridors for the 2035 Long Range Plan, as shown in **Figure 7-3,** include:

- ***US-270/SH 3*** from the junction with SH 34 in Woodward, Woodward County southeast to Watonga, Blaine County and continuing southeast on US-281 and US-281 Spur to the junction with I-40 in Canadian County, a total of 95 miles.
- ***I-40*** from the junction with US-81 Spur in Canadian County east to the junction with

SH 18 in Pottawatomie County, a partial total of 51 miles**.** Proposed improvements involve widening to six lanes. The mileage estimate excludes Oklahoma County, which is shown in the OCARTS area plan.

- ***US-81*** from I-40 in Canadian County, south to the junction with SH 9 in Chickasha, Grady County, a total of 31 miles.
- ***SH 9*** from the junction with I-35 in Norman, Cleveland County east to the junction with SH 99 in Seminole, Seminole County, a total of 48 miles.
- ***US-270*** from the junction with SH 9 in Seminole, Seminole County southeast to the east junction with US-270 Business in Holdenville, Hughes County, a total of 23 miles.
- ***SH 33*** from the junction with I-35 in Guthrie, Logan County east to the junction with SH 18 in Cushing, Payne County, a total of 29 miles.
- ***US-177*** from the junction with SH 9 in Tecumseh, Pottawatomie County south to the junction with SH 3W in Pontotoc County and continuing southeast on SH 3W to the junction with SH 19 in Pontotoc County, a total of 39 miles.
- ***SH 99*** from the junction with US-62 in Prague, Lincoln County, south to the junction with SH 1 in Ada, Pontotoc County, a total of 49 miles.
- ***US-70*** from the junction with I-35 in Carter County east to the Arkansas state line in McCurtain County, a total of 173 miles.
- ***SH 20*** from the junction with US-75 in Tulsa County east to the junction with SH 88 in Claremore, Rogers County, a total of 20 miles.
- ***US-169*** from Kansas state line in Nowata County, south to junction with SH 88 in Rogers County, then continuing on SH 88 southeast to junction with SH 20 (east) in Claremore, Rogers County, a total of 52 miles.
- ***US-59*** from the junction with I-44 in Ottawa County, south to junction with US-412 in Delaware County, a total of 47 miles.
- ***US-59*** from the junction with US-412 in Delaware County, south to junction with SH 51 in Stilwell, Adair County, a total of 26 miles
- ***SH 51*** from the junction with SH 72 in Coweta, Wagoner County east to the Arkansas state line in Adair County, a total of 75 miles.
- ***SH 9*** from the junction with SH 2 in Haskell County east to the junction with US 59 in LeFlore County, a total of 28 miles.
- ***US-59*** from the junction with I-40 in Sallisaw, Sequoyah County, south to junction with SH 128 in Heavener, LeFlore County, a total of 47 miles.
- ***SH 112*** from the junction with US-59 in Poteau, LeFlore County northeast to the junction with US-271 in LeFlore County, a total of 17 miles.
- ***US-54*** Texas Co., Oklahoma Panhandle, from junction with SH 95, Texas state line, north-east to Kansas state line, a total of 56 miles

Table 7-1 presents data for each TIC, such as the length of each corridor, miles constructed at four lanes, and estimated construction costs for projects in the *8-Year Construction Work Plan.* Approximately $436 million was programmed for TIC projects in the *2010–2017 Construction Work Plan.* Projects at locations currently experiencing capacity problems are generally scheduled first.

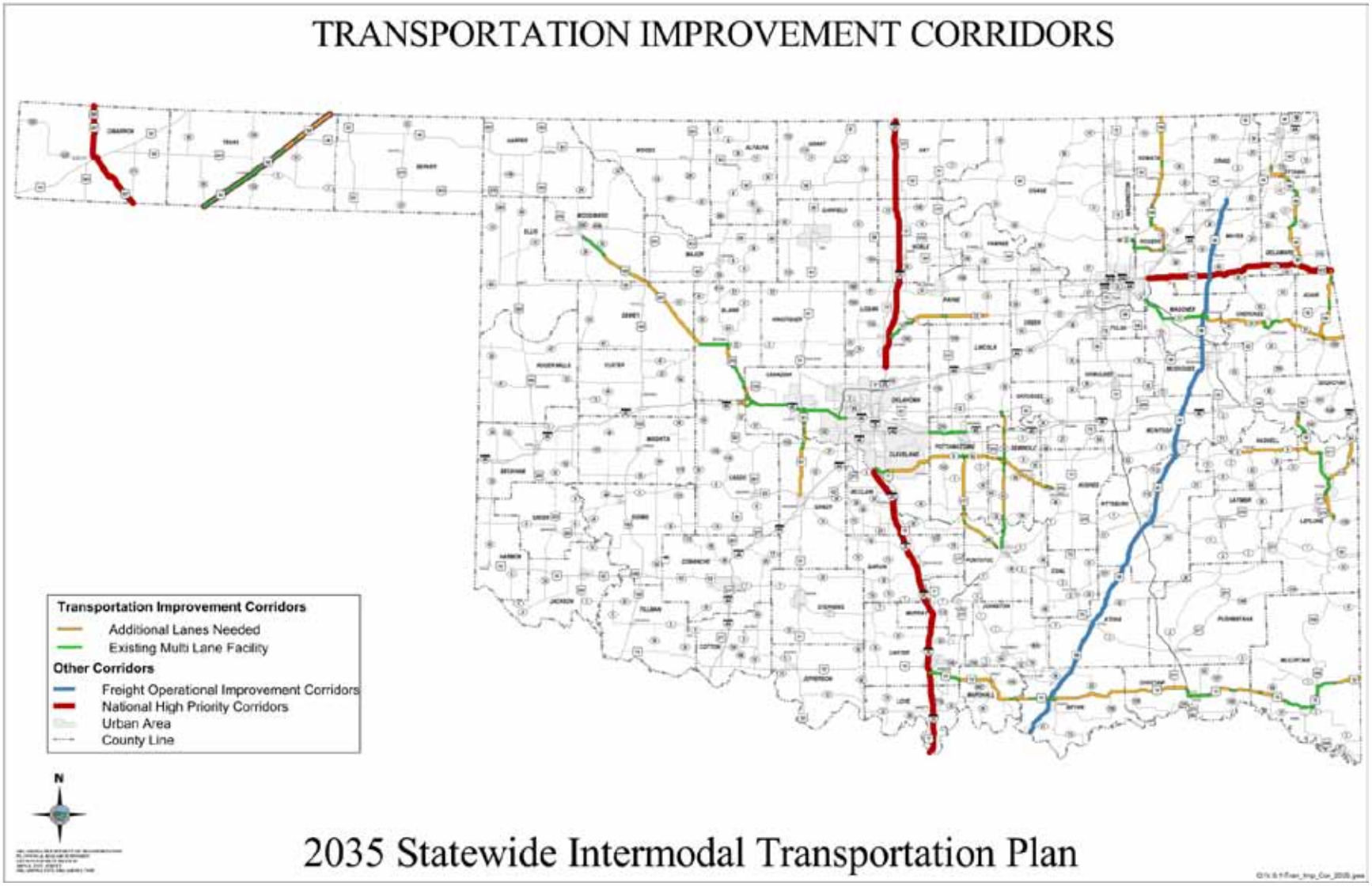


Figure 7-3. Transportation Improvement Corridors

Table 7-1. 2035 Long Range Plan, Transportation Improvement Corridors

	State Transportation Improvement Corridor	Corridor Miles	Miles w/4 lanes	Construction Status			Construction Cost Estimates		
				Awarded/ Underway	Planned 2010-2017	Remaining	Awarded/ Underway	Planned 2010-2017	Remaining
1	US 270 / SH 3 from the junction with SH 34 in Woodward, Woodward County southeast to Watonga, Blaine County and continuing southeast on US 281 and US 281 Spur to the junction with Interstate 40 in Canadian County, a total of 95 miles.	95	36	3.5	15	40.5	$8,605,794	$49,220,865	$162,000,000
2	Interstate 40 from the junction with US 81 Spur in Canadian County east to the junction with SH 18 in Pottawatomie County, a partial total of 51 miles: 4-lane to 6-lane improvement. (Estimates exclude Oklahoma County -see Oklahoma City regional transportation study (OCARTS) area plan)	51	51	0	5	46	0	$126,900,000	$184,000,000
3	US 81 from I-40 in Canadian County, south to the junction with SH 9 in Chickasha, Grady County, a total of 31 miles.	31	7	0	0	24	0	$0	$96,000,000
4	SH 9 from the junction with Interstate 35 in Norman, Cleveland County east to the junction with SH 99 in Seminole, Seminole County, a total of 48 miles.	48	7.5	0	6.25	34.25	0	$27,544,572	$137,000,000
5	US 270 from the junction with SH 9 in Seminole, Seminole County southeast to the east junction with US 270 Business in Holdenville, Hughes County, a total of 23 miles.	23	1	0	1.4	20.6	0	$10,093,235	$82,400,000
6	SH 33 from the junction with Interstate 35 in Guthrie, Logan County east to the junction with SH 18 in Cushing, Payne County, a total of 29 miles.	29	12	0	4	13	0	$14,953,819	$52,000,000
7	US 177 from the junction with SH 9 in Tecumseh, Pottawatomie County, south to the junction with SH 3W in Pontotoc County, and continuing southeast on SH 3W to the junction with SH 19 in Pontotoc County, a total of 39 miles	39	2.5	0	1	35.5	0	$14,376,021	$142,000,000
8	SH 99 from the junction with US 62 in Prague, Lincoln County, south to the junction with SH 1 in Ada, Pontotoc County, a total of 49 miles.	49	22	0	0	27	0	$0	$108,000,000

	State Transportation Improvement Corridor	Corridor Miles	Miles w/4 lanes	Construction Status			Construction Cost Estimates		
				Awarded/ Underway	Planned 2010-2017	Remaining	Awarded/ Underway	Planned 2010-2017	Remaining
9	US 70 from the junction with Interstate 35 in Carter County east to the Arkansas State Line in McCurtain County, a total of 173 miles.	173	57	5	13	98	$36,912,203	$68,877,712	$392,000,000
10	SH 20 from the junction with US 75 in Tulsa County east to the junction with SH 88 in Claremore, Rogers County, a total of 12 miles.	12	7.5	0	8.8	3.7	0	$47,315,924	$14,800,000
11	US 169 from Kansas Stateline in Nowata County, south to junction with SH 88 in Rogers County, then continuing on SH 88 southeast to junction with SH 20 (east) in Claremore, Rogers County, a total of 52 miles.	52	8	0	0.1	43.9	0	$2,546,938	$175,600,000
12	US 59 from the junction with I-44 in Ottawa County, south to junction with US 412 in Delaware County, a total of 47 miles.	47	11	0	0	36	0	0	$144,000,000
13	US 59 from the junction with US 412 in Delaware County, south to junction with SH 51 in Stilwell, Adair County, a total of 26 miles	26	4	2	10.5	9.5	$5,233,975	$45,931,340	$38,000,000
14	SH 51 from the junction with SH 72 in Coweta, Wagoner County east to the Arkansas State Line in Adair County, a total of 75 miles.	75	26	0	0	49	$0	$0	$196,000,000
15	SH 9 from the junction with SH 2 in Haskell County east to the junction with US 59 in LeFlore County, a total of 28 miles.	28	0	0	0	28	0	0	$112,000,000
16	US 59 from the junction with I-40 in Sallisaw, Sequoyah County, south to junction with SH 128 in Heavener, LeFlore County, a total of 47 miles.	47	22	5	0	20	$27,209,489	$0	$80,000,000
17	SH 112 from the junction with US 59 in Poteau, LeFlore County northeast to the junction with US-271 in LeFlore County, a total of 17 miles.	17	1	0	0	16	0	0	$64,000,000
18	US 54 Texas Co., Oklahoma Panhandle, from junction with SH 95, Texas Stateline northeast to Kansas Stateline, a total of 56 miles	56	37	5	9	5	$16,456,896	$27,891,678	$20,000,000
	Total 2035 Plan	**906**	**313**	**21**	**74**	**550**	**$94,418,357**	**$435,652,104**	**$2,199,800,000**

National High Priority Corridors

Congress has specified 45 routes on the NHS as "High Priority Corridors." These designations were made based on the importance of the route in serving regional, national, and international freight and vehicle movements. Designation of these routes began with the Intermodal Surface Transportation Efficiency Act of 1991 and continued with subsequent federal legislation.

One significant feature of a designated National High Priority Corridor is that it allows National Corridor Planning and Development (NCPD) Funds, a discretionary fund administered by the U.S. Secretary of Transportation in cooperation with Congress, to be spent to plan, construct, or maintain these corridors. The NCPD funds were available from 1991–2005 but were suspended with SAFETEA-LU legislation. The Corridors can also ultimately be designated Interstate routes if built to Interstate standards. Designation and improvements may prove useful for economic development and for enhancing safety for the movement of freight and other vehicles.

Oklahoma has four routes designated as National High Priority Corridors (location of these corridors is shown on the Transportation Improvement Corridor map in Figure 7-3):

- ***National High Priority Corridor #51*** US-54, the SPIRIT Corridor extends from El Paso, Texas, through New Mexico, Texas, and Oklahoma to Wichita, Kansas.
- ***National High Priority Corridor #8*** US-412 East-West Corridor extends from Tulsa, Oklahoma, eastward through Arkansas to Nashville, Tennessee.
- ***National High Priority Corridor #23*** The I-35 Corridor extending from Laredo, Texas, northward to Duluth, Minnesota. The I-35 Corridor bisects Oklahoma from north to south.
- ***National High Priority Corridor #38*** The Ports-to-Plains Corridor from Laredo, Texas, northward through Oklahoma, New Mexico, to Denver, Colorado traverses several highways. In Oklahoma, US-287 in Cimarron County from the Texas state line northward to the Colorado state line is included.

