Central Arkansas 2050

Sustaining Our Future

December 2018

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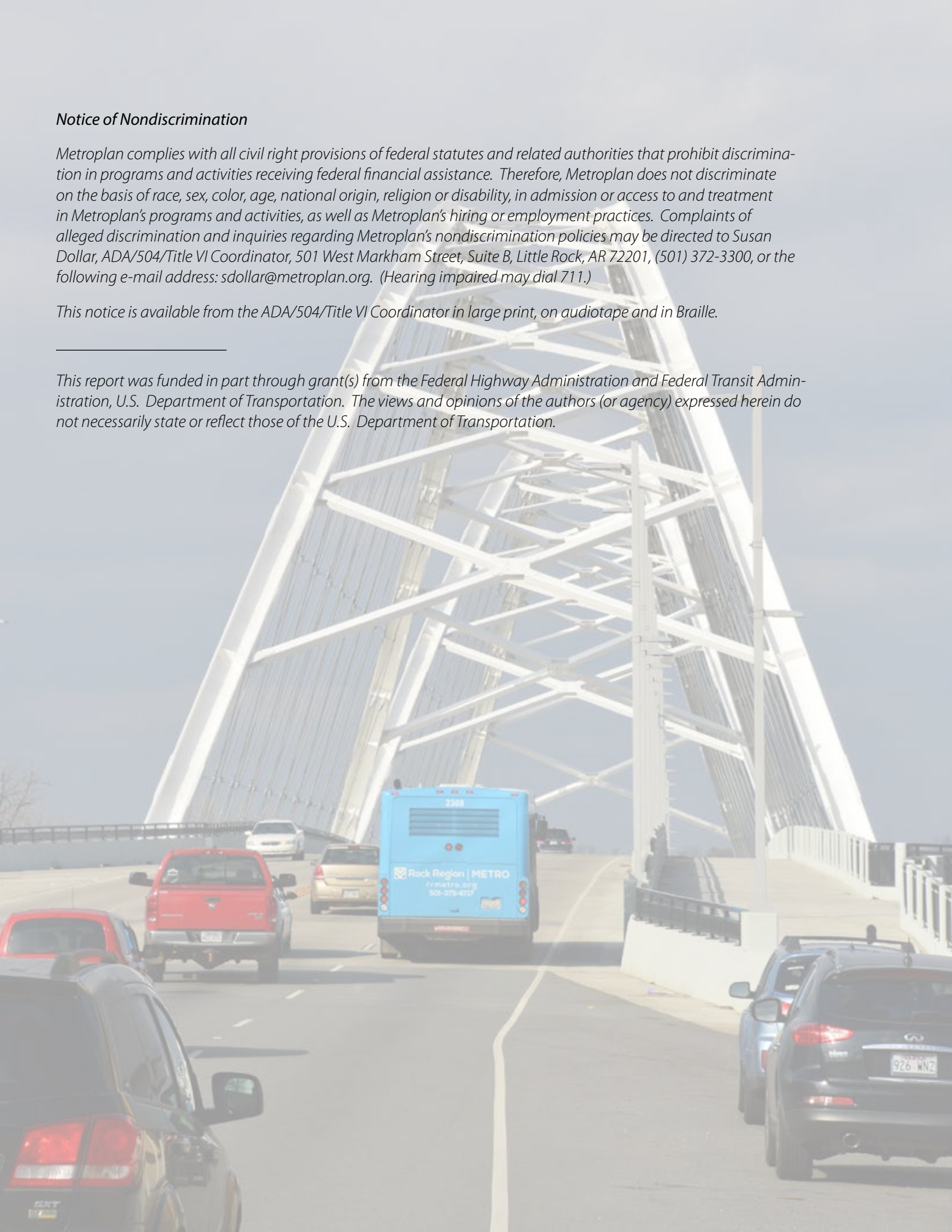

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What oil was to the 20th century, water will be to the 21st century.
– Jim McKenzie, Former Executive Director, MetroPlan

Chapter 1. Executive Summary

"Central Arkansas 2050: Sustaining Our Future" is the next chapter in central Arkansas' regional planning efforts. Following the lead of its predecessors, this plan is a broad, long-term vision for our shared future that includes specific goals, objectives, and strategies for achieving our sustainable vision.

The plan represents the planning horizon year 2050 Long Range Metropolitan Transportation Plan (LRMTP) in addition to the sustainability principles that guide housing and land development, the environment, health and safety, and economic development from *Imagine Central Arkansas*. Thus, while *Central Arkansas 2050* is a broad visioning and strategic planning effort, it also includes a focused set of elements, including the identification of transportation projects, forecast of available revenue, and prioritization of transportation projects based on available revenue.

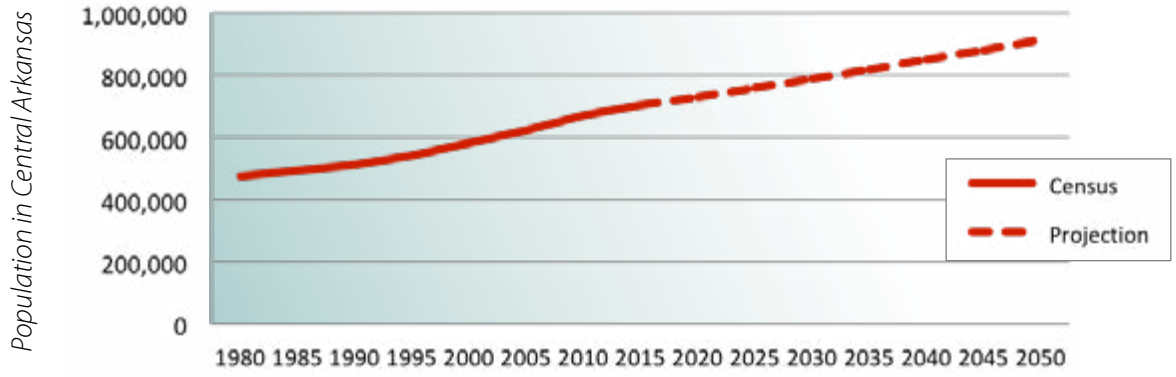
1.1 Regional Trends

The region's population is expected to reach over 900,000 people by the year 2050. With this coming growth are a number of challenges that must be addressed:

- Significant shifts in demographics, most notably by an aging baby boomer population and a younger generation of "millennials," each seeking new housing choices and lifestyle options different from what is most present within the region today;
- A reliance on the automobile for most of our daily needs and a lack of transportation options, in which a majority of central Arkansans do not have access to transit or adequate bicycle and pedestrian facilities;
- Significant household transportation costs created by long commutes and lack of options, leaving many in our region vulnerable to spikes in fuel cost;
- Expanding growth and development and increased automobile use, which threatens central Arkansas' prized natural resources, and
- Development patterns and infrastructure patterns that are unsustainable given the growing gap between the region's needs and our ability to pay for them.

As we look to the future, tomorrow will be much different from today. Our future will be shaped more by internal population shifts, changing technology, environmental issues, the global economy, and the region's ability to adapt to these changes than from the conventional business-as-usual philosophy. How we respond to these challenges will determine, in large part, Central Arkansas' ability to thrive as a region.

Table 1-1. Central Arkansas' Population Trends, 1980-2050



Source: U.S. Census Bureau, Metroplan Estimates

What Do Central Arkansans Value?

Natural and civic spaces.

Places to **connect** and play.

Safe, family-friendly.

Choice in **transportation** (transit, walking, bicycling).

Economy/ affordability, quality of life.

Based on responses collected through the website, social media and face-to-face outreach. See Appendix B for more information.

1.2 Sustaining Our Future: A Vision Confirmed

Central Arkansas 2050 aspires to cast a sustainable, holistic regional vision of what our region could become, not just tomorrow or next year, but a generation from now.

The resulting Vision is… **"a community driven guide to creating a sustainable, healthy and prosperous region that celebrates diversity, regional cooperation, educational excellence, economic vibrancy, and quality choices in housing and transportation."**

1.3 Key Vision Components:

Central Arkansas 2050 must address the region's livability—quality of life—and how to sustain it for the future. These aspirations have been reaffirmed by the public since 1992, when METRO 2020 was developed.

- A balanced approach to mobility that focuses first on maintaining our existing transportation network by building-out the regional freeway system to six through-lanes, and secondly meeting additional travel demand beyond that with improved arterial capacity, regional transit, and robust bicycle and pedestrian network.
- A pattern of compact, mixed-use development that varies in both scale and function, shaped by a regional transit network, with defined activity nodes along corridors and supported by a mix

of walkable neighborhoods, suburban, and rural areas.

- Safe, affordable, energy-efficient, widely available and accessible neighborhoods that offer a variety of housing and transportation choices.
- A clean environment that secures quality resources (water, land, and air) and enhances health and safety by encouraging active movement and community interaction.
- A competitive economy that encourages business investment, and increases residents' educational opportunities, security and quality of life.

Figure 1-1. Goals

1.4 Long Range Metropolitan Transportation

To make *Central Arkansas 2050's* Vision a reality, it must be given life through the development of a plan that is equal parts practical and aspirational. The 2050 Long Range Metropolitan Transportation Plan (LRMTP) serves that purpose. In addition to meeting federal requirements, the LRMTP launches implementation of the plan with specific projects, policies, actions, and other recommendations.

Perhaps the biggest issue surrounding the LRMTP is costs. Costs to maintain the current transportation system and to build infrastructure to implement the Vision far exceeds projected revenue from conventional sources. As a result, tough choices were made to arrive at a financially feasible plan. The LRMTP identifies specific sources of revenue, as well as project priorities for new funding should it become available during the planning horizon.

Transportation Vision Statement

The Metropolitan Transportation Plan will contribute to a more livable and efficient environment in central Arkansas. This plan should significantly change how we allow our transportation systems and our communities to develop, by defining an intermodal transportation system that:

- Maximizes the mobility of people and goods;
- Minimizes transportation related fuel consumption and air pollution; and
- Establishes a strong link between transportation infrastructure and land use.

Figure 1-2. Plan Development Process

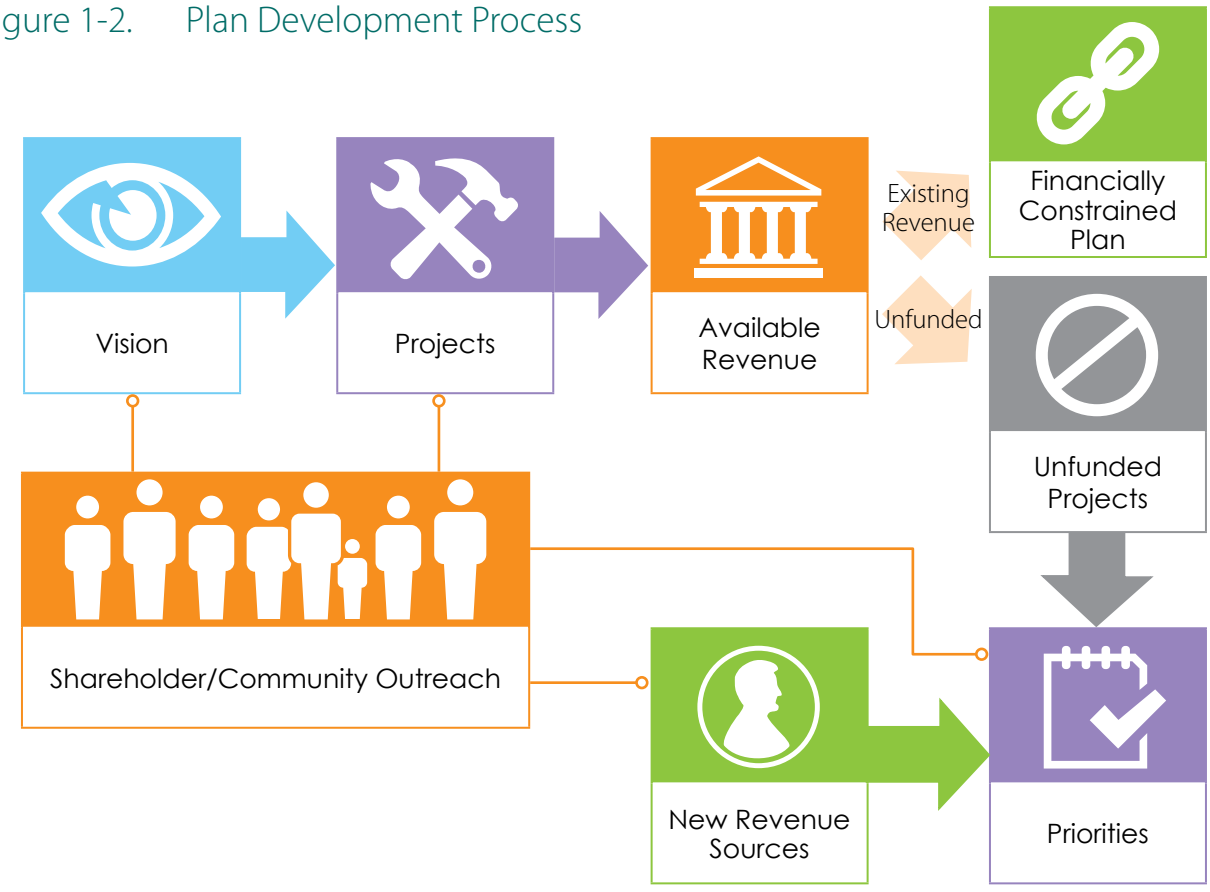


Figure 1-3. Annual Estimates of Funding Availablility

Projection of Revenue 2019 to 2050 (in millions)

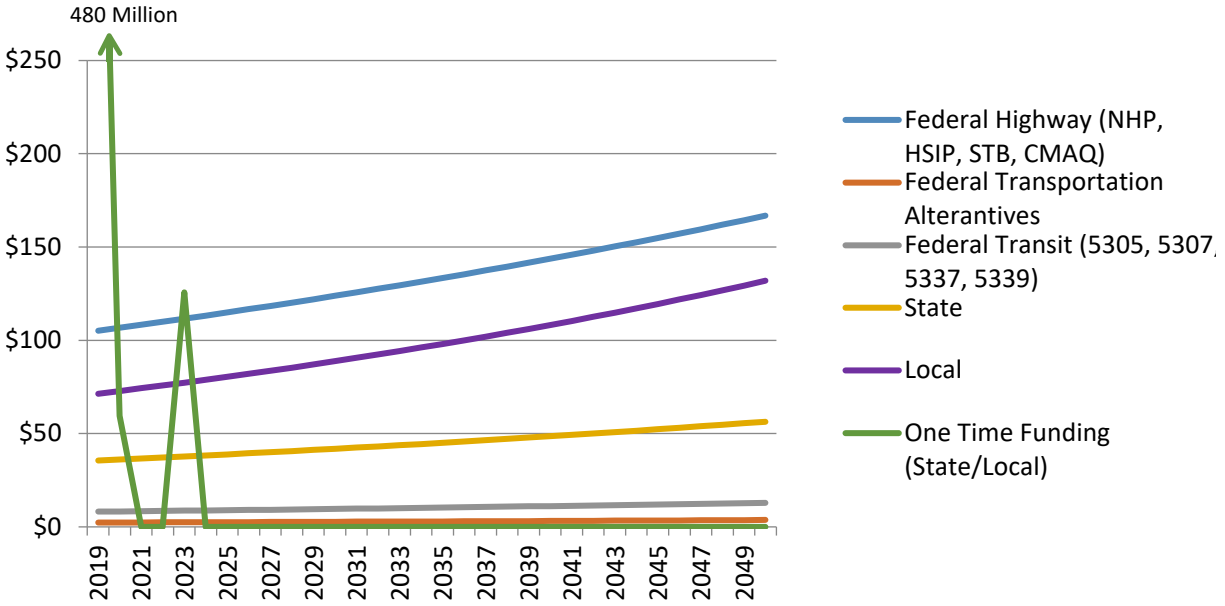
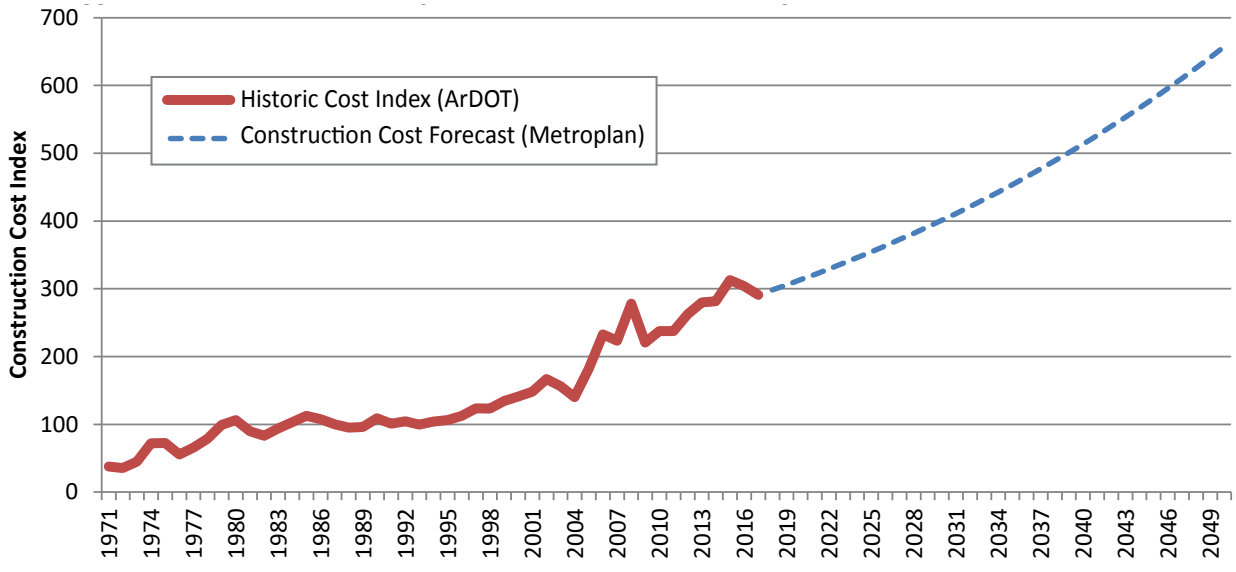


Figure 7-6. Rising Cost of Transportation Construction



Energy costs, competition from developing nations, and other national and international trends have contributed to significant increases in the cost to build, operate, and maintain transportation facilities. These trends will continue to impact transportation in the future, however, it is difficult to predict the exact effect over the long term. The forecasted price of diesel fuel, prepared by the US Energy Information Agency for the Annual Energy Outlook (AEO), is a good proxy for potential impacts. Using the historical cost index and the AEO's forecast as a basis, transportation costs could grow by over 130 percent between now and 2050

Increases in cost do not directly affect the amount of revenue the CARTS area receives; however, it does impact the region's purchasing power, which has the same net effect as a reduction in revenue.

Integral to closing this resource gap is the need to prioritize investments of currently available resources and those that may become available during the course of the plan. The prioritization strategy endorsed by the plan is a relatively simple one:

- First Priority: Cover our existing obligations. There are a number of projects that were generated prior to the development of the LRMTP. In essence, these projects were already "in the pipeline" and should be followed through to completion. They include projects in the 2019-2022 Transportation Improvement Program, ArDOT's Connecting Arkansas Program (CAP) half-cent sales tax program and a small number of others.
- Second Priority: Maintain what we've already built. Central Arkansas has a significant investment in transportation infrastructure, which must be kept in good, working order. This includes routine maintenance of interstates, arterials and local streets, maintaining existing transit service, plus major rehabilitation needs that will occur between the adoption of this plan and 2050. Given the condition of the aging infrastructure within the region, future emphasis must be placed on providing additional funding to maintain these systems.
- Third Priority: New project commitments should focus on optimization projects, which typically are lower cost and critical network projects
- Fourth Priority: New revenue sources for new major projects that require significant resources to build and maintain.

Figure 1-5.
Overview of Prioritization Strategy

1.5 Project Evaluation and Performance Measures

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) established mandatory performance-based decision making and development of plans.

The law establishes seven focus areas supported by corresponding goals:

1. Safety
2. Infrastructure Condition
3. Congestion Reduction
4. System Reliability
5. Freight Movement and Economic Vitality
6. Environmental Sustainability
7. Reduced Project Delivery Delays

Table 1-2. Performance Meaures

CARTS Baseline Data

2017 Safety	**Baseline**
Fatalities	95.2
Fatality Rate	1.18
Serious Injuries	631.4
Serious Injury Rate	7.83
Non-Motorized Fatalities and Serious Injuries	34.6
2017 Bridges	**Baseline**
NHS Bridges in "Good" Condition	33.50%
NHS Bridges in "Poor" Condition	7.50%
2017 Pavements	**Baseline**
Interstate Pavements in "Good" Condition	51.30%
Interstate Pavements in "Poor" Condition	10.80%
non- Interstate NHS Pavements in "Good" Condition	27.60%
non- Interstate NHS Pavements in "Poor" Condition	15.20%
2017 Travel Time Reliability	**Baseline**
Person Miles Traveled on the Interstate that are Reliable	91.20%
Person Miles Traveled on the non-Interstate NHS that are Reliable	89.68%
2017 Truck Travel Time Reliability	**Baseline**
Truck Travel Time Reliability on the Interstate System (LOTTR)	1.39

Figure 1-6. National Performance Goals

National Performance Goals

- Significantly reduce traffic fatalities and serious injuries on all public roads
- Maintain the highway system in a state of good repair
- Significantly reduce congestion on the National Highway system
- Improve efficiency of the surface transportation system
- Improve national freight network, strengthen rural communities access to trade markets, and support regional economic development
- Enhance the performance of the transportation system while protecting and enhancing the natural environment
- Reduce project costs, promote jobs and the economy, and expedite mobility through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving work practices

Performance measures have been identified and targets have been set to evaluate Federal-aid Highway Program projects. These measures help the region tailor project planning to meet the region's needs during the 2050 planning horizon.

1.6 Implementing the Plan

Central Arkansans have expressed a desire to pursue a balanced, seamless multimodal transportation system that supports both people and goods. A balanced system stands in contrast to a transportation system that is improved, only by a selected segment or mode without consideration of the system's overall function, which must be optimized as well.

Figure 1-7. Collaboration, Organization, Policy Recommendations, and Actions

Collaboration/Organization

- Communicate/collaborate regularly with community and business leaders, beginning with a Regional Forum.
- Encourage local governments to support the Regional Vision through regular communication, programs, and education/resources.
- Reorganize Metroplan Advisory Boards to support the implementation of *Central Arkansas 2050*.
- Continue to form and expand relationships with chambers of commerce and other economic development interests across the region.

