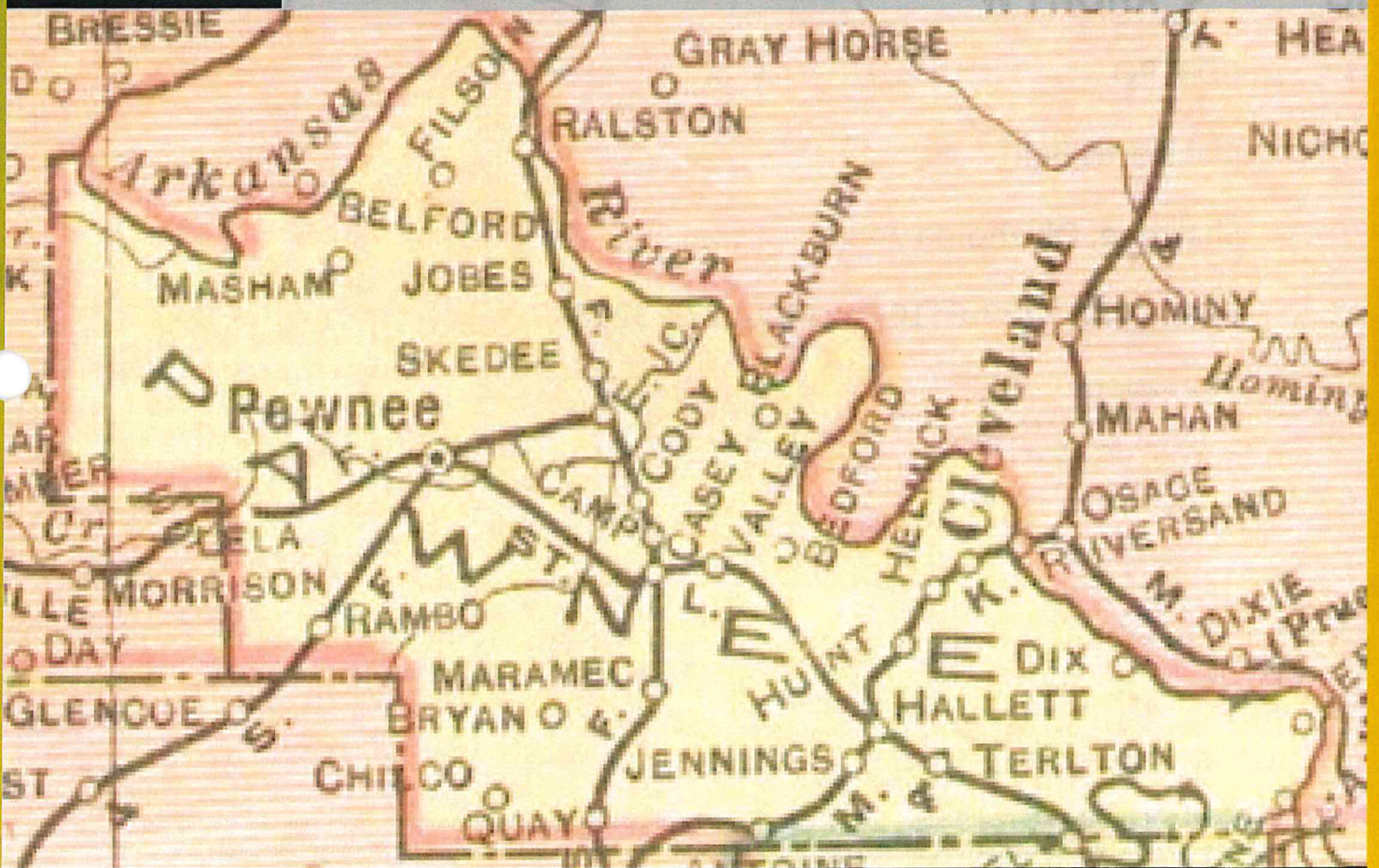


1/10/2018

CORTPO

# LONG RANGE TRANSPORTATION PLAN



1915 Railroad map, Pawnee County Oklahoma

LRTP | 2018-2040

Produced by:

# Central Oklahoma Regional Transportation Planning Organization

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**Pawnee County  
Long Range Transportation Plan  
2017-2040**

**CORTPO**

**In cooperation with:**

**The County of Pawnee**

**Pawnee Nation of Oklahoma**

**The Oklahoma Department of Transportation (ODOT)**

**Federal Highway Administration (FHWA)**

**The Central Oklahoma Economic Development District  
(COEDD) Council of Government**

The 2040 Long Range Transportation Plan (LRTP) was developed through a cooperative effort among CORTPO, member jurisdictions, the Oklahoma Association of Regional Councils (OARC), the Oklahoma Department of Transportation (ODOT) and the Federal Highway Administration (FHWA).

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## CORTPO Mission; Vision

A mission and vision were adopted by CORTPO for the purposes of planning for a sustainable regional transportation system.

A mission statement is a statement which is used as a way of communicating the purpose of the organization. A vision statement tends to be an aspirational description of what an organization would like to achieve or accomplish in the mid-term or long-term future. Together, these statements are intended to serve as clear guides for choosing current and future courses of action.

### **Mission**

To work with public and private partners to develop and maintain the appropriate systems necessary for a safe, efficient, and convenient multi-modal transportation system that will effectively move people and goods on a coordinated transportation network that will advance and secure the economic prosperity and social equity for all residents, visitors, and businesses within the CORTPO region.

### **Vision**

A comprehensive and coordinated multi-modal transportation environment based on the principles of inclusion, communications and innovation that will have the flexibility to respond to new technologies and methodologies to enhance the CORTPO region's position in the regional, national, and international markets as well as provide accessible and affordable transportation services and opportunities to all of the region's current and future residents.

*“The current level of federal, state and local funds will be inadequate to ensure long term maintenance of roads, bridges, sidewalks, transit, and rail”*

*- Staff Planner, CORTPO*

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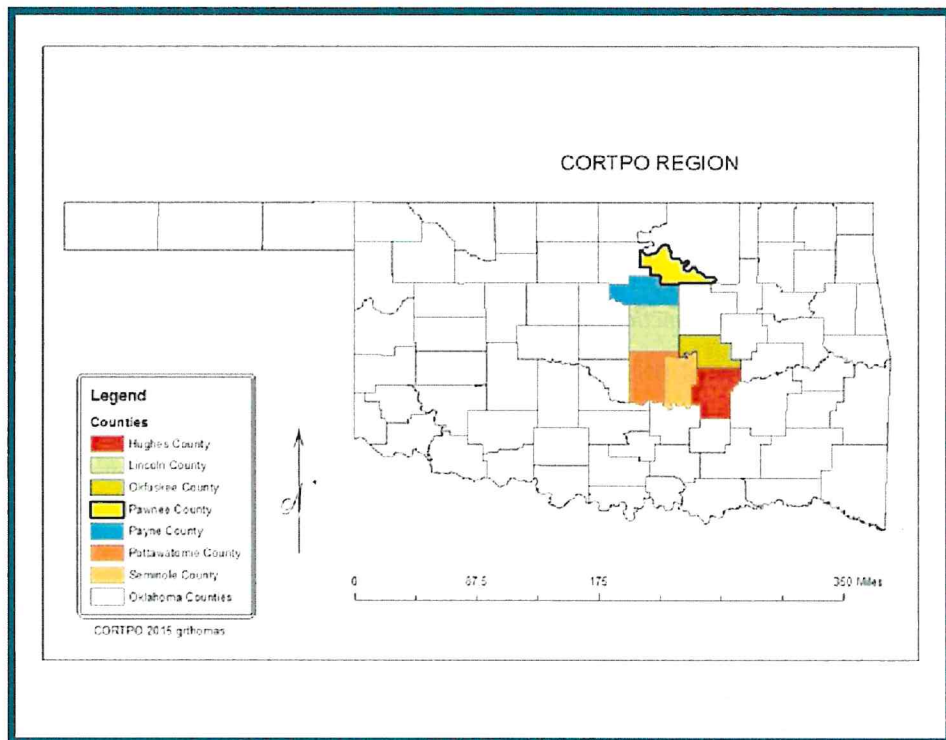
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Map 1



## Summary Comments

Transportation is fundamental to all aspects of community life. A healthy community and economy must have a transportation system that is stable, with sufficient funding for preservation, maintenance and needed improvement of all modes over time. Economic development, access to goods and services, housing, jobs, recreation, and natural resource management are all based on the transportation system. Together, these factors determine the quality of life in a community.

The purpose of the transportation system is to move people and goods in the safest and most efficient manner. Transportation must effectively allow individuals to conduct their personal lives, and provide for the efficient movement of goods to markets to support the county's economic vitality.

### Funding

The primary challenge to improving transportation in Pawnee County is to secure adequate funding. The current level of federal, state and local funds will be inadequate to ensure long term maintenance of roads, rail, and transit. For that reason, it will be necessary to find additional funding in order to maintain or improve current service levels and accommodate the needs of the residential and business communities over the period of this Plan.

### Sustainability

Long-term sustainability and resilience in transportation are needed to ensure that people and the economy can continue to function in the event of disaster or unpredictable future conditions. Near-total reliance on a single mode of transportation may be an insufficient foundation for a secure and healthy community.

"Sustainability" goals of the Long-Range Transportation Plan include maintenance and preservation of the current system, enhanced economic vitality, improved mobility, connectivity, safety and security. Infrastructure maintenance, transit, and enhanced recreational opportunities are perceived as necessary to both economic goals and long term community resilience.

### LRTP Updates

The transportation policies and projects recommended in the LRTP are intended to be implemented over the next two decades. Over the period of the LRTP, it will be necessary to update the demographics, refine the policies and assess community progress toward the goals of the plan. A comprehensive update should occur every five (5) years.



The Pawnee County 2040 Long Range Transportation Plan (LRTP) is the first transportation plan with a focus on small municipalities and unincorporated portions of Pawnee County, Oklahoma

The LRTP identifies existing and projected transportation improvement needs and includes an assessment of the various modes of travel, issues, trends and challenges that may influence transportation in Pawnee County over the next few decades.

This plan was developed through a cooperative effort among CORTPO, the member jurisdictions, the Oklahoma Department of Transportation (ODOT) and the Federal Highway Administration (FHWA).



## Data Sources

*Demographic and Employment data.* The US Decennial Census has long been the accepted standard for demographic planning analysis. Due to the length of time since the 2010 Census, changes in Census Bureau practices, and the limitations of the data collected, we must increasingly rely on American Community Survey (ACS) data products published by the Census Bureau at one, three and five year intervals, in this case the 2011-2015 ACS data.

Other Census products were employed in this report for analytic purposes, including Traffic Analysis Zone (TAZ) data from Census Transportation Planning Products (CTPP), which sometimes carry a different date. An additional source of data was the 2015 Northern Oklahoma Economic Profile and Report available through the Oklahoma Department of Commerce. These regional economic system publications offer helpful labor force assessments and commute patterns.

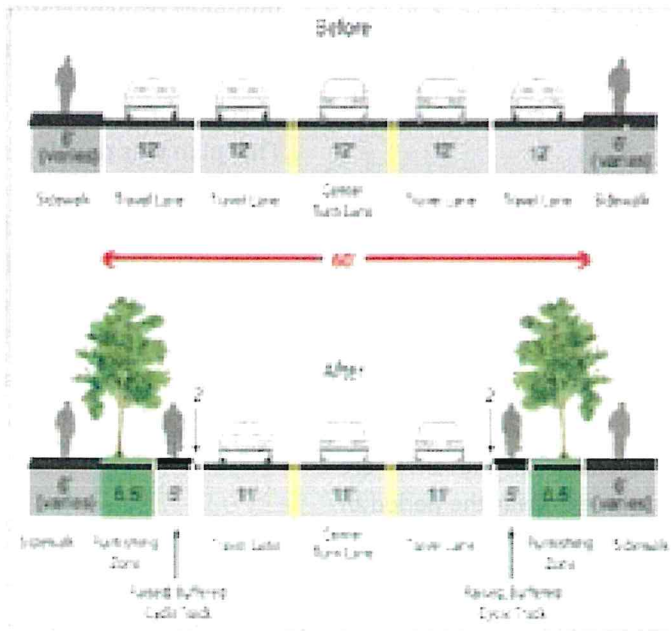
Therefore, while all the data comes together to present a comprehensive picture of the demographic and employment situation in Pawnee County, we ask the reader to forgive inconsistencies in hard numbers.

## A Policy and Project Plan

Many of the transportation safety and access needs identified by the community can be addressed over time with a shift in policy to accommodate a wider range of modal options such as improved signage and painted line adjustments to existing pavement profiles (Road Diet) See figure 1, below.

Proposed projects include intersection improvements, integration of bicycle and pedestrian signage with road projects, safe access, modernized crosswalks and studies to be conducted. A listing of proposed projects is included below.

### Concept Graphics



*A reallocation of existing space can be a relatively low-cost way to accommodate bicyclists and improve pedestrian safety.*

*Variations of this method could be applied to rural 4 lane roads as well as city streets. In a rural setting, pedestrian and buffer space could be eliminated, while improved rumble strip placement adds safety*

*Graphic source: (McKission, 2012)*

### Identified Project Locations


Community Comment	Problem	State Road
Narrow bridge to south part of Cleveland	Too narrow for Pedestrians and bikes	SH 64
Intersection of Caddo and Broadway	Problem intersection	SH 64 & 99
Caddo & Broadway stoplights	Needs stoplight upgrades	SH 64 & 99
Crosswalks needed Caddo and Broadway	Needs stoplight and/or crosswalk	SH 64 & 99
Road from Cleveland to Hominy	Too narrow, curvy & narrow bridge	SH 99
Intersection of SH 64 & 18 South of Pawnee	Dangerous "Y" intersection	SH 64 & 18
Intersection; add crosswalks in Pawnee	Add crosswalks at Intersection of Harrison	SH 64 & 18
Add shoulders to the 2-lane Highways	Needs shoulders	2-lane no-shldr
Bikes on State Highways	Needs shoulders and signage	SH 15; 18; 64; 99
Pawnee Golf course road curve	Dangerous curve	Near inters of Hwy 15
EW 4400 Road	needs realignment near the junction of	Near Hwy 18 & 15
School pick-up areas need improvement	Safety, visibility, narrow passage	Near schools
Provide an overpass for	Emergency vehicles N of Pawnee	RR Crossing

Table 1

### Rumble Strip Placement

In addition to providing enhanced safety at a relatively low cost, appropriate rumble strip placement adds sustainability and resilience to the regional transportation system. FHWA has published guidelines for rumble strip design. Placement on or near the right edgeline can provide additional seconds of warning to both drivers and bicyclists traveling in the same direction that a vehicle has strayed over the edgeline. Proper placement of rumble strips also provides a wider riding surface between the roadway and the unimproved roadside (ditch). FHWA information and a graphic illustrating preferred placement of rumble strips is shown in Appendix 5.10.