Programmed Improvements

The *FFY 2010-FFY 2017 Construction Work Plan* has approximately $238 million in improvements programmed for Oklahoma's NHS High Priority Routes as shown by **Table 7-2.**

Table 7-2. Oklahoma's National High Priority Corridor Programming by Federal Fiscal Year

Federal Fiscal Year	#51 (US-54 Texas County)	#38 (US-287 Cimarron County)	# 8 (US-412 Eastern Oklahoma)	#23 (I-35 in Oklahoma)
2010	$16,465,740	$11,440,976	$0	$29,249,792
2011	$974,384	$0	$0	$27,460,000
2012	$0	$692,999	$0	$42,830,863
2013	$1,931,187	$91,947	$0	$10,949,527
2014	$1,722,300	$872,877	$3,627,800	$48,692,400
2015	$3,300,000	$0	$300,000	$39,400,000
2016	$7,525,000	$0	$0	$14,233,431
2017	$0	$0	$5,700,000	$25,000,000
TOTAL	$31,918,611	$13,098,799	$9,627,800	$238,306,003

Source: FFY 2010-FFY 2017 Construction Work Plan, Oklahoma Department of Transportation. Includes amounts for right-of-way purchase, utility relocation, resurfacing, bridge rehabilitation, bridge replacement, and highway construction. Routine maintenance for both roadways and bridges excluded.

National High Priority Corridor Upgrades and Construction Cost Estimates

Studies for the National High Priority Corridors have been completed for two corridors in Oklahoma: the Ports-to-Plains Corridor in Cimarron County and the I-35 Corridor. The US-54 SPIRIT Corridor will be essentially complete to four lanes in Oklahoma by 2017 given current funding estimates. The US-412 Corridor is already four lanes in Oklahoma and does not need additional lane capacity.

- ***US-287 Ports-to-Plains Corridor*** Estimated construction costs to provide for a four-lane facility are $177 million for Oklahoma. As noted above, approximately $13 million is currently programmed for this facility. The *Ports-to-Plains: Corridor Development and Management Plan,* which was completed in 2004, is the basis for these costs. No funding has been identified for the remainder of the estimated construction costs.
- ***I-35 Corridor*** The *I-35 Trade Corridor Study* completed in 1999 made the following recommendations for I-35 in Oklahoma:
  - From the Kansas/Oklahoma Border to northern transition of Oklahoma City: six lanes
  - From the northern transition of Oklahoma City to the Oklahoma City core: eight lanes
  - For the Oklahoma City Core: eight lanes with additional construction of a relief route
  - From the Oklahoma City Core to southern transition of Oklahoma City: six lanes with additional construction of a relief route
  - From the southern transition of Oklahoma City to the Oklahoma/Texas border: eight lanes
  - Construction costs were estimated at $880 million for Oklahoma

As noted, $238 million is programmed for I-35 through 2017 and most of this is for rehabilitation of the existing facility. No funding has been identified for the additional capacity upgrades from the *I-35 Trade Corridor Study*.

National Corridor Planning and Development Program

As previously noted, the NCPD is a discretionary fund of the U.S. Secretary of Transportation that is used to plan, design, construct, and maintain the National High Priority Corridors. Oklahoma, through its Congressional Delegation, has received approximately $6 million in NCPD funds ($3 million for I-35; $1.5 million for US-412; $1.5 million for US-287).

Freight Operational Improvement Corridors

These corridors represent highways with high truck traffic but do not indicate capacity needs (beyond those identified in the Construction Work Plan) by 2035. However, the efficiency of these corridors is compromised by conditions such as stops in towns and cities, bridge deficiencies, geometrics, urban speed zones, school zones, at grade rail crossings, or other operating conditions that reduce the efficiency of freight movements. These corridors can benefit from corridor studies and improvements from a menu of improvements, such as bypasses; ITSs for driver information on traffic flows, weather conditions, etc.; bridge upgrades; rail grade separations; signal timing; and geometric roadway improvements.

Two highway segments have been identified as Freight Operational Improvement Corridors. The following corridors are shown in Figure 7-3:

- ***US-69 Freight Operational Improvement Corridor*** This corridor extends from the Texas state line northeastward approximately 215 miles to I-44 near Vinita. This corridor experiences significant truck delays

because of reduced speeds and stops through cities and towns along the route and lack of access control in several segments along US-69.

- ***US-54 Freight Operational Improvement Corridor*** This corridor extends from the Texas state line northeastward to the Kansas state line in Texas County. US-54 is classified as both a TIC and a National High Priority Corridor, and 90 percent of the corridor is scheduled to be completed as a four-lane highway by 2017. However, it will be important to continue to monitor traffic and use system management tools to avoid delays associated with heavy truck traffic along this route.

The only study along a Freight Operational Improvement Corridor was undertaken in 2001 by OTA for US-69 to analyze improvements to make US-69 a turnpike. Many of the improvements required to meet turnpike standards would likely be necessary to improve freight movements. This study included bypasses, environmental costs, local access road costs, reconstruction costs, and right-of-way costs. Total cost for improvements (including toll plaza costs) was $449 million.

Studies on US-54 would be necessary to determine the appropriate measures to improve freight movements since capacity upgrades for the facility are already built or programmed.

Oklahoma Turnpike System

The Oklahoma Turnpike Authority manages 602 route miles of toll roads that are financed by tolls.

Turnpike Strengths

- OTA has the ability to respond rapidly to system deficiencies, and rapidly develop projects, because it is not governed by the rules and regulations associated with federal-aid highway funding.
- OTA has one of the highest bond ratings of any turnpike authority. This reduces the cost of debt and allows the issuance of new debt rather efficiently, thus reducing the time it takes to fund capital improvement projects.

Turnpike Weaknesses

- The Turnpike Authority has identified the need for significant bridge rehabilitation or replacement. The Authority is in the process of developing a long range bridge replacement program.
- Turnpikes in the Oklahoma City and Tulsa areas are expected to experience serious congestion by the year 2035, and the OTA has requested capacity expansion studies on the Creek, Kilpatrick, and Turner Turnpikes accordingly. These studies are scheduled to commence before 2016.

Commercial Vehicle Operations

This section summarizes the strengths and weaknesses of the highway system in Oklahoma from a trucking industry perspective. Strengths and weaknesses have been gathered from Advisory Committee Interviews, Advisory Committee meeting summaries, public meeting minutes, Chapter 6, Transportation Mode Inventory and Utilization, and websites for ODOT, the American Trucking Association (ATA), and the National Highway Safety Council.

Trucking is critical to the State's economy. There are approximately 50,000 trucks going through Oklahoma every day. A large portion of these trucks travel through the State on I-35 or I-40 and do not stop. Approximately 30,000 trucks cross the I-35 and I-40 intersection daily.

The trucking industry has traditional transportation concerns: safety, congestion, pavement condition, and bridge adequacy. In

addition, the industry has economic concerns revolving around issues of taxation and size and weight regulation. Finally, specialty haulers require permits to carry oversize or overweight loads, so ODOT maintains an extensive permitting operation to ensure the smooth operation of this critical business. **Figure 7-4** shows designated Oklahoma highways for conventional commercial vehicles.

Commercial Vehicle Operations Strengths

- The highway system is in fair condition. Interstate routes, which carry the most commercial vehicle traffic, are also in the best condition of any of the roadways in the state.
- The establishment of bulk transfer facilities has resulted in cutting the highway miles for many of the commercial vehicle bulk carriers in half. Historically, trucks would run 500–1000 miles with bulk commodities; however, with the new trans-loads, the average miles per load for these products have decreased to 250 miles. Fewer miles equate to less wear-and-tear on the highway system.
- Longer combination vehicles—53-foot double trailers or triple trailers not exceeding 100 feet in length—are allowed on a network of Oklahoma roads, which allows for more productivity for the trucking industry.
- Oklahoma has made progress in rehabilitation or reconstruction of functionally obsolete and structurally deficient bridges. In January 2005, there were 150 load-posted bridges on the Oklahoma SHS. As of early 2010, there were 42. The *8-Year Construction Work Plan* calls for replacing the remaining load-posted bridges.
- ODOT has been able to accelerate bridge replacement work though a concerted effort made possible by funding provisions of State Legislation passed in 2005 and 2006. Between 2006 and 2010, the Department replaced or completed major rehabilitation of 530 bridges, over 105 annually. This is notable in comparison to the previous five years, where the rate of replacement was 30 per year.
- Trucks and passenger vehicles in Oklahoma have the same speed limit, rather than a "differential" speed limit (higher for cars than trucks) as is found in some other states. The higher speed limit promotes greater productivity for the industry.
- Trailers with triple axles can weigh up to 90,000 pounds on the Interstate System, again contributing to productivity.
- Oklahoma is a leader in alternative fuels, and this benefit should be shared in terms of lower fuel costs for Oklahoma truckers.

Commercial Vehicle Operations Weaknesses

- With the closure of the automotive and intermodal multi-modal terminals, Oklahoma trucking has lost access to global trade corridors. There was not enough density within the state to support these terminals. However, there are a number of trans-load operations for bulk materials; and newer facilities in Shawnee, Oklahoma City, Woodward, and Elk City have been developed.
- Meeting requirements related to air quality attainment legislation can be costly for commercial motor carriers.
- Other modes of transportation may gain share if trucks cannot economically attain new air quality standards.

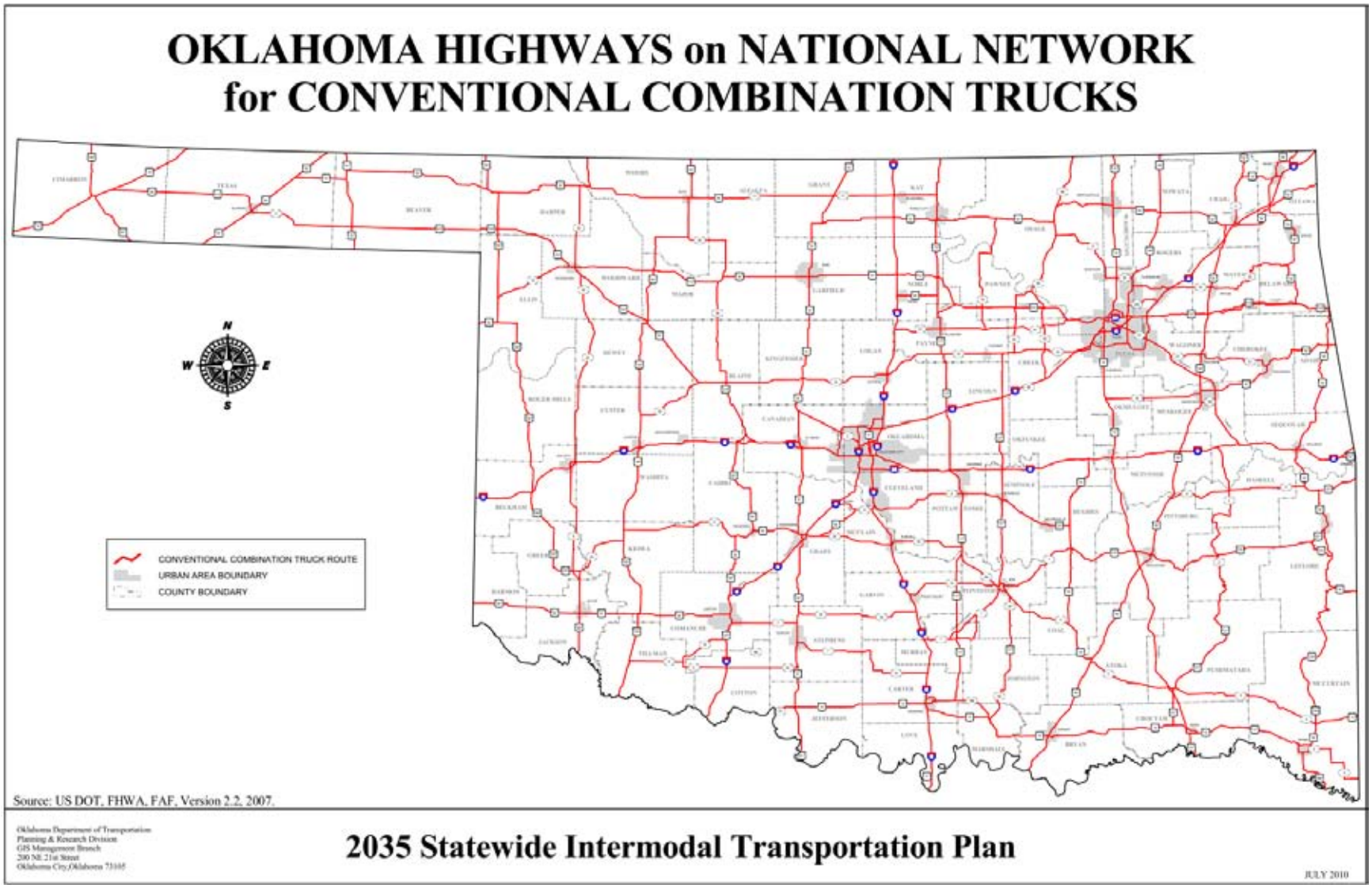


Figure 7-4. Oklahoma Highways on National Network for Conventional Combination Trucks

- Bridge conditions are a weakness for some truck cargos in Oklahoma. Bridges must conform to the weight standards for the class of highway. Some drilling rigs bring their own portable bridges to the job sites.
- Some drilling rigs weigh as much as 120,000 to 180,000 pounds. If bridges are posted or weight restricted, trucks must be re-routed, which often results in extra miles, extra transit time, and puts trucks on smaller rural roads where traffic and turning issues are aggravated.
- Permitting issues pose a problem for many oversize carriers. A blanket permit system similar to the approach in Texas would reduce delays and labor required to keep oil drilling rigs moving. The current process is slow and manual; and the internet system is not reliable in getting quick turnaround for permits. Internet software is being developed to cover 90 percent of the loads in Oklahoma. It is anticipated that Oklahoma's implementation of the second phase of this software (which is currently deployed in 18 states) will be operational in 2011.
- Many rural and two-lane roads lack wider shoulders, which allow vehicles that are turning, exiting, or entering a highway to reduce speed to turn safely or to merge into traffic safely.
- Motor carriers in Oklahoma lack timely information about congestion and delays. If carriers know where congestion or choke points occur, they can route around them. Variable signs and telecommunication messages can help truckers avoid congestion. San Antonio, Texas, is a model for communicating highway congestion and delays.

Freight Rail Systems—Class I and Short Lines

The freight railroad system in Oklahoma is the lifeline for much of the freight moving through the State, as well as into and out of the State. The State's railroads, along with the trucking companies, waterways, and air cargo carriers that also move the State's products and materials, are critical to a healthy Oklahoma economy. The unique efficiency of the railroads as bulk commodities carriers keeps millions of tons of freight off the State's highway and road network. Also, the railroads effectively move time-sensitive trailers and containers as a key component of intermodal transportation in which the final delivery is made by truck.