Policy Recommendations

- Focus first on addressing maintenance before committing to new capacity projects.
- Include the full lifecycle cost—ongoing maintenance and repair/replacement— of projects.
- Discourage adopting any new projects as part of the Financially Constrained Plan until new revenue sources have been identified.
- Favor strategies to improve the operation of existing facilities over new and expanded facilities.
- Give formal priority in the TIP and elsewhere to corridors that provide for a balance of modes, are high-quality, aesthetically pleasing, and are responsive to the surrounding context and local land use plans.
- Give formal priority in the TIP and elsewhere to corridors that provide for the safe movement of central Arkansas' motor vehicles, pedestrians, cyclists, and transit riders.
- Consider projects that directly support the movement of freight, provide access to freight facilities and support intermodal connections during TIP development.
- Provide additional maintenance funding for our aging infrastructure.

Actions

- Create and support local government initiatives that result in efficient transportation and land use patterns.
- Begin pursuit of new revenue sources in earnest, beginning with the one that shows the most immediate promise in terms of revenue potential, public and political receptiveness and administrative feasibility.
- Participate in a scientific survey to more accurately gauge the public's receptiveness to new revenue sources.
- Continue to pursue the formation of a Regional Mobility Authority.
- Promote designs that incorporate elements for all transportation modes.
- Complete identified rail grade separations by 2020.
- Update and deploy Regional ITS Architecture.
- Complete the 88-mile Arkansas River Trail.
- Continue to develop corridor-level access management plans and regional guidelines for the Regional Arterial Network.

Figure 1-8. LRMTP Funding Allocation Summary

FINANCIALLY CONSTRAINED PLAN ($10.1 Billion)

Project Specific Funding

Project List ($1.84 Billion)

- 2019-2022 TIP Projects
- CAP Projects
- Construction funding for projects in TIP for Design
- Optimization and Critical Connection Projects

Maintaining Rock Region Service - 2019-2050 ($925 Million)

Conway Transit Service - 2019-2050 ($73 Million)

Non Project Specific (Maintenance, System Preservation and Group Categories)

Metroplan Projects ($630 Million)

Federal Highway ($3.07 Billion)

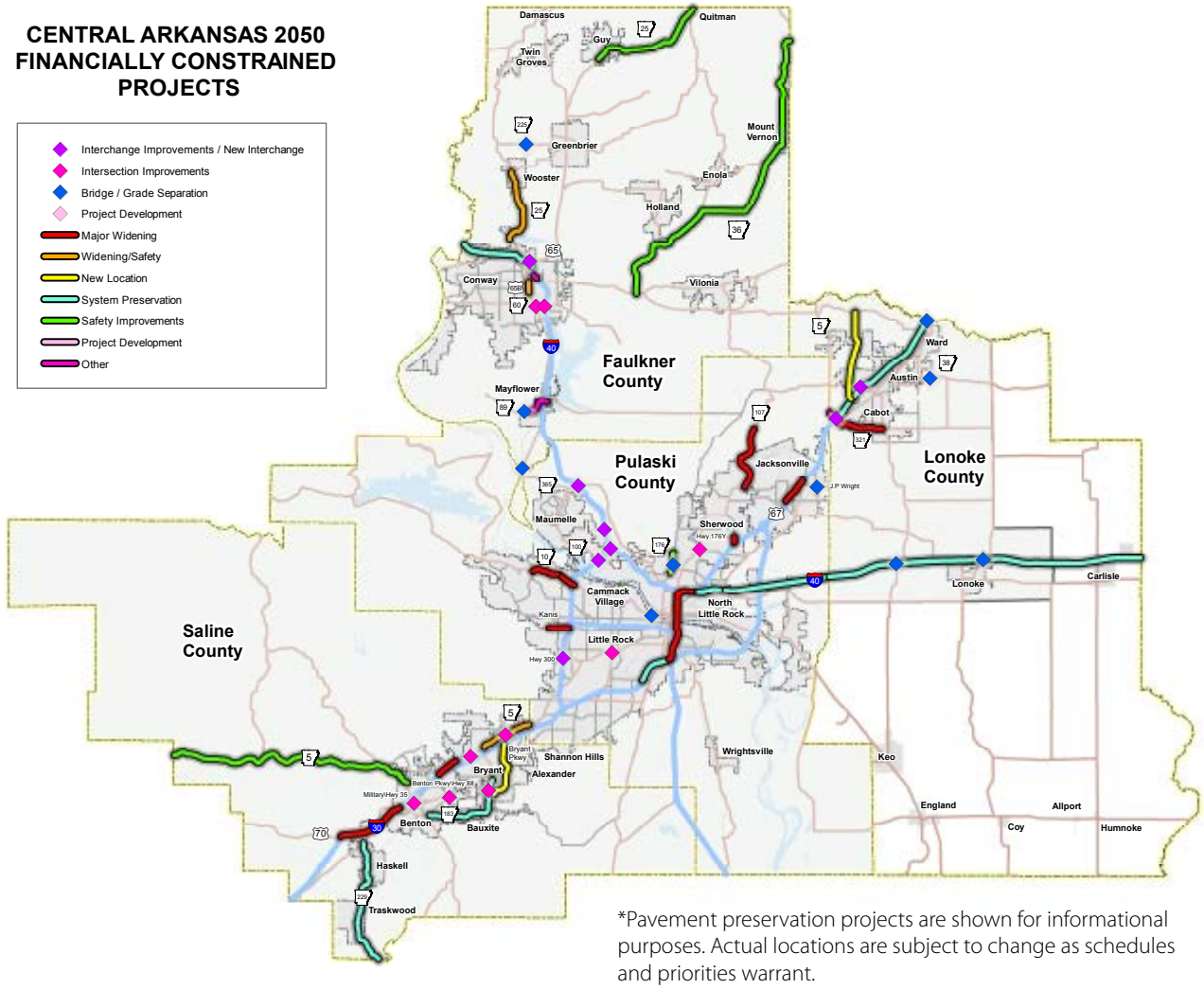
TAP/State ($61 Million)

State ($1.24 Billion)

Local ($2.25 Billion)

Figure 1-9. Financially Constrained Projects

(Project limits subject to change based on final construction cost)



*Pavement preservation projects are shown for informational purposes. Actual locations are subject to change as schedules and priorities warrant.

Life is one big road with lots of signs . . . don't bury your thoughts, put your vision to reality.
– Bob Marley

CHAPTER 2. INTRODUCTION

2.1 *Central Arkansas 2050*: Sustaining Our Future

Let's think about central Arkansas. What are its defining characteristics? What can the region do to better itself? *Central Arkansas 2050* reasserts aspirations expressed in 2014's *Imagine Central Arkansas*. This update continues building for a future that turns visioning into reality for the 700,000-plus people who call central Arkansas home. The Plan aims for maximum livability — quality of life — and sustainable growth and development for generations to come.

Who is Metroplan?

Metroplan serves as the Metropolitan Planning Organization (MPO) for the central Arkansas urbanized area and is responsible for the Long Range Metropolitan Transportation Plan (LRMTP) and Transportation Improvement Program (TIP). The LRMTP and TIP are the two primary documents for coordinating federal, state and local transportation dollars and are mandated by federal law.

Beyond the LRMTP and TIP, Metroplan oversees a host of regional initiatives. It was formed in 1955 (as the Metropolitan Area Planning Commission) by local political and civic leaders and counts among its member agencies four counties, 27 cities (spanning five counties), Rock Region METRO (Rock Region) and the Arkansas Department of Transportation (ArDOT).

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This document builds on foundations of extensive outreach and engagement with residents, businesses, community leaders, and government to preserve our region's rich culture and history, while providing transportation choices that contribute to quality growth and a vibrant economy. The end result is a broad, long-term vision for our shared future and more specific goals, objectives, and strategies for achieving the vision.

2.2 Year 2050 Long Range Metropolitan Transportation Plan

Metroplan develops a federally-mandated Long Range Metropolitan Transportation Plan (LRMTP) covering a 25 to 30 year horizon, that is updated every four to five years. A primary function of the LRMTP is to prioritize limited financial resources to specific transportation projects, referred to as the financially constrained plan.

Central Arkansas 2050 represents the current incarnation of the LRMTP. *Central Arkansas 2050* is a broad visioning and strategic planning effort, which identifies transportation projects, forecasts available revenue, and prioritizes projects.

2.3 The Process Detailed

The Central Arkansas Regional Transportation Study (CARTS) is the federally designated area for which Metroplan studies and makes decisions on transportation issues and needs. The CARTS area covers all of Faulkner, Pulaski, and Saline counties, as well as northwest Lonoke County.

Oversight of *Central Arkansas 2050* was provided by the Regional Planning Advisory Council (RPAC), a citizen-led advisory body appointed by Metroplan's Board of Directors. The RPAC has met regularly to shape and direct *Central Arkansas 2050* and the LRMTP. Specifically, the RPAC is responsible for direction and oversight of public engagement and overall plan development.

The Technical Coordinating Committee (TCC) provides assistance to the RPAC in addressing technical aspects of plan development. The TCC is composed of professional planners and engineers appointed by Metroplan member jurisdictions. The TCC is responsible in part for plan implementation through the Transportation Improvement Program (TIP) and ongoing review of studies as part of plan implementation. During the drafting of *Central Arkansas 2050*, the RPAC and TCC held joint meetings to share ideas and strengthen their relationship.

Technical Assistance Support to Local Governments

Metroplan provides technical assistance support to member jurisdictions at their request. This includes the creation of, or support for, land use plans, master street plans, and zoning regulations and ongoing planning education.

2.4 This Document

This document is intended to capture the process, results and recommendations behind *Central Arkansas 2050* and the LRMTP. It includes five distinct elements:

Chapter 3. Timelines: Central Arkansas History and Development — A brief history of the region and Metroplan's planning legacy.

Chapter 4. Trends: Region-Wide Snapshot — A snapshot of where central Arkansas stands, to form a basis for decisions about our future.

Chapter 5. *Central Arkansas 2050*: *Sustaining Our Future* — A description of what we would like to become, shaped by hundreds of voices from across the region.

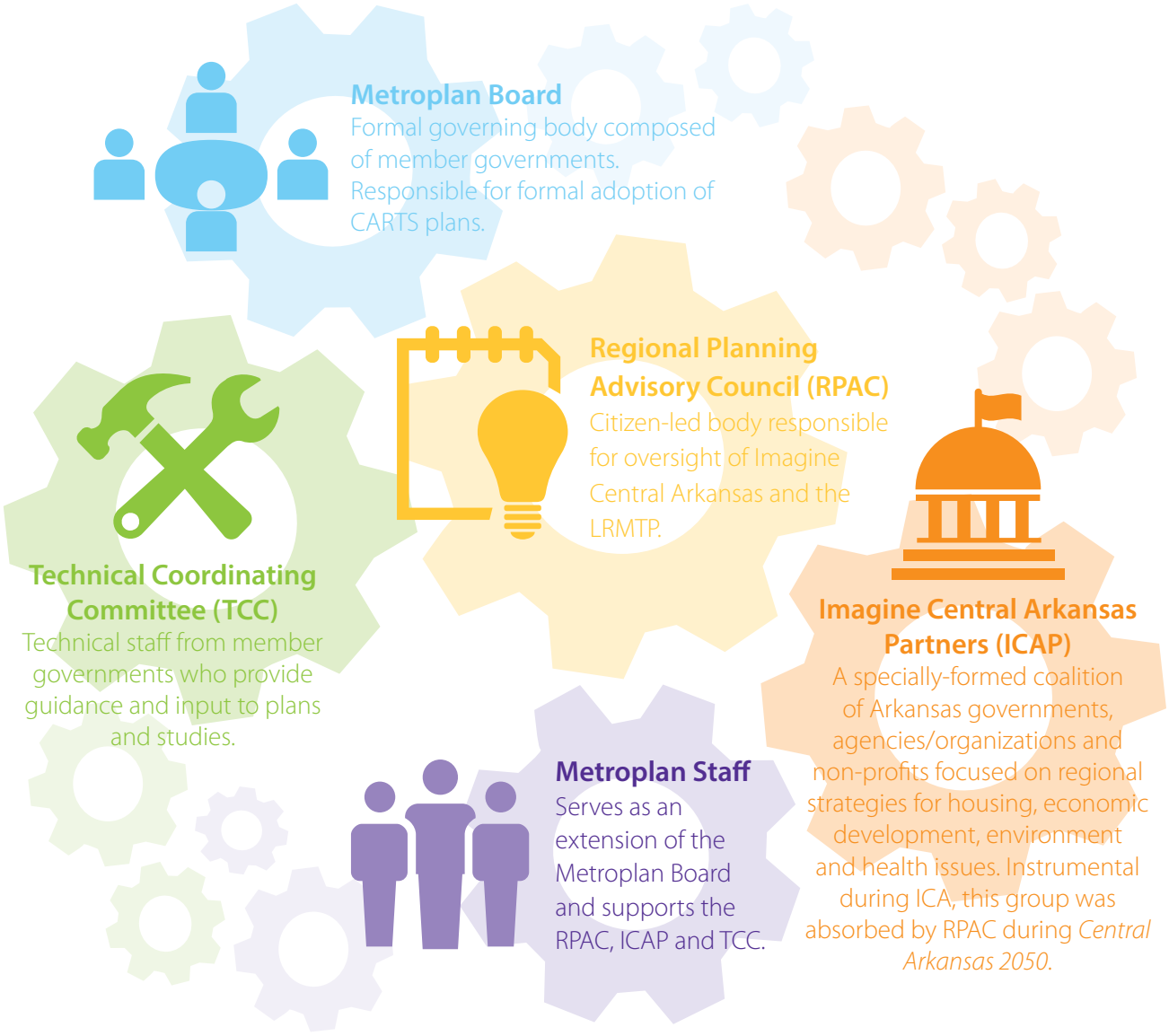
Chapter 6. Charting the Course — An informed look at our future under current policy and practice, and how we might change for the better.

Chapter 7. 2050 Long Range Metropolitan Transportation Plan — Putting the plan into focus with thoughtful consideration of conventional resources, potential new resources, regional priorities and strategies for implementation.

Appendices — Further reading, for those interested in additional detail.

Figure 2-1. CARTS Study Region

Figure 2-2 Organization Chart *(reflecting interaction between committees)*



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Members of the RPAC and ICAP contributed to the Imagine Central Arkansas process, which helped inform Central Arkansas 2050.

Source: Arkansas Studies Institute. Capital Avenue, Little Rock, circa 1959.

TIMELINES: CENTRAL ARKANSAS' HISTORY AND DEVELOPMENT

French explorer Bernard de La Harpe explored the Arkansas River Valley in 1722. The Valley cuts through the highlands of north and west Arkansas until it meets the lowlands of south Arkansas and the Mississippi River Valley alluvial plain. At this crossroads, in the center of the state, lies Little Rock, Arkansas' capital city, and a four-county metropolitan central Arkansas.

Much of Arkansas' political and economic history can be understood as an interplay between the highlands and the lowlands, with central Arkansas serving as a political and trading center. The region has been a meeting place since prehistoric times, first serving as a frontier rendezvous among the Quapaw, Osage, and Caddo Native Americans. What is now the metropolitan area has always been Arkansas' principal urban center, the physical growth of which has been very much influenced by the geography of its location.

3.1 Central Arkansas' Beginnings

The first bridges across the Arkansas River were railroad bridges. It was not until the construction of the Pulaski County Free Bridge in 1896 that pedestrians and wagons could cross at will between the two banks. The advent of the automobile after the turn of the century led to pressure to replace the Free Bridge with modern crossings. In 1923 and 1924, the Broadway Bridge and the new Main Street Bridge (replacing the older Free Bridge) were opened to traffic. Main Street also carried the trolley lines across the river. Streetcar neighborhoods were also springing up in the highlands west of Little Rock.

On the political front, Little Rock annexed the railhead community of Argenta on the north bank, in 1904. Ten years later, dissatisfied with the services the northside was receiving from the city, the residents voted to secede from Little Rock and join the recently incorporated town of North Little Rock.

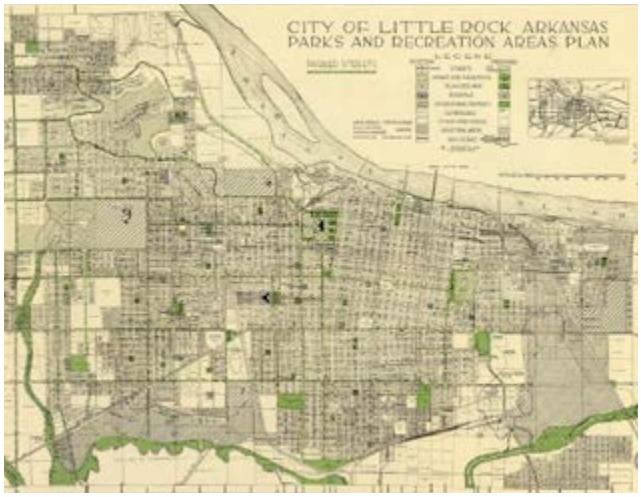
Isolated, central Arkansas suffered little from the Civil War, prospered with federal occupation, and enjoyed a mild postwar boom with the rise of the railroad and with cotton speculation.

During the same time, settlements along the railroads leading to Little Rock continued to flourish as small communities (Haskell, Benton, Bryant, Jacksonville, Cabot, Austin, Ward, Mayflower, and Conway). It was not until later, after the construction of the early freeways, that the region began taking on the characteristics of a metropolitan economy, with commuting and greater economic exchange among these different jurisdictions.

Source: Arkansas Studies Institute. www.ULAR.edu

3.2 Post 1950 Development

The return of many of the men from World War 2 and the GI Bill led to the region's residential growth. The construction of the New Benton Highway (later I-30), US Hwy 67, and I-40 made it easier for residents to choose locations outside Little Rock and North Little Rock. The construction of the Little Rock Air Force Base in Jacksonville contributed to the growth in homes in communities northeast of Little Rock/North Little Rock. Automobile usage became the dominant



Early Development
Source: Arkansas Studies Institute. www.UALR.edu

Hays Street (now University Avenue) circa 1952.

means of transportation. The streetcar system ceased operations on Christmas Day 1949 in favor of motor coaches. Then the once-robust network of bus routes gradually shrank in the face of auto-centric suburbs and reduced funding.

Arkansas, and specifically Little Rock, gained a negative international reputation as a result of de jure segregation and the 1957 national-state confrontation over court-ordered school desegregation at Little Rock's Central High School. In the mid-1980s, facing court ordered school integration in Pulaski County and the increased violent crime, many families took advantage of the ample roadway capacity to migrate from the central county for school systems and new homes in Faulkner, Lonoke, and Saline Counties. Each countysaw significant population increases in the 1980s and 1990s.

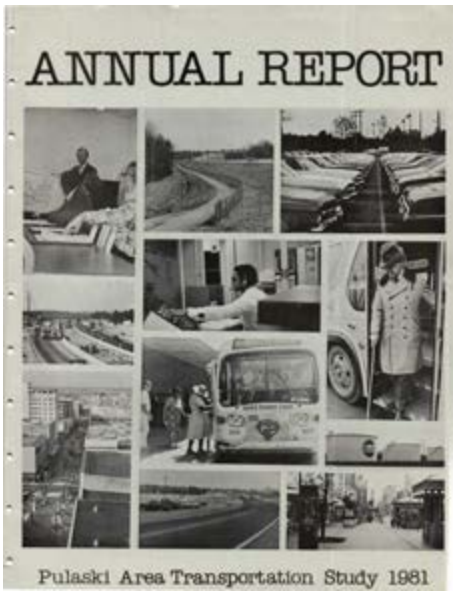
The first decade of the new century saw out-migration begin to ebb, and the 2010s are seeing a reflection of the national trend toward more urban lifestyles and redevelopment, driven by empty nester Baby Boomers and the Millennial generation. Out-migration continues, but at a slower pace, and there is early evidence of a possible urban inversion in which higher-income households are concentrating near the regional center, while the suburbs have seen a small rise in poverty.

3.3 Transportation

Central Arkansas and its original settlements owe their existence to the Arkansas River. Canoes, rafts and keelboats initially plied the river and its tribu-

taries. Later, as populations grew and wealth and power became centered on the capital city, steamboats began to run up the river—at least when conditions permitted. Modern river tugs and barges now ply the river. The completion of the Arkansas River Navigation Project in 1970 made the river an important interior route from the Mississippi River in the east to Catoosa (near Tulsa), Oklahoma in the west. Recently, the river has spurred development along its banks and is the foundation of a chain of parks built along it.

The river's role was reduced by the arrival of railroads in the late 19th century. The St. Louis, Iron Mountain and Southern line (later Missouri Pacific; now Union Pacific) linked Little Rock with St. Louis and extended south to Texas, paralleling the old Southwest Trail which so many pioneers had followed a half century before. Another line, now also part of the Union Pacific system, connected Fort Smith, Memphis, and Little Rock. From these main lines, spur lines pushed out in several directions. North Little Rock, born of the railroad expansion, remains a hub of the industry,



especially in the wake of North American Free Trade Agreement (NAFTA).

The first road — if it could be called a road — was a path a few feet wide hacked through the dense

Source: Arkansas Studies Institute

Capitol Avenue looking west – downtown Little Rock 1958 (left); Pulaski Heights bus route (right)
Source: Library of Congress

forest between Little Rock and Cadron. As central Arkansas' population grew with the rest of the Southwest, a trail developed between St. Louis and the northern portion of Mexico that is now Texas. Called the Southwest Trail, the road meandered through central Arkansas. With the influx of money appropriated by Congress, the road was improved and by 1834 wagons could easily travel across Arkansas. The Memphis Military Road, linking Memphis to Fort Smith, had a branch between Fort Smith and Little Rock.