  
 Poor rumble strip placement
   
 reduces the utility of the shoulder;
   
 edgeline strips are preferred



## Chapter 1: Introduction; Key Issues & Goals

### Background Information

#### REGIONAL TRANSPORTATION PLANNING ORGANIZATION

In June of 2006, Rural Planning Organizations of America (RPO America) was established. Rural Transportation Planning Organizations facilitate local involvement in the statewide transportation planning process at the regional level, provide technical assistance to local governments, and assist with public involvement in the planning process and other tasks. Congress recognized the new national organization as “dedicated to improving the planning and development of America’s rural transportation network.” The group supports the coordination, management, and planning of national rural transportation systems, as well as the linking of rural community economic development initiatives with state and local transportation programs.

The Oklahoma Department of Transportation worked with the Federal Highway Administration to allocate a portion of the federal State Planning & Research (SPR) funding to the Oklahoma Association of Regional Councils (OARC) to fund rural transportation planning projects. The Central Oklahoma Economic Development District (COEDD) was selected to participate. Other participating Regional Councils of Governments are NODA, SWODA, ASCOG and Grand Gateway.

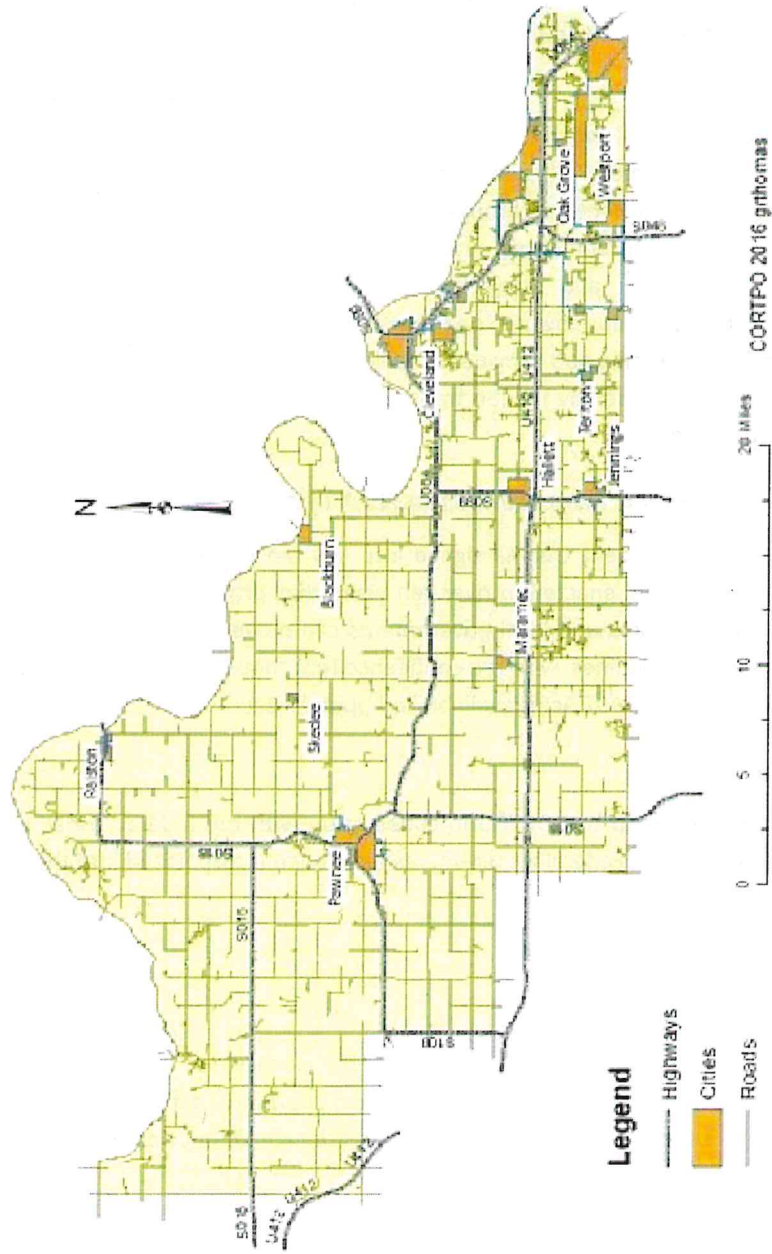
In October of 2009, the COEDD board created the Central Oklahoma Regional Transportation Planning Organization (CORTPO) by Resolution #09-04. The CORTPO Region is composed of a seven county area, and includes Hughes, Lincoln, Okfuskee, Payne, Pawnee, Pottawatomie, and Seminole Counties (Map 1). CORTPO will develop transportation plans for each county, which will ultimately result in a Regional Plan. The region is predominately rural, with the majority of the population being within the incorporated cities of Seminole, Shawnee, Stillwater, and Tecumseh.

The development of this Long-Range Transportation Plan (LRTP) provides an opportunity for the community to identify priorities for Pawnee County in context of the greater CORTPO region.



Pawnee County

Pawnee County Oklahoma  
Towns and Cities



## Purpose of the Plan

The Pawnee County Long Range Transportation Plan (LRTP) may be used to assist the community in focusing limited transportation funds on projects that provide the best return on investments, by developing realistic goals based on analysis of data and input from the community. By establishing the year 2040 as the planning horizon, the community is looking toward long range strategies to accommodate community needs over a significant period.

The transportation plan will provide a guide for the development of a safer, more efficient transportation network among population centers through both long-term transportation system objectives and short-term implementation of policies and projects. Realistic assessment of short range steps toward long range goals will support local fiscal planning and provide for long term coordination with state or federally funded transportation projects within the County.

## Use the LRTP when:

**Public repairs are planned, or  
new development is proposed**

- ✓ Guiding Policy
- ✓ Project List
- ✓ Grant applications

## Fixing America's Surface Transportation (FAST) Act

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act." It is the first law enacted in over ten years that provides long-term funding certainty for surface transportation, meaning states and local governments can move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term. More information about the FAST Act is available in Appendix 1.1

## Requirements

The LRTP has been developed by CORTPO in cooperation with the federal, tribal, state, county, and member governments, ODOT, FHWA. Federal requirements have been incorporated into the Pawnee County LRTP, some of which are reproduced below:

The transportation plan must

- ✓ Address a twenty year planning horizon
- ✓ Identify needed pedestrian walkway and bicycle facilities
- ✓ Indicate, as appropriate, the transportation alternative activities within the area
- ✓ Include a financial plan that demonstrates the consistency of proposed transportation investments with sources of revenue already available

## Planning Factors

The plan is intended to address the ten planning factors required by federal law 23 CFR 450.306 for the transportation planning process listed in Table 2 on the following page.

## Planning Factors 23CFR 450.306

### **PLANNING FACTORS TO BE ADDRESSED IN NONMETROPOLITAN, METROPOLITAN AND STATEWIDE TRANSPORTATION PLANNING:**

1. Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system across and between modes, people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
10. Enhance travel and tourism

Table 2

### **Environmental Justice**

Public involvement in development of the Plan must comply with Presidential Executive Order 12898, Environmental Justice. The Federal Highway Administration (FHWA) also follows federal policy to ensure federally funded activities (including planning, through implementation) do not have a disproportionate adverse effect on disadvantaged populations.

Poverty rates as defined by the U.S. Census Bureau ACS 2011-2015 were identified in Pawnee County. About 11% of families and 14% of individuals were living below the poverty line. The LRTP process identified additional environmental justice (EJ) populations through a comparison of the racial and ethnic composition of the county by Census area. Older neighborhoods (original town plats) have the most Zero-vehicle households and a higher density of minority populations. This information is further illustrated in Appendix 6.1.

## Key Issues, Trends and Challenges

During the public participation process, the Pawnee County community identified key issues, trends and challenges that have an impact on the function of the transportation system.

### Concerns of the community

Comments received during the public participation survey indicate that preservation of existing infrastructure and road surface maintenance is a high priority in both the county road and city street systems. Pedestrian routes to schools and shopping may be insufficient. Transit is needed. There are few existing accommodations for bicycle travel. Signage is perceived to be lacking or in need of repair.

### Top Issues

- ✓ Funding limitation. Revenues continue to be limited to meet transportation system needs, while costs increase, especially for: county road maintenance, preservation and improvement; bridge rehabilitation or reconstruction
- ✓ Need for improved safety:
  - Pedestrian access to common destinations and schools
  - Increasing bicycle traffic is observed on rural roads
- ✓ There is little resiliency and sustainability incorporated into the existing system
- ✓ A need for improved: local and regional transit, pedestrian, and bike accommodations, signage, sidewalks, benches, bike racks, multi-use trails

### Trends

- ✓ Residents support local business and medical services
- ✓ Gradual population increase
- ✓ An increase in the proportion of residents over age 65 is projected
- ✓ Decay of existing infrastructure among all modes of transportation
- ✓ Improved Tribal influence on development and transportation in Oklahoma
- ✓ A national and regional economic shift towards increased demand for recreational travel amenities; trails, sidewalks, bike racks, bike lanes
- ✓ FHWA policy has placed greater emphasis on improving transportation for “traditionally under-served” population groups such as:
  - Non-drivers of any age, including the elderly, low-wage workers and zero-vehicle households
  - Bicycle and pedestrian users of the system

### Local assets

There are local assets that make Pawnee County stand out in regional transportation opportunities. *First*, is the proximity to good jobs and urban infrastructure for commuters. *Second*, Pawnee County enjoys an established working relationship with Tribal partners. *Third*, ready access to the Tulsa Port of Catoosa, via the Cimarron Turnpike provides incentive for business and industry. *Fourth*, a remarkable number of miles of abandoned rail routes offer off-road trail potential. *Finally*, there is a motivated leadership and an active community already working to preserve and improve all aspects of life in Pawnee County. This collaboration forms a stable foundation for effective progress toward the future.



## Challenges

### FUNDING

The primary challenge identified by this study is funding of all aspects of the transportation system. Revenue has fallen behind the investment needed to preserve and maintain the current system. Additional funding will be needed to keep people and goods moving effectively over the next two decades. Increases in the proportion of the population over age 65 can be expected to result in additional demand for transit. Expanded Regional Rail service and infrastructure improvements would offer an alternative to trucked freight and reduce the wear on vulnerable state and county roads. Adequate funding for maintenance and preservation of the existing roads, bridges and rail infrastructure must be the first priority of the long-range plan.

**COUNTY ROADS.** The persistent challenge to the county road system is the cost of road maintenance; the daily costs of keeping more than 800 miles of roadway and signage in good condition.

**SIDEWALKS AND PEDESTRIAN SAFETY.** Sidewalks and proper crosswalks throughout the CORTPO region are absent or in a state of disrepair. The lack of safe paths to shopping, school and recreation is a common safety issue. Some Pawnee County towns and cities have made efforts to improve pedestrian conditions. These efforts should be continued and supported in every population center.

### TRANSIT.

Low population densities and limited funding present challenges to establishing feasible routes and scheduling services so that a trip is acceptable to riders and not cost prohibitive. See Page 51 for more information.

**RAIL.** Some of the regional rail capacity has deteriorated to a point where the infrastructure is nearly lost. A great deal of research has been completed that demonstrates the value of rail infrastructure in central Oklahoma, and the direct economic benefits of existing and potential rail restoration investment in the CORTPO region and Pawnee County. BNSF operates a rail line that passes through Pawnee. Freight service was available at one time, but that infrastructure is currently idle. The following paragraph is excerpted from the Federal Highway Administration document titled "Planning for Transportation in Rural Areas;" relevant to Pawnee County connections to the regional and national economy:

"Business decisions by rail companies have resulted in the abandonment of many rural branch lines. The result has been loss of rail freight service to these areas and increased trucking on the rural road system to compensate for this loss. Increased trucking on rural roads ultimately increases road maintenance needs and reduces the financial capability of the rural area and state to keep the roads in adequate condition. (FHWA PTRR, 2001)"

The reader is directed to the Draft *Oklahoma Freight Transportation Plan 2018-2022*; the *2013 Oklahoma Rail Infrastructure Report Card*; the *Oklahoma Statewide Freight and Passenger Rail Plan*; current FHWA and ODOT policy, and other print and web resources.



General maintenance and repairs are the key factors in keeping annual costs of road work low. According to the American Association of State Highway and Transportation Officials (AASHTO), every \$1 spent to keep a road in good condition avoids \$6-\$14 needed later to rebuild the same road once it has deteriorated.



## Demographic Trends

**STABLE POPULATION AND ECONOMY.** Pawnee County is forecast to have a relatively stable population with a gradual increase over time. According to the public survey conducted in Pawnee County, most people work and shop within 30 to 50 miles of home.

**AGING.** The projected number of people over age 65 in 2040, is expected to grow. In 2015, Pawnee County, 17.6% of the population was over age 65, somewhat higher than the percentage for the rest of the State (14.2%). The US Administration on Aging (AoA) Report projected that by 2030, the over-65 group will make up 24% of the population in the state (AoA, 2014). If the balance holds true, Pawnee County may expect an aging population in excess of 25% of population. For more information on changing demographics in the county also see Appendix 3.2.