Rail is the primary mode of freight products moving through the State (those freight movements that have neither an origin nor a destination within Oklahoma). Approximately 70 percent of these through-freight movements in Oklahoma occur by rail. Also, rail is the primary transportation mode for the grain and stone products shipped out of Oklahoma. Rail is the mode of choice for all of the coal and a great majority of the grain that is imported into Oklahoma. Chapter 5 provides additional freight and goods movement information.

Oklahoma has a vested interest in rail transportation, with the State having purchased nearly 900 miles of track. Class I or Class III railroads operate 88 percent of the State-owned miles.

Class I System

The Class I railroads include BNSF, UPPR, and KCS. These three railroads carry most of the rail freight tonnage moved within the State. These major railroads operate over approximately 2,500 miles of track in Oklahoma and carry nearly 300 million tons of freight in the State

each year. Chapter 6 provides detailed information on these facilities.

BNSF's east-west "Transcon" line, connecting Chicago and Los Angeles, passes through northwest Oklahoma and, in recent years, has been expanded to a double-track mainline within Oklahoma. Additional Centralized Traffic Control (CTC) on the Class I railroads has also provided railroads with the ability to move additional freight. The BNSF north-south mainline operating through Oklahoma City between Kansas City and Fort Worth also carries Amtrak's Heartland Flyer passenger service between Oklahoma City and Fort Worth. Additional capacity on this single-track line would be very desirable.

BNSF is in the process of expanding its intermodal traffic off the "Transcon" line through Enid and Tulsa as part of BNSF's increased emphasis on its Memphis Gateway. Also, BNSF is proposing the expansion of its Cherokee Yard within Tulsa.

Rails for National Defense

The Strategic Rail Corridor Network (STRACNET) is a series of rail routes in the United States designated as being critical for the movement of military goods and equipment. STRACNET includes 38,800 miles of railroad providing rail service to 193 defense installations whose missions require rail service. The military places heavy and direct reliance on railroads to integrate bases and connect installations to predominantly maritime ports of embarkation. Mainlines, connectors, and clearance lines must all combine to support movement of heavy and oversized equipment.

STRACNET routes in the State include BNSF's "Transcon" line, which passes through northwestern Oklahoma, connecting Chicago and Los Angeles. Another STRACNET route is BNSF's north-south mainline through Oklahoma City, connecting Kansas City to Fort Worth. The KCS line along the eastern edge of the State is a STRACNET route. In addition, as part of 5,000 miles of track nationwide essential to connecting one facility to another, there are "Connector" rail routes in Oklahoma as well. These include the UPPR north-south line connecting BNSF's "Transcon" Line to the Army Ammunition Depot in McAlester, and the Stillwater Central Railroad connecting to both Altus Air Force Base in Altus and Fort Sill in Lawton.

Short Line Railroads

The 19 Class III railroads own and operate over 1,000 miles of rail line within Oklahoma and also have trackage rights and operate over many Class I railroads as well. These Class III railroads provide many of the critical pick up, delivery, and other customer service capabilities that are integral to the overall movement of freight by rail within Oklahoma. As in other states, the ability to maintain the track and bridge infrastructure of these short line railroads is a real challenge because of the often marginal revenues generated.

The *FFY-2008 through FFY-2015 State Owned Rail Construction and Maintenance Work Plan* indicates that the six railroads operating on the state-owned rail lines are projected to spend almost $19.3 million on the state-owned lines in the next five fiscal years (2011–2015). The five-year amounts are Wichita, Tillman and Jackson ($6.83 million); Farmrail Corporation ($4.43 million); Stillwater Central Railroad ($4.08 million); Arkansas-Oklahoma Railroad ($2.59 million); Blackwell Northern Gateway Railroad ($1.94 million); and South Kansas and Oklahoma ($270,000). These construction and maintenance projects primarily include tie replacement, ballast improvements, bridge

improvements, vegetation control, and drainage improvements.

The State provides these funds to the operators of its short lines for the ongoing rehabilitation and maintenance of track and structure. Most operators maintain their track to Class 2 FRA (maximum 25 miles per hour) track standards, but some are limited to Class 1 (maximum 10 miles per hour).

About 88 percent of the 862 miles of rail lines owned by the State are in operation. ODOT may wish to partner with the Oklahoma Department of Commerce to promote additional economic development along State-owned rail lines.

Freight Rail Strengths

- Oklahoma is served by three major Class I competitors—UPPR, BNSF, and KCS. This is very positive competition that helps to keep costs down. The good relationships between Class I railroads and some of the short lines have been very beneficial.
- The State's ownership of nearly 900 miles of branch lines has been a positive step in preserving rail availability for customers served by branch lines that would have been discontinued by Class I operators.

Freight Rail Weaknesses

- There is a lack of funding for improvements and maintenance on the State-owned lines. The State had acquired the former Rock Island line (north-south through El Reno), and UPPR has been operating through a lease-purchase agreement. The payment cycle is nearly complete, and UPPR will actually own the line starting in 2011. This annual lease payment of $1.8 million to the State has been used as a "revolving fund" to maintain other short-lines throughout the State. This money will disappear once UPPR gains full ownership of the line, and funding for future short lines will cease.
- The infrastructure on many short lines is deteriorating, especially short lines with weight limitations. These lines are insufficient to handle the new 286,000-pound freight cars. Infrastructure needs are increasing, while funds are decreasing.
- There are no rail-served intermodal facilities currently operating in Oklahoma. BNSF closed its truck and rail intermodal facility in the Oklahoma City area in May 2005 because of insufficient intermodal volumes. The primary reason for a lack of intermodal business potential in Oklahoma is the proximity to very large truck and rail intermodal facilities in both Fort Worth and Kansas City. BNSF's Alliance intermodal facility in Fort Worth and UPPR's Intermodal facility in Dallas, as well as several intermodal facilities in the Kansas City area owned by BNSF, UPPR, and KCS, provide sufficient intermodal capacity within proximity to Oklahoma's truck/rail intermodal needs. While Oklahoma is adequately served by these intermodal facilities from a transportation perspective, the State loses out on some of the economic benefits associated with intermodal hubs—namely, warehousing, distribution, and manufacturing facilities that locate in close proximity to hubs.

Airports

Oklahoma has good air service connections—the Will Rogers World Airport in Oklahoma City and the Tulsa International Airport are the two major airports in Oklahoma. The three regional airports are located in Lawton-Fort Sill, Enid (Woodring), and Ponca City while the State is served by an extensive network of small airports. In 2008, there were 97 general

aviation and 37 other public-use airports registered with the Federal Aviation Administration (FAA).

Aviation System Strengths

- Oklahoma has a good regional airport system. There is not a location in the State that is more than an hour away from a jet-capable airport.
- The Oklahoma State government is focusing more on what facilities are needed at current airports, instead of expanding airports to each county in the State.
- The State government recognizes the positive economic impact of aviation.

Aviation System Weaknesses

- Larger airports, such as Will Rogers and Tulsa, are financially sustained by on-site lease revenue and airport ticket fees. General Service airports, however, require public subsidies. There is a lack of State funding to upgrade such airports, in spite of their economic benefit to local communities.
- Stakeholders find that there is inadequate transit access from downtown areas to airports.
- Transshipment and intermodal options are not located within the State.

Inland Waterways

Inland waterways in Oklahoma are defined as the 440-mile segment of the MKARNS, which connects the Port of Catoosa and Port of Muskogee to the Mississippi River and the Gulf of Mexico.

Waterways are able to handle large bulk items traveling into or out of the State of Oklahoma. On a ton-mile basis, it is estimated that commodity and project cargo (especially heavy or oversized) can be moved by barge at 33 percent of the cost of railroad transportation and 20 percent of the cost of truck shipping. Also, a full "tow" of eight barges can hold the equivalent of the weight borne by 480 semi-trailer trucks with a significantly lower carbon footprint than either truck or rail. The cost savings of using waterways to transport items clearly outweighs using other modes. Both the Port of Catoosa and the Port of Muskogee offer multi-use facilities with many attractive features. Although the MKARNS could be widened and deepened to accommodate more barge traffic, it is currently meeting the basic demands for waterway shipping in Oklahoma.

Overall, interaction between shipping modes in Oklahoma could be improved. The public supports the development of intermodal freight facilities (for highways, roads, rail, and water-ways). The feasibility, cost, and environmental concerns of this development have not been assessed. The State has not embraced an intermodal access roads plan. Until joint facilities are built or roadways, bridges, and railroads leading to ports are improved, transferring goods between modes will be inefficient.

The strengths and weaknesses following have been gathered from Advisory Committee interviews, Advisory Committee meeting summaries, public meeting minutes, Chapter 6, Transportation Mode Inventory and Utilization, and websites for the Tulsa Port of Catoosa, the Port of Muskogee, the U.S. Census Bureau, and ODOT. Phone interviews were conducted with the Directors at the Port of Catoosa and Port of Muskogee.

Inland Waterways Strengths

- Waterway shipments are cost effective and environmentally friendly compared to other modes.

- There is future potential of containerized and bulk cargo coming into/out of Oklahoma because of Panama Canal expansion.
- Waterways can handle heavy and overweight loads that railroads and highways cannot handle.
- The Army Corps of Engineers is considering deepening the channel to 12 feet.

Inland Waterways Weaknesses

- The Port of Catoosa is a valued waterborne freight terminal but is located well up river, behind many locks. The resulting extended transit times for bulk commodities inhibit the competitiveness of some waterborne shipments.
- There is a lack of intermodal connections from ports to the ultimate destinations.
- In some instances, bridges cannot handle the volume and weight of loads from the ports, and/or the roads are too narrow. Oklahoma should increase highway capacity to/from ports as they are improved and developed.

Public Transportation

Public transportation, encompassing bus, passenger rail, and paratransit services, is an essential element of the urban, rural, and intercity transportation resources of the State. The importance of public transportation outweighs its relatively small share of person trips made within any of these three environments, because it is available at low cost and provides the following functions:

- An alternative to the private automobile for those who otherwise face driving on congested roads, expending time as a driver that can be better used for other purposes during time required for travel, avoiding tying up the use of an automobile that may be needed for other purposes, or reducing personal expenditures for travel.
- The only available mode of travel for persons who do not have access to an automobile or who are unable to drive.
- In most cases, an efficient mode of travel in terms of road capacity used, fuel consumed, and air pollutants emitted.

Although the use of public transportation in the United States, including Oklahoma, has in most cases declined percentagewise during the last 50 or 60 years, the absolute number of passengers carried has been rising. The upward trend in need, and in the supply of needed services, can be expected to accelerate in response to policies addressing energy independence and reduced emission of greenhouse gases. In Oklahoma's larger cities, urban public transportation will also be an important means of responding to rising traffic congestion.

A challenge routinely face by public transportation in Oklahoma, as elsewhere throughout the nation, is funding. For a number of reasons, fares paid for public transportation are commonly perceived by passengers as being greater than the cost of travel by automobile, an exception being the taxi. This perception arises mainly from the fact that the cost of travel by private automobile is spread quite broadly among multiple sources ranging from the cost of housing or business property to income taxes, car payments, and finally, more directly trip-related expenditures such as fuel and tolls.

Even though fare levels may be keenly felt by passengers, they are well below the level necessary to cover the costs of the required facilities, vehicles, and their operation and maintenance. Furthermore, public transportation systems do not have the same access to funding as the highway system, and in many cases the systems do not have dedicated source of funds other than fares. With the possible

exception of intercity bus lines, public transportation requires public funding; urban transit systems typically recover 20 to 40 percent of their operating and maintenance costs from fares paid by passengers and rely entirely on other sources for capital expenses. Intercity rail is operated by Amtrak, which is supported by federal funding.

Urban Transit

Urban public transportation systems serve communities with populations of 50,000 or more. There are four urban public transportation agencies in Oklahoma: Oklahoma City METRO Transit, which is part of the Central Oklahoma Transportation and Parking Authority (COTPA); CART for the Norman area; the Metropolitan Tulsa Transit Authority (MTTA); and the LATS. COTPA and MTTA have both directly-operated and contracted fixed-route service, although the contracted service is only about one-tenth the amount operated directly. COTPA also splits demand response operation, while MTTA contracts all of its demand response service. LATS and CART services, both fixed route and demand response, are entirely directly operated.

Using the most recent available *National Transit Database* (2008), the fixed-route directly operated services of the two largest of these systems, COTPA and MTTA, were compared with the average of a selected directly operated fixed-route service sample of 77 systems operating in the United States. The sample selection was made on the basis of the maximum number of vehicles operated in fixed-route weekday service, and included 77 systems that operate from 30 to 100 buses in weekday service. **Table 7-3** summarizes the comparison.

Table 7-3. Comparison of Transit System Characteristics for Oklahoma City and Tulsa and an Averaged Sample of U.S. Transit Systems

Transit System and Characteristics	Oklahoma City COTPA	Tulsa MTTA	Averaged National Sample
Population Served	650,221	486,665	260,473
Service Area (square miles)	244	261	224
Maximum Number of Buses in Operation	45	51	53
Directional Route Miles	602	575	324
Weekday Bus Revenue Miles	9,156	9,060	7,050
Weekday Bus Revenue Hours	547	560	529
Weekday Passenger Boardings	8,881	9,307	13,895
Total Annual Operating & Maintenance Cost	$15,663,468	$12,138,126	$13,948,330
Total Annual Fares Earned	$1,728,136	$1,853,808	$2,846,718
Population Density (persons per square mile)	2,665	1,865	1,164
Directional Route Miles per Capita	0.0009	0.0012	0.0012
Directional Route Miles per Square Mile	2.47	2.20	1.45
Weekday Bus Miles per Directional Route Mile	15.22	15.76	21.73
Average Speed of Revenue Service (miles per hour)	16.7	16.5	13.3
Annual Passenger Boardings per Weekday Boarding	279.6	270.3	290.6
Annual Passenger Boardings per Capita	3.8	5.2	15.5
Passenger Boardings per Bus Revenue Hour	16.0	16.6	25.7
Total Operating & Maintenance Cost per Boarding	$6.31	$4.83	$3.45
Average Fare per Passenger Boarding	$0.70	$0.74	$0.70
Farebox Recovery Ratio	11.0%	15.3%	20.4%

Source: Parsons Brinckerhoff from 2008 National Transit Database.