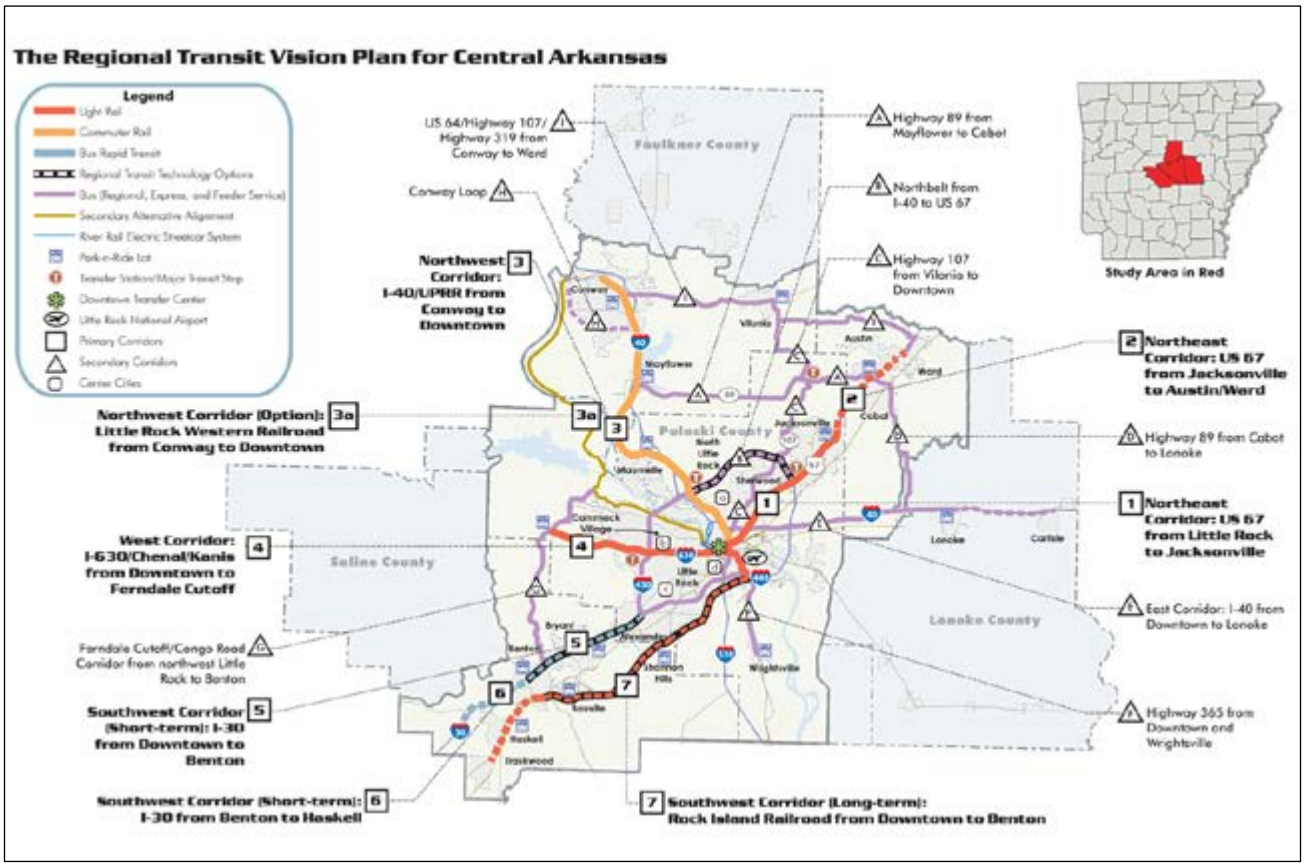
Over the next hundred years, many miles of roads were constructed in Arkansas. Then, in the 1950s, the US Interstate System intersected central Arkansas with the construction of I-30 and I-40. Construction of the Little Rock Air Force Base led to the transformation of portions of US 67/167 connecting Little Rock with St. Louis to controlled access.

Like many cities in the US, Little Rock and North Little Rock operated a streetcar system that served the cities quite well. Following World War II, national transportation policy emphasized roadway construction and automobiles, which in turn led to the dismantling of the streetcar system. In the 1990s, renewed interest in this mode led to the establishment of the River Rail trolley system, now METRO Streetcar ,which serves the downtown areas of Little Rock and North Little Rock. The streetcar has been a catalyst for development of both downtowns, and additional lines are being considered.

Rock Region METRO, formerly Central Arkansas Transit Authority, has operated fixed-route and demand-response (paratransit) transit service in Pulaski County since 1986. Prior to that time, the bus system was operated by Metroplan as its trustee when the private operator sold it to a group of local governments in 1972.

3.4 Metro-Planning Through Time

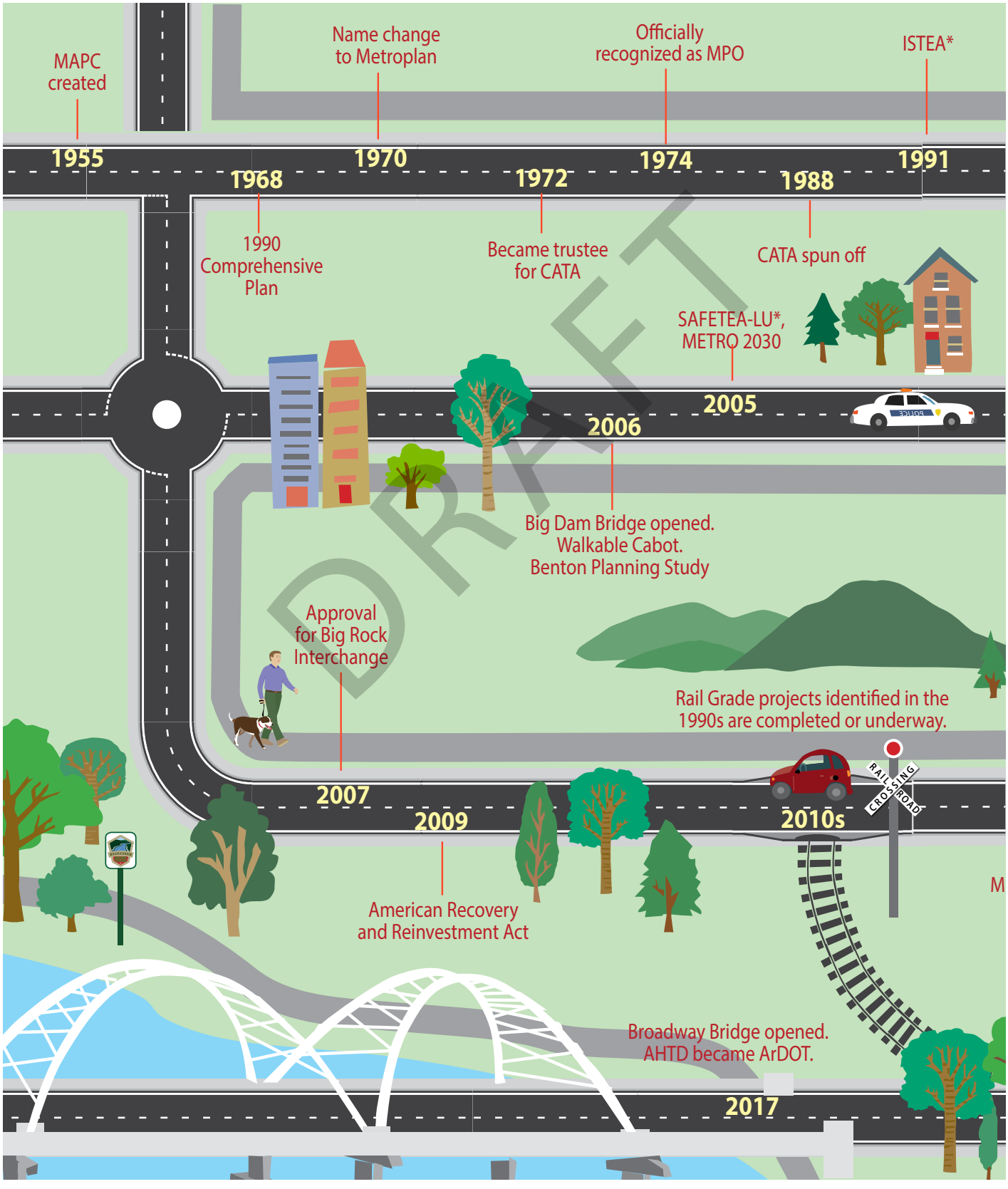
Figure 3-2. METRO 2030 Transit Vision Plan

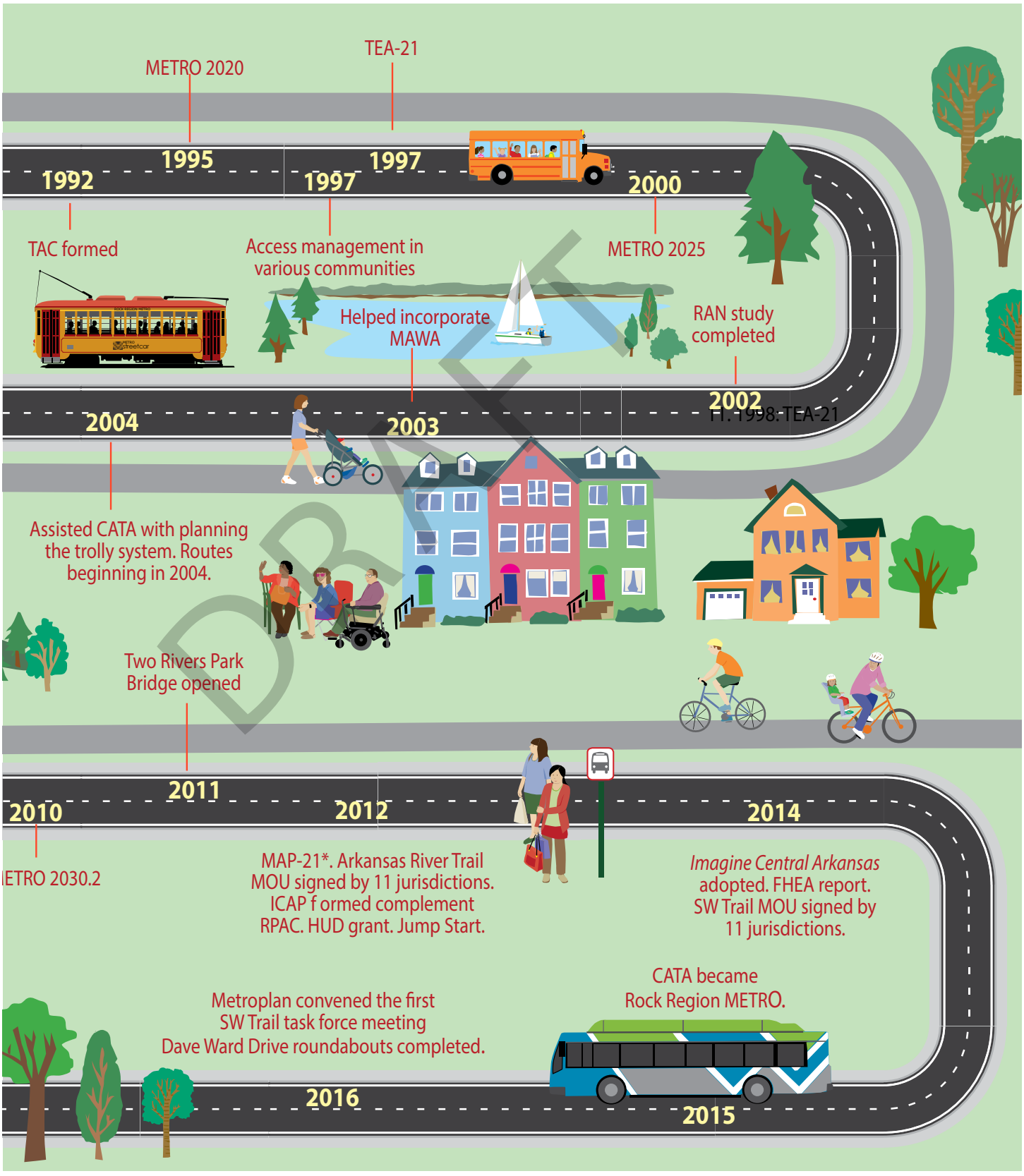


Metroplan's history of influencing plans in central Arkansas spans over 60 years. Beginning in 1955 as the Metropolitan Area Planning Commission, Metroplan has expanded its influence to four counties, and many more cities at present. The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 changed the organization's mission, making transportation planning paramount. National transportation policies set new planning requirements for states and metropolitan areas. As the designated Metropolitan Planning Organization (MPO) for the Little Rock-North Little Rock-Conway Metropolitan Statistical Area (MSA), Metroplan was responsible for financially constrained long-range plans with provisions for active transportation modes, such as sidewalks and bicycles.

From its first regional comprehensive development plan in 1957 to *Central Arkansas 2050* today, Metroplan has driven visioning for central Arkansas. Over time, boundaries, the planning process, and public engagement have evolved as the organization adapts to meet new challenges. However, the goal is the same; a livable, sustainable region. The following timeline benchmarks key organizational moments, and illustrates several defining central Arkansas projects and achievements during Metroplan's history.

Figure 3-3. Metroplan Timeline




METRO 2020
TEA-21
1992
1995
1997
1997
2000
TAC formed
Access management in various communities
METRO 2025
Helped incorporate MAWA
RAN study completed
2002
FY 1998: TEA-21
2004
2003
Assisted CATA with planning the trolly system. Routes beginning in 2004.
Two Rivers Park Bridge opened
2011
2010
2012
2014
ETRO 2030.2
MAP-21*. Arkansas River Trail MOU signed by 11 jurisdictions. ICAP f ormed complement RPAC. HUD grant. Jump Start.
Imagine Central Arkansas adopted. FHEA report. SW Trail MOU signed by 11 jurisdictions.
CATA became Rock Region METRO.
Metroplan convened the first SW Trail task force meeting
Dave Ward Drive roundabouts completed.
2016
2015

"The future depends on what you do today." – Gandhi

Chapter 4. Trends: Region-Wide Snapshot

Central Arkansas is rich in culture, history, and resources. Ranked among the nation's top ten in both happiness and value by Kiplinger in 2010, our region is a great place to live. But things do not stand still. The decisions we make today as a region will impact how we live in the future.

Trends: Region-wide Snapshot represents a portrait of where central Arkansas stands today, and how changing trends relate to our sustainability and quality of life. It serves as the baseline from which decisions about our future will be made and measured.

4.1 Our People

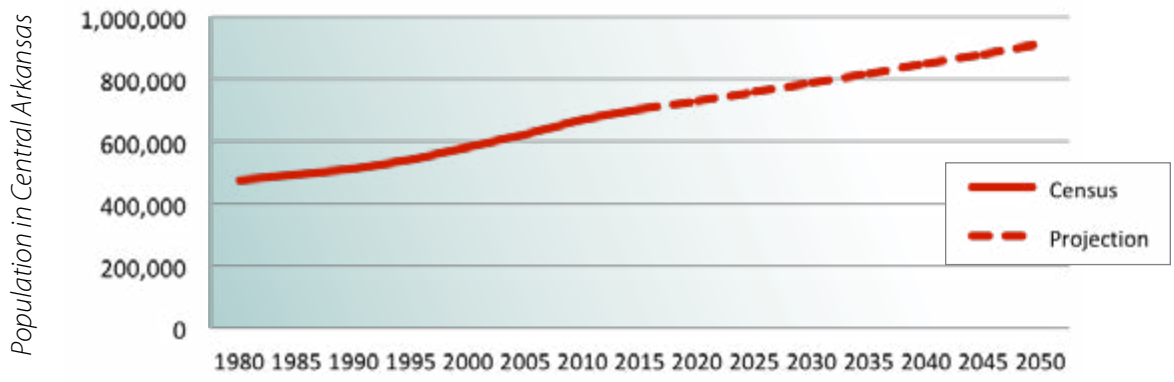
Central Arkansas has a growing population, adding almost 100,000 people (a 15 percent increase) between 2000 and 2010. As of 2015, the metro population was 703,321. The region's population is expected to pass 900,000 shortly before 2050.

Pulaski County, central Arkansas' traditional population and employment center, is expected to see a smaller share of this growth in the future as population pushes outward to other counties. In 2000, Pulaski County housed almost 62 percent of the region's residents (about 362,000 of 583,800), but only 57 percent of the total population (383,000) by 2010. Faulkner, Lonoke, and Saline Counties absorbed a majority of the region's population growth between 2000 and 2010 (about 67,000 of 88,000 total). Recent trends, however, have shown a reversal of the decline in population in central business districts in Pulaski County, as residents look for shorter commutes and lower transportation costs.

Growth means more demand placed on central Arkansas' natural and built systems. For example, increased suburbanization, as evidenced by a majority of growth occurring outside Pulaski County, mean longer commutes and more demand placed on transportation systems. Additional demands are also placed on the region's water and energy supplies, health care services, developable land, and public facilities. These demands will also be felt by residents' pocketbooks, through higher costs of housing, utilities, and transportation.

The region is also experiencing a demographic shift. Central Arkansas' population is growing older and becoming more ethnically diverse. This will influence the transportation and housing choices residents make in the future. For example, an aging

Table 4-1. Central Arkansas' Population Trends, 1980-2050



Source: U.S. Census Bureau, Metroplan Estimates

We grew.

Central Arkansas grew by over 15% between 2000 and 2010, faster than either of the previous two decades.

We're growing.

The region will grow to about 914 thousand people by the year 2050 , an increase of 30%.

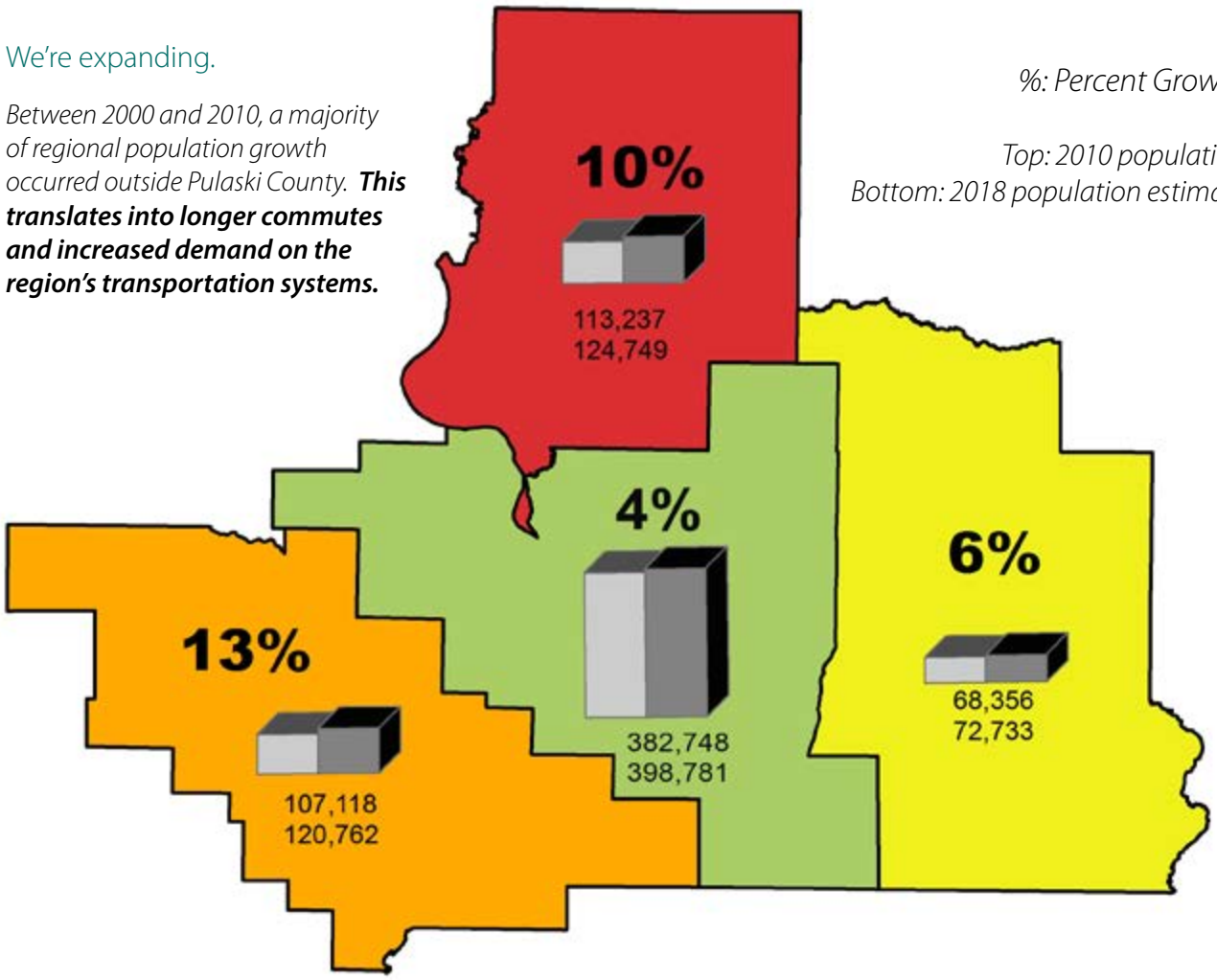
Figure 4-1. Population Change and Growth Rates

We're expanding.

Between 2000 and 2010, a majority of regional population growth occurred outside Pulaski County. ***This translates into longer commutes and increased demand on the region's transportation systems.***

%: Percent Growth

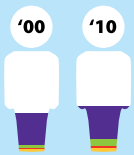
Top: 2010 population
Bottom: 2018 population estimate



population means that more individuals may have difficulty driving to access daily needs. Alternative modes of travel, greater housing choices or new technology will be necessary to maintain aging individuals' personal mobility. Young professionals are also beginning to make choices that are changing the definition of personal mobility. Much of this changing demand will be for smaller lots, townhomes, and condos with less maintenance than conventional subdivisions.

Figure 4-2. Ethnic Composition, Median Age, Gender, and Median Household Income

Ethnic Composition of Four-County Region



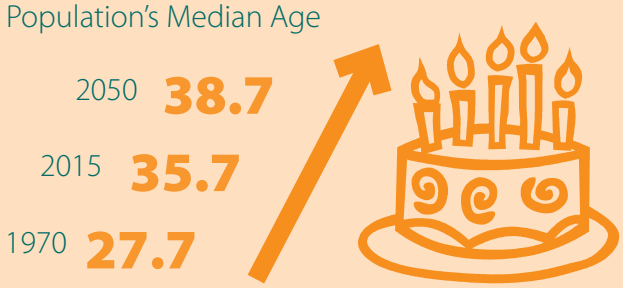
Ethnicity	2000	2010	2015
White*	73.5%	68.6%	66.8%
Black*	21.8%	22.9%	24.0%
Hispanic	2.1%	4.9%	5.2%
Asian*	0.9%	1.5%	1.8%
Other*	1.6%	2.1%	2.2%

*Denotes Non-Hispanic

We're becoming more diverse.

Minority populations, led by Hispanics, are growing at a significantly faster rate than the population as a whole. **Our region will look very different in 2050 than it has in the past.**

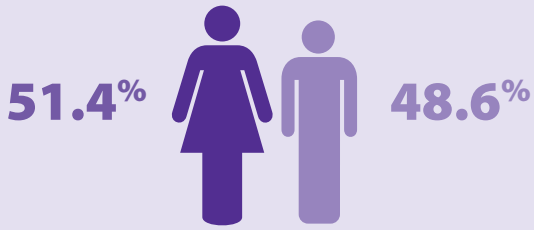
Population's Median Age



We're getting older.

The median age will be almost 40 by the year 2050, compared to 28 in 1970. **Mobility needs change as people grow older.**

Population by Gender



Women in the lead.

Women have a slight edge in total population at about 51.4% and are expected to maintain that edge over the next few decades.

Median Household Income

Incomes are growing.

Incomes are highest in Saline County and lowest in Faulkner County. Per capita, income is the highest in Pulaski County.

*Rounded to the nearest hundred

4.2 A Broader Scope

4.2.1 Central Arkansas' Transportation Profile

Automobile ownership, coupled with inexpensive fuel and the hidden costs of vehicle operation, has provided our society the ability to choose living arrangements, often without regard to the true costs of commuting to a job or other destination. Although petroleum remains a viable energy source, its cost is likely to remain unstable and unpredictable in face of extraction uncertainties and growing global demand. Central Arkansas exhibits significant cross-county commuting and travel times/distances that exceed the national average.