Pawnee Co Age Cohort	2000	2010	2015
18 years and over	73.5%	75.4%	75.8%
21 years and over	69.8%	71.8%	72.2%
62 years and over	17.6%	20.3%	21.5%
65 years and over	14.8%	16.4%	17.6%

Table 3

**CULTURAL TRENDS AND PERCEPTIONS.** “Quality of life” is an economic issue that impacts the long-term social and fiscal health of a community. The availability of preferred educational, recreational and transportation options has a direct impact on where individuals choose to invest valuable business and family resources. Continuing efforts to develop the county as a great place to live and work is a fundamental component of economic attraction, as is the physical appearance of the infrastructure.

### Other Challenges that were identified by this study:

- ⇒ There has been limited integration of alternative mode facilities, environmental or sustainable transportation improvements within the current system
- ⇒ Safety and security for all legal road users has not been fully integrated into historic improvements
- ⇒ Improved integration of transportation goals with economic development goals could result in greater efficiencies in fiscal investment
- ⇒ Barriers to accessibility and mobility for under-served segments of the community – including able-bodied non-drivers – may have a negative impact on:
  - the local economy (customer access, worker stability)
  - community health, safety and welfare
  - perceptions of the quality of life available in Pawnee County

### Goals, Objectives and Policies

The LRTP includes goals, objectives and policies to assist Pawnee County in the planning and prioritization of transportation system investments.

## GOALS

The goals of the LRTP were developed from meetings held with the general public, key stakeholders, Technical Committee members, Policy Board members and are based on the current planning guidelines published by the primary funding agencies – the Federal Highway Administration (FHWA), and the Oklahoma Department of Transportation (ODOT). We applied the acronym *SMART* as a template for development of the objectives, policies and action steps of the LRTP, a standardized strategy published in 1981 by GT Doran.

## OBJECTIVES

Objectives are specific, quantifiable components of community goals. Objectives should be *Specific and Measurable* and are more focused; typically more tangible statements related to attaining the set goals. It is expected that when all objectives are met, the Goal has been reached.

## POLICIES

Policy statements and Action steps provide guidance for decisions that will help attain these goals and objectives. They are *Attainable and Relevant* in the twenty-year *Time* frame. Policies included in the plan were developed in coordination with member governments; partner agencies; technical committee and policy board members and are based on the current planning policies of the FHWA and ODOT. Policies and actions are implementation strategies; expected to result in the attainment of each objective.

## Pawnee County Goals

Table 4 identifies the goal categories developed for the LRTP. The full text of the goals, objectives and implementation strategies developed for this plan are outlined below.

### Pawnee County Goals

1. Maximize Access to Funding	Provide a sound financial basis to maintain, preserve, and improve transportation infrastructure
2. Emphasize Maintenance & Preservation	Emphasize preservation and maintenance of all components of the existing system
3. Increase Safety and Security	Ensure high standards of safety in the transportation system, improve resilience for security
4. Improve Accessibility, Mobility and Connectivity	Improve access to common destinations for pedestrians, bicyclists, and transit riders; regional connectivity
5. Enhance Economic Vitality	Maintain and enhance movement of freight and other economic development activities; improve quality of life; encourage tourism
6. Envision Long Term Objectives	Objectives for the community that, while desirable, are currently viewed as unattainable or unrealistic

Table 4

## Goals and Objectives

### Goal 1– Maximize Finance & Funding

GOAL STATEMENT: A fiscally balanced and sustainable transportation system

#### Objectives

- A. Consistent regional applications for all available transportation opportunities maximize annual funding
- B. Local agencies, municipalities, tribal governments, state officials and private interests effectively collaborate in the pursuit and funding of transportation improvements
- C. Expansion of transportation modes that utilize private funding or have a higher proportion of user-borne costs, such as private roads and rail; fees for service

### Goal 2 Emphasize Maintenance and Preservation of Existing infrastructure

GOAL STATEMENT: Preservation and maintenance of all components of the existing system will be prioritized over new construction to serve residential and commercial development within the region.

#### Objectives

- A. New development is directed to appropriate roads and infrastructure
- B. Private companies with heavy truck traffic contribute to maintenance of vulnerable county roads and bridges
- C. Regional pavements are preserved through growth of intermodal rail freight

### Goal 3 – Increase Safety & Security

GOAL STATEMENT: Safety: All modes of transportation will provide transportation opportunities that are safe. Security: Identify and protect critical transportation infrastructure from both natural hazards and human threats; incorporate strategies for improved resilience.

#### Objectives

- A. Structurally deficient bridges are prioritized for repair or replacement
- B. Local site development standards address safety for all legal road users
- C. Crosswalks have appropriate signage and visibility
- D. Bicyclists have improved safety in rural areas
- E. Persons using handicap mobility vehicles have safe access to common destinations
- F. RR crossings are modern, safe and do not impede emergency vehicles

#### **Goal 4 – Improve Accessibility, Mobility, Connectivity**

GOAL STATEMENT: Improve accessibility and mobility for Pawnee County’s people and freight; Ensure regional connectivity; Support multiple modes of transportation

##### **Objectives**

- A. Funding is balanced among modes to ensure sustainable mobility solutions
- B. Highway improvements are coordinated with bicycle and pedestrian projects
- C. Reliable access to the transportation system is ensured for disadvantaged persons
- D. Transit is a preferred method of travel for a wider segment of the populace
- E. Bike routes are indicated with signage for improved regional mobility
- F. Planning efforts result in continuous bikeways throughout the multi-county region
- G. Right of way (ROW) areas are preserved for transportation purposes; including abandoned, existing and future road and railroad corridors

#### **Goal 5 – Enhance Economic Vitality**

GOAL STATEMENT: An integrated, multimodal transportation system promotes quality of life and economic development opportunities through enhancing the economic competitiveness of the region by improving access to jobs, education services, encouraging healthy neighborhoods and supporting business access to markets.

##### **Objectives**

- A. Economic development is coordinated with strategic transportation investments
- B. Employers have assurance that the labor force has reliable transportation options
- C. Retail establishments are located within Town/City limits
- D. Reliable access to shopping and services is realistic for all residents
- E. Retail customers using all modes of travel are welcomed by *Complete Streets*
- F. Tourism provides annual revenue for low cost transportation improvements

#### **Goal 6 – Long term Objectives**

GOAL STATEMENT: These objectives represent a vision for Pawnee County transportation improvements that, while desirable, are currently viewed as unattainable or unrealistic.

##### **Objectives**

- A. County Road and Bridge maintenance budget increased by 1.5 million annually
- B. Bus service connections to OKC, Ponca City, Stillwater and Tulsa metro bus stops
- C. Improved intermodal rail freight opportunities
- D. Passenger rail to Stillwater and Tulsa

*See also Chapter 6, Recommendations; Implementation; Policies and Projects. Goals, Objectives, Policies, Actions have been summarized into a single table for easy reference in Appendix 6*

## Chapter 2: Current Conditions, Needs, and Funded Improvements

### Pawnee County

The bulk of the county is formed by the boundary of the Pawnee Nation; part of the western portion is Otoe-Missouria. According to the 2013 Pawnee Nation Annual Report there are approximately 3,200 enrolled Pawnee; nearly all reside in Oklahoma. The tribal headquarters is in the City of Pawnee (Tribal jurisdiction Map, Appendix 2.1.).

The following information is sourced from the Encyclopedia of Oklahoma History and Culture, by Linda Wilson: The Pawnee Agency and Pawnee Boarding School were established after the Pawnee tribe came to this area in 1875. The Pawnee Agency was designated as a post office on May 4, 1876. The area was opened to non-Indian settlers on September 16, 1893, during the Cherokee Outlet Opening. Town site Number Thirteen (later Pawnee) had been designated as the temporary county seat. The post office was re-designated from Pawnee Agency to Pawnee on October 26, 1893. The town incorporated on April 16, 1894. On September 9, 1895, the townspeople dedicated a stone county courthouse.

The Eastern Oklahoma Railway, which later became part of the Atchison, Topeka and Santa Fe Railway, built a line through Pawnee between 1900 and 1902. In 1902, the Arkansas Valley and Western Railway (later the St. Louis and San Francisco Railway) also built a line through the city. The railroads enabled Pawnee to develop as an agricultural trade center. During the Great Depression, Pawnee continued to develop largely because of Federal public works projects. A hospital to care for the Ponca, Pawnee, Kaw, Otoe, and Tonkawa people opened January 15, 1931. The federal government built a reservoir named Pawnee Lake in 1932. A new county courthouse was also built in 1932 (Wilson, 2009).

### Geography

The western third of the county is part of the Red Bed plains, while the remainder is in the Sandstone Hills region. On September 3, 2016, a magnitude 5.8 earthquake struck near the city of Pawnee, just after 7 AM (CST). This was Oklahoma's strongest quake in recorded history to date. State regulators in Oklahoma ordered 37 petroleum production wastewater disposal wells in the vicinity of the earthquake to be closed while assessments are made (USGS, 2016). Those wells remain closed in 2017.

### Ecology

Most of the county lies in either the Cross Timbers Ecological region (western) or the Northern Cross Timbers regions (eastern portion). A small area in the Northwest corner of the county is in the Prairie Tableland zone (see map Appendix 2). According to the U.S. Census Bureau, the county has a total area of 595 square miles, of which 568 square miles is land and 27 square miles (4.5%) is water. The Cimarron and Arkansas Rivers drain the county. Black Bear Creek also flows through the county.

### Economy

According to the Oklahoma Historical Society, Pawnee County's historic economy was based on the petroleum industry, ranching and farming. Surrounded by prominent oil fields such as the Cushing-Drumright, the Osage, and the Glenn Pool, many wells were drilled in the eastern third of the county. The Cleveland pool opened in 1904 after a discovery well, known as Uncle Bill Lowery Number One, was completed on the William Lowery farm located south of Cleveland. Other oil and gas wells soon developed near Hallett, Jennings, Maramec,

Pawnee, Quay, Ralston, and Terlton. In December 1915 Frank Buttram completed a discovery well in the Watchorn (Morrison) Field in northwestern Pawnee County. In 1925 oil production peaked at 2.2 million barrels annually. In 1980 the county produced more than one million barrels of crude and 620 million cubic feet of natural gas.

In the early 1900s the county had one-fourth of its surface covered with timber, and one-half was under cultivation in the production of cotton, corn, oats, hay, grain sorghum, and potatoes. In 2015 145,000 tons of winter wheat, 126,000 tons of soybeans and 41,000 tons of hay were produced in the county.

Availability of sandstone, limestone, clay, and sand provided construction materials for early buildings and roads. At various times more than thirty-five quarries operated. In the 1930s Cleveland had a brick plant, and Ralston had a broom factory and a sand company. In the 1990s two quarries existed, the Quapaw Quarry near Skedee, and Stewart Stone, east of Pawnee. Those quarries remain in operation.

Manufacturing has played a lesser role in the economy. In 1959 Pawnee County had nine industrial plants. At the turn of the twenty-first century twenty local manufacturers were in operation, including the Columbia Windows factory in Cleveland (Wilson, 2009).

## Places

The county seat is Pawnee. Other incorporated towns in the county include Blackburn, Cleveland, Hallett, Jennings, Mannford, Oak Grove, Quay, Ralston, Shady Grove, Skedee, Terlton, and Westport. There are two unincorporated communities; Mule Barn, and Quay.

## Population

The 2015 ACS estimated county population at 16,499. The population was spread out with 24.2% under the age of 18 and 17.6% who were 65 years of age or older. The median age was 41.4 years. Among respondents, 80% of people identify as White, 10.7% Native American, 1.1% Black or African American, 0.4% Asian, 0.1% Pacific Islander and 7.6% of two or more races. 2.7% identified as Hispanic or Latino of any race. Therefore, Pawnee County has more people who identify as White or Native American, and fewer people who identify as Black or Hispanic than does the state, in general. See Table 5 below.

2015	State of OK	Pawnee county
	%	%
Total population	100	100
One race	94.1	92.4
White	72.2	79.8
Black or African American	7.4	1.1
American Indian and Alaska Native	8.6	10.7
Two or More Races	5.9	7.6
Hispanic or Latino (of any race)	8.9	2.7
<i>US Census ACS data 2015</i>		

Table 5

### Housing

The population resides in 6,486 occupied dwelling units. There were a total of 7,946 units of housing in the county, about 82% were occupied and 18 percent were vacant. Most vacant units are rental properties (US Census, 2015). A map in Appendix 2.2 shows the relative density of vacant dwellings by Block Group (BG).

Of the 6,486 occupied housing units, 5,042 (78 percent) were owner-occupied and about 1,444 (22 percent) were rented. Among total housing units, 71 percent were single-unit structures, about 4 percent were in multi-unit structures, and 24 percent were mobile homes.

Pawnee County	Pop in occupied housing units	Total housing units	Occupied housing units	Owner occupied	Renter occupied	Vacant units	Percent Vacant	Avg hhd size
	16,383	7,946	6,486	5,042	1,444	1,460	18%	2.53

Table 6

ACS 2015

### Households

In 2011-2015 the average household size was 2.53 people. Thirty-four (34) percent of all households have one or more people under the age of 18; thirty-two (32) percent of all households have one or more people 65 years and over.

Pawnee Co Household Income	% hhd's
Less than \$10,000	7%
\$10,000 to \$14,999	7%
\$15,000 to \$24,999	12%
\$25,000 to \$34,999	12%
\$35,000 to \$49,999	16%
\$50,000 to \$74,999	21%
\$75,000 to \$99,999	12%
\$100,000 to \$149,999	9%
\$150,000 to \$199,999	3%
\$200,000 or more	2%
Median household income (2015)	\$45,765

Table 8

### Income

The 2015 median income for a household in the County was estimated at \$45,765, as compared to \$46,879 for the State of Oklahoma. Pawnee County has proportionally fewer people in poverty than does the State, in virtually every demographic category. About 13.8% of the population was below the poverty line, including 19% of those under age 18 and 6% of those aged 65 or over (ACS 2015). Appendix 5.5 includes additional information and illustrates the relative density of poverty by Census block group.