Key findings include:

- Route miles relative to area and density: In Oklahoma City, the transit system operates fewer-than-average route miles per capita. The Tulsa transit system operates at the national average of route miles per capita.
- Bus miles per route mile: Both Oklahoma City and Tulsa transit systems operate fewer bus miles per route mile than the average of the sample, indicating that service is less frequent or operated fewer hours per day.
- Boardings per capita and per bus hour: Both of the transit systems are under-used, in terms of passengers per hour of service operated.
- Cost per passenger boarding: Low use of the service results in higher-than-average operating cost per boarding; operating cost is not far from the average value.
- Fare per boarding: Fares for the Oklahoma City and Tulsa systems are about average.
- Farebox recovery: Because of low service utilization, passengers pay a below-average share of transit operating cost.

The Lawton (LATS) and Norman (CART) fixed-route services were similarly compared (see **Table 7-4**) with a directly-operated sample drawn from the 2008 *National Transit Database*. A sample of 74 transit systems was generated based on a range of maximum vehicles between 8 and 25 buses. LATS serves the city of Lawton and adjacent Fort Sill. CART service and use is affected by the University of Oklahoma's location in Norman.

Table 7-4. Comparison of Transit System Characteristics for LATS and CART and an Averaged Sample of U.S. Transit Systems

Transit System and Characteristics	Lawton - LATS	Norman - CART	Averaged National Sample
Population Served	70,177	96,782	196,258
Service Area (square miles)	42	178	393
Maximum Number of Buses in Operation	10	13	12
Directional Route Miles	145.0	127.0	161.4
Weekday Bus Revenue Miles	1,913	1,335	1,842
Weekday Bus Revenue Hours	130	114	123
Weekday Passenger Boardings	1,354	4,312	2,018
Total Annual Operating & Maintenance Cost	$1,810,790	$1,613,727	$2,613,813
Total Annual Fares Earned	$199,616	$85,997	$572,987
Population Density (persons per square mile)	1,670.9	543.7	499.4
Directional Route Miles per Capita	0.0021	0.0013	0.0008
Directional Route Miles per Square Mile	3.45	0.71	0.41
Weekday Bus Miles per Directional Route Mile	13.19	10.51	11.41
Average Speed of Revenue Service (miles per hour)	14.7	11.7	15.0
Annual Passenger Boardings per Weekday Boarding	297.5	264.5	283.6
Annual Passenger Boardings per Capita	5.7	11.8	2.9
Passenger Boardings per Bus Revenue Hour	10.4	37.8	16.4
Total Operating & Maintenance Cost per Boarding	$4.50	$1.41	$4.57
Average Fare per Passenger Boarding	$0.50	$0.08	$1.00
Farebox Recovery Ratio	11.0%	5.3%	21.9%

Source: Parsons Brinckerhoff from 2008 National Transit Database.

Key findings include:

- Area and density: Lawton has a relatively small area but a much higher-than-average population density. Norman is average in population density. Both systems serve lower-than-average populations.
- Bus miles per route mile: Both systems are near average in route use intensity.
- Boardings per capita and per bus hour: The Lawton system passenger boardings are high per capita but low per bus hour while Norman, because of its large university, is very high relative to both population and bus hours.
- Cost per boarding: Lawton is at the average. Norman is very low, a consequence of high productivity. Both systems have lower-than-average operating cost.
- Fare per boarding: Lawton is low; Norman very low.
- Farebox recovery: Lawton is low; Norman is very low.

Rural Transit

There are presently 19 community public transportation providers in Oklahoma. **Table 7-5** provides summary data from FY2003 to FY2008 for these rural transit systems.

Urban and Rural Public Transportation Strengths

- Transit demand, both fixed route and demand response, is strong with the State's aging population.
- Transit coverage is good, although there is always a frequency issue, especially in non-urban areas. Mobility options do exist and demand exists.
- Reasons for strong transit demand include low auto ownership in some areas, the incidence of elderly or disabled persons, and the need in congested travel corridors for an alternative to travel by private car.
- The increase in demand for public transportation will bring opportunities to replace demand response service, which has high cost per passenger carried, with expanded use of fixed-route service. There will also be opportunities to implement employee shuttles.

Table 7-5. Rural Transit Information, Statistics and Trends

Fiscal Year	Revenue Miles	Passenger Miles	All Passenger Trips	Elderly Trips[1]	Disabled Trips[2]	Elderly & Disabled Trips[3]	Other[4]
2003	10,411,000	18,194,621	1,983,854	350,948	236,681	126,323	1,269,902
2004	10,816,238	18,111,865	2,182,222	358,286	266,037	125,782	1,432,117
2005	12,407,985	21,053,792	2,618,931	369,014	276,553	136,824	1,836,540
2006	13,582,154	22,031,773	2,843,067	369,172	267,166	140,714	2,066,015
2007	14,424,574	22,199,032	2,891,260	333,254	264,791	136,085	2,157,130
2008	15,556,263	30,059,708	3,125,884	342,962	278,468	150,673	2,353,781

Source: ODOT.

[1]Elderly Trips are passengers who are 55 or older;

[2]Disabled Trips are passengers who are disabled;

[3]Elderly & Disabled Trips are passengers who are both elderly and disabled;

[4]Other trips are all passenger trips not including elderly, disabled, and elderly and disabled trips.

Urban and Rural Public Transportation Weaknesses

- Because all the public transportation modes require separate modes of access, connections between modes are essential (bus, Amtrak, fixed-route to airports, routes to service feeders, etc.). It is critical to look for opportunities for transit services to be expanded including development of vanpools and park-and-ride facilities.
- A perennial issue is transit service coordination between many human service agencies.

Tribal Transit

There are several tribal transit services in operation that have been funded since 2006 by the FTA Tribal Transit Program, Section 5311 (c), which helps promote public transportation on Indian reservations. These transit agencies include FasTrans, Cherokee Nation Health Department, Choctaw Nation of Oklahoma, Comanche Nation Transit, Mosque Creek Nation Transit, and Wichita and Affiliated Tribes.

Tribal Transit Strengths

- The tribal systems provide access for jobs, and for elderly and disabled individual's access to activity centers and transportation for medical care.

Tribal Transit Weaknesses

- Long commutes for employees to work sites.
- Lack of coordination with other transit providers.

Intercity Bus Transit

Oklahoma is served by two intercity bus companies: Greyhound Lines and Jefferson Bus Lines. Chapter 6 provides operating information on both intercity bus lines.

Passenger Rail

Amtrak, the national passenger rail company, operates the Heartland Flyer which is a daily passenger rail service that follows a 206-mile route between Oklahoma City's Santa Fe train station and Fort Worth, Texas. Oklahoma communities served along the way include Norman, Purcell, Pauls Valley, and Ardmore. Ridership aboard Heartland Flyer trains increased nearly 19 percent during fiscal year 2008, to 80,892 passengers.

The Heartland Flyer Route is designated as a part of the USDOT's *Vision for High Speed Rail (HSR) in America.* There are 11 HSR Corridors nationwide, and the Tulsa to Oklahoma City and Oklahoma City to Fort Worth corridors are a part of the greater South Central Corridor.

Passenger Rail Strengths

- The Heartland Flyer's scheduled connections with Amtrak's Texas Eagle in Fort Worth provide service to Chicago and San Antonio, with continued service to Los Angeles.
- The Heartland Flyer provides a high quality of customer service. The consumer service index has been high for this passenger route, and the Heartland Flyer has received Amtrak's "Champion of the Rails" award.
- Railroads, such as UPPR, are often constructing a second track when implementing rail grade separations.
- High speed rail and commuter rail are receiving more attention than they attracted five years ago. At the federal level, funding is becoming available to implement improvements.
- One of the nation's 11 High Speed Rail Corridors, the South central Corridor, crosses through Oklahoma.

Passenger Rail Weaknesses

- Rail congestion is definitely a problem with Class I railroads. Although double tracking the lines could address passenger and freight issues, this approach is very expensive to build and maintain. Other solutions include building selective siding extensions, which are less expensive, and more advanced signal/dispatching systems, such as Positive Train Control (PTC). PTC is mandated on all passenger lines by 2015.
- Passenger rail activities are occurring at regional, rural, high speed and Amtrak passenger levels; but there is a lack of coordination on these issues.
- Grade crossing safety is important for high speed rail passenger service, with grade separations (overpasses, or underpasses) providing the ideal level of safety. Most passenger rail routes, however, lack grade separation.
- The Heartland Flyer's connection times with the Texas Eagle at Fort Worth are long—there is an hour and half wait in either direction. On a long trip, these layover times are acceptable. For shorter distance trips, the waits become an issue and discourage passenger rail use.
- The lack of frequent service on the Heartland Flyer also discourages use. There is one train down to Texas in the morning and one back in the evening. Implementation of a mirror image schedule, northbound in morning and southbound in evening, would make the service more attractive. The current schedule hampers ridership because it is geared towards longer trips and stays.
- The Heartland Flyer station in Oklahoma City lacks local transit connections. Greyhound serves the location, but the company does not provide tickets at the train station.

Pedestrian and Bicycle Transportation

Bicycling and walking are environmentally friendly, healthy, and the least costly transportation choices, yet they have often been overlooked as viable transportation modes. Bicycling and walking can be excellent choices for short trips. Some factors that influence walking and bicycling mode choices are the distance between the start of the trip and the destination, climate, a person's health, and the safety and availability of infrastructure.

The State's Role in Bicycle and Pedestrian Infrastructure

The direction that Oklahoma has taken in developing its bicycle and pedestrian infrastructure is to focus attention on funding projects in urban areas and local communities, where there is the most population and, by proxy, the most need. The State relies primarily on the Transportation Enhancements and Safe Routes to Schools programs to support local community improvements. Project selection for the Transportation Enhancements program is made by a committee, as are decisions for the Safe Routes to Schools program. The Transportation Enhancements program usually commits about half or slightly more than half of available funds to bicycle and pedestrian projects. The Safe Routes to Schools program is dedicated to providing infrastructure and education projects that make walking and bicycling to school safer for students in elementary or middle school.

A recent additional opportunity occurred with the ARRA funding. The State committed $26 million to local communities to revamp sidewalks throughout the state, primarily to bring sidewalks into compliance with Americans with Disability Act (ADA) standards.

It should be noted that the State does not have a stand-alone bicycle and pedestrian plan or any specific goals, such as improving pedestrian and bicyclist safety or increasing the rate of bicycling and walking as modes. There are no specific design guidelines available that address bicycle and pedestrian accommodation on State roads, nor any policies such as 'routine accommodation' that would ensure bicycle and pedestrian infrastructure was evaluated during all phases of the road project planning process.

Pedestrian safety on the road network is one issue that should receive attention. 2008 crash statistics[1] show that the pedestrian fatality rate was 21st worst in the nation (out of 50 states and the District of Columbia) with a fatality rate of 1.4 per 100,000 residents. Based on the potential level of walking in the State, pedestrians are over-represented in the statistics, as pedestrian deaths make up 6.8 percent of all crash fatalities. Making roads safer for pedestrians has the additional benefit of making roads safer for all users.

Trails

Trails that can be used as transportation routes are the result of work completed by the MPOs, cities, or towns. Trails, also referred to as multi-use paths, are physically separated facilities (from the road network) that are used by bicyclist and pedestrians and other non-motorized modes.

Trails differ from bikeways and sidewalks, as that infrastructure is generally immediately adjacent to (or in the case of bicycle lanes, on) a road. Sidewalks differ from trails in that sidewalks are most often for pedestrians only,[2] whereas multi-use paths accommodate a wide variety of non-motorized modes. Trails are often used for recreational purposes (running, hiking, skating) in addition to serving as transportation routes.

The State has a number of trails located in urbanized areas. Funding for these has come from the Transportation Enhancements program and other local sources. Opportunities for additional trails exist, and as evidenced in the regional transportation plans, the MPOs are planning for additional trails in their communities.

Pedestrian and Bicycle Transportation Strengths

- Since the inception of the Enhancement program in Oklahoma in 1993, approximately 200 projects, including sidewalks, downtown lighting and landscaping, and multi-use bicycle and pedestrian trails, have been funded to facilitate bicycle and pedestrian activity.
- The recent investment of stimulus funding to local communities for ADA requirements will help with sidewalks and accessibility.

Pedestrian and Bicycle Transportation Weaknesses

- Pedestrian and bicycle issues have not been a priority in overall State planning. ODOT has neither a full-time bicycle and pedestrian transportation coordinator, nor a statewide pedestrian and bicycle advisory committee. There are selection committees for projects funded through the Transportation Enhancement and the Safe Routes to School programs, but there is no statewide pedestrian and bicycle plan to guide discussions or investments.

Chapter 7 Endnotes

[1] National Highway Traffic Safety Administration National Center for Statistics and Analysis, publications 811 163 and 811 156.

[2] Skateboards, in-line skates, non-motorized scooters and Segways are also often allowed on sidewalks even though they have wheels. Persons using wheelchairs are considered as pedestrians.

Chapter 8 Long Range Plan Development

Introduction

This chapter identifies plan recommendations that enhance Oklahoma's intermodal transportation system, take advantage of the State's comparative logistics advantages, and support the State's economy and opportunities for economic development.

Recommendations have been developed for each mode and these recognize the connections between the various modes. The strategies herein are described in the context of a policy framework, in which strategies flow from a specific recommendation.

The recommendations and strategies are intended to maximize the potential for short- and long-term economic growth. They demonstrate the State's commitment to partnering with the private sector in promoting economic development through strong transportation planning and infrastructure development.

The recommendations are listed by mode in **Table 8-1** and are consistent with the overall policy framework presented in Chapter 3. The subsequent sections describe recent accomplishments and challenges by mode, followed by 2035 Plan recommendations and strategies. The strategies explain methods that will be used to implement the recommendations.

Table 8-1. Recommendations by Mode

Highway	• Improve safety by replacing or rehabilitating structurally deficient and functionally obsolete bridges on the State Highway system. • Preserve and improve the condition of roads and bridges by fully implementing asset management systems. • Improve highway safety through implementation of system-level strategies. • Improve operational performance on priority highway corridors through strategic targeted improvements. • Improve operational performance of highways through increased use of traveler information systems. • Improve commercial vehicle operations on highways through increased use of electronic/automated routing, screening, and permitting.
Freight Rail	• Improve rail operations through targeted improvements of rail lines. • Preserve and improve rail conditions and operations through adoption of a comprehensive State Rail Plan. • Improve safety by upgrading at-grade highway/rail crossings. • Protect our investment in the rail system by seeking and developing state funding sources for rail improvements. • Improve rail-highway-port connections to facilitate intermodal freight movement.
Passenger Rail	• Promote selected expansion of Amtrak passenger rail service to provide people with multi-modal options for intercity travel. • Improve passenger rail as a modal choice through development of the designated High-Speed Rail Corridor in Oklahoma. • Improve travel time, safety, and reliability of passenger rail through strategic improvements to rail lines and highway/rail at-grade crossings. • Increase intermodal choices by improved connections at passenger rail stations with intercity bus services, public transportation, and park-and-ride facilities.