The relatively limited transit service and coverage area, an absence of sidewalks or paths, and lack of walkable block systems all contribute to lack of transportation choices in central Arkansas.

Rock Region, the primary transit provider for central Arkansas, operates and maintains an efficient fixed-route transit system within the core of Pulaski County. However, due to its limited service coverage area within Pulaski County, only about one-fourth of the region's residents have access to transit. Central Arkansas Development Council operates limited transit service in parts of Saline and Lonoke Counties for seniors and persons with disabilities through South Central Arkansas Transit (SCAT).

A number of human service agencies also operate transit service within central Arkansas. These agencies focus on serving individuals within specific client groups or populations that, due to a disability or for economic reasons, have fewer transportation options than the general public. Typically, these individuals must meet qualifying criteria specific to the provider program.

Without additional financial resources, a more comprehensive transit system with more frequent buses and a larger service area will not be possible.

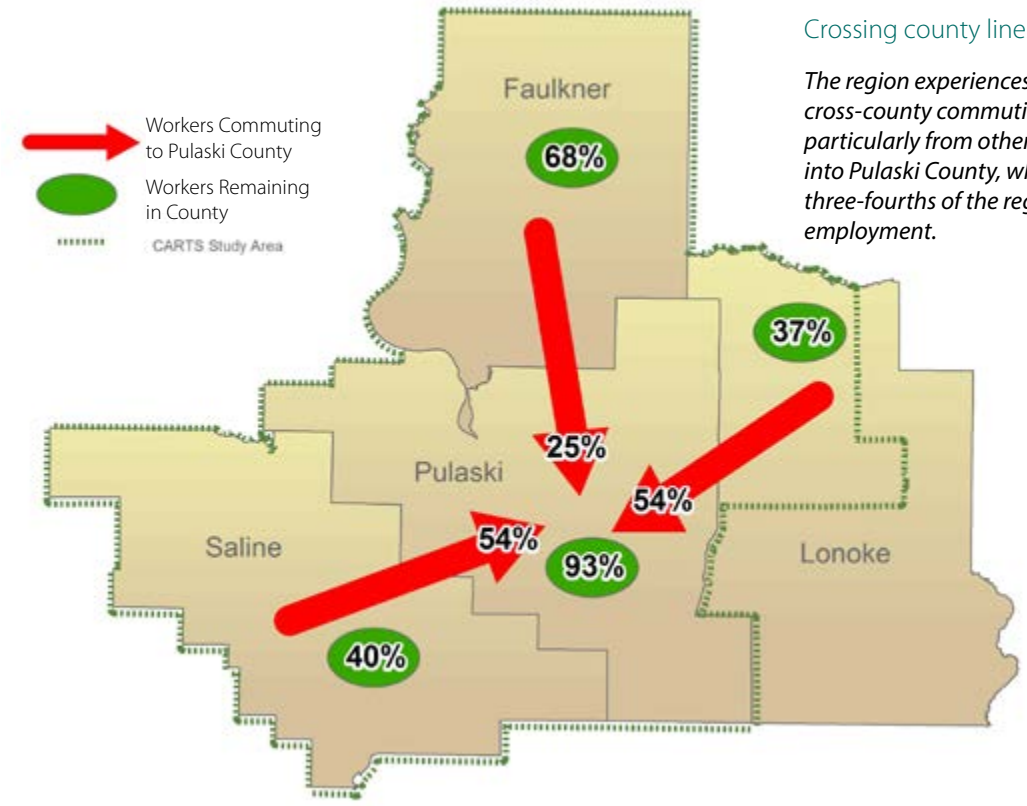
Congestion occurs on several key roadway segments, causing travel delays, especially during peak times. Both the number of congested facilities and time of traffic delay are growing within the region. The average one-way work trip took about 23 minutes. (ACS 5-year estimates 2013–2017)

Finally, freight movement comprises an important component of the regional economy. Trucks dominate freight movement in central Arkansas, and make up a significant portion of total traffic on many of the region's major road facilities. Goods movement affects central Arkansas' economic output, energy use, and environmental quality.

Table 4-2. Bicycle and Pedestrian Facilities in Central Arkansas

Location	Street Centerline Miles	Sidewalk Miles	% of Streets with Sidewalks	Miles of Bike Lanes, Routes and Shoulders	Miles of Off- Road Trails
Faulkner County	2,054	139	7%	69.3	3.8
Lonoke County	1,903	50	3%	0	1.7
Pulaski County	3,837	1,107	29%	78.1	77.3
Saline County	2,470	116	5%	4.6	5.1
Four-County Region Totals	10,264	1,412	14%	152	87.9

Figure 4-3. Commuting Patterns into Pulaski County



Crossing county lines.

The region experiences significant cross-county commuting, particularly from other counties into Pulaski County, which contains three-fourths of the region's employment.

Figure 4-4. Vehicle Miles Traveled Daily

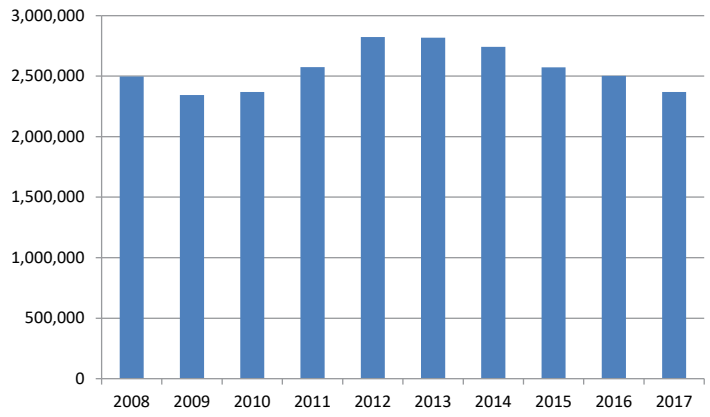
We drive a lot.

There were over 23 million miles of daily vehicle travel (VMT) in 2017, or about 32.4 miles for every person.

More VMT means more fuel consumed and greater emissions, more wear and tear on central Arkansas roads and more congestion.

Source: U.S. Census Bureau, Metroplan Estimates

Table 4-3. Rock Region METRO Ridership



Source: National Transit Database, Rock Region METRO

Although ridership is a common metric of public transit service, it is not the only meaningful metric of a transit system's performance. Moreover, public transit ridership is heavily influenced by factors outside of a transit agency's control – factors such as existing land use policies, fuel prices, and the unemployment rate. METRO unsurprisingly logged its highest ridership to date during the Great Recession recovery years, for example. A more meaningful way to consider public transit's value to central Arkansas is by noting its contributions to community goals of equity, livability, prosperity, stewardship, and mobility.

—Rock Region METRO

Figure 4-5. Existing Sidewalks, Bike Lanes and Trails - Little Rock, North LIttle Rock

Figure 4-5b. Existing Sidewalks, Bike Lanes and Trails - Regional Cities

1.Benton/Bryant

2. Conway

Figure 4-5b. Existing Sidewalks, Bike Lanes and Trails - Regional Cities, Continued

3. Cabot

Figure 4-6. Rock Region METRO Service Area and CARTS Urbanized Areas

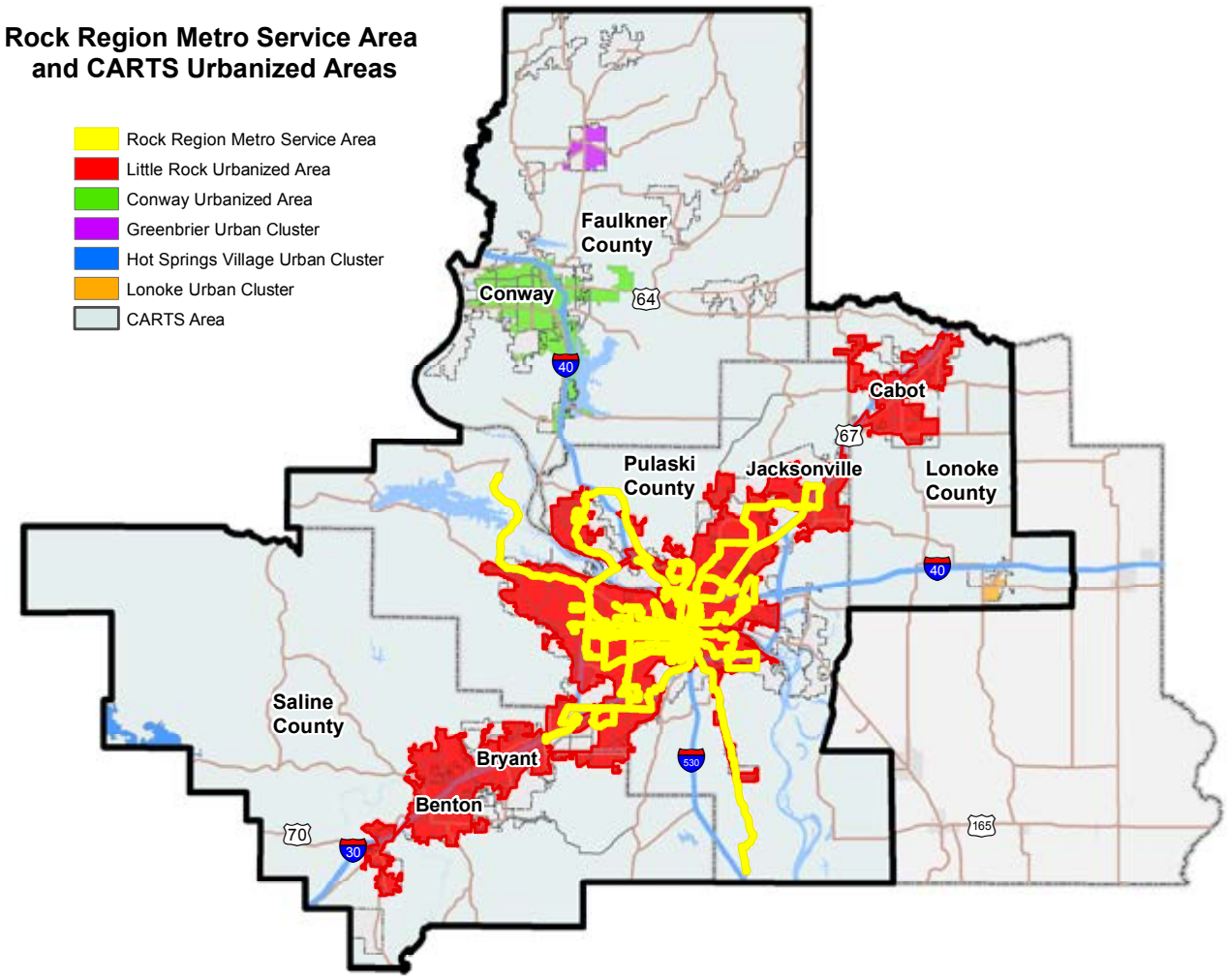


Figure 4-7. Existing Fixed-Service Transit Routes

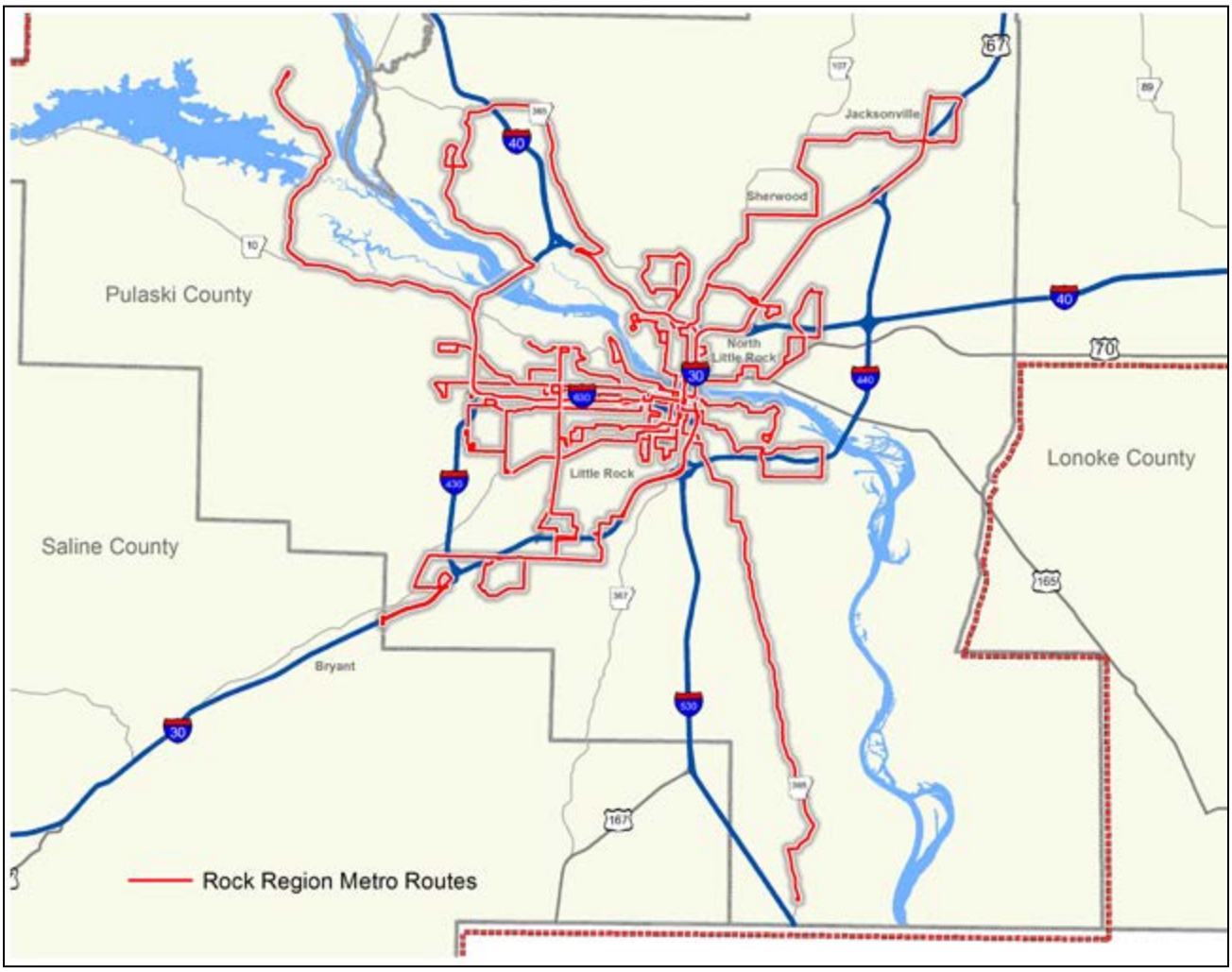
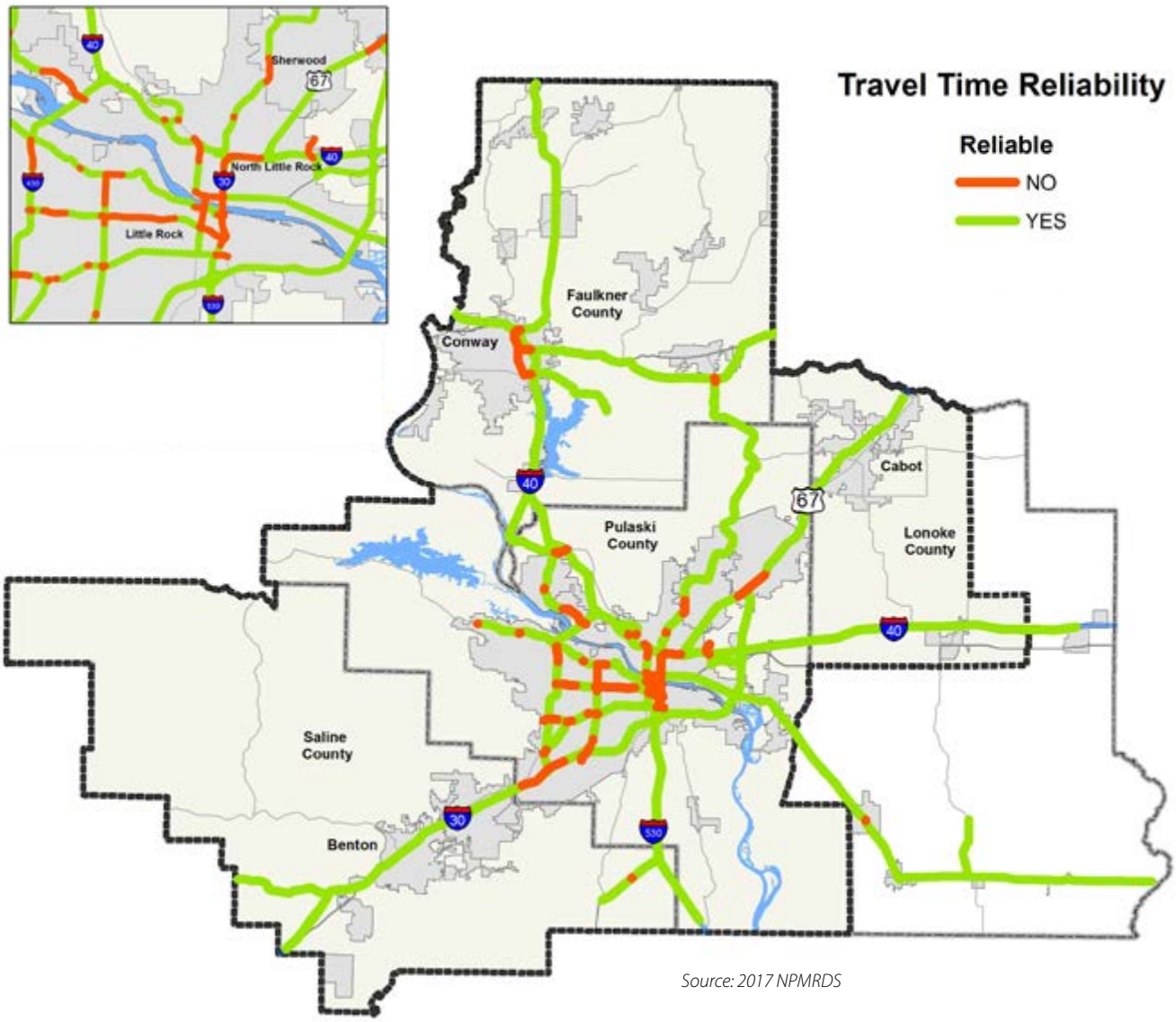


Figure 4-8. Congestion



Source: 2017 NPMRDS

4.2.2 Demographic Changes

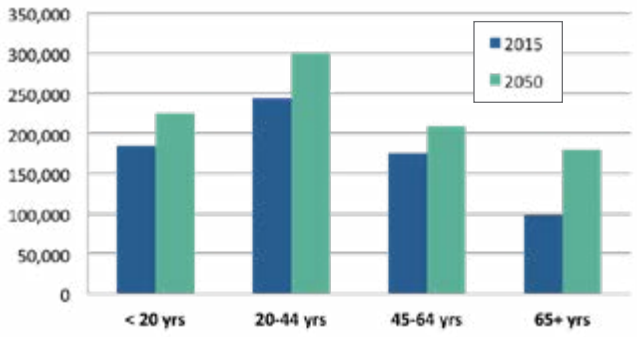
Aging Population

Baby Boomers were born between 1946 and 1964 and are in their highest income-earning years, but are approaching retirement. Table 4-4 shows, while the region will see population growth in all age groups, the greatest growth by far will be the elderly population age 65 and above. By 2020, the youngest Boomers will be 56 and the oldest 74. Many Boomers may remain in the labor force past the traditional retirement age of 65. Even so, by 2020 Baby Boomers will be exiting a labor force then dominated by Millennials.

The mobility needs of Baby Boomers are difficult to foresee, but two challenges are likely to emerge. First, some of the better-advantaged members of this generation seem eager to embrace the walkable lifestyle offered in New Urbanism, like Hendrix Village, and revitalized urban districts. As retirees, they will have less need for commuting but more need for safe pedestrian access and the presence of medical care. At the same time, Baby Boomers have unusually high divorce rates, so the problem of elders living alone — sometimes isolated socially — will grow as this group ages.

The problem of isolation could become particularly serious for those located in low-density suburbs, which still hold a major share of the region's housing. Para-transit may be a necessary help. For non-emergency medical needs, so-called "stretcher services" may become increasingly necessary to avoid overburdening local emergency-response systems. Studies done thus far suggest that elders give up walking before they give up driving, for reasons rooted in logic and safety. Thus, while walkable environments are desirable, the transportation infrastructure will also need to be able to cope with a growing share of elder drivers. This includes issues involving signage, intersection design, driver licensing, and law enforcement.

Table 4-4. Central Arkansas Population by Age Group 2010-2050



Millennials and Gen-X

The Millennial generation is defined loosely as those born from about 1981 to 1994. At the time of Census 2010, central Arkansas had about 237,000 Millennials, or about 35.2 percent of population – slightly higher than the national average. Millennials and their older counterparts in "Generation X" have a preference for living in urban environments with options for walking and biking. Abnormally low car-ownership rates among much of the population under age 25 may suggest a growing willingness to embrace the use of public transit or private ride-sharing services like Uber and Lyft. Studies are showing that Millennials prefer transportation systems that allow them to maintain contact with portable electronic devices. Millennials and Gen Xers will greatly influence the region's future, and will hold most leadership positions in less than 15 years.

An Altered Housing Market

The Great Recession of 2008-2009 altered national and regional housing markets. Housing construction

Generational Designations

Traditional/Silent Generation: 1922–1945

Baby Boomers: 1946–1964

Generation X (Gen-X): 1965–1980

Millennials: 1981–1994

Generation Z: 1995—

slowed across the country. The slowdown also occurred in central Arkansas, but was less pronounced. For several years during and after the recession, the total number of multi-family units under construction exceeded that of single-family. A post-recession pattern gradually asserted itself in the local area, with single-family accounting for a slight majority of new units, but with fewer units being constructed. For example, total new units started in the five-year interval 2013-2017 amounted to just over 11,000, less than half the total constructed in the pre-recession five-year interval 2002-2007.

Table 4-6 compares U.S. housing trends in three five-year intervals: during the last of the boom years 2002-2007, in the crash and its immediate aftermath 2008-2012, and the most recent five years 2013-2017. Single-family housing was hardest hit. It then recovered somewhat during the past five years but still ran at less than half the pace of the boom years. Table 4-6 shows housing trends in the Little Rock region. Local single-family construction declined by less than the U.S. average in the years after the crash, but then continued declining in the years 2013-2017 when U.S. housing was nudging back upward.