2015 Poverty comparison (All people)	
OK State	Pawnee
16.7%	13.8%

Table 7



### Registered Motor Vehicles

According to the Oklahoma Tax Commission, there were 14,535 personal, government, commercial, farm, and business motor vehicles registered in Pawnee County in 2015. When the number of vehicles is divided by the estimated 2015 population, the rate of ownership is about .88 vehicles per person (nearly one vehicle per person of any age). The historical figures are similar when population is taken into account (OTC, 2015).

### Zero-vehicle Households

About 4% of households in the county have no vehicle. Block Groups 1 & 2, Census Tract 9575 in the Pawnee area, show the highest percentage of zero-vehicle households, with about 14% (86 homes) where no vehicle is available. Blocks 3 & 4 in CT 9571 (the Cleveland area) also reflect a relatively high percentage of households without transportation, at about 8% (54 homes). See Appendix 2.2 for maps and more information about zero-vehicle households.

Zero-Vehicle Households			
Occupied housing units	6,486	# Hhd's	# People
No vehicle	4.1%	265	670

Table 9



Two hundred sixty-five (265) households in the county have no vehicle.

At an average household size of 2.53 persons, that means about 670 county residents have no transportation available at home



### Educational Attainment

Pawnee County is part of the Tulsa Metropolitan Statistical Area (TMSA). Tulsa MSA residents tend to be more highly educated than residents of the state as a whole. Twelve percent (12%) of TMSA residents possess less than a high school education, compared to 13.8% of the state and 13.98% of the nation.

At the Post-secondary level, persons who have some college are 23.8 % of the population as compared to 23.5% of the state's residents, and 20.8% nationally. Those with an Associate's degree represent 8.24% of the population of the TMSA while that figure is 7.1% of the state and 7.9% of the nation. The greatest difference between educational attainment in the TMSA as compared to the State of Oklahoma is for those who hold Bachelor's degrees; 17.8% as compared to 15.9% in the State. Tables showing specific numbers for Pawnee County may be seen in Appendix 2.2. For employment projections into the year 2025 and beyond, see Chapter 3.

#### *Women are exceeding men in earning college degrees*

The most remarkable feature of the current US Census statistical data for Pawnee County is the difference in educational attainment between males and females as estimated by ACS for 2012 through 2016. The Table titled Educational Attainment by Age shows that females vastly outnumber males in achieving Bachelor's degrees or higher in all age groups under age 65. For those aged between 35 to 44 years, that difference is nearly 10 percentage points; 24.6% of women have a BA or more, while only 14.9% of men have reached or exceeded that degree. For more information See Appendix 2.2

## Major Employers

Pawnee County is part of the Northern Oklahoma (NO) region economic statistical area. The region includes seven counties: Garfield, Grant, Kay, Noble, Osage, Pawnee, and Washington. Listed below are some of the more significant non-agricultural employers in the region. Commerce in Northern Oklahoma is not primarily concentrated in any one area; however there are a significant number of businesses associated with oil and gas extraction operations, associated manufacturing, and health and social service employers in the area.

Of twenty-seven top employers listed by the NO Profile, five are Oil & Gas extraction companies and direct services, another 4 are oil field-related companies, 2 are governmental bodies, four are educational centers, and four are medical facilities. Several casinos operated by various Tribal authorities employ a significant number of workers as well (NEP, 2015).

Therefore, it appears that the largest employers in the county are engaged in natural resource extraction. Next in importance are services for people (such as education, medical services, entertainment), as opposed to manufacturing or other industry, and much of the sales tax revenue is sourced from food sales and small retail businesses of less than 25 employees each. See Table 10, below.

Major employers; Northern Oklahoma Region		
Phillips 66	Bartlesville	Oil and Natural Gas Extraction
Conoco Phillips Company	Bartlesville; Ponca City	Oil and Natural Gas Extraction
Vance Air Force Base	Enid	Government
Ditch Witch	Perry	Construction Machinery MFG
AdvancePierre Foods	Enid	Meat Processing
Enid Public Schools	Enid	Elementary and Secondary Schools
Atwood Distributing	Enid	Hardware Stores
Jane Phillips Medical Center	Bartlesville	General Medical Surgical Hospital
Bartlesville Public Schools	Bartlesville	Elementary and Secondary Schools
Ponca City Public Schools	Ponca City	Elementary and Secondary Schools
Wal-Mart	Multiple Cities	Warehouse Clubs and Supercenters
INTEGRIS Bass Baptist Health Ctr	Enid	General Medical Surgical Hospital
Osage Tribal Council	Pawhuska	American Indian Tribal Government
St Mary's Regional Medical Center	Enid	General Medical Surgical Hospital
Marsau Enterprises, Inc.	Enid	Wholesale Trade
TPI Staffing Services	Enid; Ponca City	Temporary Help Services
United Community Action Program	Pawnee	Community Development
Hamm & Phillips Service Company	Enid	Specialized Freight Trucking
Baker Petrolite Corporation	Barnsdall	Petroleum and Coal Products MFG
First Council Casino	Newkirk	Casino
Ponca City Medical Center	Ponca City	General Medical Surgical Hospital
Northern Oklahoma College	Tonkawa	Junior College
Schlumberger	Ponca City	Oil and Gas Machine MFG
Osage Casino	Multiple Cities	Casino
Parrish Enterprises Ltd	Enid	Machine Shops
Mertz Manufacturing	Ponca City	Construction Machinery MFG
Shebestor-Bechtel Inc.	Blackwell	Support Activities for Oil and Gas

Source: EMSI 2014.3, OneSource

Table 10

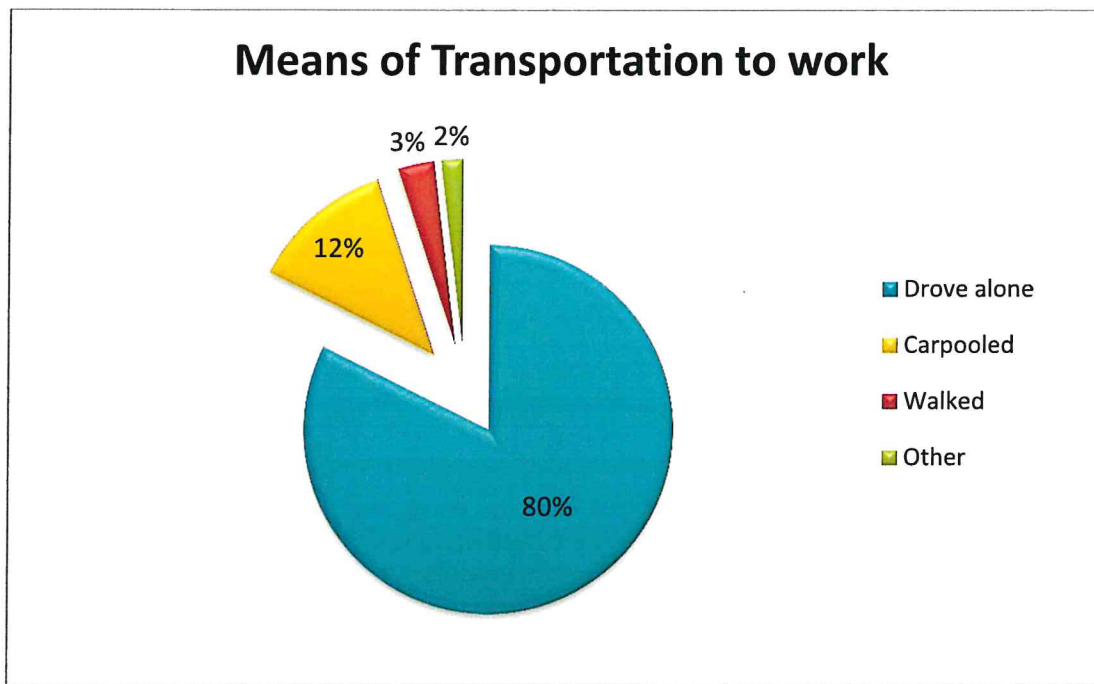
### Commuter Statistics

According to the 2015 Northern Oklahoma economic profile, there are a significant number of people who commute to work. For the most part, Northern Oklahoma workers live in the same county as their place of work. However, in Pawnee County, only about 46% of workers are employed within the county. About 6% commute to Noble, Kay or Osage counties. Approximately 48% of working residents leave the Northern Oklahoma region for employment; that percentage includes workers commuting east or south, to neighboring counties such as Payne County (Stillwater) or Tulsa County (Tulsa Metropolitan Area). A number of workers also commute into Pawnee County from adjacent communities each day, resulting in an overall net reduction in daytime population in the county.

### Mode of Commute

An estimated 80% of Pawnee County, Oklahoma workers drove to work alone in 2011-2015, and about 12% carpooled. Three percent walked to work and about 2 percent used public transit, motorcycle, bicycle or other means to get to work. According to US Census statistics, more than 45% of Pawnee County workers travel 30 to 60 minutes to arrive at work. Among all workers who commuted, it took an average of 27 minutes to get to work (ACS, 2015). About 2.5% of Pawnee county residents reported that they work at home. See Appendix 2.2 for more information.

*Percent of Workers 16 and over Commute by Mode in Pawnee County in 2011-2015*



### **Traffic Analysis Zones (TAZ)**

The Traffic Analysis Zone (TAZ) Program is used to produce Census Transportation Planning Products (CTPP). TAZ data are based on the 2010 US Census and are designed to allow planning agencies access to specific data for transportation system analysis and creation of geographic information layers suitable for planning purposes.

CORTPO uses Traffic Analysis Zone (TAZ) boundaries in analysis of socio-economic data. Geographically, the study area was subdivided into five Census TAZ which (in Pawnee County) were equivalent to the Census Tracts (CT) and numbered identically to the CT's.

One of the tasks of this planning effort was to create more detailed TAZ, based on census block data for the rural areas of the state. Census data is organized by County, Census Tracts, Block Groups and the smallest units, Tabulation blocks. Fifty-eight (58) TAZ were created based on block data, each with populations numbering from 200 to 400 people. See Appendix 2.3 for more information.

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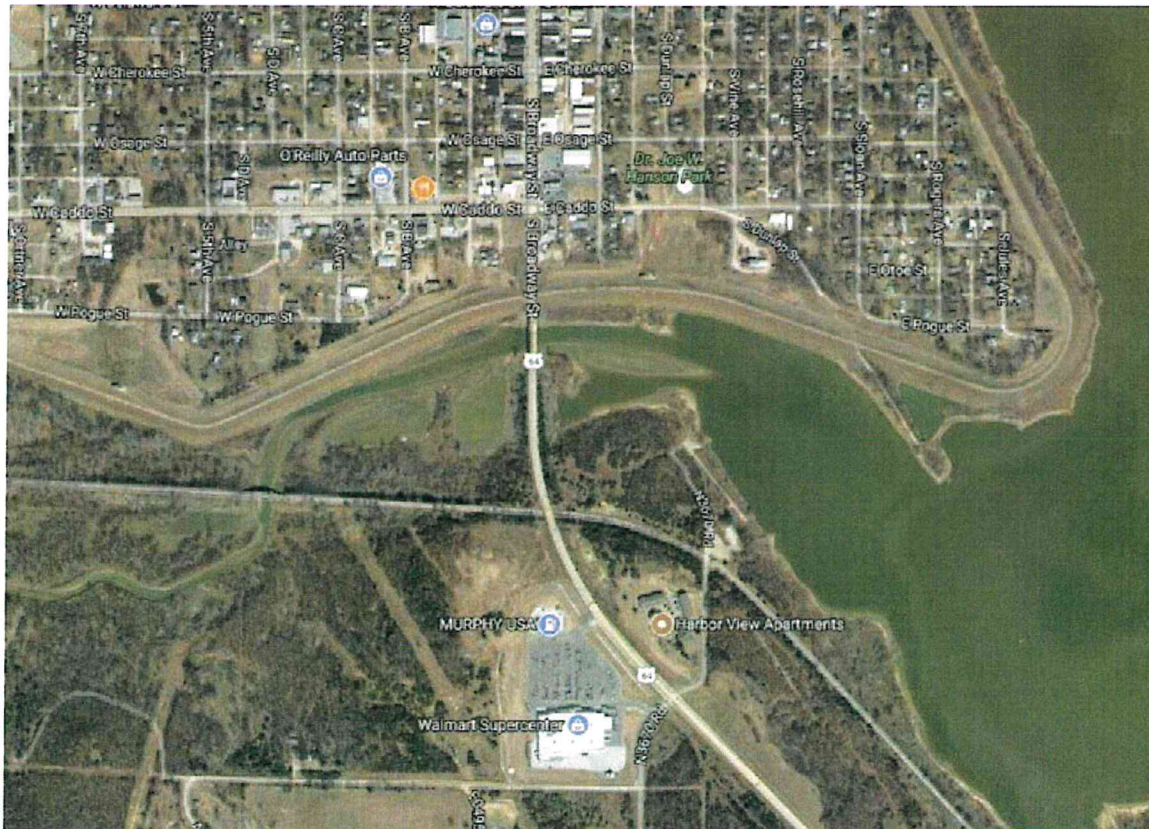
## County and Community Development

Changing land uses affect the flow of traffic throughout the community. Over recent decades, most residential and industrial growth has occurred in and near incorporated municipalities. This is a preferred development strategy which efficiently utilizes existing infrastructure.

Growth within the Cities of Pawnee and Cleveland is guided by Zoning. Pawnee County itself has no zoning or subdivision regulations; the county does regulate road standards for new development. In every Town and City, sidewalks and crosswalks lack connectivity.

Some areas are common destinations that may generate additional demands on the transportation system. Such activity-generators include grocery, retail, business and industrial sites, agencies, schools, universities, and recreation centers. The destinations in the county that draw the most concentrated traffic are in Cleveland; the original downtown, and the newer grocery and shopping strip along Highway 27 (Broadway).