Table 8-1. Recommendations by Mode (continued)

Public Transportation	• Improve public transportation system operation and performance by promoting connections among rural, urban, tribal, and intercity bus services. • Support multiple modes of transportation among residential areas and employment locations, health services, and other activity centers. • Protect our investment in the public transportation system by seeking dedicated funding sources for public transportation. • Enhance modal choice by identifying and improving intermodal connection points for travel by public transportation, intercity bus, passenger rail, and automobile. • Develop a Statewide Public Transportation Plan that identifies and targets opportunities for strategic improvements to services.
Waterways and Ports	• Protect our investment in the McClellan-Kerr Arkansas River Navigation System (MKARNS) by seeking increased Federal funding for maintenance and improvements, including the deepening of the river channel. • Enhance intermodal connectivity by targeting improvements to truck corridors and railroads which provide access to MKARNS ports. • Facilitate modal choices for goods movement and provide a sustainable budget for marketing and development of Oklahoma ports and waterways.
Aviation	• Improve intermodal freight connectivity through development of new air cargo hub facilities. • Protect our investment in the aviation system by seeking and developing state funding sources for aviation improvements. • Improve intermodal choices through improved connection to public transportation, intercity bus, and passenger rail at airport terminals.
Bicycle and Pedestrian Transportation	• Establish a vision for promoting modal choices for individuals who prefer, or need, an alternative to a motorized vehicle. • Improve safety by incorporating pedestrian and bicyclist facilities when highway and street improvements are made. • Incorporate bicycle and pedestrian facilities at all intermodal connection points.
Multi-Modal Transportation	• Protect our investment in transportation by seeking to establish new and/or dedicated funding mechanisms for all modal systems. • Improve efficiency, economic vitality, and intermodal connectivity by developing a comprehensive multi-modal Freight Plan. • Promote personal travel modal choice by improving intermodal connectivity for public transportation, intercity bus, passenger rail, airports, automobile, bicycle, and walking. • Protect the environment by promoting clean fuels and energy conservation practices within the agency and to the traveling public. • Improve security through adoption of emergency preparedness protocols for managing natural and man-made threats to human resources, transportation capital assets, and information.

Highway

Oklahoma has made system preservation a priority because of the importance of the highway system for providing mobility and enhancing commerce. The country, as a whole, shares this priority of system preservation; specifically, one of USDOT's draft strategic planning goals is to maintain its critical transportation infrastructure in a "state of good repair." As no national definition exists for a "state of good repair," conditions are assessed[1] on a mode-by-mode and a state-by-state basis.

Preserving existing pavements and bridges, particularly those on the National Highway System (NHS), including the interstate system, is critical to the system's cost effectiveness and sound operations. Increasing volumes of freight traffic are notable because of their utilization of the highway system for commerce and efficiency and because of the added wear and tear caused by trucks.

ODOT has made great progress toward meeting goals established in the previous Long Range Plan. As reported by ODOT in May 2010, there were 796 structurally deficient and 600 functionally obsolete bridges in the state system. There are also-load posted bridges on the State's US and State Highways. The reduction in the number of load-posted bridges on the Oklahoma system from 151 in 2005 to 40 in 2010 is a considerable achievement. A significant investment has also been made in the US 70 and US 54 Corridors, both part of the State's Transportation Improvement Corridor program. ODOT will continue its efforts to provide a safe, well-managed highway and bridge system, as evidenced in the following Plan recommendations.

Traffic on Oklahoma's major highways has increased dramatically in the past 20 years and is expected to continue to compound in the foreseeable future. In 2009, the State's roadways with more than two lanes registered 46 million vehicle miles of travel daily. Improvements to these highways are often ODOT's most expensive projects, but also yield high returns and have an immediate impact on regional traffic patterns. Over 211 miles of interstate pavement have been rehabilitated or reconstructed since 2003 and an additional 90 miles are included in ODOT's *2011–2018 8-Year Construction Work Plan.*

Roadway collisions where vehicles cross over into an oncoming lane of traffic have the greatest potential for dangerous consequences on high-volume, high-speed roads. The installation of median barriers minimizes the opportunity for such accidents. A before-and-after analysis of 50 miles of roadway where cable barriers were installed over the past decade revealed an 84-percent decrease in crashes (63 before, 10 after) and a 94-percent decrease in fatalities (18 before, one after). A total of four years of data (two years before cable barrier installation, two years after) were reviewed in the ODOT study.

Oklahoma's rural nature and historically agricultural-based economy has witnessed the conversion of many farm-to-market roads and bridges into highways. While these roads were ideal for transporting livestock and crops to market 70 years ago, they are less than adequate for supporting today's heavier trucks, meeting increased traffic demands, and accommodating higher operating speeds. Almost 4,700 miles of Oklahoma highways are rural, two-lane facilities without shoulders. The *2011–2018 Construction Work Plan* addresses the challenge of improving safety and increasing mobility on these roads; over the next eight years, the Work Plan shows 485 miles of shoulder and roadway improvements to two-lane highways without paved shoulders.

Highway Modal Recommendations

Highway Recommendation #1

Improve safety by replacing or rehabilitating structurally deficient and functionally obsolete bridges on the State Highway system.

- Continue an aggressive schedule for replacing load-posted bridges on the State Highway System.
- Pursue methods of rehabilitating and replacing fracture-critical, including truss-style, bridges.
- Develop a programmatic approach to identify and address potential preservation issues on noteworthy historic bridges, including, but not limited to, truss-style bridges, working collaboratively with community partners.

Highway Recommendation #2

Preserve and improve the condition of roads and bridges by fully implementing asset management systems.

- Further develop the State's Bridge Management System (PONTIS). Utilize data from the Bridge Management System to highlight specific areas requiring action in relation to safety, maintenance, and reconstruction or expansion.
- Utilize the bridge rating system as a tool to identify marginally sufficient structures, and incorporate them into the Bridge Maintenance Program.
- Utilize the Pavement Management System and Maintenance Management System as tools to develop a short-, medium-, and long-term pavement preservation program.
- Assess the impact that increased truck size, weight, and axle configurations will have on highway system capacities.

Highway Recommendation #3

Improve highway safety through implementation of system-level strategies.

- Add shoulders on two-lane rural highways with high accident rates.
- Install median barriers to higher-volume divided highways experiencing crossover collisions.
- Improve safety of roadway infrastructure though implementation of proven approaches outlined in the Oklahoma Strategic Highway Safety Plan (September 2007).
- Promote system operational strategies to reduce the negative impact of congestion-causing incidents on transportation systems. This includes effective traffic incident management, traveler information systems, corridor management, and technologies to manage safety in work zones, among others.

Highway Recommendation #4

Improve operational performance on priority highway corridors through strategic targeted improvements.

Since 1995, the Long Range Plan defined three types of highway corridors: Transportation Improvement Corridors, Freight Operation Improvement Corridors, and National (Highway System) High Priority Corridors. The current Plan continues this practice.

- Make targeted investments on the State's priority highways to accommodate traffic growth and truck routes.
- Evaluate State Highways that are a part of the National Network for Conventional Combination Trucks and make selected improvements to strengthen system safety and efficiency for truck operations.

Highway Recommendation #5

Improve operational performance of highways through increased use of traveler information systems.

A wide range of communication tools are now available to reach users more effectively and provide highly reliable and current information with a relatively low investment. These resources offer greater opportunities for promoting mobility, reliability, safety, and economic viability to the State's commuters, travelers, and freight haulers.

- Expand the utilization of internet-based systems and emerging technologies for managing traveler information and user notifications.
- Improve ITS communication and the use of variable highway message signs to inform motorists of congestion, bottlenecks, and workzones.

Highway Recommendation #6

Improve commercial vehicle operations on highways through increased use of electronic/ automated routing, screening, and permitting.

- Automate and expand electronic commerce for commercial vehicle transactions. A web-based automated permitting and routing system for oversize, overweight vehicles is currently under development. The Oklahoma Permitting and Routing Optimization System (OKie PROS) will use integrated GIS data and maps, along with real-time information, to provide assistance to oversize, overweight commercial motor vehicle users for making safe and efficient route choices.
- Continue development of Ports of Entry—technology-based commercial motor vehicle weigh and credential screening stations located at major highway entry points to the State. Oklahoma's Ports of Entry data is a part of the nationwide Commercial Vehicle Information System Network (CVISN) electronic framework established by Federal Motor Carrier Safety Administration, the States, and motor carriers to address safety, screening, and credentials administration.

Freight Rail

Since 2005, the major railroads have invested over $34 billion for system maintenance and capacity upgrades nationwide. While freight demand forecasts nearly double by 2035, from 19.3 billion tons in 2007 to 37.2 billion tons in 2035, the railroads should be generally prepared to handle the growth by investing about $5 billion annually. Industry estimates place capacity investment needs between $121 billion and $143 billion for new bridges, tracks, etc. This excludes the regular maintenance and replacement costs.[2]

However, many of the U.S.'s most important freight lines will be asked to share the same network with passenger rail when both freight and passenger rail frequencies increase. Thus, capacity challenges will emerge on specific operating segments, including some of Oklahoma's current rail lines.

Rail freight infrastructure and services contribute to Oklahoma's economic vitality in the following ways:

- Shipping costs for bulk transportation users and intermodal users are reduced by providing competition to truck freight.
- Service by three Class I railroads provides increased competition in the State.
- Short lines or regional railroads preserve service on branch lines and offer excellent service to customers and serve as collectors for Class I railroads.
- Freight movement by rail reduces truck traffic on the State's highways.
- Freight rail also reduces emissions since one freight train can replace many trucks to carry the same volume of goods.

Freight railroad safety will continue to be a priority with ODOT. In 2009, Oklahoma ranked 15th nationally for highway-rail grade crossing collisions with 48 crashes. None involved passenger trains.[3]

The following recommendations focus on strengthening the State's rail system, recognizing the key national, regional, and state role it plays in economic competitiveness and safety.

Freight Rail Modal Recommendations

Freight Rail Recommendation #1

Improve rail operations through targeted improvements of rail lines.

- ► Support elimination of bottlenecks both on main lines and classification yards (the multi-track facilities where freight cars are transferred from one engine to another based on their destination) by the Class I railroads.
- ► Support double tracking and signal/operations improvements to meet projected rail traffic increases.
- ► Maintain coordination between government agencies and Class I railroads.
- ► Support upgrades to state-owned Class III track and structures to permit use of 286,000–pound standard rail cars and larger, which in turn will support Class I service and improve service efficiency.
- ► Evaluate the need for rail grade separation improvements as part of planning efforts for Transportation Improvement Corridors.

Freight Rail Recommendation #2

Preserve and improve rail conditions and operations through adoption of a comprehensive State Rail Plan.

- ► Develop the State Rail Plan in accordance with Federal Railroad Administration (FRA) guidelines. The Plan will allow the State to qualify for future Federal funds through the FRA.

- Identify branch lines at risk of abandonment of rail freight service and establish priorities for lines to be preserved through State or other intervention as part of the State Rail Plan.

Freight Rail Recommendation #3

Improve safety by upgrading at-grade highway/ rail crossings.

- Update the existing rail crossing inventory with current rail and highway traffic data and review accident exposure ratings using the FRA safety program.
- Provide technical assistance to local communities planning to improve rail-highway crossing facilities, including roadway surfaces and signal devices.
- Continue efforts to evaluate the consolidation of at-grade crossings to further improve safety.

Freight Rail Recommendation #4

Protect our investment in the rail system by seeking and developing state funding sources for rail improvements.

- Review rail programs of other states and sources of funding for potential application to Oklahoma.
- Develop options for statewide programs to target preservation and upgrading of Class III lines. Consider modifications to fee structure assessed to operators of state-owned lines, request for additional funds from the State, and/or expanding the lease-purchase program.

Freight Rail Recommendation #5

Improve rail-highway-port connections to facilitate intermodal freight movement.

Participate in development of the State Multimodal Freight Plan and identify potential logistics centers, transloading facilities, and other intermodal rail service opportunities. Support the development of multimodal freight corridors that connect major population centers with freight generators and international gateways.

Passenger Rail

Passenger rail can be a very efficient transport mode, but because of the nature of its high capital cost, dense corridors are required to justify the investment. By connecting the largest of Oklahoma's cities with rail connection to major population centers in adjacent states, the efficiencies of rail can be put to work. To gain the travel densities needed, local connections and other collector systems can be developed to serve less dense corridors and form a cohesive regional transportation system.

Oklahoma has been investing in the return of intercity passenger rail since the first Amtrak Heartland Flyer ran between Oklahoma City and Fort Worth, Texas, in June 1999. The State also participated in a study that resulted in Oklahoma's inclusion in the nation's "Vision for High Speed Rail America." The Plan envisions that the Heartland Flyer will continue along the same route; infrastructure upgrades are proposed which will result in service improvements.[4]

The existing Heartland Flyer line between Central Oklahoma and the Dallas-Fort Worth area and the proposed Oklahoma City to Tulsa route are components of the USDOT-designated South Central High Speed Rail Corridor. The Plan supports upgrades to the Oklahoma City to Fort Worth segment, as well as proceeding with construction of the Oklahoma City to Tulsa portion of the route.

Another passenger rail route under considera-tion is the rail corridor from Oklahoma City to Newton, Kansas (near Wichita). Further pursuit of this effort must be closely coordinated with the State of Kansas, BNSF, and Amtrak.

Population densities in many Oklahoma cites would likely not meet the threshold for the capital investment required for rail, but an integrated feeder system using private bus lines and various rural, tribal, and urban transit systems should be explored.

The Plan continues to endorse rail safety and maintain and improve intermodal connections.

Passenger Rail Modal Recommendations

Passenger Rail Recommendation #1

Promote selected expansion of Amtrak passenger rail service to provide people with multi-modal options for intercity travel.