Multi-family also declined, but by much less. U.S. multi-family construction dropped from 2.7 million units 2002-2007 to 1.1 million in the 2008-2012 interval, a decline of 59 percent. In Central Arkansas, multi-family housing increased during the rough years 2008-2012. However, total multi-family construction was lower in the most recent five years (2013-2017) than it was in the five years previous.

Some of the change reflects altered economic circumstances, with tighter credit markets after the crash. Much of the change probably owes to demographics. Table 4-5 depicts a trend which explains a lot about the underlying demographics

Table 4-5. Homeowners Under 35 as Share of Total Homeowners

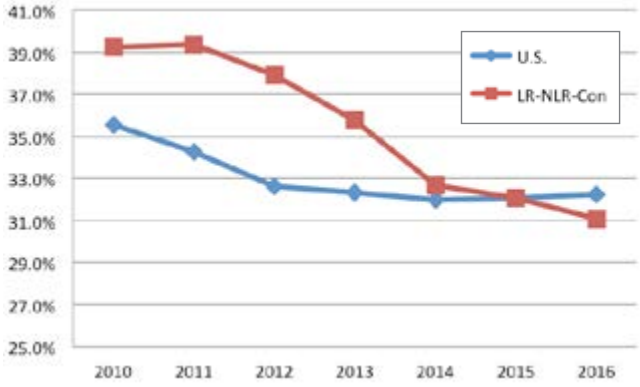
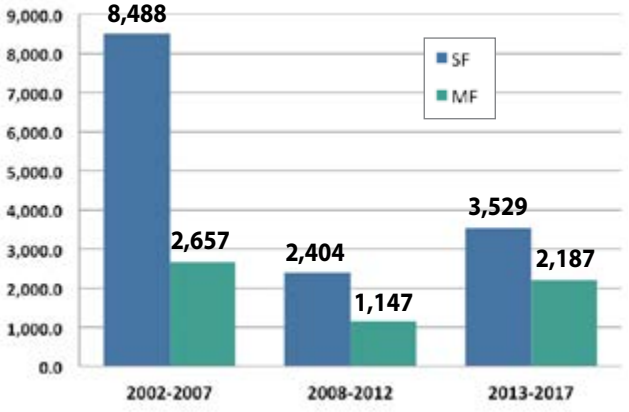
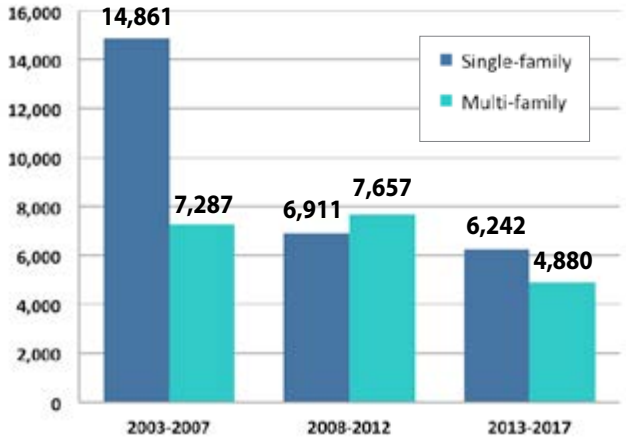


Table 4-6. U.S. New Housing Permits by Type (x 1,000) 2002-2017



Source: U.S. Bureau of the Census, with Metroplan adjustments for series changes.

Table 4-7. Central Arkansas New Housing Units by Type 2003–2017



of the housing market. As the blue line shows, the share of householders under age 35 who are homeowners declined after the Great Recession, and has remained nearly flat since then. Despite the large size of the Millennial demographic group, homeownership among the youngest share of the housing market has yet to grow. Locally, the trend is even more stark. While homeownership ticked up slightly among those age 35 and under, in central Arkansas it has continued to drop, and has run under the U.S. average since 2015.

Some of the change in housing choices reflects economic circumstances, and some reflects shifting living preferences . The Millennial group seems less interested in owning big-ticket items like cars and houses, spending more of its income on entertainment and consumer electronics than previous generations. Tight economic circumstances in their young adult years, and tougher home mortgage credit standards may have influenced Millennials' housing choices. Although they have held back, Millennials could still boost the market for homeownership, a trend that will bear watching over coming years.

In the meantime, demand for multi-family housing remains strong. With lower entry costs, multi-family residents are free of worries about maintenance and yard care, and have greater flexibility to relocate when necessary. The demand for multi-family housing is being boosted not only by strong demand from the Millennial generation, but also by members of Baby Boom generation, some of whom are downsizing from homeownership as they age. The region also has a small but growing market of housing, much of it multi-family, in pedestrian-friendly and/or mixed-use neighborhoods in locations like downtown Little Rock, Argenta in North Little Rock, Hendrix Village in Conway, and several other places. Demand for residences in such areas is high. For the foreseeable future, it appears that demand for the quality of life offered by such neighborhoods will continue to grow.

While a stronger economy may permit some renewal of housing markets, many demographers contend that the housing bust of the 2000-2010 decade marks a sea change. While economic circumstances and finance markets will continue recovering, personal tastes and needs have been transformed.

The New Workforce

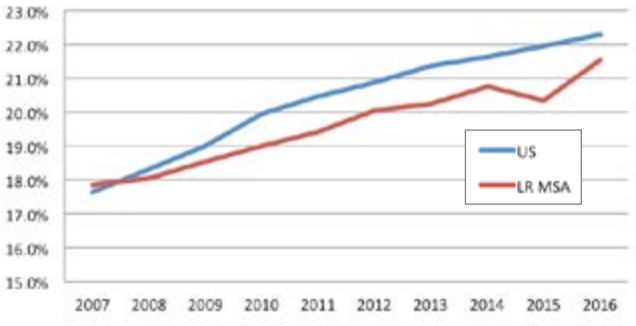
The Little Rock region weathered the Great Recession of 2008-2009 with less economic damage than was seen in many other parts of the country. Unemployment maxed out well below U.S. levels, and the region's drop in total jobs was among the smallest among U.S. metros. However, the region's economic growth since the Great Recession has been slow. Per capita income has barely grown, while employment growth has run at a slower pace than the U.S. average.

Both the U.S. and local workforces are aging as the large Baby Boom generation reaches retirement years. The sizeable Millennial generation has largely entered the work force: by 2018, the youngest Millennials were age 23. Since most members of this younger generation are now fully within traditional working ages, the bulk of Millennial-induced workforce growth is now over.[1]

The future of U.S. and regional workforces will depend on how many older workers stay in the job market, as well as the share of participation among the youngest workers. By 2018, the youngest Baby

[1]*The analysis assumes the Millennial generation was born between about 1980 and 1995. There is no precise definition of the Millennial generation.*

Table 4-8. Workers Age 55+ as Share of Workforce 2007-2016



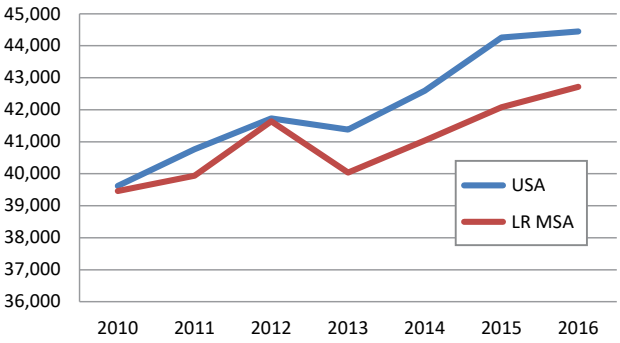
Boomers had reached age 55, an age at which the share of workers moving into retirement starts to rapidly increase.

The Little Rock region's workforce is somewhat younger than the U.S. average, with an overall workforce participation rate just a notch below the U.S. average by 2015. About 73,000 members of the local workforce (21.5 percent) consisted of persons age 55 or older by 2016, compared with a U.S. average of 22.3 percent. In the critical 25-to-44 age category, there were about 151,000 workers locally, an increase of about 4 percent compared with the year 2007. These younger workers represented about 44 percent of the local workforce, a notch above the U.S. average of 43 percent.

Part of the labor force slowdown also owes to an increase in college and trade school enrollments, as young adults and even mid-career people take time out from the workforce to train themselves for the higher skill levels demanded of the future. Nonetheless, these two factors—aging of the workforce and education—do not account for the scale of decline in the labor force. Part of the answer is in the rising share of disabled persons. As with workforce participation, the region mirrors the national trend.

It is likely that some of the problem can be traced to a growing bifurcation of the job market, into high-end, high-skill jobs for which there are too few qualified applicants, and low-skilled, low-paying jobs, with a loss of jobs in the middle. The issue of labor force participation has particular relevance for the Millennial generation. The job and education decisions they make will in large part shape the workforce and, by implication, the economy.

Table 4-9. Per Capita Income 2010-2016 (Inflation-Adjusted)



4.3 A Sustainable Region

During public involvement sessions for *Imagine Central Arkansas*, participants were repeatedly asked what was important to them for the future of central Arkansas. Responses focused on four general areas —education, health, environment, and safety. All of these elements are influenced by how we grow and develop the region in a sustainable manner and how we are able to move within it.

The *Central Arkansas Green Agenda*, discussed in detail in Chapter 5, defines sustainability as "Living today like you really believe there will be a tomorrow." In the broadest sense of the word, it is the act of preserving, maintaining, and recycling resources so they are not depleted or permanently damaged, and residents can maintain the highest level of livability. In essence, sustainability means ensuring that the quality of life we enjoy today is available to future generations.

Transportation ensures economic opportunity by connecting people to jobs, schools, housing, healthcare, and other key community resources and assets of all communities. An equitable transportation system is one where access to community resources and assets is available to all members of the community regardless of ethnicity, socioeconomic status, age, gender, or need for accommodation. Ideally, an equitable and sustainable transportation system: 1) provides choices in transportation modes, 2) allows access to vital resources, 3) protects human and natural ecosystems, 4) contributes to the health and safety of the community, and 5) is generally affordable. Such a system links a community together rather than separating it.

The region's current pattern of development tends to inhibit the creation of a more equitable transportation system. Current land use patterns, coupled with road design deficiencies and inadequate maintenance, often confers a burden on individuals through higher mobility costs or severely limits mobility altogether.

In rural and suburban areas of central Arkansas, residents' mobility is solely dependent on automobiles. Car ownership for these persons is essential to achieving a high degree of personal mobility and independence. Yet the cost of owning, operating and maintaining a personal vehicle is an externality normally not accounted for in calculating the true expense of building, operating, and maintaining that transportation system.

In contrast, residents in the central cities of Little Rock and North Little Rock also have a high degree of personal mobility, but achieve it through a better land use/transportation connection with more transportation modal options that yield shorter trips and lower personal transportation costs.

There are equity issues to be addressed in both urban and rural areas. The cost of vehicle ownership can become excessively high when fuel costs escalate unexpectedly, leaving households in rural and suburban communities isolated and economically vulnerable. Likewise, residents in central cities can also become isolated and vulnerable to economic shock due to the inability to access employment beyond the geographic coverage of the transit system. Both circumstances are transportation-related mobility and equity issues, and both are impacted by personal, private, and governmental actions that can result in inequitable solutions.

Central Arkansas 2050 and its long-range transportation plan element is the declaration of how central Arkansas chooses to fund and implement transportation projects equitably in our region.

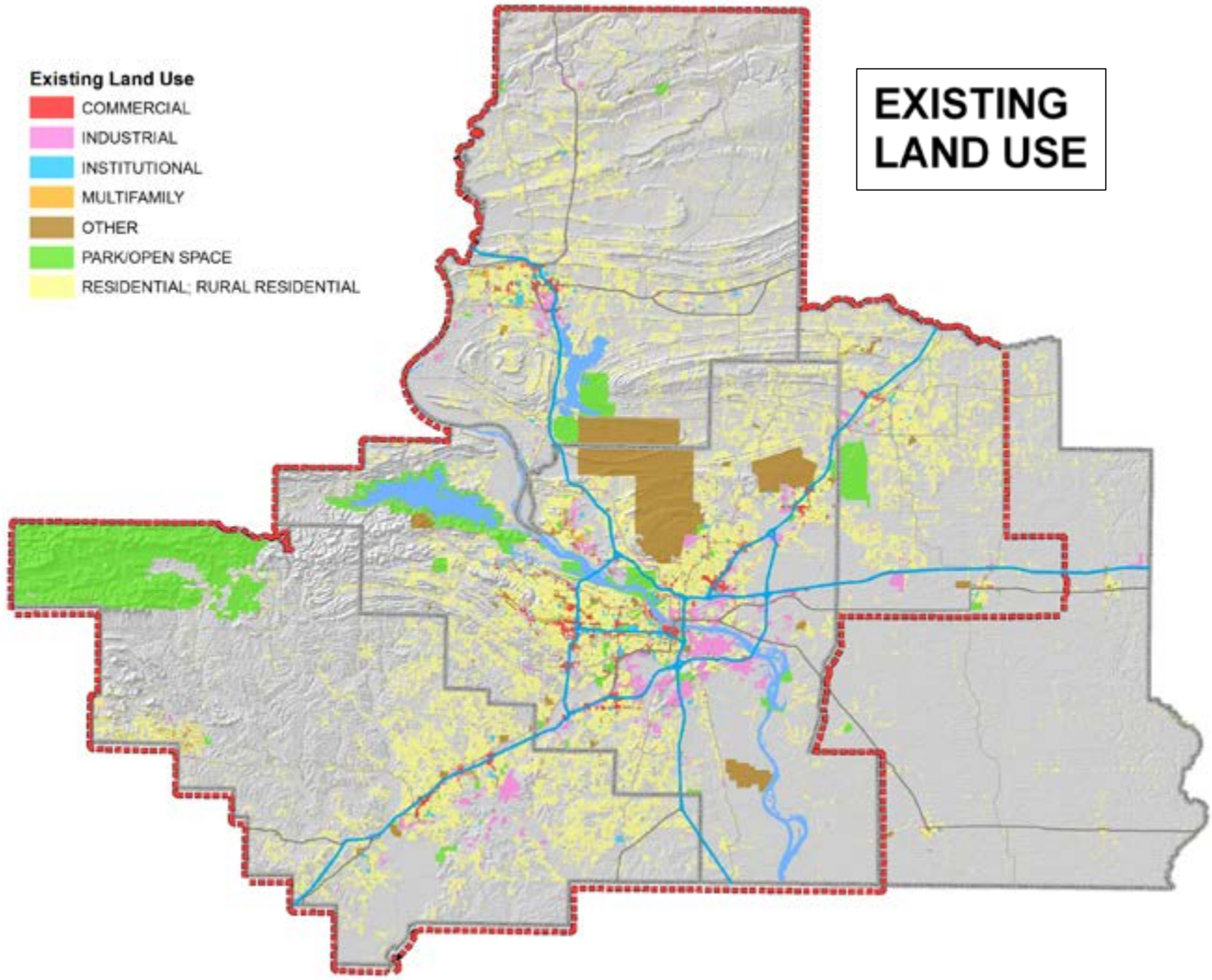
4.3.1 Growth and Development: Land Use and Mobility

How we grow and develop our land has a major impact on regional sustainability. Land use decisions directly influence travel behavior; likewise, mobility directly influences land use patterns.

For example, central Arkansas, like most places across the country, experienced an increase in road-building and automobile ownership levels beginning after World War II. This change created a new pattern of land use, including lower-density single family subdivisions, strip-style retail and office parks spreading further and further from traditional cities and into suburban and rural locations. As a result, central Arkansas' land use pattern is one in which most trips must be made via personal vehicle and many daily destinations (work, school, conveniences) require time-consuming vehicle trips.

The pattern of land use greatly affects the efficiency of transportation systems. Density influences transportation by determining how proximal homes and

Figure 4-9. Existing Land Use with Density



jobs are to each other. The term "mixed-use" refers to the locations of different types of land uses, such as homes (origins) and jobs, shopping, services, and schools (destinations) relative to each other. How "dense" a place is and/or the extent to which different types of land uses are mixed can determine whether walking and cycling are even possible and how far we travel via automobile.

The standard practice in the United States has been for transportation and land use decisions to be made independently of each other. The end result is that many of our places are not walkable or bike-able, transit is inconvenient or at worst unavailable, and long car rides are necessary for most of our daily needs.

4.4 Regional Characteristics: Housing and Transportation

4.4.1 Affordability for People

Traditionally, the asking price of the house itself is the primary budgetary consideration when families choose a place to live. What tends to be overlooked is the associated transportation costs that the household then must bear to access jobs, schools, and shopping.

The Housing + Transportation (H+T) Index, developed by the Center for Neighborhood Technology, takes both elements into account. It represents a new, comprehensive way of thinking about the cost of housing and affordability.

Figure 4-10. Residential Density

A modest shift in density can have a significant impact.

Based solely on the average cost of housing relative to median household income, central Arkansas appears to be very affordable. However, when transportation costs are factored in, the picture changes dramatically: most places across the region well exceed standard affordability thresholds.

If fuel prices and other transportation costs increase, the lack of affordability in central Arkansas could become critical. Most susceptible are those places where central Arkansans already spend a disproportionate amount of their household incomes on transportation, and where they lack transportation options.

If left unchecked, an increasing lack of H+T affordability within central Arkansas will negatively impact the quality of life and economic competitiveness of the region. Ensuring transportation affordability for future generations is a key challenge of *Central Arkansas 2050*.

Suburban and Rural Areas of Central Arkansas

Households in suburban and rural areas are dependent on automobiles for their mobility. These areas have the highest household transportation costs in the region, often exceeding rent/mortgage cost, and their residents spend the most time in vehicles. Many of these households spend in excess of 30% of household income on transportation (twice what is considered affordable). While many of these residents enjoy a high level of mobility

provided by their automobiles, they are highly susceptible to increases in energy (gas) costs.

4.4.2 Rethinking Community Efficiency

Neighborhoods close to downtown Little Rock and North Little Rock are areas of high employment access, with a wider range of transportation choices, although jobs in these areas may not match the skill levels of nearby populations. Residents are more likely to use public transportation or active modes of transportation such as biking or walking to get to and from work. For the most part, streets are laid out in a traditional grid pattern and are far more likely to have networks of sidewalks throughout their community. To a lesser degree, Conway, Benton, and Jacksonville have areas where access to employment and increased transportation choice is provided; however, these small areas lack broader connectivity to the larger region, severely inhibiting mobility for those with limited access to automobiles.

In recent years, some communities have recognized that their pedestrian infrastructure is in a poor state of repair and have allocated a portion of their maintenance funding on the older infrastructure elements. Despite the efficiency, lower cost, and health benefits of active methods of transportation (walking and bicycling), these facilities must be safe for users. Until infrastructure is upgraded to useful standards, proximity does not automatically confer access.

Pedestrian & Bicycle Safety

The most dangerous streets for pedestrians and bicyclists in central Arkansas are higher speed multi-lane arterials located near downtown areas. Often these areas are characterized by residential development on one side and commercial strips on the other, where residents are more likely to cross streets on foot. The lack of safe pedestrian crossings, combined with higher speeds on these roads, contributes to the highest number of pedestrian crashes (between motorists and pedestrians). Roadways with the highest frequency of pedestrian crashes include: Pike Avenue, Camp Robinson, Broadway, Roosevelt, and Colonel Glenn. Central Arkansans who are African Americans, male, and/or age 10-30 are much more likely to be involved in a crash as a pedestrian or cyclist. For more information see Metroplan's analysis of pedestrian and bicycle crashes at http://metroplan.org/files/53/2010Ped-BikeCrashAnalysis.pdf.

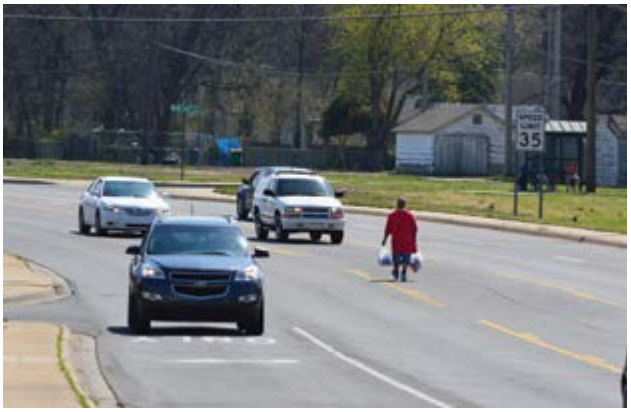


Figure 4-11. Housing Costs
Percentage of Household Income

Housing costs vary from a low of 20.5% of median income in Faulkner and Saline Counties to a high of 23.1% in Pulaski County.

Housing is considered "affordable" at 30% or less of median household income.