In the aerial view of Cleveland below, the south part of the city is shown. Development is concentrated as a result of the original city plat near the banks of the Arkansas River. State Highway 64 passes over a narrow bridge and connects the city to the local Walmart store. As shown in the photo at the bottom of page 30, it is perilous for pedestrians or persons using handicap-mobility vehicles to pass through the narrow structure to access a common shopping destination. This route is also the primary access point for a multi-family apartment complex.





Crosswalks are in place in many areas throughout the City of Pawnee. Curb cuts and painted areas improve access and safety for pedestrians. These important features require annual maintenance.

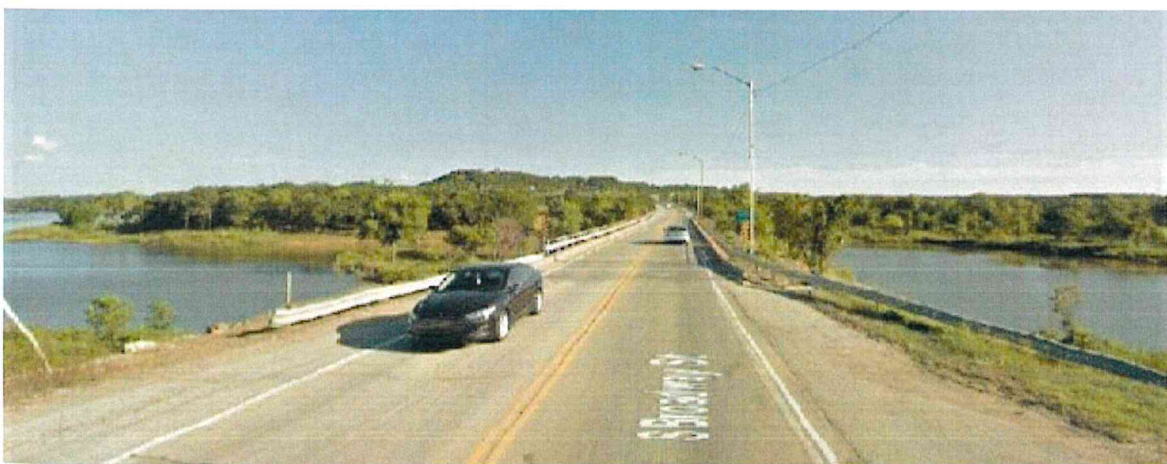


## PEDESTRIANS

“Pedestrian” is a term intended to include both those who travel by walking and people using wheelchairs or handicap-mobility vehicles



Below: a narrow bridge forces pedestrians into the same travel lane as vehicles. This bridge, on the south side of Cleveland, connects the main residential and shopping areas to a local Wal-Mart store



## Physical Development Constraints

There are various factors that can affect whether a site is appropriate for development. Some of these conditions may include the location of water and sewer infrastructure, existing roads buildings and, land ownership and tribal jurisdictions, legally established rights of way, floodplains, wetland areas, habitats or regulations.

### Environmental features

Pawnee County is home to environmental features and natural resources which influence the transportation system. Gas and oil fields underlie much of the region. Protection of these and other resources must be an integral part of early project development, as required by the National Environmental Policy Act (NEPA), and other State and Federal laws.

The county has a gentle topography. This rolling topography, together with the presence of numerous streams and rivers, influenced the number of small county bridges that were originally built; many of which are now in need of rehabilitation and replacement. There are limited amounts of floodplain area mapped by FEMA in the County. The City of Pawnee includes Zone A flood hazard areas (Effective date 1995). The location of these special flood hazard areas indicates that there may be unmapped flood prone areas in the unincorporated area adjacent to the municipal boundary. Check current flood maps and local knowledge when planning projects.



*American Peregrine Falcon  
Photo by Roy W Lowe USFWS*

### Lakes

Residents of Pawnee County enjoy a number of lakes and reservoirs, of which Keystone Lake is the largest. Other lakes and reservoirs include Pawnee Lake, Cleveland Lake, Sooner Lake, Feaster Lake, P S O Lake, and Maramec Lake. According to the Corps of Engineers website, Keystone Lake has 16 recreational areas (including 3 alcohol-free beaches), 11 boat ramps, 4 marinas and 2 off-road vehicle areas. There are also campgrounds, a waterfowl refuge and a public hunting area. Keystone State Park nearby offers cabins. Fishing is popular, with the most plentiful species being striped bass, sand bass, black bass, small mouth bass, crappie, and catfish. Fauna around the lake include: white-tailed deer, raccoon, bobcat, coyote, beaver, squirrel, cottontail rabbit, quail, dove, ducks and geese.

### Endangered Species

Group	Common Name	Scientific Name	Status
Birds	Whooping crane	Grus americana	Endangered; Experimental Population
Birds	American peregrine falcon	Falco peregrinus anatum	Recovery
Birds	Piping Plover	Charadrius melodus	Threatened
Birds	Least tern	Sterna antillarum	Endangered
Birds	Red knot	Calidris canutus rufa	Threatened
Insects	American burying beetle	Nicrophorus americanus	Endangered

Table 11

### National Register of Historic Places (NRHP)

Twelve local properties are included on the National Register of Historic Places. Most historic properties in the county are so designated due to architectural style. Others are noteworthy for periods in Native American history; some are of special interest for well-known people who were associated with a place. WPA building projects are noted for preservation as well.

Pawnee County Historic Places	Note:	Significant Period	Location
Arkansas Valley National Bank	Late Victorian Architecture	1900-1924	Pawnee
Blackburn Methodist Church	Gothic Architecture	<b>1900-1924</b>	Blackburn
Blue Hawk Peak Ranch (Pawnee Bill)	Agriculture, Domestic	1900-1924	Pawnee
Corliss Steam Engine	Industry/Museum	1900-1924	Pawnee
First State Bank of Maramec	Romanesque Architecture	1900-1949	Maramec
Mullendore Mansion	Greek Revival Architecture	1910	Cleveland
Pawnee Agency and Boarding School	Queen Anne Architecture	1875-1974	Pawnee
Pawnee Armory	Military, Architecture	1925-1949	Pawnee
Pawnee County Courthouse	Government, Architecture	1925-1949	Pawnee
Pawnee Indian Agency	Gov't; Native American	1875-1899	Pawnee
Pawnee Municipal Pool and Bathhouse	Works Progress Admin	1925-1974	Pawnee
Ralston Opera House	Commerce, Entertainment	1900-1924	Ralston

Table 12

### Bicycle and Pedestrian Network

The 2011-2015 American Community Survey showed that few people walked or rode bikes to work in Pawnee County. While the proportion of the pedestrian and biking public in addition to workers has not been measured, it can be stated that those who prefer sustainable or healthy forms of transportation, low-income workers, students and other diverse non-driver adults would benefit from increased safety. No bike routes have been identified or signed.

Pedestrian safety improvements are evident in the City of Pawnee. Crosswalks are marked in many areas throughout the City. Curb modifications have been made to improve accessibility, and painted lines indicate the pedestrian area. Painted areas must be maintained annually.

In Cleveland, a limited amount of newer sidewalks are in place near the Primary and Middle Schools. There appear to be sidewalks in the older neighborhoods and areas associated with the original plat. These have deteriorated in utility over many decades since construction. Additional sidewalks may be buried under layers of accumulated soil and grass. A connected sidewalk runs for about 9 blocks along the East side of Broadway Street (Hwy 64S), connecting residents to many commercial destinations and downtown. Newer neighborhoods have been built with few if any sidewalks. Sidewalks built internal to a development lack connectivity to general destinations.





*View travelling East on OK 99/64, on the west side of Cleveland. Functional shoulders permit bicyclists or pedestrians to travel off the vehicle lanes of the road to access businesses such as a mini-storage facility, budget motel and restaurant. The shoulders end about a mile west of town. No Bike/Ped signage or rumble strips are present.*

## **Public Transit**

Low population densities in the county and the distances between activity centers complicate the delivery of public transportation in rural areas. There is consistent need for transit to reach local sites and larger population centers such as Stillwater, Ponca City or Tulsa, where workplace, shopping and medical services are frequent destinations. Federal, state and local funding is limited, which restricts the type and level of service that can be provided. Medical trips for patients with *SoonerCare* are subsidized.

A division of United Community Action Program, Inc., Cimarron Public Transit Service (CPTS) has provided demand-response (curb to curb) transit service in Pawnee County since 1999. CPTS operates from schedules, and most rides must be scheduled in advance. Arrangements may be made for a single trip or for repetitive trips over an extended period (subscription service). Transit trips are available in and around the county for one-way fare, which, at \$1 per mile, is often cost prohibitive. From a home in Pawnee, a 25-mile trip to Stillwater would result in a \$50 round trip fare. For a dialysis patient, such a trip may be required three or more times each week.

## **Highways**

Interstate, US highways, state and county roads are the framework of mobility. The location and condition of state highways in the county may drive development decisions. Several two-lane no-shoulder roads in the county are identified as locations for ODOT improvements over the next few years (see Map Appendix 2.15). Most roads in Pawnee County are two-lane roads; US 412 (the Cimarron Turnpike) is a four-lane road.

The Cimarron Turnpike is a primary east west route through the southern part of the county. The turnpike provides efficient access to Stillwater via a connection with 177, and further west connects to Interstate 35. To the east, it's a direct link to the Tulsa Metropolitan area and the Port of Catoosa. Other primary roads include US 64, and State Highways 15, 18, 99 & 48, which are major collectors for the county. See Appendix 2.13 for maps depicting the location and Functional Classification of roads; Appendix 2.15 shows Traffic counts.

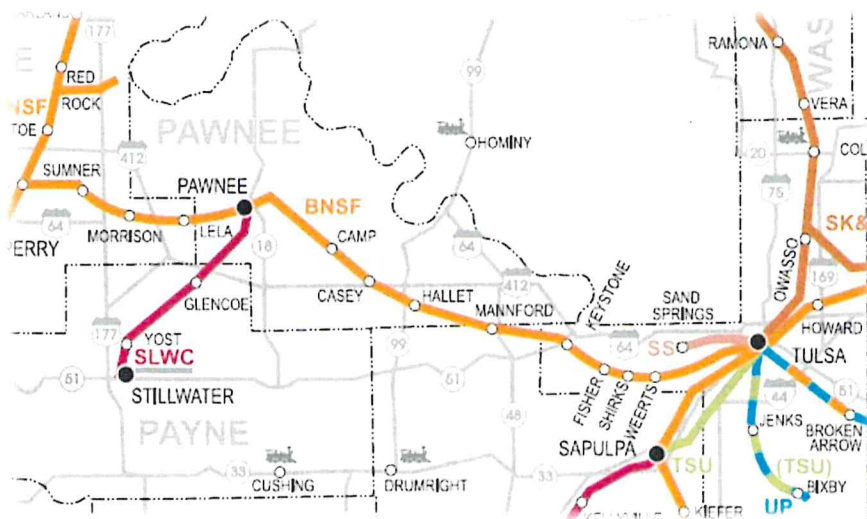
## Truck Freight

Reliable freight transportation enables connections among business and markets in the County, in Oklahoma, the United States and the global economy. According to the 2015 ODOT report titled Freight and Goods Movement, freight activity has rebounded from an economic slump that occurred between 2008 to 2012, and is expected to continue to grow.

Interstates 35 & 44 are high volume truck routes through Northern Oklahoma as identified by ODOT. State Highway 412, the Cimarron Turnpike, carries the bulk of the freight that passes into, out of, and through Pawnee County, as mapped by ODOT, connecting to Interstate routes outside of Pawnee County (ODOT FGM, 2015).

## Rail Freight

The location of active or inactive rail facilities in the county may influence development decisions. Connectivity of rail service in the CORTPO region deteriorated after the peak of rail service in the early twentieth century. In the last few decades, public and private rail investments have been made to preserve lines and restore service.



Burlington Northern Santa Fe (BNSF) and Stillwater Central RR (SLWC) operate freight shipping through Pawnee County, with a historic station at Pawnee.

The SLWC line provides a freight connection to the City of Stillwater. The orange line on the map below indicates the operational BNSF line; the pink line shows the Stillwater Central Railroad (ODOT FGM, 2015).

## Abandoned Rail

In the early 1900's Pawnee County had a remarkable number of rail facilities passing through it, compared to some other counties in the region. The *Cover Illustration* of this document shows a map of lines through the county that were operational in 1915. Many of these lines and stops across the county were ultimately abandoned after the 1930's. In Pawnee County, a number of these old rights-of-way remain visible on aerial photos. The presence of these old ROW areas can be a valuable resource for future multi-use trails and must be preserved, especially considering the proximity of the county to the Tulsa Metro and Stillwater, both of which have projected extensive networks of bike routes that should be connected through Pawnee County to improve recreational travel and community resilience.

## Port of Catoosa

The Tulsa Port of Catoosa is accessible to freight carried by truck and rail directly through Pawnee County. The port is the terminus of the McClellan-Kerr Arkansas River Navigation System (MKARNS). Port connections to the county freight network are via BNSF Railroad and the Cimarron Turnpike (US 412 & 64). This alternative freight connection provides enhanced economic resilience to the county as well as to the State and Nation. In 2013, more than 2.7 million tons of freight moved through the Port. According to the Port website, a full complement of eight barges carries the equivalent of 480 semi-trailer trucks; 1,400 to 1,500 tons of material. This is a tremendous regional asset.

The Port of Catoosa provides intermodal access among barges, roads and rails. There are more than 60 industrial companies located at the Tulsa Port of Catoosa that employ 4,000 people. The port owns a 1.5-mile private channel hosting waterfront docks and terminals that make up its shipping complex. Cargo loaded in river barges in Catoosa can be transported through the Port of New Orleans to any seaport in the world, without touching land again. The port owns three locomotives serving the terminals and 20 private industry spurs on its 12-mile short-line system.

## Aviation

The county is home to three municipal airports, in Pawnee, Cleveland and Westport. Two small airports are privately maintained. The Pawnee and Cleveland community hospitals both operate heliports for medical emergencies. A Map in Appendix 2.9 shows Airport locations.