- Cooperate and coordinate with Amtrak, BNSF, and the State of Kansas in expanding passenger rail service by means of an Oklahoma City to Newton or Wichita, Kansas, Amtrak route.

Passenger Rail Recommendation #2

Improve passenger rail as a modal choice through development of the designated High-Speed Rail Corridor in Oklahoma.

- Proceed with planning and engineering activities necessary for high speed rail development between Oklahoma City and Tulsa.
- Improve the existing Amtrak Heartland Flyer line from Oklahoma City to Fort Worth and upgrade to emerging high speed rail standards.

Passenger Rail Recommendation #3

Improve travel time, safety, and reliability of passenger rail through strategic improvements to rail lines and highway/rail at-grade crossings.

- Update the existing rail crossing inventory with current rail and highway traffic data and review accident exposure ratings using the FRA safety program.
- Provide technical assistance to local communities planning to improve rail-highway crossing facilities, including road-way surfaces and signal devices.

- Continue efforts to evaluate the consolidation of at-grade crossings to further improve safety further.
- Collaborate with Amtrak, BNSF, and the State of Texas to evaluate modifications to Amtrak Heartland Flyers schedule and station stops.
- Continue improvements to the Amtrak Heartland Flyer line by encouraging double track construction in selected locations, thus allowing for additional frequency and capacity for the Oklahoma City to Fort Worth service.

Passenger Rail Recommendation #4

Increase intermodal choices by improved connections at passenger rail stations with intercity bus services, public transportation, and park-and-ride facilities.

- Encourage expanded and improved connections to passenger rail stations from rural, tribal, and urban public transit, intercity buses, and airport terminals. Coordinate schedules to provide better connections of local and regional public transportation systems and to provide seamless and convenient transportation throughout the State and region. (See related Public Transportation recommendations.)
- Coordinate with urban public transit systems to define and implement formal park-and-ride lot locations adjacent to ODOT and other rights-of-way, where ridership warrants, to enhance passenger rail ridership and efficiencies.

Public Transportation

Over the past decade, national transit ridership has increased and Oklahoma transit ridership has grown as well. Most notably, between the years 2003 and 2008, the ridership on the State's 19 rural (non-tribal) transit systems grew 56 percent.[5] During the same period, urban transit ridership remained stagnant, while revenue miles grew about nine percent.

With the demand for public transportation increasing both to serve the elderly and disabled populations as well as the journey to work and medical related trips, the State conducted the *Oklahoma Transit Needs Assessment* in 2003. Out of Oklahoma's 77 counties, 73 counties are rural, making rural transit an important element to overall statewide public transportation concerns. The total number of rural one-way passenger trips reported for 2002 was 1.9 million trips. The Needs Assessment estimated that the current rural Oklahoma transit system meets 28 per-cent of the State's transit needs, meaning that in 2002, unmet rural transit needs were approximately 6.7 million one-way person trips. This is predicted to grow 1.1 percent annually, to result in over 8.4-million rural unmet trips by 2022.[6] Nationally, transit data indicate that about 25 percent of the bus and rail assets are in marginal or poor condition. The same issues related to aging infrastructure for transit systems—vehicles, transit centers, maintenance garages, transit bus stops, etc.—exist in Oklahoma, adding demand for replacement funding.

Providing for increased public transportation options and bringing the systems' assets to a state of good repair are challenges that the following recommendations seek to address. These measures aim to fortify Oklahoma's existing transit services, while advancing service improvements and efficiencies in locations where current demand may be unmet or underserved.

Public Transportation Modal Recommendations

Public Transportation Recommendation #1

Improve public transportation system operation and performance by promoting connections among rural, urban, tribal, and intercity bus services.

- Expand and improve connections between rural transit systems and intercity bus stops/terminals, urban transit system transfer points, airports, and Amtrak Heartland Flyer stops. (See related Passenger Rail Transportation recommendations.)
- Coordinate with urban public transit systems to define and implement formal park-and-ride lot locations adjacent to ODOT and other rights-of-way, where ridership warrants.
- Implement additional transit services as funds become available.
- Continue collaboration with the University of Oklahoma in development of an electronic database regarding the State's transit service routes and locations.

Public Transportation Recommendation #2

Support multiple modes of transportation and improved accessibility among residential areas and employment locations, health services, and other activity centers.

- Investigate potential for agreements between rural transit systems and health and hospital systems, social service providers, and major employers to expand transit service options.

- Conduct study to identify demand for off-peak transit service for intra- and inter-city bus services.
- Coordinate with health and human service agencies and others to expand paratransit services for special needs populations and individuals with disabilities.

Public Transportation Recommendation #3

Protect our investment in the public transportation system by seeking dedicated funding sources for public transportation.

- Prepare a statewide program of FTA-eligible capital projects and operational needs every three to five years. Identify non-Federal match for FTA-eligible projects.
- Encourage continued cooperation among ODOT and the urban transit systems and appear as one voice to the Oklahoma legislative delegation on FTA funding requests.
- Promote development of dedicated transit funding sources beyond the existing Public Transportation Revolving Fund.

Public Transportation Recommendation #4

Enhance modal choice by identifying and improving intermodal connection points for travel by public transportation, intercity bus, passenger rail, and automobile.

The Oklahoma City and Tulsa metropolitan areas are the major economic engines of the State economy. Together, they comprise about 63 percent of all the State's employment. The vitality of the commercial centers of these cities is critical to the economic health of the metropolitan areas and to the State. Providing safe and convenient access by a variety of transportation modes to and from the metropolitan area businesses, health centers, airports, and other modal and activity centers is integral to maintaining the State's economy.

- Monitor existing and estimate future passenger travel demand for Oklahoma City to Tulsa travelers. Continue examination of options, including bus, intercity rail, etc., in coordination with passenger rail efforts.
- Identify demand for intercity/commuter connections between midsize cities and between cities and Oklahoma City and Tulsa.

Public Transportation Recommendation #5

Develop a Statewide Public Transportation Plan that identifies and targets opportunities for strategic improvements to services.

- Conduct planning study to analyze statewide transit network with recommendations for improvements to existing service as well as locations for new services. Utilize data from surveys regularly completed by Oklahoma City Metro Transit, Tulsa Transit, and CART (Cleveland Area Rapid Transit) in the Norman area.
- Encourage Lawton Area Transit Service and rural transit operators to undertake regular surveys of their users to assess trends, travel patterns, needs, desires, etc.
- Support efforts by metropolitan areas and other sub-state regions to evaluate public transit needs and plan for future service between substate regions and cities.

Waterways and Ports

The U.S. maritime system carries over 75 percent of goods by volume and 48 percent of goods by value traded globally. The system carries goods to and from ports along some 25,000 inland, intra-coastal and coastal waterways, of which the McClellan-Kerr Arkansas River Navigation System (MKARNS) makes up 445 miles of the system. Forty-two countries trade with the MKARNS, making it the State's gateway to goods import and export. The Panama Canal expansion will likely increase demand on the MKARNS as well as overall global trade growth.

Not only do the U.S. seaports support global trade, but they do so efficiently, saving significant amounts of fuel. For a comparison, one gallon of fuel carries a ton of goods 5,765 miles by barge, 413 miles by rail, and 155 miles by semi-truck. The EPA estimates that towboats emit 35 to 60 percent fewer pollutants than locomotives and trucks.

Within Oklahoma, waterborne commerce carried over 3.8 million tons with a value exceeding $2 billion in 2008. Oklahoma's ports and terminals provide loading and off-loading services to an average 2,000 commercial semi-trucks daily. Intermodal connections, such as rail to barge, truck to port movements, especially adjacent to Oklahoma's ports, are critical.

The strength of Oklahoma's waterways sets the State apart from other areas by providing greater options for the shipping and distribution of goods. However, waterways often do not receive the necessary attention and funding to utilize the waterways fully. The following recommendations seek to strengthen access to meet economic and security needs.

Waterways and Ports Modal Recommendations

Waterways and Ports Recommendation #1

Protect our investment in the McClellan-Kerr Arkansas River Navigation System (MKARNS) by seeking increased Federal funding for maintenance and improvements, including the deepening of the river channel.

- Continue to work with State and local officials, as they advocate for funding for the deepening of the McClellan-Kerr Arkansas River Navigation System.
- Continue cooperation with the State of Arkansas to secure Federal funding for the waterway system.

Waterways and Ports Recommendation #2

Enhance intermodal connectivity by targeting improvements to truck corridors and railroads which provide access to MKARNS ports.

- Work collaboratively with the Port of Catoosa and other stakeholders to address issues related to transporting "high, wide, and heavy" loads to and from the Port. (Connections are needed to surrounding states.) Develop criteria and a process for deciding on highway routes to handle port-related freight. Subsequently, improve structures and pavement on routes to accommodate oversize vehicles.
- Participate in development of the *State Multimodal Freight Plan* and identify potential transloading facilities and other intermodal service opportunities.

Waterways and Ports Recommendation #3

Facilitate modal choices for goods movement and provide a sustainable budget for marketing and development of Oklahoma ports and waterways.

- Seek partnerships with private sector user groups, economic development associations, and other public entities to support promotion of the Oklahoma waterways network.

Aviation

Air transportation plays an important role in economic competitiveness; it affects manufacturing supply chains, tourism and hospitality markets, and business travel. Domestic and international passenger traffic increased despite the effects of the events of September 11, 2001, energy price increases, and the recent global recession.

The enplanements at Will Rogers World Airport grew by 6.1 percent through 2008 (from 1.74 million to 1.85 million enplanements); while the Tulsa International Airport saw enplanements shrink 7.9 percent over the same timeframe (1.73 million to 1.59 million).[7] Both of these airports, along with other regional and local airports in the State, expect to see slow but steady increases in passenger activity over the coming years.

As the U.S. manufacturing base has been shifting to high-value and high-tech products, the importance of efficiency and reliability in transportation have increased to support just-in-time supply chains. Airport freight services are integral to the freight supply chain. The State experienced a slump in air cargo activity in the first part of the decade after 2001. However, because of growth in high-value industries (e.g., electronics), air cargo volume in Oklahoma is expected to grow over two percent per year over the forecast period.

The following recommendations support development of the passenger and freight aviation linkages. These address the intermodal and transshipment opportunities within the State and illustrate the need for additional funding for aviation in Oklahoma.

Aviation Modal Recommendations

Aviation Recommendation #1

Improve intermodal connectivity through development of new air cargo hub facilities.

- Coordinate with metropolitan planning organizations, chambers of commerce, Oklahoma Trucking Association, defense installations, Oklahoma airport operators, and other stakeholders to determine the lead agency and initiate a study to identify potential locations and types of commodities that would reap highest benefits from transshipment center(s) within Oklahoma. The study should consider various interfaces for freight, including rail, commercial motor vehicles, and waterways.

Aviation Recommendation #2

Protect our investment in the aviation system by seeking and developing state funding sources for aviation improvements.

- Conduct a study to compare Oklahoma's method of providing state aviation funding with that of other similar sized and surrounding states. The study could also include development of methodologies to prioritize projects as candidates for funding.
- Use aviation funding study results to define potential new and additional revenue sources to increase state aviation funding participation. Also develop guidelines to allow airport operators to apply for grants and obtain funding.

Aviation Recommendation #3

Improve intermodal choices through improved connection to public transportation, intercity bus, and passenger rail at airport terminals.

- Coordinate with local stakeholders and public transportation providers to expand and improve connections to airport terminals from rural and urban public transit, intercity buses, and passenger rail stations.

Bicycle and Pedestrian Transportation

Planning and designing streets with all users in mind improves pedestrian, bicyclist, and motorist safety and use. Bicycle and pedestrian infrastructure contributes to the economic vitality of a community, region, or state in the following ways:

- Improves conditions for all transportation users by keeping bicyclists and pedestrians safer, thereby reducing the costs of emergency response, health care, and lost productivity.[8]
- Reduces the need for transportation users to rely solely on motorized vehicles for transportation needs, thereby reducing air, noise and water quality pollution; improving congestion; saving on individual transportation costs and government transportation investments; and improving health.
- Assists local communities with infrastructure and education grants that help students bicycle and walk to school safely through Safe Routes to Schools, a Federal program.[9] This program helps to reduce the reliance on motorized transportation modes, with health, environmental, financial, and mobility benefits.

Bicycle and Pedestrian Modal Recommendations

Bicycle and Pedestrian Recommendation #1

Establish a vision for promoting modal choices for individuals who prefer, or need, an alternative to a motorized vehicle.

- ► Continue to pursue opportunities to bring State highways in small rural communities into compliance with the Americans with Disabilities Act.
- ► Incorporate bicycle facility design standards into the next version of the ODOT *Roadway Design Manual.*
- ► Encourage local communities that are planning or constructing new facilities for pedestrians and bicyclists to seek technical support from the State's bicycle and pedestrian coordinator.
- ► Assess and respond to needs for pedestrian and bicycle infrastructure on or adjacent to state routes concurrent with related street and highway improvements when implementing improvement projects on the State Highway system.
- ► Develop a statewide bicycle plan that builds and expands upon the work of the State's Metropolitan Planning Organizations.

Bicycle and Pedestrian Recommendation #2

Improve safety by incorporating pedestrian and bicyclist facilities when highway and street improvements are made.

- ► Provide pedestrian signals, warning beacons, signage, striping and lighting at intersections of state routes with high-volume pedestrian crossings.
- ► Promote statewide and local-area education programs to make transportation users aware of pedestrian and bicyclist rights and responsibilities.
- ► Continue to promote safe walking and bicycling facilities on public rights of way through the Safe Routes to School program.

Bicycle and Pedestrian Recommendation #3

Incorporate bicycle and pedestrian facilities at all intermodal connection points.

- ► Support inclusion of bicycle facilities into new and renovated intermodal facilities, such as train depots, bus terminals, etc.
- ► Support efforts by local governments, public transit providers, passenger rail systems, and others to expand and improve bicycle ways and walkway connections to passenger travel stations and stops.

Multi-Modal Transportation

Since the early 1990s, the U.S. Department of Transportation has focused on efforts to encourage communication and coordination among various transportation modes. Thus, use of the words intermodal and multimodal have become a larger part of the transportation planning vocabulary. Many types of transportation require an interface between modes. For example, on a trip from home to work, an individual will use the walk/pedestrian mode, may drive a car to a park-and-ride location, and then take a bus. In addition, some topics are of vital concern to all modes. For example, funding and environmental issues affect many, if not all, transportation project development.