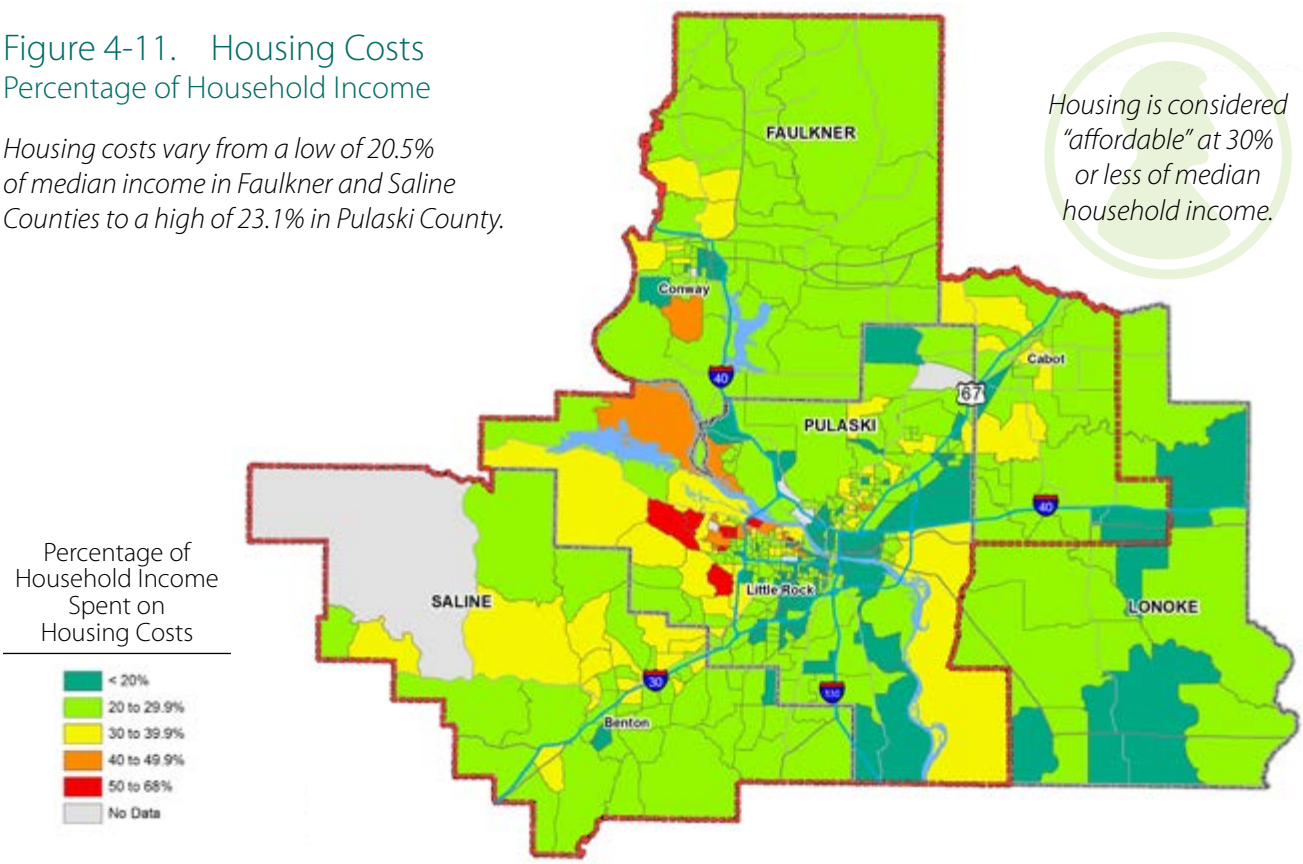
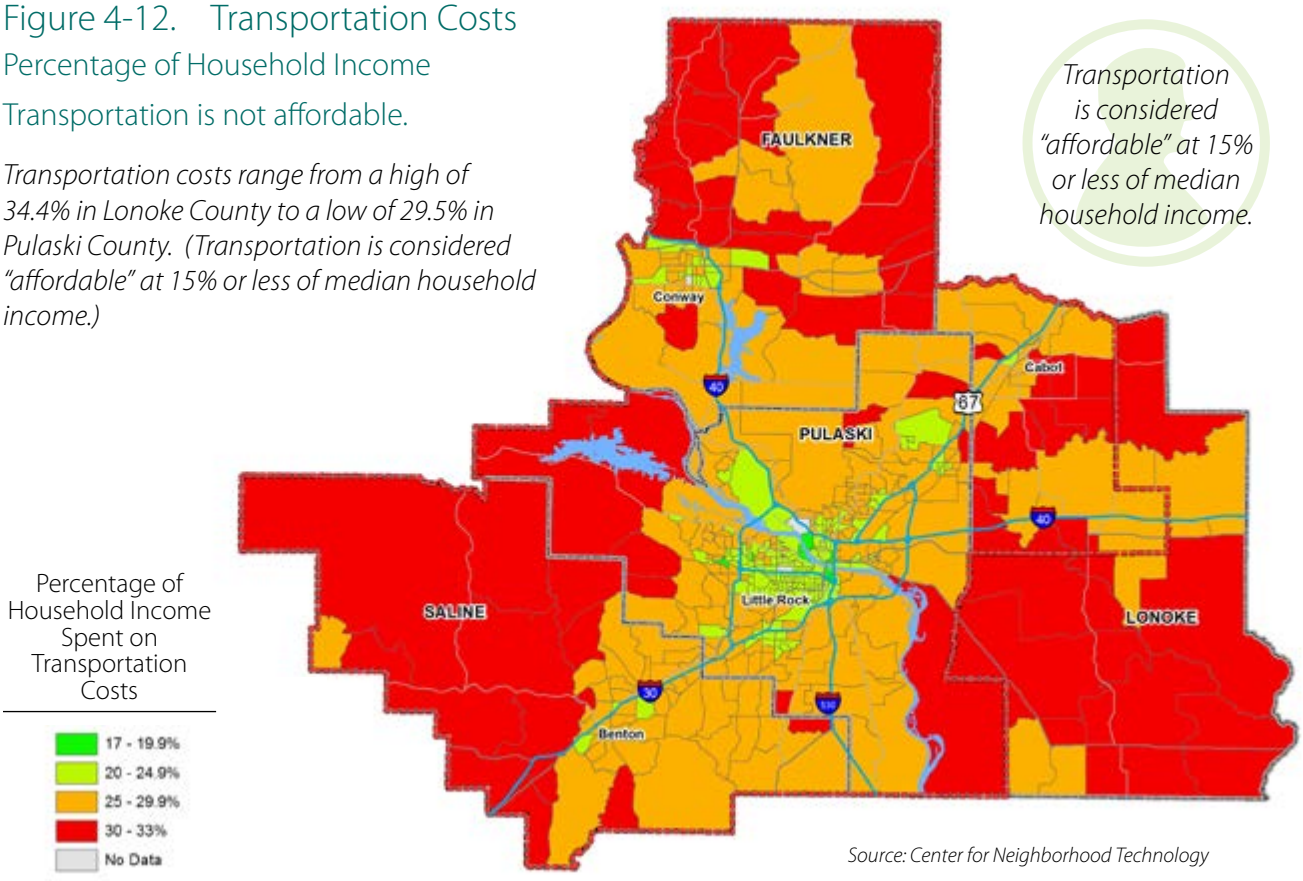


Figure 4-12. Transportation Costs
Percentage of Household Income
Transportation is not affordable.

Transportation costs range from a high of 34.4% in Lonoke County to a low of 29.5% in Pulaski County. (Transportation is considered "affordable" at 15% or less of median household income.)

Transportation is considered "affordable" at 15% or less of median household income.



Source: Center for Neighborhood Technology

Table 4-10. Housing + Transportation Cost as a Percentage of Household Income

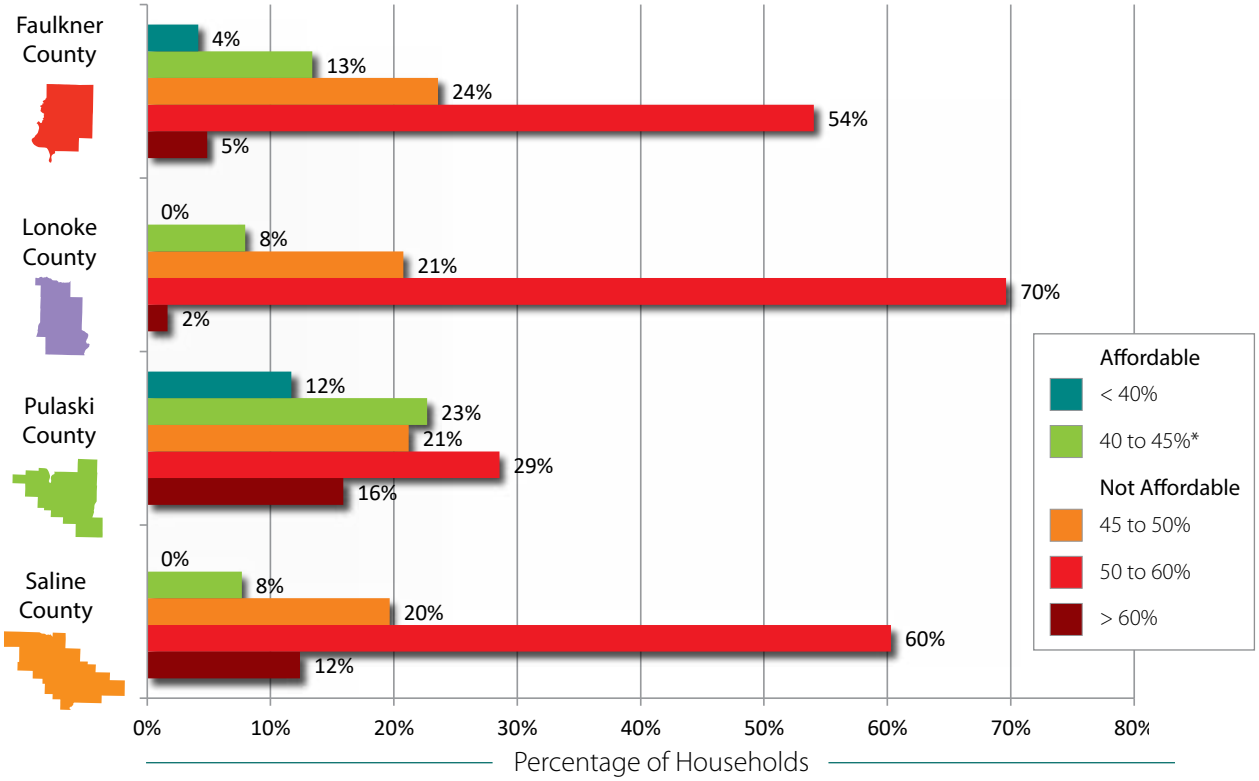
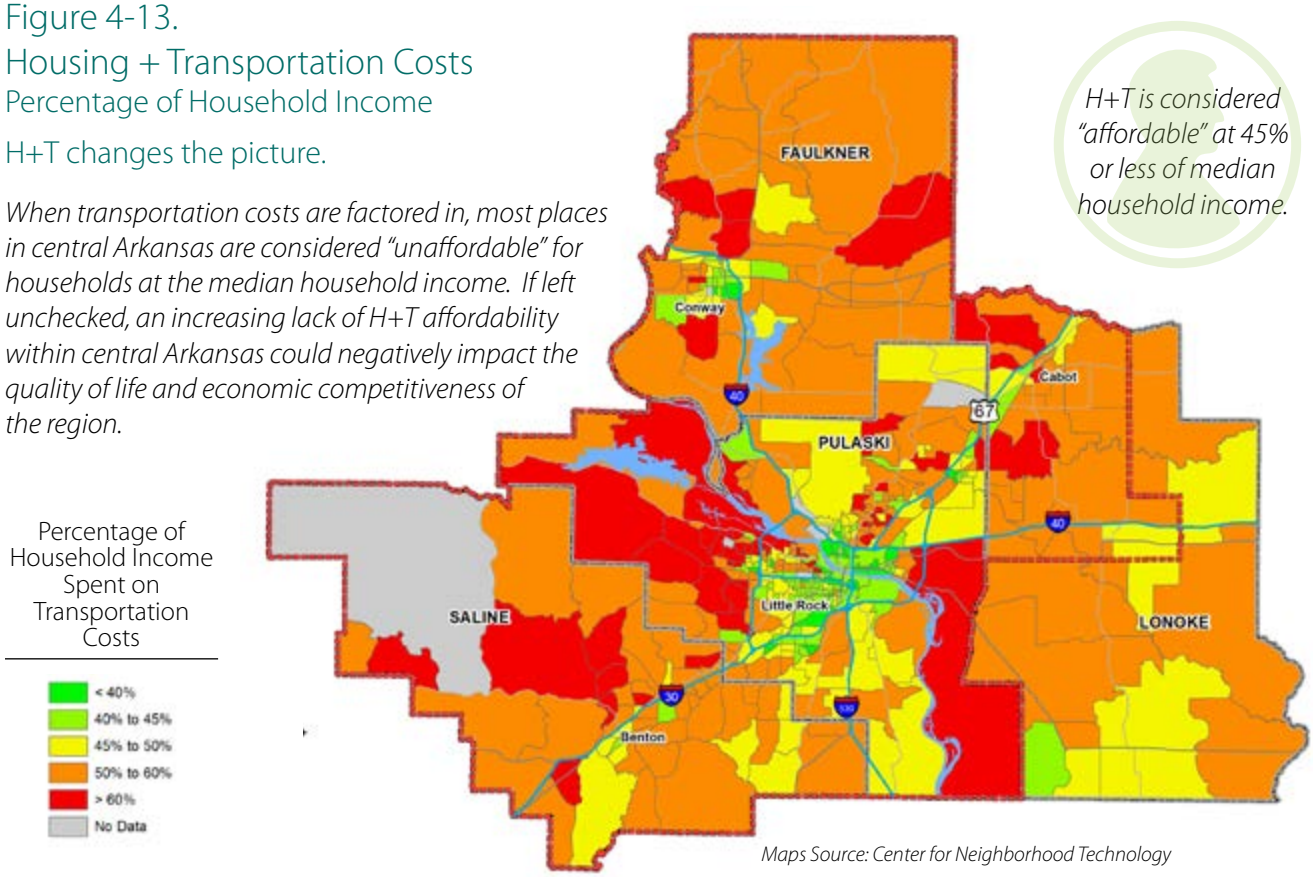


Figure 4-13.
Housing + Transportation Costs
Percentage of Household Income
H+T changes the picture.

When transportation costs are factored in, most places in central Arkansas are considered "unaffordable" for households at the median household income. If left unchecked, an increasing lack of H+T affordability within central Arkansas could negatively impact the quality of life and economic competitiveness of the region.

H+T is considered "affordable" at 45% or less of median household income.



Maps Source: Center for Neighborhood Technology

Figure 4-14. Residential Density and Mixed Use

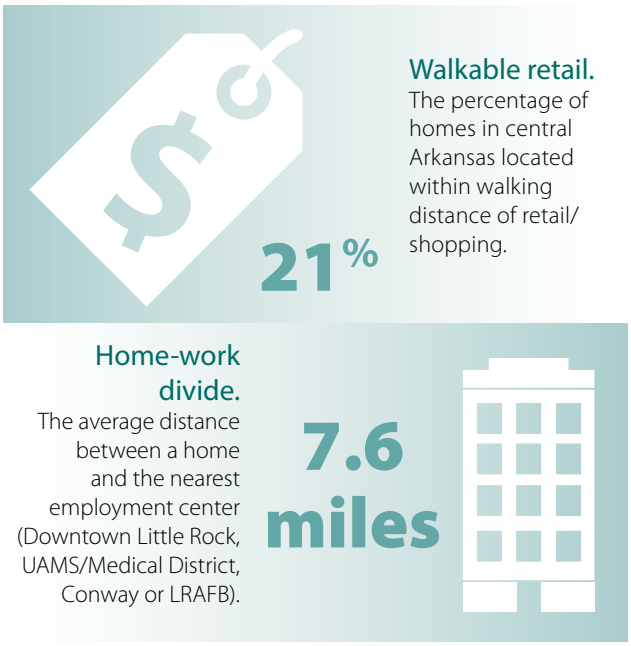
Table 4-11. Number of Homes within Walking and Biking Distance of a Destination *(at Varying Densities)*

Density, walking, and cycling.

Generally speaking, places become more viable for walking and cycling at higher densities.

Gross Density (in dwelling units per acre)	Walking Distance (1/4 mile)	Biking Distance (2 miles)
1 du/ac	130	8,040
2 du/ac	250	16,080
3 du/ac	380	24,120
4 du/ac	500	32,150
6 du/ac	750	48,230

Figure 4-15. Homes within Walking Distance of Shopping and Average Distance Between Home and Employment Center



Source: Derived from data provided by Metroplan Estimates

Figure 4-16. Family Poverty Rate

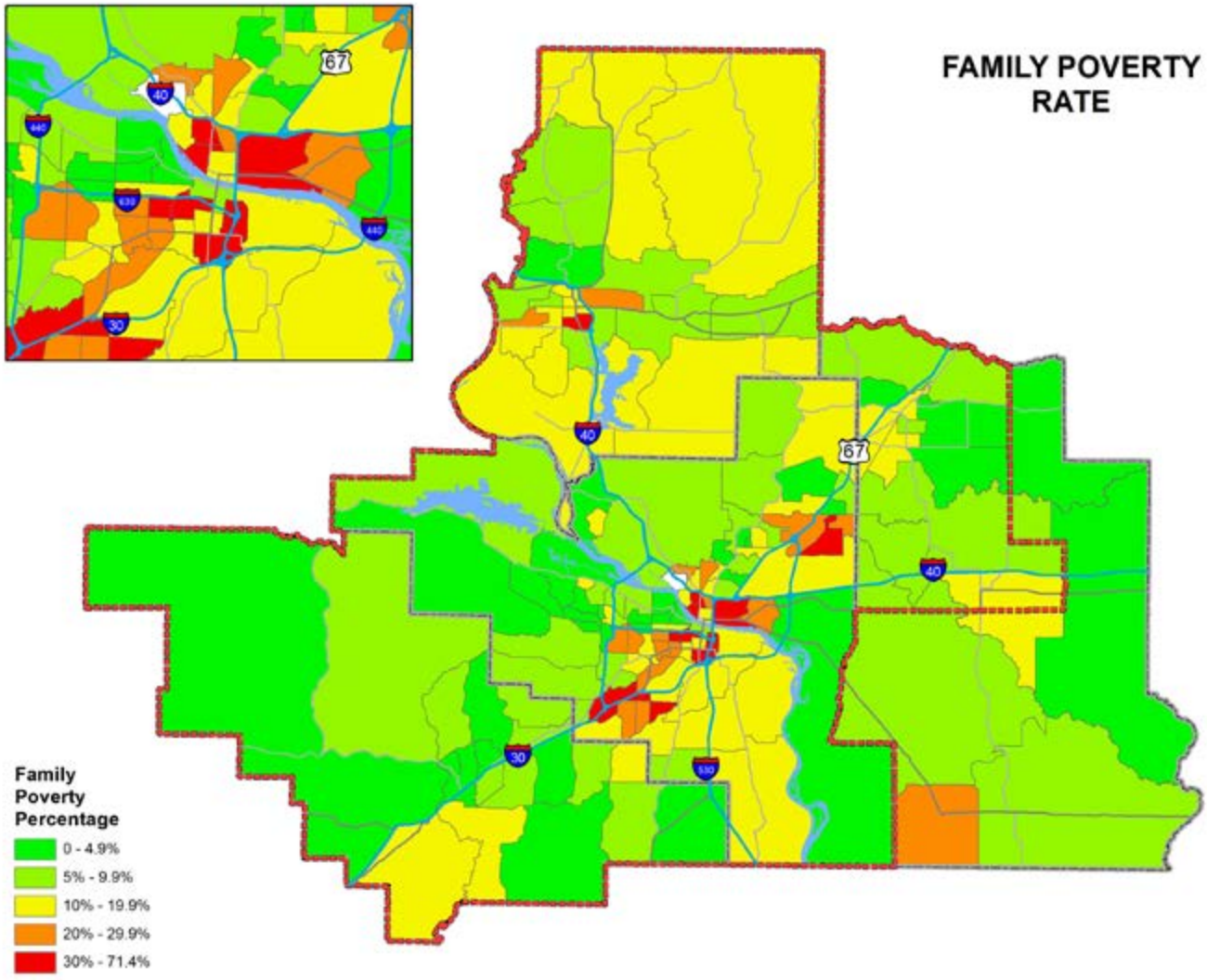
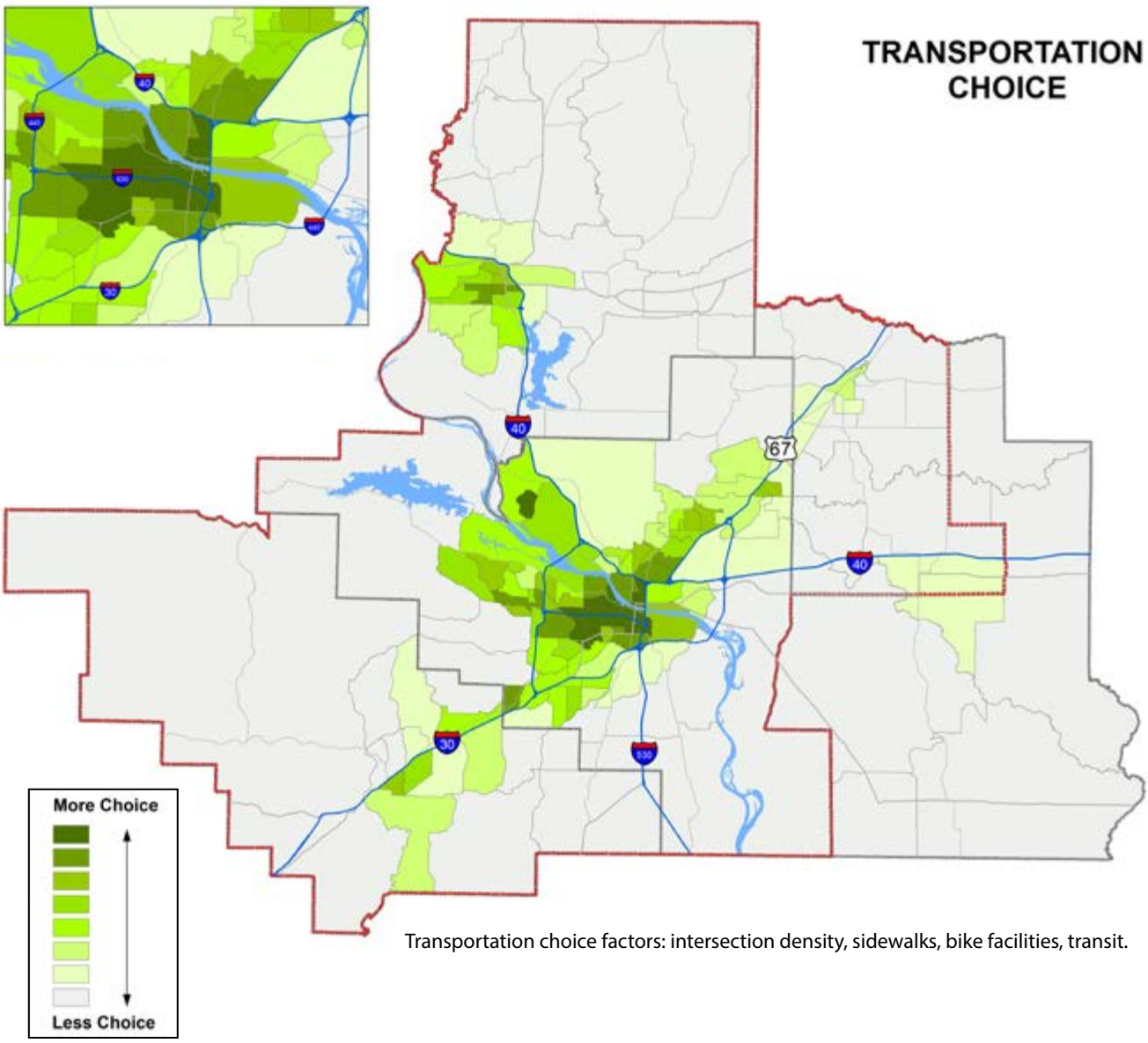
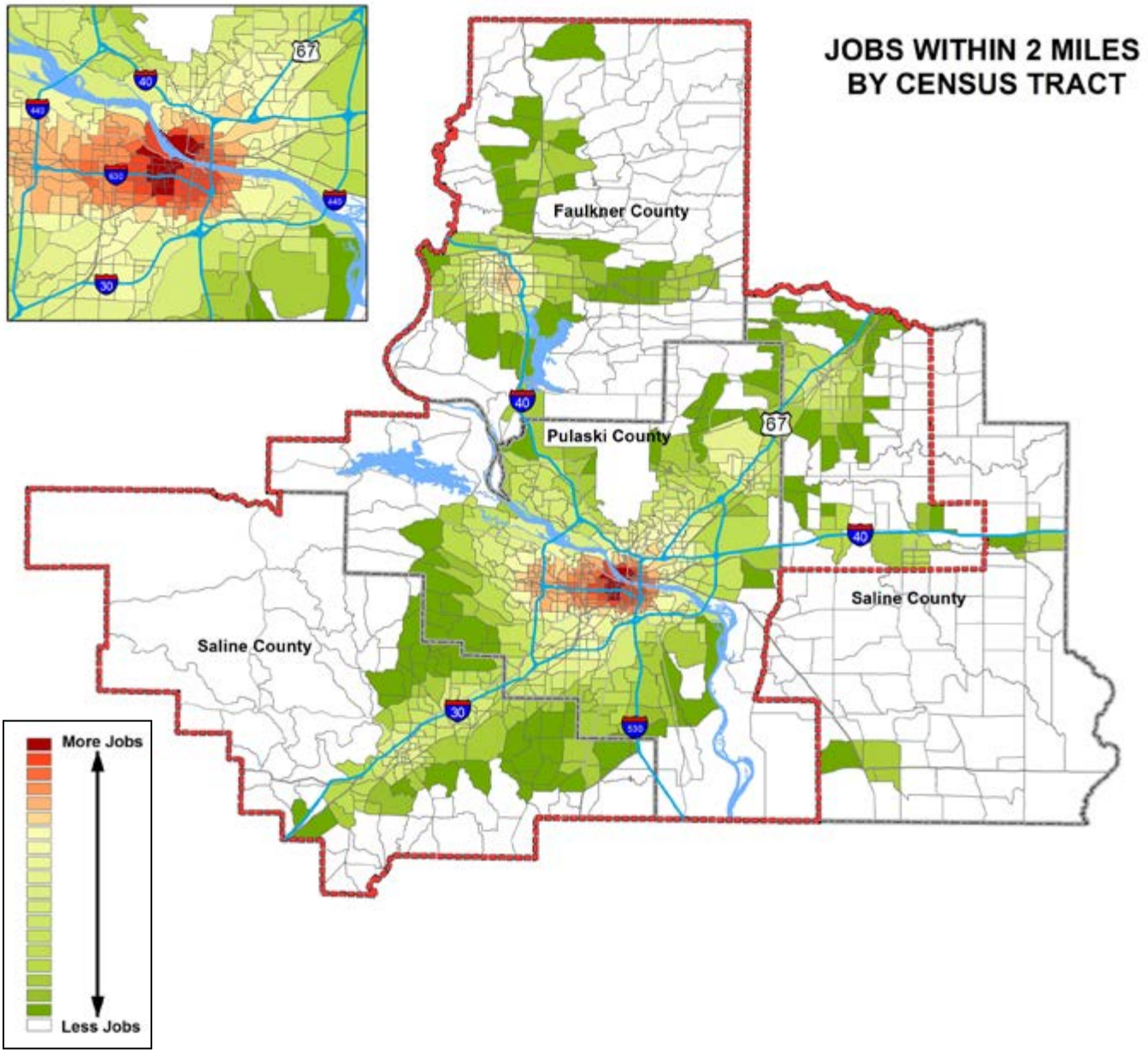


Figure 4-17. Transportation Choice Index by Census Tract



Transportation choice factors: intersection density, sidewalks, bike facilities, transit.