## Public Safety Issues

Transportation safety issues are based on a variety of factors, many of which cannot be addressed by local transportation system planning, but are under ODOT jurisdiction. ODOT has collected extensive data and identifies sites for improvements annually to improve safety conditions throughout the State.

The ODOT data in Table 2.1 depicts Pawnee County Collision data from 2012 through 2016. There were a total of 1017 reported vehicle accidents of all types over the 5 year period. The number of all collisions per year has varied since 2012 with a total of 168 crashes occurring in 2012, rising to 258 in 2015, with 173 in 2016. Twenty-five people were killed in twenty-four accidents during that period.

In comparison, for the State of Oklahoma during this time period, total crashes declined by 14%, and fatal crashes decreased by 14.5%. During the years 2012 through 2016, an average of two point three percent (2.3%) of Pawnee County accidents resulted in death. It should be noted that during the years 2013, 2014 and 2015, when the total number of accidents went up, fatality rate decreased to 1.3% of accidents. About 1% of all accidents statewide result in fatality. Vehicle accidents resulted in the deaths of 24 individuals in Pawnee County over the five year period, 432 people were injured, and 561 collisions (55%) caused property damage only.



Freight movement by rail reduces truck traffic on the state's highways. One freight train can carry the same tonnage of goods using less fuel, than shipping by trucks. For that reason, shipping freight by rail also reduces emissions per ton of freight. Barge freight, available nearby, at the Port of Catoosa offers even greater economy of scale.



Pawnee County Collision data, by Year 2012 -2016																
Year	Highway				City Streets				County Roads				Total			
	Fat	Inj	PD	Tot	Fat	Inj	PD	Tot	Fat	Inj	PD	Tot	Fat	Inj	PD	Tot
2012	6	49	56	111	0	4	16	20	1	22	14	37	7	75	75	168
2013	3	66	84	153	0	3	10	13	1	24	12	37	4	93	93	203
2014	2	62	90	154	0	5	9	14	1	30	16	47	3	97	97	215
2015	3	66	121	190	0	1	14	15	1	28	24	53	4	95	159	258
2016	4	53	80	137	0	2	4	6	2	17	11	30	6	72	95	173
Total	18	296	431	745	0	15	53	68	6	121	77	204	24	432	561	1017

**Table 13** Source ODOT 2015 The above information is for informational purposes only; use is restricted under 23 USC 409.

Most collisions and nearly all fatalities happen on highways in rural areas, including along US 64 and the Cimarron Turnpike (US 412), see Map 13, Appendix 2. A significant number of collisions occur on State Highway 99 as well. Of the 1017 collisions that were analyzed for this plan, 745 (73%) were on highways. Twenty percent (204 collisions) occurred in rural non-highway areas; 10% (68) were documented on streets within incorporated city limits. More than 75% of collisions occurred during dry conditions; most happened during daylight hours in dry conditions (506 accidents), with 184 recorded in dry conditions after dark.

Accidents seem to be spread fairly evenly among the hours of the day with the exception of peak traffic periods from 5 am to 8 am and from 4 pm to 6 pm. Friday was the most frequent day that accidents occurred (15.8%), the fewest collisions happened on Wednesdays, at 12%, or 122 of all 1017 accidents tracked.

*Causes*

Many accidents have no specific cause noted (34%). The primary driver error identified was unsafe speed, the cause of almost 19% of all collisions and 20% of fatalities. Following unsafe speed, about 12% of all accidents were caused by inattention; 6.2% involved failure to yield.

Another 20% of fatalities were attributed to drunk/impaired driving, whereas impaired driving was responsible for only about 7.6% of all collisions. That indicates that impaired driving collisions are more likely to result in fatality. Thirty-eight percent (9 of 24) of all fatal vehicle collisions were a result of collision with a fixed object. Two of 24 fatal collisions occurred as a result of vehicle rollover.

*Pedestrian; Bicycle*

Of total collisions over the five year period, 5 pedestrians were injured, but none were killed. None of the recorded accidents between 2012 and 2016 involved bicyclists.

## Deteriorating Pavements and Deficient Bridges

Pawnee County roads are rated as being in relatively poor condition. The Oklahoma DOT has assigned county roads an average score of 109 on the International Roughness Index (2014), a measure of the pavement performance standards for good and acceptable ride. A score below 95 is in the good category.

State transportation infrastructure investment did not increase between 1985 and 2005. According to the 2014 Update on Oklahoma Bridges and Highways published by ODOT, in 2005 highway pavements were deteriorating at a rate beyond the available funding to repair, let alone reconstruct, and more than 1,500 of Oklahoma highway bridges were *structurally deficient* or *functionally obsolete* (see Appendix C; Definitions). The Oklahoma Legislature enacted legislation to begin to correct the problem.

ODOT initiated a goal to have near zero structurally deficient bridges in Oklahoma by 2020, and has replaced or rehabilitated more than 1,000 bridges since January 2006. All such bridges on State highways are targeted for repair and replacement by ODOT over the next eight years. Therefore, much of the annual funding for road repairs and improvements in the ODOT 8-year Plan (2015-2022) is necessarily dedicated to bridge work. See Appendix 3.6 for scheduled improvements in the ODOT 8-year Plan.

### Bridges

Aging bridges are scattered throughout the county. Structurally compromised bridges may be weight restricted. Some bridges may be structurally sound, but have narrow road beds which are considered functionally obsolete by modern standards.

Pawnee County Bridges on the NBI			
Total Bridges	# Structurally Deficient	# Functionally Obsolete	Total Deficient
186	58	21	79

Table 14

The National Bridge Inventory tracks all bridges that are more than 20 feet long. The NBI database records a total of 186 bridges in Pawnee County. Of those, 79 are considered deficient or obsolete, most constructed during the 1920's and 1930's. These bridges are identified and categorized by sufficiency rating in Appendix 3.8

### Structurally Deficient; Functionally Obsolete

Fifty-eight (58) of Pawnee County bridges are structurally deficient, 21 are functionally obsolete; which can have a negative impact not only on public resources and safety, but also on the economic development potential of properties in the county. A bridge is classified as structurally deficient if the deck, superstructure, substructure, or culvert is rated in "poor" condition. A bridge can also be classified as structurally deficient if its load carrying capacity is significantly below current design standards, or if a waterway overtops the bridge during floods.

Functionally Deficient bridges have lane widths, shoulder widths, or vertical clearances that are not fully functional to serve current traffic demand. While not unsafe for all vehicles, older design features cannot adequately accommodate modern traffic volumes or vehicle sizes and weights. Low traffic counts are an indication that the bridge serves a limited number of properties; therefore, a correspondingly low tax base for repair or reconstruction of these bridges can be assumed.

For example, the bridge pictured below is a Pony truss bridge over Ranch Creek on E0530 Road. It was built in 1927, has a deck width of 13.5 feet, and is eligible for the National Register of Historic places. With a sufficiency rating of 21 (of 100), traffic on this bridge is estimated to be about 20 vehicles per day. *Photo: Gene McCluney, March 2009*

*In some cases, weight limits on county bridges may be too low to safely support Fire response vehicles, resulting in a situation where trucks may have to be indirectly routed in a fire emergency.*

*In the event of fire in a location that is not readily accessible to a fully loaded water tanker, water may have to be shuttled across the bridge.*



“The problems of 40 years of underfunding cannot be overcome in a few years,” said ODOT Executive Director Mike Patterson. “ODOT is grateful to the Legislature and the public for investing in the system’s bridge needs. Unfortunately, it will take a sustained effort to truly dig out of this hole and put Oklahoma back on track to meets its citizens’ transportation needs.” (Hill, 2015)

## Chapter 3: Future Conditions, Needs, & Planned Improvements

### Population and Employment Projections

US Census data indicate total population is expected to remain stable or slightly growing. Other demographic factors remain stable. Table 15 shows the changes in population that were recorded for incorporated communities between the 2000 and 2010 decennial census. Due to small total populations, in some communities the relocation of a few families can represent 25% or more of the total population.

#### Aging Population

The percentage of people in the general population from birth to adults age 44 has fallen, while the percentage of population between 45 and 75 years of age increased significantly between the 2000 and 2010 Census. This change is attributable to the aging status of people born during the post-WWII population spike (Baby Boomers). This demographic group will likely include many additional non-drivers over the next two decades. See Appendix 3.2.

#### Employment projection

Pawnee County is part of the Northern Oklahoma (NO) economic region. The Oklahoma Department of Commerce identified five occupational categories in Oklahoma important to the economy to generate wealth, have employment growth potential, or where the state has a competitive advantage. They are Aerospace and Defense, Energy, Agriculture and Bioscience, Information and Financial Services, and Transportation and Distribution. Those and three others, Health Care, Construction, and Manufacturing are key sectors for the NO Region. Within each broad category, there are a variety of critical occupations necessary for future growth and advancement in a range of companies and organizations.

#### Workforce Education Projection

By 2025, 48% of all newly created jobs in the TMSA will require completion of a certificate, license, college courses or an Associate’s degree. Currently 32% of TMSA residents meet these criteria. Therefore there may be an educational gap that must be closed by 16% of the potential workforce to meet this need. In 2025, 13% will require a bachelor’s degree which is about right for the projected need. Approximately 4% of new jobs will require a Master’s degree or higher. In 2016, about 8% of MSA residents possess a Master’s Degree or higher. If these projections are correct, some of these individuals may have to accept jobs below their educational level.

Population Change; Incorporated Municipalities

Total	2000 Pop	2010 Pop	# ppl change	% change
Pawnee Co.	16,612	16,577	-35	-0.2%
Blackburn	102	108	6	5.9%
Cleveland	3,282	3,251	-31	-0.9%
Hallett	168	125	-43	-25.6%
Jennings	373	363	-10	-2.7%
Mannford	2,095	3076	981	46.8%
Oak Grove	18	18	0	0.0%
Pawnee	2,230	2196	-34	-1.5%
Ralston	355	330	-25	-7.0%
Shady Grove	44	44	0	0.0%
Skedee	102	51	-51	-50.0%
Terlton	85	106	21	24.7%
Westport	264	298	34	12.9%

Table 15

### Projection of job growth in key sectors by 2020

Northern Oklahoma Regional employment is projected to show consistent growth in high quality employment opportunities through 2040. By 2020, an estimated 6,180 new jobs are expected to be available in these critical sectors. The job categories shown in Table 16 below, often pay above median income for the State, averaging between \$49,000 and \$72,000 annually (NEP, 2015). Pawnee County is well situated to provide workers that can commute efficiently to these new regional jobs.

Employment projections by Sector (N.O. Region)	2014 Employed	Expected increase in jobs	2020 Projected Employed
Aerospace and Defense	4,760	190	4,950
Energy	11,950	1,290	13,240
Agriculture and Bioscience	5,390	730	6,120
Information and Financial Services	4,670	590	5,260
Transportation and Distribution	5,800	340	6,140
Health Care	8,280	890	9,170
Construction	11,980	1,260	13,240
Manufacturing	10,300	870	11,170

Table 16

### Projected Growth Areas and new Housing

Residential, commercial and industrial growth is projected to continue to be concentrated in and near the Cities of Pawnee and Cleveland. Some smaller communities have set aside areas that are appropriate for Industrial Park use. Each of these small towns includes housing which should be rehabilitated or demolished. Senior and Low-income housing units would contribute to the long-term vitality of these communities and meet the needs of additional retired residents.

### Highway improvements

Improvements planned for state roads in the county include upgrade of two-lane roads. ODOT has targeted specific 2-lane roads for the addition of shoulders, to improve safety on these roads. A map illustrating the location of these roads may be found in Appendix 2.15.

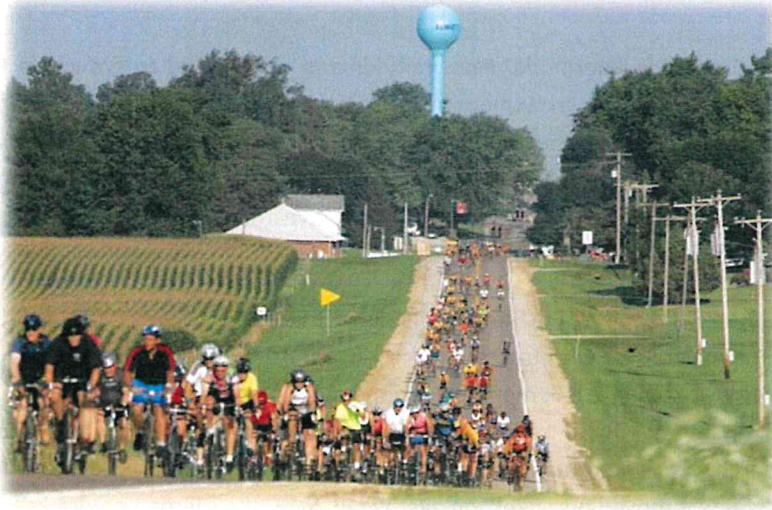
### Pedestrian Routes

In Pawnee and Cleveland the communities have planned to improve pedestrian safety by undertaking rehabilitation of existing sidewalks and crosswalks. These efforts together with additional sidewalk construction projects are intended to be implemented over time.

### Projected Bicycling

Anecdotally, the presence of bicyclists on both paved and gravel roads is increasing, consistent with national trends. There are no signed Bike Routes in the county, and currently, no such routes have been identified. Because of the unusual number of original rail lines, many miles of abandoned RR rights-of-way are present across the county. The presence of these open ROW areas may be a valuable resource for future trails and must be preserved. Action should be taken to preserve these, with a long term plan to develop them to connect with adjacent county bike routes, and the Stillwater and Tulsa Metro existing and proposed bike systems.





Bicycle tourism is a growing segment of the Midwest economy; in 2012, the State of Iowa reported that recreational biking was generating nearly a million dollars a day in direct and indirect revenue to the State

(Wyatt, 2012)



*The annual RAGBRAI event in Iowa is limited by lottery to 10,000 riders and their support vehicles. Each July, riders travel from west to east across the state, covering approximately 467 miles in 7 days. First held in 1973, RAGBRAI is now the largest bike-touring event in the world.*

## Public Transportation

Cimarron Public Transit consistently experiences high demand. Survey results indicate that regular riders of the transit service are expressing a need for increased availability of trips, shorter advance scheduling timelines and an option for an interrupted trip (dropping a child off at day care on the way to work). Transit systems may encounter increased operational demand as the aging and low-income populations continue to grow.