Thus, this multi-modal section addresses issues that overlap or affect several modes, as well as themes that are important to many modes.

According to the United States Census Bureau, the country's population will increase by over 26 percent between 2010 and 2035. The nation's gross domestic product will almost double during this 25-year period. Based on studies completed in 2009 by the National Surface Transportation Policy and Revenue Commission, the combined impact of freight and population growth will result in a 65-percent increase in the number of autos and trucks on the highway system between 2010 and 2035.

The following recommendations reinforce the key role that Oklahoma's transportation system plays with state and national economic competitiveness. The multimodal concepts acknowledge the importance of developing a diverse transportation system that offers the traveling public and businesses competitive, safe, convenient, affordable, and environmentally responsible transportation choices.

These multi-modal measures focus on maintaining the system in a "state of good repair" while also recognizing the fiscal challenges facing the Federal and State programs with current dedicated revenue sources inadequate to sustain current spending limits.

The Plan focuses on connectivity and safety among all of the modes: highways to railroads to ports; pedestrian and bicycle paths to public transit, passenger rail, and airports; and sidewalks and pedestrian paths to various destinations. Many linkages also promote more livable communities. The strategies also recognize the special role the transportation system plays in times of natural disasters and national emergencies.

As energy becomes increasingly expensive, alternative fuels and more energy efficient modes play important roles as do congestion management and traveler information systems. Reducing congestion and arming the traveler with information about mobility options leads to more efficient trips, improved air quality, and fewer greenhouse gas emissions.

Multi-Modal Transportation Recommendations

Multi-Modal Transportation Recommendation #1

Protect our investment in transportation by seeking to establish new and/or dedicated funding mechanisms for all modal systems.

- Develop and maintain information on historical trends and provide this information to State government leaders and the Congressional Delegation to support their search for new funding sources for the State Highway System. Continue to assist government leaders in determining appropriate transportation funding and improvements priorities.
- Support efforts by the Oklahoma Congressional Delegation to obtain discretionary monies for Congressional High Priority Corridors and Freight Operational Improvement Corridors.
- Continue to work with sovereign Native American Tribes and Nations to leverage resources for transportation improvements. Native American Tribes and Nations have been an important partner in providing funds for transportation improvements in the State.
- Cooperate and coordinate with local governments to research possible new funding partnerships for transportation projects of mutual interest. A number of other states are testing innovative funding partnerships with local and regional governments.
- Because of inadequate Highway Trust Fund revenues, explore various alternatives for funding the State's surface transportation program, such as consider weight and vehicle miles travelled for fuel tax; fund transportation capital improvements from the (Federal) general fund; increase car tag fees; index the motor fuel tax to inflation; and charge user fees to provide maintenance funds for freight-related infrastructure.
- Provide information to State government leaders and Oklahoma's Congressional Delegation to assist them in finding additional sources of funding for rural, urban, and tribal transit, passenger and freight rail service improvements, aviation improvements, and waterways improvements.

Multi-Modal Transportation Recommendation #2

Improve efficiency, economic vitality, and inter-modal connectivity by developing a comprehensive multi-modal Freight Plan.

- In recognition of a systems-based approach to freight movement, develop a long-range multimodal Freight Plan for Oklahoma. Within that freight plan, identify a series of goals for multimodal systems integration and communication strategies.
- Support investments to improve linkages between the McClellan-Kerr Arkansas River Navigation System (MKARNS) and the rail and highway systems, particularly rail and intermodal connectors.

Multi-Modal Transportation Recommendation #3

Promote personal travel modal choice by improving intermodal connectivity for public transportation, intercity bus, passenger rail, airports, automobile, bicycle, and walking.

- Identify gaps and opportunities in urban and rural public transportation, intercity bus, passenger rail, airports, automobiles, and bicycle and pedestrian facilities and operations.

- Promote the "Complete Streets" approach for street and highway projects. (A "Complete Streets" approach ensures that roadways are designed and operated with all users in mind, including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.)[10]

Multi-Modal Transportation Recommendation #4

Protect the environment by promoting clean fuels and energy conservation practices within the agency and to the traveling public.

- Assess current ODOT practices in construction, maintenance, and agency operations to identify areas for potential energy conservation. (This could include installing light emitting diode traffic signals, reducing roadside mowing, using warm-mix asphalt, etc.)
- Focus efforts to assist the travelling public in conserving fuel, such as developing efficient traffic operations, park-and-ride infrastructure, traffic signal optimization, work zone design to minimize idling time, etc.
- Improve air quality by reducing traffic congestion and bottlenecks that result in increased emissions.
- Promote the use of alternative fuels and distribution mechanisms throughout Oklahoma to facilitate the utilization of the State's abundant clean fuels. These cleaner fuels and engine technologies will provide Oklahoma with improved air quality and will promote the development of the State's resources.

Multi-Modal Transportation Recommendation #5

Improve security through adoption of emergency preparedness protocols for managing natural and man-made threats to human resources, transportation capital assets, and information.

- Contribute to the public's safety by coordinating with the State Department of Emergency Management and the U.S. Departments of Homeland Security and Defense to plan for the restoration, and ensure the availability, of transportation services after a disaster and during times of national emergencies.
- Improve the security and resilience of the transportation system, including highways, transit, rail, ports and marine, air cargo, and passenger aviation, through identification of "safety-critical" assets.
- Develop alternate routes and transportation system redundancy to maintain mobility during emergencies or natural disasters.

Conclusion

ODOT will use this Plan to develop and implement programs to enhance the State's multimodal transportation system. This system will provide the traveling public and businesses competitive, safe, convenient, affordable, and environmentally responsible transportation choices. ODOT will work with the elected officials, public, and private stakeholders to ensure the State's transportation network is a high-performing system ensuring economic competitiveness for the next 25 years.

Chapter 8 Endnotes

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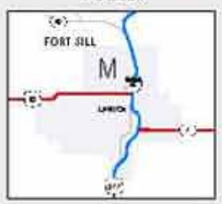
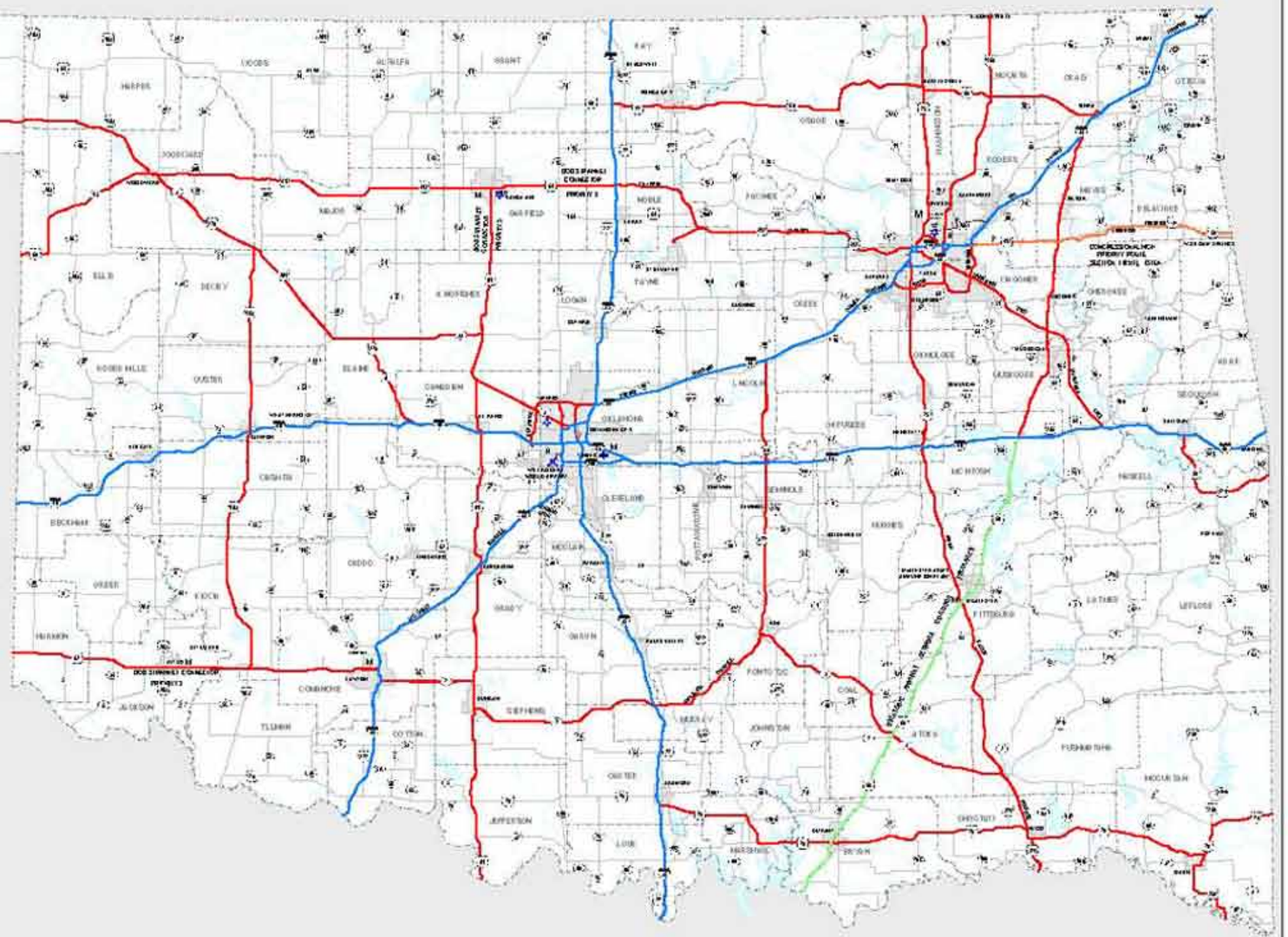
OKLAHOMA NATIONAL HIGHWAY SYSTEM

OKLAHOMA CITY

TULSA



LAWTON



INTERSTATE HIGHWAY
NHS CONNECTOR
STRAHNET
CONGRESSIONAL HIGH PRIORITY ROUTE
OTHER PRINCIPAL ARTERIAL
NON-NHS TOLL ROUTE
PROPOSED NHS ROUTE

INTERSTATE HIGHWAY SYMBOL
US HIGHWAY SYMBOL
STATE HIGHWAY SYMBOL
URBAN AREA
COUNTY LINES
RIVERS AND LAKES

M MILITARY INSTALLATION
A MAJOR AIRPORT
P MAJOR PORT

TOTAL STATE HIGHWAY SYSTEM MILAGE	=	12,871.36
STATE MAINTAINED NHS MILES	=	2,786.08
TURNPIKE MAINTAINED NHS MILES	=	592.87
NHS CONNECTOR MILES	=	11.54

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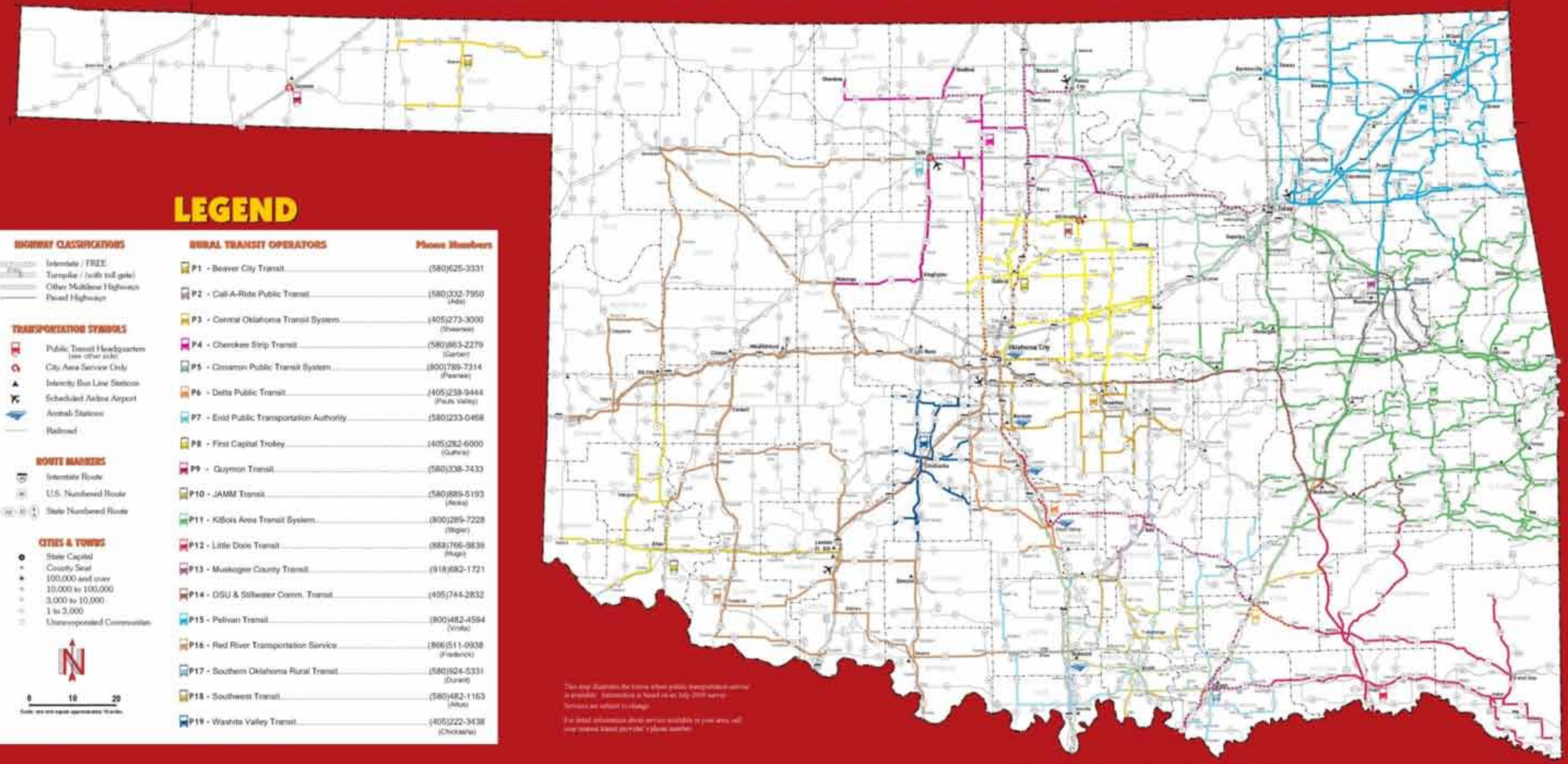
Revised: NHS Connector 412 August 13, 1999
Revised: KILPATRICK TURNPIKE June 18, 2001
Revised: CREEK TURNPIKE - Phase I June 18, 2001
Revised: CREEK TURNPIKE - Phase II January 9, 2003
Revised: S.H. 266 NHS Connector I-44 to Port of Catoosa April 6, 2004
Revised: U.S 59/U.S. 271 - I-40 To I-540 July 18, 2006
* SECTION OF THIS ROUTE IS FUNCTIONALLY CLASSIFIED AS RURAL MAJOR COLLECTOR

OKLAHOMA DEPARTMENT OF TRANSPORTATION
GIS MANAGEMENT BRANCH, SYSTEMS SECTION
200 N.E. 21ST STREET
OKLAHOMA CITY, OKLAHOMA 73105

AUGUST 1, 2006
G:\NHS\NEW_NHS.gws

OKLAHOMA PASSENGER SERVICE MAP

Not all routes illustrated below run on a daily basis. Contact the local provider for more detailed information.