Figure 4-18. Access to Jobs by Transportation Analysis Zone (TAZ)



4.4.3 Increasing Opportunity: Better Living Arrangements

Fair Housing Assessment

In 2010, Metroplan was a recipient of a "Sustainable Communities Regional Planning Grant" from the US Department of Housing and Urban Development's (HUD) new Office of Sustainable Housing and Communities (OSHC). An essential element of the grant was the creation of a Fair Housing Equity Assessment (FHEA). The assessment analyzes the metropolitan area in terms of "access and opportunity" for both soft (jobs, health, etc.) and hard (transportation, parks, etc.) infrastructure systems, but primarily focuses on the ability of persons in poor households to equitably access areas of high opportunity and services. Areas of high opportunity and services are sections of the community characterized by low crime, few environmental hazards, broad commercial, and recreational choices, and proximity to high performing schools. Increasing transportation choice, mixed-use developments, and housing price point options throughout the metropolitan region are improving overall equity.

The metropolitan area's poorest households are predominantly African American and live in areas, defined by HUD as Racially Concentrated Areas of Poverty (RCAP), where more than 50 percent of the residents are people of color and more than 40 percent of the residents have incomes less than or equal to the federal poverty line. There are five RCAPs, two located near downtown Little Rock and three located in North Little Rock. They are characterized as areas of few opportunities, high levels of violent crime and drug trafficking, numerous environmental hazards, lowest average household incomes, few commercial and/or recreational options and the highest percentages of children living below the poverty line (see Appendix J for copy of Fair Housing Equity Assessment). While the FHEA focuses primarily on the RCAPs, *Central Arkansas 2050* focuses on equity in the broader region.

A well-kept home in RCAP Tract 12 is next door to a boarded-up and condemned house.

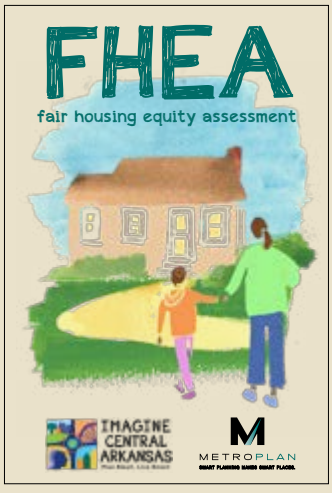


Figure 4-19. Pedestrian Crashes 20112–2016

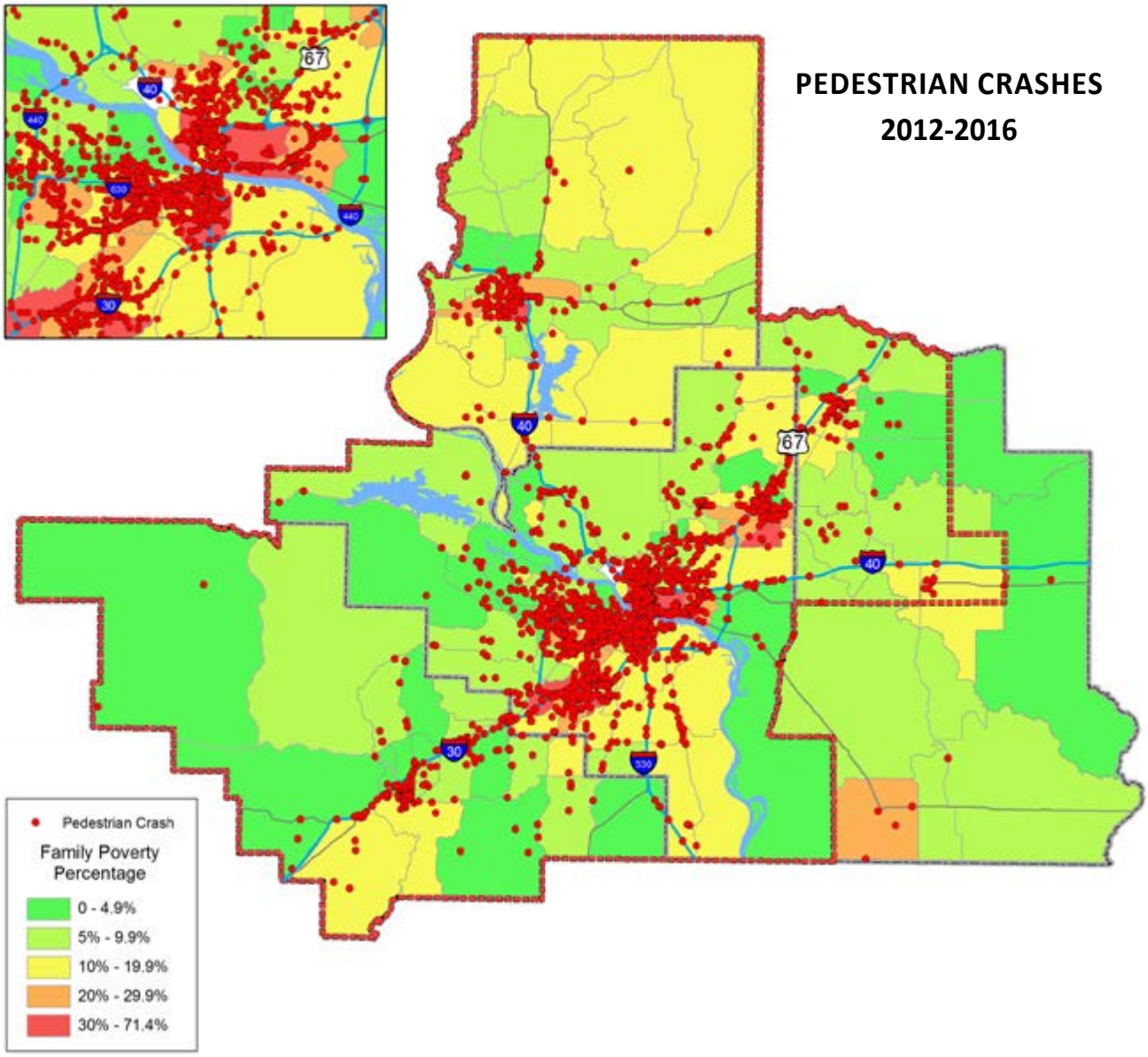


Figure 4-20. Bike Crashes 202–2016

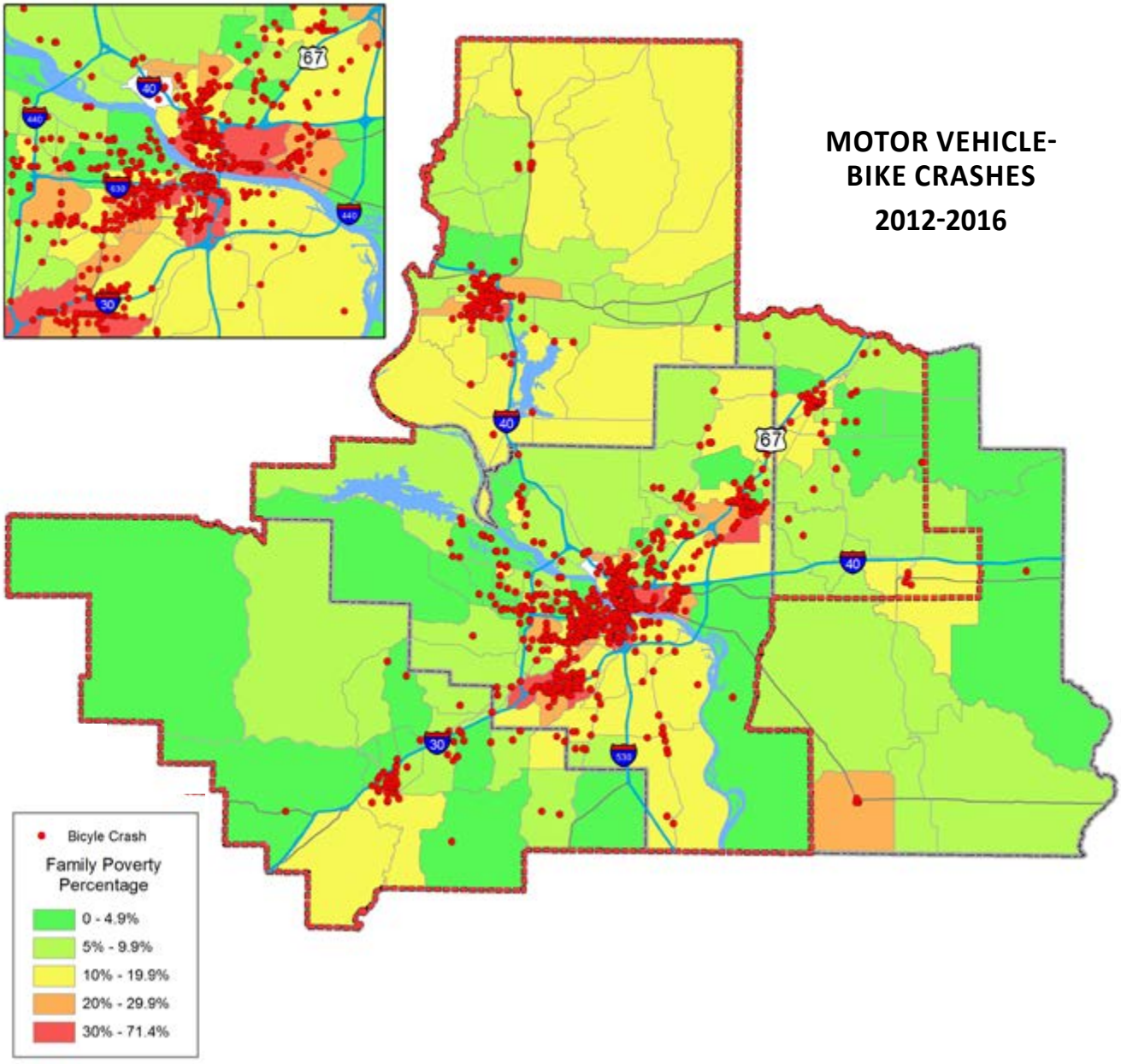
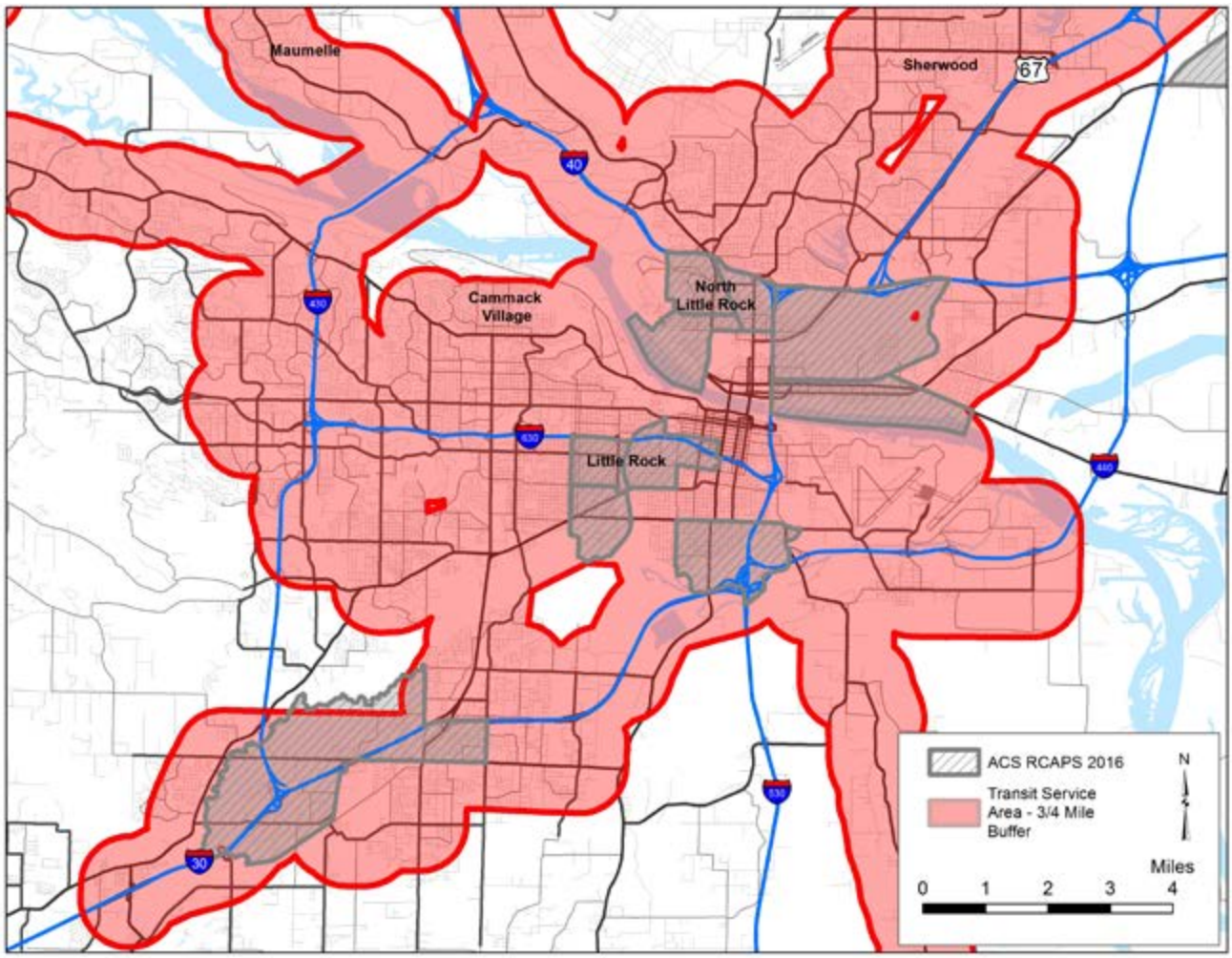


Figure 4-21. Transit Service



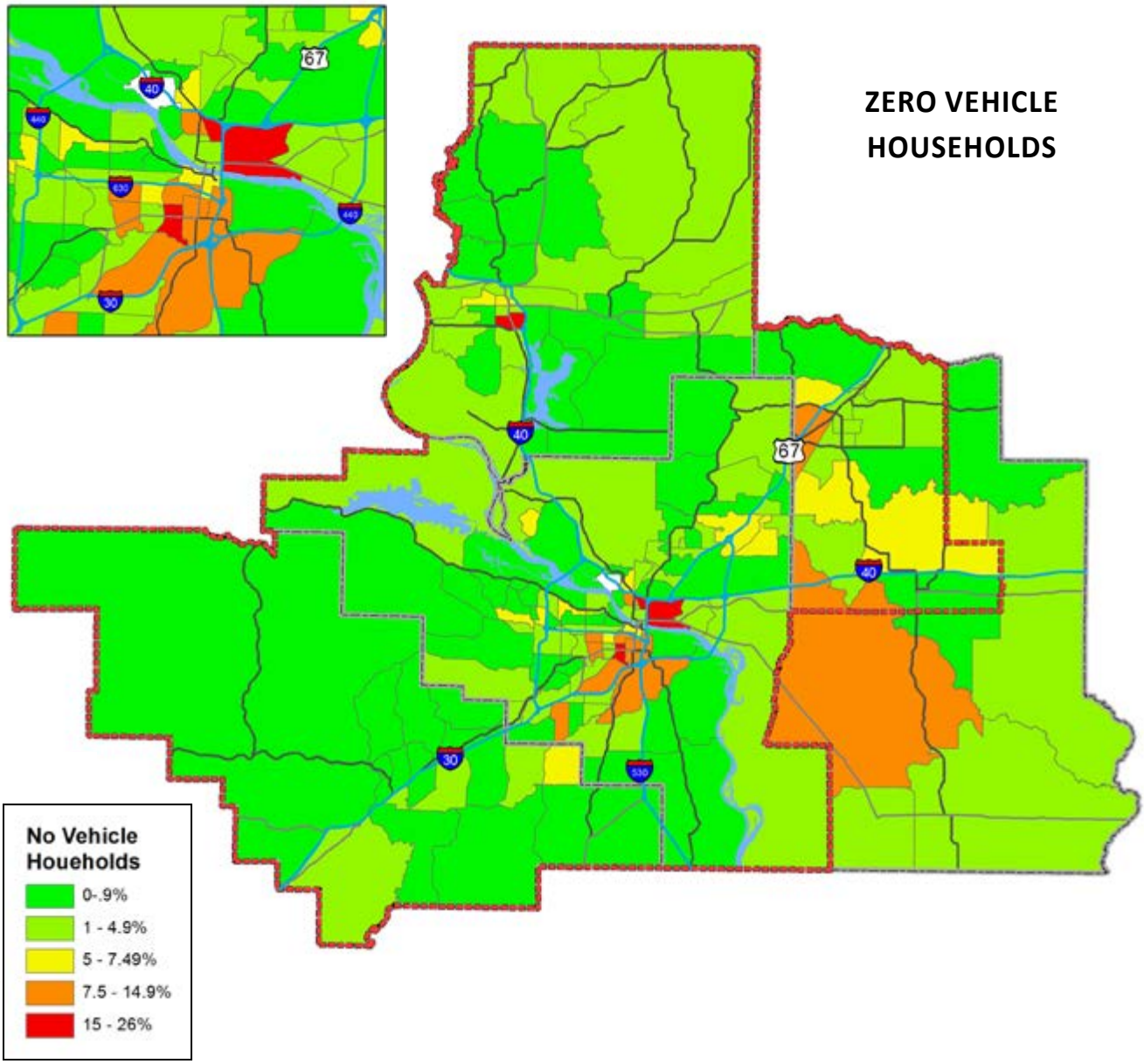
The Crime Effect

Crime has heavily influenced the pattern of suburbanization that has taken place in the last several decades. It has been so closely associated with urban decay that in many models crime is used as an indicator of decline. Prospective residents and business looking to settle and invest in the community consider crime as an important indicator. Since the 1970s, crime has been blamed for the mass exodus of urban dwellers to the suburbs and has similarly been linked to the disappearance of store fronts and the reluctance to redevelop downtown commercial areas. The most compelling argument against denser, mixed-use development is that violent crimes and drug arrests are found in greatest concentrations near the urban core and tend to deter major investments. Crime dissuades the efficient use of resources, thwarts development, promotes sprawl, and discourages diversity. Maintaining crime free neighborhoods is essential to achieving a sustainable community.

Limited-Auto Households

The lack of mobility is greatest for those central Arkansans with limited or no access to personal household automobiles. For this group, access to opportunity and mobility is measured to a greater extent by the availability and frequency of public transit and the walkability of neighborhoods. Reliance upon these modes makes it necessary for limited-auto households to live near bus routes or in close proximity to essential services and places of employment. A limited number of bus routes, reduced hours and/or days of operation, and a lack

Figure 4-22. Zero Vehicle Households



*Zero vehicle households may include group quarter housing, like retirement homes.

of sidewalks all contribute to make accessing areas of high opportunity unavailable for this population, and can lead to these individuals living confined lives. For these households, public transportation is a lifeline. Economic independence depends on convenient access to employment, food options, and medical care.

Locating Opportunity

An important consideration to increase opportunity is the broader geographic availability of affordable and safe housing. The exclusion of a wider variety of housing types in areas of opportunity regularly involves the scarcity of affordable housing, which restricts where those of lesser means can afford to live.

The downtown cores and inner neighborhoods of Little Rock and North Little Rock offer three distinct benefits to residents: 1) Transportation costs within these areas are the lowest regionally, due to their proximity to areas of high employment and the availability of alternative transportation modes; 2) housing costs are also among the lowest in the region; and 3) they have the most public and subsidized housing options. To further capitalize on the benefits of these areas, crime must be reduced, education opportunities expanded and quality housing provided.