## Projected Truck Freight

The Federal Highway Administration's Office of Freight Management and Operations projects Oklahoma freight tonnage to, from, within and through the state on all transportation modes to increase about 1.3% per year over the 2015 to 2035 forecast period. 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 Metropolitan Areas.

Annual truck traffic in Oklahoma on I-35, I-40, and I-44 is projected to grow at a 1.6-percent annual pace over the 2015 to 2035 forecast period. By 2035, roughly 13,000 and 14,500 trucks per day are expected to use I-35 and I-40, respectively, 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 (ODOT NHS, 2010). These forecasts further indicate an increase in truck traffic on the smaller highways that connect with the interstate network as well.

Highway 412 through Pawnee County is a major arterial that can be expected to record a proportionally similar increase in truck traffic. These projections may be subject to adjustment, particularly if improvements to rail intermodal freight capacity were to be emphasized over the next two decades.

## **Rail Improvements**

According to the *2010–2035 Oklahoma Statewide Intermodal Plan*, rail demand is expected to grow at a 0.9 percent annual rate from 2015 to 2035, with the largest growth occurring on the Class I network in the center of the State. The viability of the existing BNSF service connecting Pawnee and Stillwater to the National Class I system, and the rail linkage to the Tulsa Port of Catoosa inland waterway seem to support the economic desirability of additional long-term rail improvements in the county. New investments in the Port and its associated road and rail infrastructure indicate confidence in intermodal shipping.

Projections for specific freight modes are difficult to make at this time due to economic and political unpredictability, but railroads are working to compete with trucking for freight tonnage. Fuel prices and political funding priorities may shift. According to JOC.com in 2016, more U.S. shippers say they are shifting freight from truck to rail than the other way around, on improved intermodal service, according to a survey of shippers made by New York research firm Wolfe Research. Trucking remains a cost-effective mode because of historically low fuel prices, but with almost 307,000 containers moved per week, on average in 2015, the railroad networks have handled a greater intermodal volume than ever before (Hutchins, 2016). Rising fuel prices could tip the economy of scale in favor of rail and waterway transportation.

Projected gradual increases in rail freight will support the preservation, maintenance and restoration of the regional rail infrastructure. Because current public funding for transportation in Oklahoma is so limited, it may be necessary to use jurisdictional collaboration and private funding to stabilize and improve local railways.

## **At-grade Crossings**

Seven at-grade Railroad crossings on the BNSF line have been identified for improvement in the county; three are northwest of Cleveland, four are southwest of Pawnee. The crossings are listed as part of a \$100 million Rail Crossings Safety Initiative that was announced in 2014 by the State of Oklahoma and ODOT. These projects can include improved signage and active warning systems such as flashing lights and gates that will lower to prevent traffic from crossing when trains are present, and audible alert devices (ODOT, 2015).

## **Port of Catoosa Projection**

The volume of freight entering and leaving the Tulsa Port of Catoosa can be expected to impact regional freight statistics. In 2014, more than 2.36 million tons of freight moved through the port. The transportation industry continues to improve logistics for intermodal shipping by truck, rail and waterways; the Port of Catoosa expects the number of cargo shipments coming through its port and 2,000-acre industrial park to grow. When ODOT projections for increased truck and rail traffic are taken into consideration, it seems likely that the Port can be expected to handle a greater volume of freight as well.

## **Aviation Review**

No airport improvements or expansions are planned at this time.

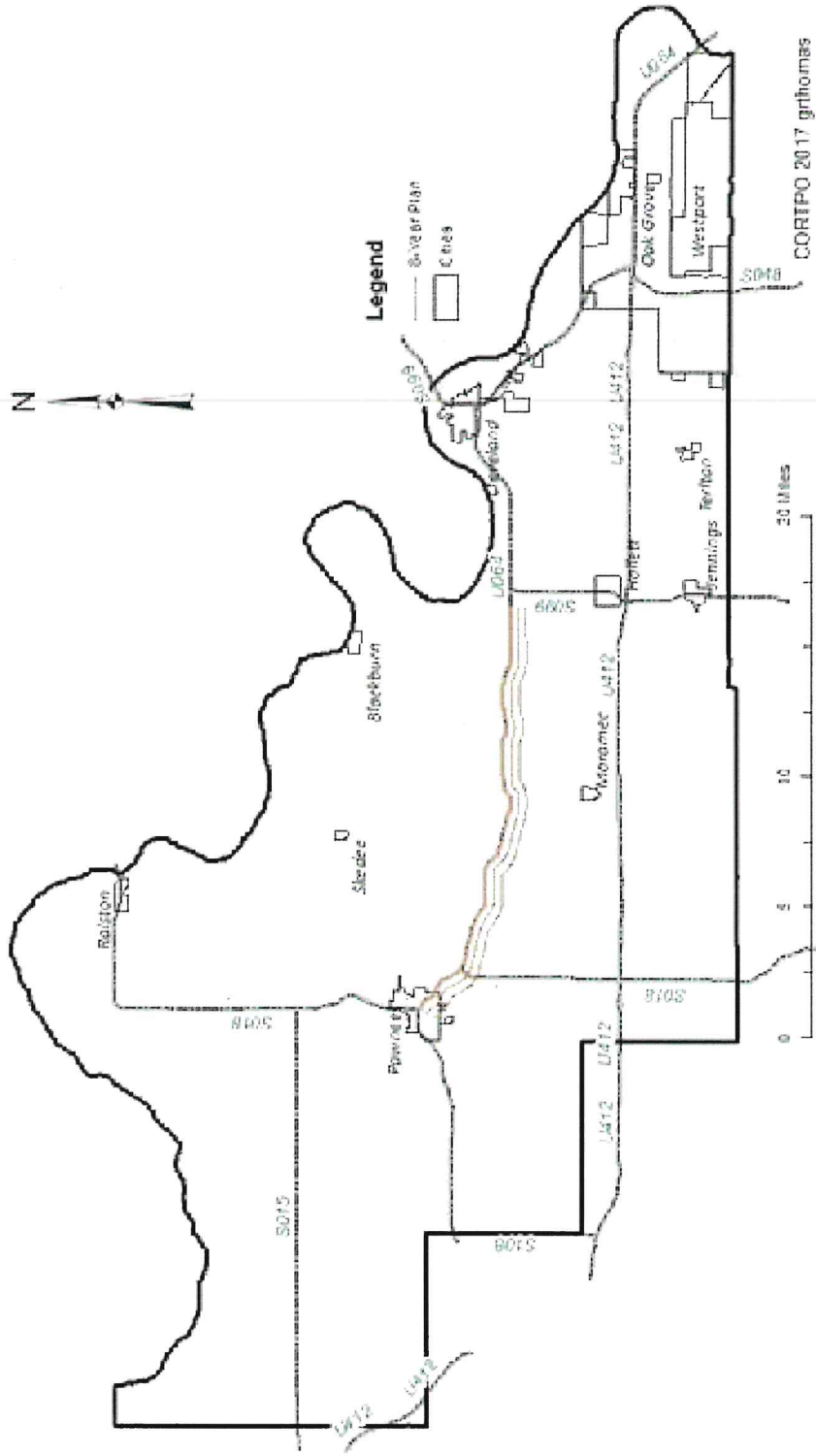
### **Funded Improvements; 8-year Plan**

Funded improvements are projects that have ODOT and local funding commitments through the year 2018. Projects included in the ODOT 8-year Construction Plan that are scheduled beyond a 3 or 4 year time frame are subject to occasional reordering of priorities and funding has not been committed to those projects. See Appendix 3.6 for a Table of Pawnee County projects on the ODOT 8-year Plan. About half are bridge-related improvements. A map on page 42 illustrates some of the scheduled improvements.

### **County Improvements Roads & Bridges (CIRB)**

Statewide, the 2016-2020 CIRB 5-year plan includes replacement or rehabilitation of 439 County Bridges. That List includes 327 structurally deficient or functionally obsolete bridges. 52 Bridges in the CIRB plan will utilize recycled crosstown bridge beams. Approximately 875 miles of County Roads in the state will also be improved (CIRB, 2016). A list of CIRB projects in Pawnee County is shown in a Table in Appendix 3.7. Twenty (20) of those projects are bridge-related improvements, only three (3) are road repairs.

# Pawnee County Oklahoma Projects on the 8-Year Plan



## Chapter 4: Financial Summary

### Funding for Projects and Recommendations of the LRTP

Funding of local transportation projects and programs is heavily influenced by State of Oklahoma's annual budget and federal funding. Transportation funding sources based on motor vehicle fuel taxes tend to fluctuate with changes in fuel prices and fuel consumption. Instability in gas and oil revenues collected by the State has contributed to the challenge of consistent investment in road surface maintenance and preservation. Modern roads and bridges must be wider and carry more freight than the original design of a road, and rehabilitation or replacement becomes increasingly expensive.

Limited budgets and a focus on repairing structurally deficient bridges have diverted funds from pavement maintenance. The number of structurally deficient highway bridges peaked at 1,168 in 2004. Due to increased state funding since 2006, bridges were replaced at such a rate that by the end of the 2014 inspection season that number had dropped to 372.

### Funding Sources

Successful projects are often the result of collaborative funding strategies. Therefore, coordination among federal, local, regional and statewide agencies in the development of transportation initiatives will be necessary in order to accomplish needed improvements. New sources of revenue may be required to meet gaps in services.

Funding for highway improvements in Oklahoma comes primarily from two sources – the Federal Highway Trust Fund and state funds. Oklahoma Department of Transportation (ODOT) provided \$26 million of Surface Transportation Program (STP) federal funds to the County Highway System. Oklahoma's primary sources of funding for road and bridge construction and maintenance are derived from fuel taxes and motor vehicle tax. Appendix 4.1 provides more information about various transportation funding strategies.

In 1923, Oklahoma enacted its first State excise tax on motor fuels. The last increase was in 1987 and the tax is currently 17 cents per gallon for gasoline; diesel is taxed at 14 cents. In addition, counties raise their own revenue sources to supplement state and federal funding through local option sales taxes. Pawnee County collects a one-cent excise (sales) tax, the proceeds of which are deposited to the county revolving fund. Ten percent (10%) of the penny tax is allocated to maintenance, repair and improvement of county roads and bridges.

### Rural Transit

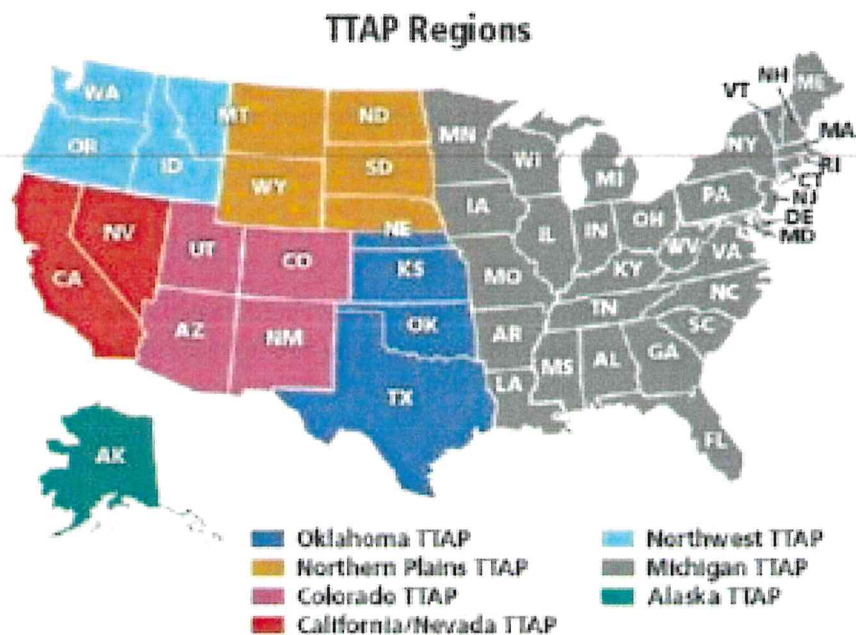
The Federal Transit Authority allocates funds annually to the governor of each state, to provide funding for public transportation projects serving areas that are outside of an urban boundary with a population of 50,000 or less. Tribal Transportation funding is a critical component of keeping transit available in the county and the region.

### Non-motorized Transportation

The Transportation Alternatives Program (TAP) was authorized under Section 1122 of Moving Ahead for Progress in the 21st Century Act (MAP-21). TAP provides funding for programs and projects defined as transportation alternatives, primarily bicycle and pedestrian infrastructure.

### Tribal Transportation projects and funding

Recognized tribal governments receive federal transportation funds and may also designate local funds for transportation projects. Municipal and Tribal governments throughout the CORTPO region have been successful in working together to achieve implementation of critical transportation improvements. The (TTP) Tribal Transportation Program is the largest program in the Office of Federal Lands Highway. TTP is intended to address transportation needs of Tribal governments throughout the United States. Pawnee County is located in the Pawnee and Otoe-Missouria Nations.



Source: LTAP/TTAP



## Chapter 5: Public Participation

Public involvement is an integral part of the transportation process and is also a federal requirement, continued as part of the legislation Fixing America's Surface Transportation Act, or "FAST Act." The Pawnee County Long Range Transportation Plan (LRTP) is the product of comprehensive study of data, community meetings, public surveys and planning research. Together, these efforts provided an opportunity for local stakeholders to assess the existing transportation system, consider needs, trends and alternatives, and identify specific priorities for the county and region in the context of sound planning principles.

We include an assessment of the relative concentrations of identified populations such as low-income and zero-vehicle households. Proposed construction projects must be evaluated to determine if they have disproportional adverse effects on vulnerable populations. This concept is known as Environmental justice. Additional information about community involvement in drafting this plan is available in Appendix 5.