LEGEND

HIGHWAY CLASSIFICATIONS

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

TRANSPORTATION SYMBOLS

- Public Transit Headquarters (see other side)
- City Area Service Only
- Intercity Bus Line Stations
- Scheduled Airline Airport
- Amtrak Stations
- Railroad

ROUTE MARKERS

- Interstate Route
- U.S. Numbered Route
- State Numbered Route

CITIES & TOWNS

- State Capital
- County Seat
- 100,000 and over
- 10,000 to 100,000
- 3,000 to 10,000
- 1 to 3,000
- Unincorporated Communities

0 10 20

Scale: one inch equals approximately 19 miles.

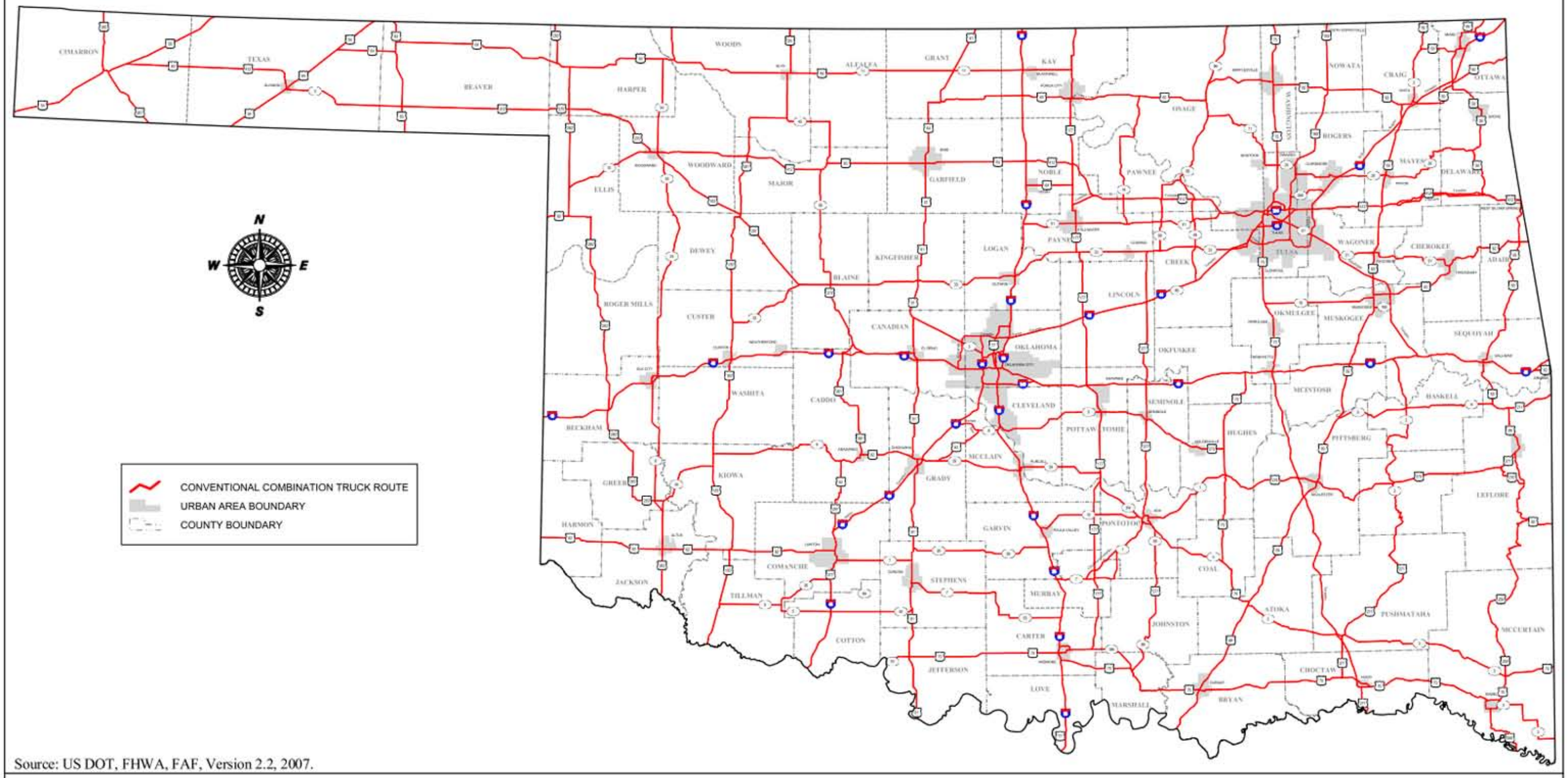
RURAL TRANSIT OPERATORS

		Phone Numbers
P1	- Beaver City Transit	(580)625-3331
P2	- Call-A-Ride Public Transit (Ada)	(580)332-7950
P3	- Central Oklahoma Transit System (Shawnee)	(405)273-3000
P4	- Cherokee Strip Transit (Garber)	(580)863-2279
P5	- Cimarron Public Transit System (Pawnee)	(800)789-7314
P6	- Delta Public Transit (Pauls Valley)	(405)238-9444
P7	- Enid Public Transportation Authority	(580)233-0468
P8	- First Capital Trolley (Guthrie)	(405)282-6000
P9	- Guymon Transit	(580)338-7433
P10	- JAMM Transit (Atoka)	(580)889-5193
P11	- KiBois Area Transit System (Stigler)	(800)289-7228
P12	- Little Dixie Transit (Hugo)	(888)766-9839
P13	- Muskogee County Transit	(918)682-1721
P14	- OSU & Stillwater Comm. Transit	(405)744-2832
P15	- Pelivan Transit (Vinita)	(800)482-4594
P16	- Red River Transportation Service (Frederick)	(866)511-0938
P17	- Southern Oklahoma Rural Transit (Durant)	(580)924-5331
P18	- Southwest Transit (Altus)	(580)482-1163
P19	- Washita Valley Transit (Chickasha)	(405)222-3438

This map illustrates the towns where public transportation service is available. Information is based on an July 2009 survey. Services are subject to change.

For detail information about service available in your area, call your nearest transit provider's phone number.

OKLAHOMA HIGHWAYS on NATIONAL NETWORK for CONVENTIONAL COMBINATION TRUCKS

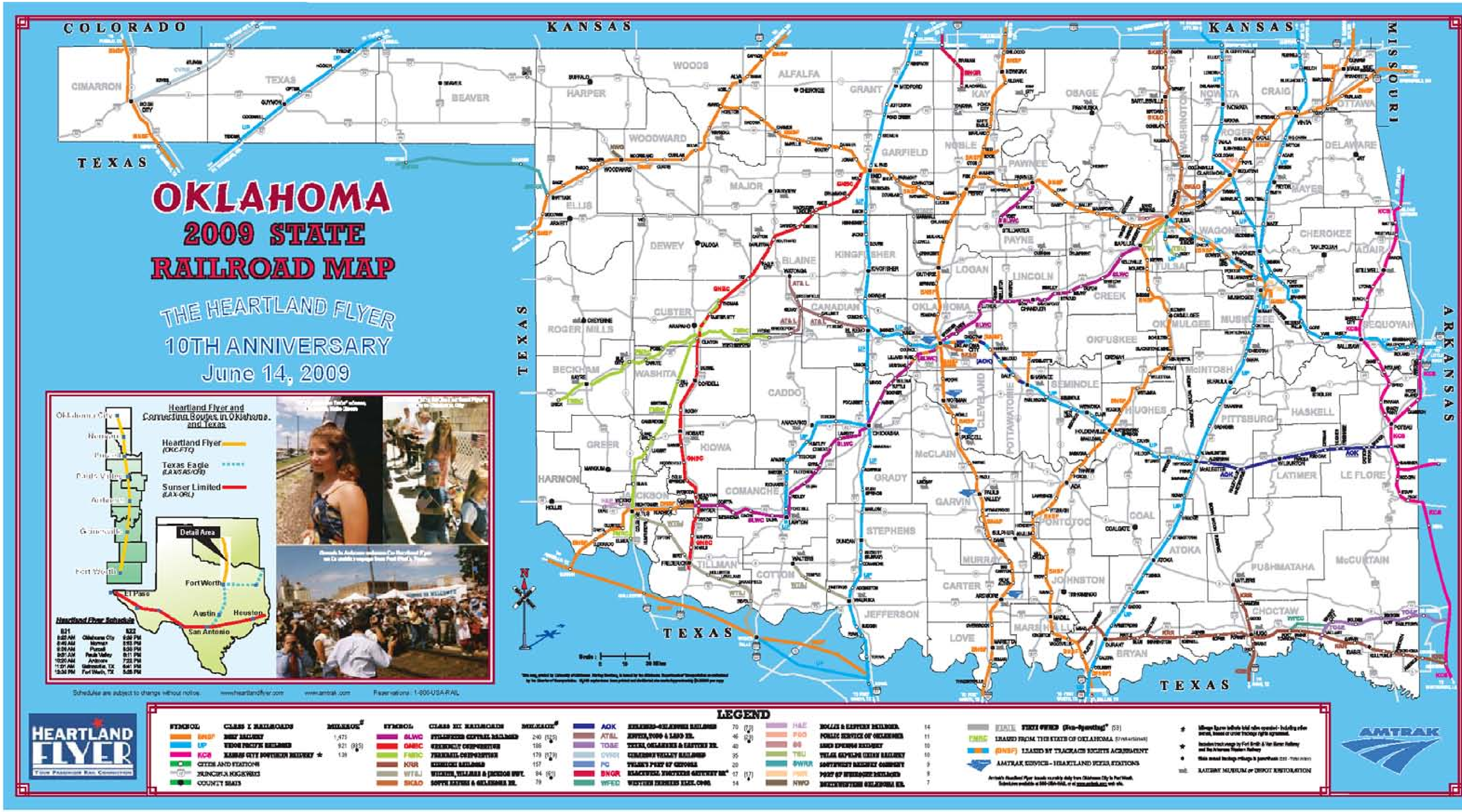


Source: US DOT, FHWA, FAF, Version 2.2, 2007.

Oklahoma Department of Transportation
Planning & Research Division
GIS Management Branch
200 NE 21st Street
Oklahoma City,Oklahoma 73105

2035 Statewide Intermodal Transportation Plan

JULY 2010



OKLAHOMA
2009 STATE
RAILROAD MAP
THE HEARTLAND FLYER
10TH ANNIVERSARY
June 14, 2009
COLORADO
KANSAS
MISSOURI
ARKANSAS
TEXAS
CIMARRON
TEXAS
BEAVER
HARPER
WOODS
ALFALFA
GRANT
KAY
OSAGE
NOWATA
CRAIG
OTTAWA
WOODWARD
MAJOR
GARFIELD
NOBLE
PAWNEE
ROGERS
DELAWARE
MAYES
ELLIS
DEWEY
BLAINE
KINGFISHER
LOGAN
PAYNE
LINCOLN
CREEK
TULSA
WAGONER
CHEROKEE
ADAIR
CUSTER
ROGER MILLS
CANADIAN
OKLAHOMA
OKMULGEE
MUSKOGEE
SEQUOYAH
BECKHAM
WASHITA
CADDO
OKFUSKEE
McINTOSH
HASKELL
SEMINOLE
HUGHES
PITTSBURG
GREER
KIOWA
CLEVELAND
POTTAWATOMIE
McCLAIN
LATIMER
LE FLORE
HARMON
JACKSON
COMANCHE
GRADY
GARVIN
PONTOTOC
COAL
TILLMAN
COTTON
STEPHENS
MURRAY
JOHNSTON
ATOKA
PUSHMATAHA
McCURTAIN
CARTER
JEFFERSON
LOVE
MARSHALL
BRYAN
CHOCTAW
Heartland Flyer and Connecting Routes in Oklahoma and Texas
Heartland Flyer (OKC-FTC)
Texas Eagle (LAX/SAS/CHI)
Sunser Limited (LAX-ORL)
Detail Area
Fort Worth
El Paso
Austin
Houston
San Antonio
Heartland Flyer Schedule
821 | | 822
8:25 AM | Oklahoma City | 6:39 PM
8:49 AM | Norman | 5:53 PM
9:09 AM | Purcell | 5:30 PM
9:51 AM | Pauls Valley | 5:11 PM
10:20 AM | Ardmore | 7:22 PM
11:01 AM | Gainesville, TX | 6:41 PM
12:36 PM | Fort Worth, TX | 5:25 PM
Schedules are subject to change without notice.
www.heartlandflyer.com
www.amtrak.com
Reservations: 1-800-USA-RAIL
HEARTLAND FLYER
LEGEND
SYMBOL
CLASS I RAILROADS
MILEAGE#
BNSF 1,475
UP 921 (915)
KCS ★ 139
CITIES AND STATIONS
PRINCIPAL HIGHWAYS
COUNTY SEATS
SYMBOL
CLASS III RAILROADS
MILEAGE#
SLWC 240 (125)
GNBC 186
FMRC 179 (179)
KRR 157
WTJ 84 (61)
SKOL 79
AOK 70 (70)
AT&L 46 (23)
TO&E 40
CVSR 35
PC 20
BNGR 17 (17)
WFEC 14
H&E 14
PSO 11
SS 10
TSU 10
SWRR 9
PBR 8
NWO 7
STATE
FMRC
BNSF
AMTRAK