### Public Participation Plan

CORTPO is proactive in its efforts to communicate effectively with the public and has adopted a Public Participation Plan (PPP) to ensure that local transportation planning provides opportunities for the public to take an active role in the decision-making process and complies with the federal requirement for public involvement and participation.

### Methods

As part of the PPP, public meetings were held and newspaper press releases were issued for public outreach, to involve interested parties in the early stages of the plan development. Notices of public meetings for the LRTP were posted in accordance with Oklahoma Open Meetings Law After the draft LRTP was developed, CORTPO hosted additional public meetings and provided a notice of availability for a 30-day public comment period (Appendix 6.4). The final draft LRTP was presented to the CORTPO Technical Committee for review and comment prior to recommendation to the CORTPO Policy Board for adoption. Contact the CORTPO office or website for the full version of the PPP.

### Surveys

To receive public comments by survey, we issued a press release, posted notices, published the survey on CORTPO website, provided paper copies to local interest groups and distributed them throughout Pawnee County and to community representatives on the CORTPO Technical Committee. Surveys were collected from the public between July and October, 2017. Eighty-nine surveys were returned and tabulated. All public comments received have been included. See Appendix 5.1 for survey instrument, response summary and public comments.

### Narrative Survey Results

#### Demographics

Not all respondents chose to answer the optional demographic questions. Of the respondents who stated their age, most were over age 45 – (86%). Seven percent (7%) identified as Native American or Black; Males were represented at 31%. One respondent identified themselves as Hispanic. Twenty-five percent (25%) said they were "low-income."

### Medical Travel

Many people are able to get primary medical care within 15 to 40 miles from home, but that can represent a 30 to 80 mile round trip. A third of respondents must travel to Tulsa or Stillwater for Medical care, some more than 100 miles round trip. Medical travel for individuals varies from three times a week to once per year among Pawnee County respondents. Dialysis patients must travel often for treatments.

### Work, Shopping, Other

Most respondents shop at local merchants most often (less than 30 miles from home); a short walk or up to 60 mile round trip. The most frequent work and shopping destinations are Cleveland, Stillwater, Sand Springs, and Tulsa. More than two-thirds of respondents drive somewhere in a car alone every day (work, shopping, school). About a third of respondents say that carpooling is common mode of travel. A few respondents report using transit services; several respondents walk or rely on a motorized wheelchair or scooter to access needed supplies or services.

### Importance of transportation components

Road improvements and maintenance are viewed as the most important issues, followed by bridge maintenance. Protecting the environment rated as an important concern as well. Transit scored next. Crosswalks, pedestrian safety and signage ranked near the middle in importance, while bicycling and rail freight scored much lower. All three of the latter modes (transit, bicycling and improved rail freight) could be viewed as environmentally preferable to an individual vehicle strategy. This may indicate that bicycling and rail freight are seen as less feasible than automobile and truck transportation. See Appendix 5.3.

Culturally, bicycling has been viewed as a relatively exotic method of travel in central Oklahoma. The proportion of people engaging in bicycle recreational travel has been increasing in the region, consistent with a national trend towards biking. While bicycle improvements scored lower than road maintenance and pedestrian improvements, the higher ranked priorities of general road safety (adding shoulders and improved signage) will support an increase in bicycling as a viable and sustainable strategy for both travel and recreational purposes. Anecdotally, bicycling was seen as being tied to economic vitality, tourism and perceived quality of life available in the county, but may be viewed as a luxury in terms of funding.

### Priority for consideration

Safety improvements are the top priority for this community. Economic development ranked as the second priority for transportation system improvements. This seems practical when sales tax receipts and jobs are the revenue foundations for local municipal functions. Economic vitality and transportation are viewed as mutually dependent. Pedestrian safety – sidewalks (with crosswalks) was the third most important category, followed by reducing environmental impacts and more travel choices (transit, biking and walking). See Appendix 5.4.



Bike and pedestrian facilities scored lower than environmental concerns, which may seem inconsistent, as biking or walking are the most readily available ways to reduce energy use and environmental impacts at an individual level.

The rural setting and age demographic of respondents may have influenced those selections.

Improved Rail transportation for people and freight seems to be viewed as environmentally and economically desirable, but unrealistic.





### **Public Comments**

Seventy-seven written comments were received by survey. Other comments were made as well. All comments have been incorporated into the LRTP and are recorded in Appendix 5. Twenty-four percent (24%) of the public comments made by survey targeted road preservation and maintenance. Thirteen percent (13%) reflected a need for additional transit services, particularly for seniors, a growing demographic. Sidewalks and crosswalks were the next most often mentioned concerns, followed by safer school zones and bicycle safety.

The bridge connecting the primary residential districts in Cleveland to development on the south of the river (Housing, Wal-Mart) is most often mentioned as a dangerous place for pedestrians. Comments specific to Cleveland focused on two main issues, stop lights and street conditions. See Appendix 5.5.

### **Tabulation, Tables, and Comments**

All tabulation of survey results and comments received are displayed in tables in Appendix 5



### **A “Pipe Dream”**

Passenger rail service among Stillwater, Pawnee and Tulsa, while often mentioned as desirable, was dismissed by many respondents as unattainable



## Chapter 6: The Transportation Plan

The recommendations of projects, plans, policies and studies were developed as a result of the review of demographics, growth, activity generators, transportation infrastructure, survey information and comments of the community. Research is included in the plan that will provide information and data to support achievement of the goals. The goals, objectives, and recommendations of this plan can be used as guidelines for improvement to the county and region's multimodal transportation system over both short and long periods of time.

### L RTP Recommendations:

The goals and objectives in Chapter 1 of the Pawnee County L RTP suggest strategies which consistently applied, can be expected to bring the community vision to fruition. Those recommended activities and policies have been organized below. The Goals, Objectives, Policies and Action Steps have been summarized into a comprehensive reference table shown below, "The Plan."

### Projects

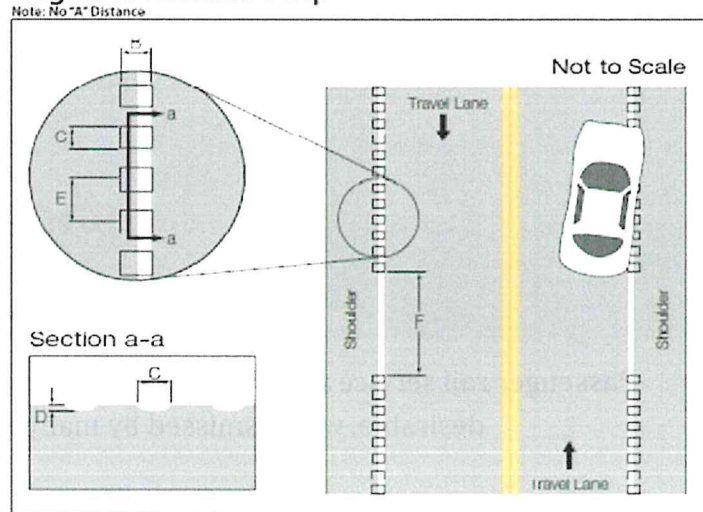
There were several potential projects that were identified by the community during the planning process. Specific locations were noted where safety was a concern, many on or near State Highways. Those projects are shown in Table 1 Chapter 1.

Other projects were suggested, which were incorporated into the section titled "Action Steps," such as the suggestion that a trail be completed in Cleveland, which went under the generic action step "A.4.8. Develop a proposed multi-use trail system." The Action steps can be addressed over time, and together, will result in comprehensive improvements to the transportation system in the County.

### Rumble strip placement

Appropriate rumble strip placement adds value to the sustainability and resilience of the regional transportation system. FHWA has published guidelines for improved rumble strips. A graphic illustrating preferred placement is shown here. Placement on or near the right edgeline can provide additional seconds of warning to both drivers and bicyclists traveling in the same direction that a vehicle has strayed over the edgeline. Proper placement of rumble strips also provides a wider riding surface between the roadway and the unimproved roadside (ditch).

### Edgeline Rumble Strip



**Strategies for implementation: Policy & Action Steps**

The Pawnee County LRTP 2040 is organized below in a Summary Reference Table format with policy and action steps are shown together with the goals and objectives for the convenience of the reader. Six Goals are described. In addition, a Table in Chapter 1 displays problem locations identified by the community.

Pawnee County Goals, Objectives, Policy, Action Steps					
Goal 1 – Maximize Finance & Funding					
Objectives		Policy		Action steps	(obj)
A. Consistent regional applications for all available transportation opportunities maximize annual funding	1.1	Preservation of existing levels of service among all modes of travel is the first priority	A.1.1	Monitor and apply for all available transportation grant opportunities each year	A
B. Local agencies, municipalities, tribal governments, state officials and private interests effectively collaborate in the pursuit and funding of transportation improvements	1.2	Continue to expand Multi-jurisdictional collaboration	A.1.2	Engage in long term Fiscal Planning to balance long-term transportation needs with sustainable solutions	B
C. Expansion of transportation modes that utilize private funding or have a higher proportion of user-borne costs, such as private roads and rail; fees for service	1.3	Allocate an annual portion of public employee labor to be used as in-kind funds for transportation grants	A.1.3	Explore and implement alternative funding opportunities used in other jurisdictions	C

Goal 2 Emphasize Maintenance and Preservation of existing infrastructure				
Objectives	Policy		Action Steps	(obj)
A. New development is directed to appropriate roads and infrastructure	Share the cost burden of road maintenance among road users	2.1	A.2.1 Identify preferred development corridors and plan for preservation; Map	A
B. Private companies with heavy truck traffic contribute to maintenance of vulnerable county roads and bridges			A.2.2 Evaluate and post weight limits on roads	B
C. Regional pavements are preserved through growth of intermodal rail freight			A.2.3 Use public-private agreements with industry, waste disposal and oil field companies to maintain vulnerable county roads	B
			A.2.4 Publicize the proximity of the county to the Port of Catoosa	C

The intersection of N Gilbert Ave and W Wichita Ave near the Cleveland Middle school. Students would benefit from crosswalk improvements at this intersection.



Goal 3 – Increase Safety & Security					
Objectives		Policy		Action Steps	(obj)
A. Structurally deficient bridges are prioritized for repair or replacement	3.1	Consistent investment in alternative modes of transportation to reduce dependency on single-occupancy vehicles	A.3.1	Prioritize bridge improvements where weight limits are too low for emergency vehicle response; map alternate routes	A
B. Local site development standards address safety for all legal road users			A.3.2	Include safe access for all road users in development regulations	B
C. Crosswalks have signage and visibility			A.3.3	Evaluate and prioritize crosswalks for improvement	C
D. Bicyclists have improved safety in rural areas			A.3.4	Use signage to alert motorists to the possible presence of bicycles on the road	D
E. Persons using handicap mobility vehicles have safe access to common destinations	3.2	New construction and rehabilitation transportation projects should include pedestrian or bicycle access features	A.3.5	Place rumble strips appropriately for enhanced safety between motorized vehicles and bikes or pedestrians using the shoulder	D
F. RR crossings are modern, safe and do not impede emergency vehicles			A.3.6	Evaluate and prioritize narrow underpasses, overpasses and bridges for improvements for non-motor vehicle travel safety	E
			A.3.7	Provide an overpass for emergency vehicles over RR N of Pawnee	F

Goal 4 – Improve Accessibility, Mobility, Connectivity						
Objectives		Policy		Action Steps	(obj)	
A. Funding is balanced among modes to ensure sustainable mobility solutions				A.4.1 Add signage to direct Bike and Pedestrian travelers to preferred routes	A,B	
B. Highway improvements are coordinated with bicycle and pedestrian projects	4.1	Include pedestrian and bicycle infrastructure on or adjacent to state routes		A.4.2 Identify and minimize transportation barriers for non-drivers	C	
C. Reliable access to the transportation system is ensured for disadvantaged persons				A.4.3 Plan and implement walkways and bike facilities in small town areas	C	
D. Transit is a preferred method of travel for a wider segment of the populace				A.4.4 Evaluate existing town sidewalks and pursue rehabilitation	C	
E. Bike routes are indicated with signage for improved regional mobility	4.2	Integrate alternative transportation solutions into all new developments		A.4.5 Designate specific areas as Park-and-Ride lots for commuters	C	
F. Planning efforts result in continuous bikeways throughout the multi-county region				A.4.6 Identify two practical ways to support increased transit. Provide a bus stop?	D	
G. Right of way (ROW) areas are preserved for transportation purposes; including abandoned, existing and future road and railroad corridors	4.3	Choose transit when possible to support long term sustainability		A.4.7 Develop a proposed Bike route map with a focus on regional connectivity	F	
				A.4.8 Develop a proposed multi-use trail system	G	

Goal 5 – Enhance Economic Vitality					
Objectives		Policy		Action steps	(obj)
A. Economic development is coordinated with strategic transportation investments	3.1	Support facilities and services that enable non-drivers to access typical destinations	A.5.1	Publish a County map showing the location of existing infrastructure appropriate for residential and industrial development	A
B. Employers have assurance that the labor force has reliable transportation options			A.5.2	Provide employers with an opportunity to contribute to transit	B
C. Retail establishments are located within Town/City limits			A.5.3	Conduct a strategic annexation study	C
D. Reliable access to shopping and services is realistic for all residents	3.2	Coordinate economic development with long-term regional connectivity and sustainability	A.5.4	Develop a prioritized plan for sidewalks and bicycle routes	D, E
E. Retail customers using all modes of travel are welcomed by Complete Streets			A.5.5	Identify local tourist attractions, map a proposed route among them	F
F. Tourism provides annual revenue for low cost transportation improvements			A.5.6	Encourage Tourism with signage, websites, brochures and events to improve sales tax revenue	F
Goal 6 – Long term Objectives					
<i>These objectives represent a vision for Pawnee County transportation that while desirable, are currently viewed as unattainable or unrealistic.</i>					
A. County Road and Bridge maintenance budget; increase by 1.5 million annually					
B. Bus service connections to OKC, Ponca City, Stillwater and Tulsa city bus service					
C. Improved intermodal rail freight opportunities					