4.4.4 Central Arkansas 2050's Role

Enhancing equity within the metropolitan area requires expanding both transportation and housing options. *Central Arkansas 2050* provides the framework for investing in our regional infrastructure. The FHEA report provides regional quantitative data that local, state and federal governments, in collaboration with private developers, community stakeholders and advocates, can use to help provide area households with access to safe and healthy environments. The report also shows that transportation is of critical importance to achieve and maintain economic vitality not only within the RCAP areas but the region at large. By adding more transportation choices and expanding transit service, the metropolitan area can achieve greater equity for all residents.

4.5 Obstacles to Regional Sustainability

Is the region trending toward greater sustainability? Broadly speaking, the answer is "yes," but there are exceptions and the pace of movement toward sustainability is slower than it could be. The RPAC acknowledges that the public perception of sustainability and environmental stewardship is changing. Through Jump Start, Metroplan is initiating efforts throughout our region to incorporate sustainability and environmental considerations into small, local developments. These development plans demonstrate how developers and cities can build in a manner that provides economic benefits (to both the developer and city) while simultaneously achieving sustainability.

Ultimately, a failure to embrace sustainability could impact the region's ability to attract new jobs and residents, to maintain a high quality of life and to preserve our natural environment. A few metrics can help illustrate both the region's progress, as well as obstacles. While not the only measures, these elements illustrate how sustainable practices, or lack thereof, could affect environmental quality and economic costs.

4.5.1 New Development

The central Arkansas region is one of the least dense, in terms of persons per square mile, among the country's 100 largest urbanized areas (ranking 87th among the largest 100, at about 1,300 persons per square mile). While analysis indicates that density

increased slightly from 2000 to 2010, and a bit more through 2014, (Table 4-12), the region lags the U.S. trend of more concentrated growth of residential population. Despite local exceptions, like redevelopment activities in downtown Little Rock, North Little Rock, Conway, and midtown Little Rock, on the whole the region continues developing in a low density, sprawling pattern that will make pedestrian and transit access problematic in the future. This will continue the region's dependence on private automobiles.

4.5.2 Transportation Effects

From a financial standpoint, transportation impacts sustainability in different ways. For one, the cost to build new roads continues to increase, while the amount of revenue available for maintenance and construction remains stagnant at best.

Chapter 7 of *Central Arkansas 2050* includes a full discussion of the transportation revenue forecast for central Arkansas. Conventional transportation funding, derived from the fuel tax, is declining in relative terms due to improved fuel efficiency, alternative fuel vehicles, and slower VMT growth. At the same time, the construction cost of transportation facilities continues to increase, which hinders the region's construction program. Without new sources of revenue the future of our transportation network is bleak, as existing infrastructure falls into a state of disrepair.

On a regional level, residents of central Arkansas spend a disproportionate amount of their income on transportation; personal transportation affordability could become an even greater issue in the future if fuel costs continue to rise without alternative means of transportation available.

Indirectly, transportation impacts sustainability in other ways. The nature and framework of transportation investments in central Arkansas strongly influences development patterns across the region, affecting the amount of land and resources consumed, the amount we drive, and whether walking, cycling, and riding transit is feasible.

4.5.3 Environmental Concerns

Air Quality

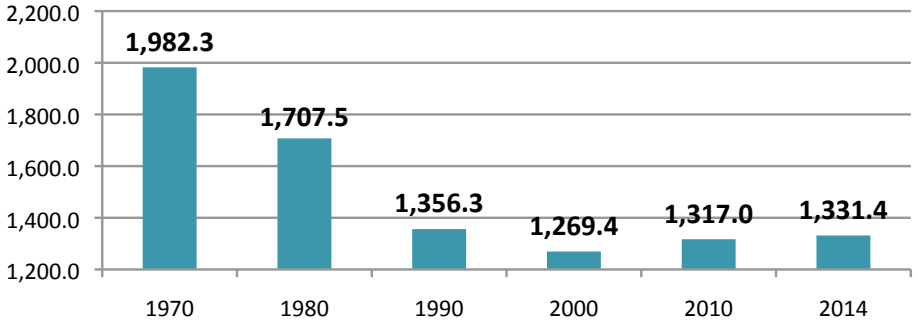
National-level studies of the region's carbon footprint demonstrate that the Little Rock-North Little Rock-Conway MSA ranks among the highest in the country for carbon emissions per capita. The region's high carbon footprint has at least two negative impacts: (1) if in the future carbon regulations occur, the region will have to pay a greater economic penalty than average for remediation; and (2) the region's high carbon output suggests other inefficiencies that have costs in terms of energy waste and air pollution.

Transportation-related emissions are primarily attributed to the operation of motor vehicles, which are at their worst during periods of idling or in stop-and-go conditions. Additionally, ground-level ozone is a significant health concern for the region, Ground level ozone is formed from the combination of volatile organic compounds (VOCs) and nitrogen oxide (NO_x), a by-product of fossil fuel combustion. Learn more about air quality in Chapter 5.6.2.

Water Resources

Central Arkansas Water (CAW) serves as the utility company for approximately 400,000 residents in the metropolitan area. The water sources for CAW are Lake Winona, located in Saline County, that supplies 35 percent of daily system-wide demand and Lake Maumelle, located in west Pulaski County that provides about 65 percent of daily system-wide demand. American households typically use 107,000 gallons of water each year. Conserving water not only protects our water sources, but also saves money.

Table 4-12. CARTS Area Incorporated Population per Square Mile 1970-2014



Note: figures are provisional because 2010 data represent GIS-based land area data for reasons of compatibility with 2014 land area data. Figures for 1970, 1980, 1990 and 2000 remain Census-based.

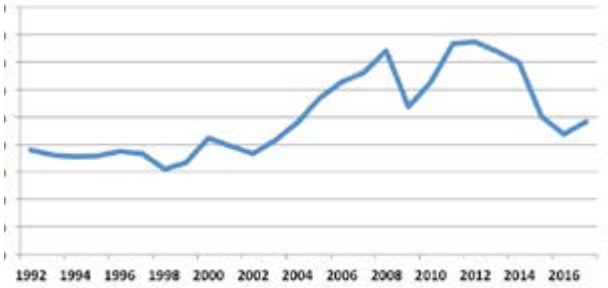
Energy Consumption

According to the U.S. Department of Energy, Arkansans spent $3,655.33 on energy per person in 2009, a difference of $194.61 from the national state average, ranking Arkansas 24th on energy expenditure per capita. In terms of total energy usage of the same year, Arkansans consumed 365 million BTUs* per person compared to an average of 208 million in the US, ranking Arkansas 17th in states with the highest energy consumption. This means that Arkansans use and pay for more energy than the average American.

Also, the transportation sector is the single largest consumer of energy, accounting for over one-third of all energy consumed in central Arkansas. We are burning more fuel, and generating more traffic per capita than the national average. This makes the region vulnerable to fuel price hikes, and contributes to regional air pollution. Fossil fuels, including coal and electricity derived from coal, oil, and gas, are the primary sources of energy for the region. Fossil fuels are a finite resource. Just as important, fossil fuels are closely associated with environmental damage, particularly air pollution.

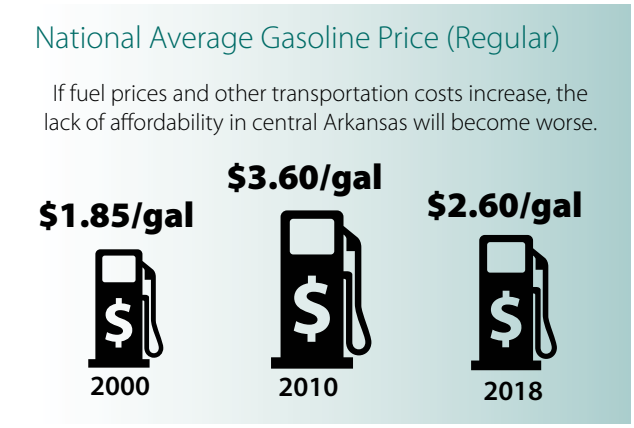
Table 4-14 shows the trend in U.S. energy use per dollar of GDP for the years 1980-2017, with a Metroplan forecast to 2050. As the chart shows, by 2017 it took barely more than half as much energy to generate a dollar of economic activity as it had 30 years earlier. The improvement reflects more energy-efficient vehicles and appliances, the use of information technologies for more efficient allocation of resources, and other improvements. While specific figures do not exist for central Arkansas, there can be little doubt the local trend has been similar.

Figure 4-23. U.S. Gasoline Price 1992-2017
(Inflation-Adjusted, 2017 dollars)



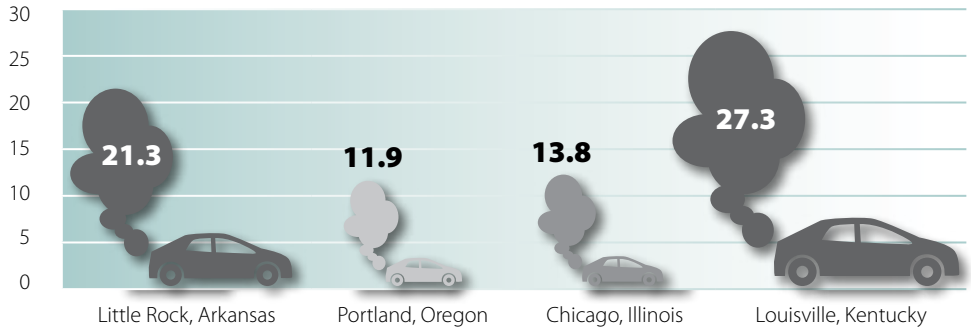
Source: U.S. Energy Information Administration, inflation adjustment by Metroplan.

Figure 4-24. Average Price for Gasoline



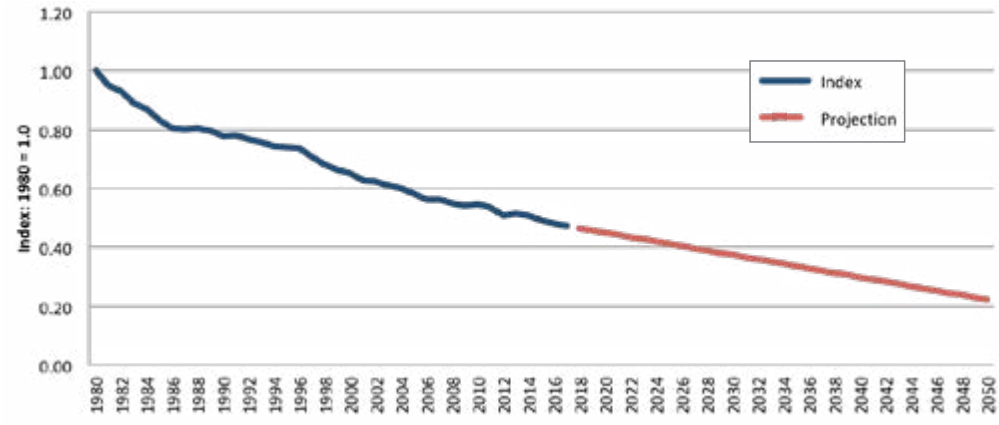
Source: U.S. Energy Information Administration, adjusted for inflation

Table 4-13. CO_2 Emissions Per Capita (tons)



Sources:
www.portlandoregon.gov/bps/article/268612; http://www.cnt.org/repository/Chicago-Climate-Analysis-Final.pdf;
http://www.louisvilleky.gov/NR/rdonlyres/9C5722BB-62FD-481B-A8D0-5FD5F29A4640/0/Louisville_Metro_GHG_Inventory_Report_v420081120.pdf

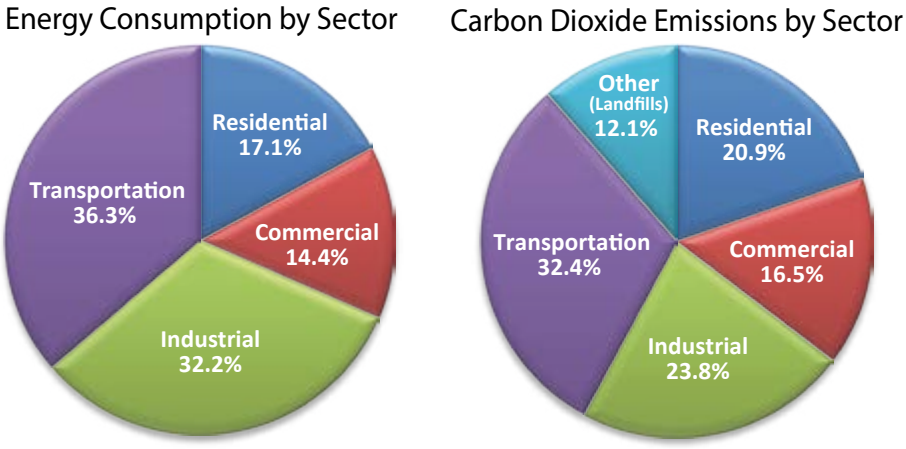
Table 4-14. U.S. Energy Use per Dollar of GDP 1980–2017 Projected to 2050



Arkansas Ranked 9th in 2016 for energy consumption per dollar of GDP. The U.S. average was 5.8, so we are nearly double the average. Top rank was Louisiana, then Wyoming. The most efficient were New York and Washington D.C.

Source: U.S. Energy Information Administration 2017. Projection by Metroplan based on linear trend 2000-2017.

Figure 4-25. CO_2 Consumption and Emissions Per Sector



Transportation is the single largest source of man-made carbon dioxide emissions in central Arkansas. Carbon dioxide is a direct source of ground-level ozone, which carries significant health risks, and is linked to environmental issues.

Source: Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories (version 1.1) and ICLEI Community-wide Greenhouse Gas Inventory Instructions: CACP 2009 Data Entry & Quality Control.

Top Ten Trends

In the spring of 2013, the Regional Advisory Planning Council (RPAC) and the general public were challenged to consider how external **trends** will **influence** central Arkansas over the coming decades and determine how these trends will impact *Central Arkansas 2050.* The following list is the top 10 trends that these groups identified as having the greatest **impact** on central Arkansas:

1. New and expanded **alternative fuel** sources and vehicles will positively impact the environment but negatively impact transportation funding revenue.

2. Demographic and market shifts will create demand for more accessible and **smaller-lot housing** in walkable neighborhoods in close proximity to groceries, parks and schools.

3. More **active lifestyles** and greater transportation choices will be desired.

4. Improved **technology**, such as real-time arrival **information** via mobile device, will make public transit easier to use.

5. National transportation policy will have a major influence on transportation **funding**, generating the need for new sources of revenue.

6. Growing **diversity** in our population will impact our choices in living environment, housing and community interaction.

7. Aging and **millennial populations** will desire more opportunities for walking and bicycling.

8. Integration of **technology** into **vehicles** (i.e. dashboard screens, collision avoidance systems) will improve the efficiency and **safety** of our transportation system and minimize **congestion**.

9. The public perception of **sustainability** and the environment will impact future practices (i.e. recycling, driving habits).

10. **Population growth** will generate resource conflicts and the risk of ecosystem collapse, which will lead to changes in available **resources**, and as a result, quality of life.

"Vision animates, inspires, transforms purpose into action."
– Warren Bennis

CHAPTER 5. *CENTRAL ARKANSAS 2050*— SUSTAINING OUR FUTURE

Central Arkansas 2050 is a broad, regional vision "imagined" by central Arkansans. The vision seeks to retain the livability — quality of life — that we have come to treasure about our region, while moving the region toward true sustainability. The Vision includes strategies to provide more housing options, real transportation choices, and access to healthier foods and services to a larger segment of our population; coupled with better stewardship of our environment and energy systems all supported by a foundation of a robust economy and globally-competitive educational system.

Chapter 5 introduces the Vision, Goals, and Objectives of *Central Arkansas2050*; the concepts of livability and sustainability; tools for measuring the plan's progress; and an in-depth look at quality of life for our region.

5.1 Setting the Agenda for Change: Vision, Goals, and Objectives

The plan's vision for central Arkansas is compelling, but not new. The responses gathered during *Imagine Central Arkansas'* two-year planning effort strongly reaffirmed aspirations that have been articulated since 1995, when METRO 2020 was adopted. *Central Arkansas 2050* continues along that path.

For *Central Arkansas 2050* to be effective, there must be a policy framework to guide decision-making and setting of priorities. These policies are most often carried out by member governments and agencies, through jurisdictional land use and master street plans, zoning and subdivision regulations, and transportation project development, and implementation.

The vision statement and supporting goals and objectives are intended to guide the implementation and development of the region's vision, including the technical analysis and evaluation of specific projects.

5.1.1 Sustainable Vision

Central Arkansas 2050 is a community-driven guide to creating a sustainable, healthy and prosperous region that celebrates diversity, regional cooperation, educational excellence, economic vibrancy, and quality choices in housing and transportation. Imagine…

5.2 Livability and Sustainable Communities

Livability and sustainability are often used interchangeably, yet the two terms are not synonymous. There is no universally accepted definition of livability or sustainability, nor is there general agreement as to how each can be achieved. With that in mind, central Arkansans, under the guidance of HUD's six livability principles, crafted their own versions of these concepts. Through a variety of online survey tools and in-person venues, participants consistently drew a picture of a region with places to connect and play, and a quality of life that contributes to and helps ensure a stable economy and affordable lifestyle. *Central Arkansas 2050*'s definitions of livability

What Do Central Arkansans Value?

- Natural and civic spaces.
- Places to connect and play.
- Choice in transportation (including transit, walking, bicycling).
- Safe, family-friendly.
- Economy and affordability.
- Quality of life.

Based on responses collected through the website, social media and face-to-face outreach. See Appendix B for more information.

and sustainability are derived from criteria presented in the Vision, Goals, and Objectives.

Livability

The concept of "livability" is understood intuitively. Across a wide spectrum of residents, definitions of livability all hark to common themes: accessible housing and transportation, environmental stewardship, economic resilience, educational excellence, and the value of community interaction. Essentially, livability for central Arkansans is quality of life.

Sustainability

Sustainable living means meeting current needs without compromising the ability of future generations to meet their own. When these needs are met, the region can maintain the qualities that make it unique without jeopardizing its future. Sustainability is a system that is affordable, efficient, and one that creates opportunity for central Arkansas residents and businesses.

Identifying the Public's Direction

The public realized that how we build our communities directly affects livability and sustainability. The vision that emerged focuses on compact, mixed-use growth, both in scale and function, but shaped by a regional transportation network. Features include defined activity nodes along transportation corridors throughout the region, complemented by a mix of compact, walkable neighborhoods, as well as traditional suburban and rural areas. The characteristics of central Arkansans' ideal built environment will be presented in this chapter, as well as in more detail in Chapter 6.2.

A History of Sustainability

The idea of sustainability has long been a feature of ecology and biological diversity. The concept of sustainable living emerged from the world's first Earth Summit in Rio De Janeiro in 1992. The concept resonated with people and has since been on the minds of scientists, planners, and communities.

5.3 Maximizing Regional Livability and Sustainability

The Vision, Goals, and Objectives outline aspirations for a more livable and sustainable region. Goals, and corresponding discussion, are numbered one through six. However, this order is not meant to diminish the importance of any single goal, but rather reflect plan components that Metroplan can more directly impact through its charge as an MPO. These goals are inter-woven throughout the plan to form a complete fabric of a sustainable region.

Themes are categorized as Transportation and Mobility; Housing and Development; Environment, Energy, and Natural Resources; Health and Safety; and the Economy. The interconnectedness of these facets is crucial to help the region grow in a fashion that optimizes success and ensures livability for generations to come. Each of the five themes mentioned above contains a "Making Connections" section that displays how the themes relate to one another, as well as how they improve the region's chances for sustainability by offering affordability, efficiency, and opportunity.

Figure 5-1. Goals

GOAL 1: QUALITY CORRIDORS & TRANSPORTATION CHOICE

Build and enhance a regional network of quality transportation corridors with high design standards for efficiency in moving traffic, with provision for pedestrian, bicycle and transit options, and consideration of freight needs. Create a metropolitan system that allows all citizens of central Arkansas reasonable access to services and jobs without regard to age, income or disability by providing many transportation choices

1.1	**High Design Standards.** Incentivize local governments to make routes on the regional arterial system attractive public spaces for pedestrians, cyclists, and drivers alike by providing lighting, street furniture and plantings, where possible.
1.1.1	Incentivize local governments to require high design standards for land development—new and redevelopment/infill—on these routes.
1.2	**Urban Character / Rural Character.** Design transportation facilities to reflect and reinforce the character of the areas through which they pass. In urban areas, encourage local governments to plan for compact, mixed-use development that is pedestrian-friendly and transit-friendly. In rural areas, encourage local governments to maintain the rural character of the countryside with appropriate design of the facility and control of adjacent land development.
1.3	**Access Management on Key Corridors.** Managed access to and from adjacent property in key corridors (1) improves vehicular and pedestrian safety, and (2) safeguards investment in those facilities by protecting traffic capacity.
1.4	**Traffic Management Techniques.** Maximize the use of existing roadways and minimize the need for new roadways through measures such as ridesharing, transit service, computerized and coordinated traffic signals and traffic operations.
1.5	**Public Transit System.** Provide adequate and stable funding to operate existing public transit systems in the near term.
1.6	**Pedestrian Facilities.** Provide improved pedestrian connectivity by providing sidewalks to every development that offers goods, services, or jobs, and providing safe pedestrian crossings of busy roadways at appropriate locations.
1.7	**Bikeway Facilities.** Develop a regional bikeway system that will provide safe routes of travel between home, work and services as an alternative means of transportation.

Note (1.5): For transit to be considered a primary transportation option by the public, it will have to be supported with compatible land development policies (compact, mixed-use corridors, and nodes) and adequate funding. Passenger intermodal hubs at the Bill and Hillary Clinton National Airport and among bus, rail and auto are important components of a strong public transit system as rail is deployed.

Note (1.6): This objective should be considered in local master street plans, adopted regional roadway cross-sections, and the Arkansas Bicycle and Pedestrian Transportation Plan's Bike-Ped Accomodations Policy. Pedestrian facilities should meet or exceed ADA design standards.

Note (1.7): This objective should be considered in local master street plans, adopted regional roadway cross-sections and Bike-Ped Policy.

Adopted December, 2014

1.8 **Mixed Use/Compact Clusters.** Incentivize local governments to provide zoning for clusters of mixed use (jobs, services, and residences in close proximity) and compact development along major transportation arteries in their land use and zoning plans.

Note (1.8): Mixed use development reduces the need for private autos and facilitates walking and bicycling.

1.8.1 Encourage local governments to adopt parking codes that are conducive to transit-friendly, walkable communities, and that promote mixed-use, compact development.

Note (1.8.1): inflexible minimum parking requirements present a barrier to better infill and redevelopment, as well to new projects. Empty parking lots create a "dead zone" in the middle of what ought to be bustling commercial districts or neighborhoods. Flexible parking policies can encourage growth, save money, improve the environments, and meet broader community goals.

GOAL 2: LAND DEVELOPMENT AND HOUSING

Protect and enhance the efficiency of the metropolitan transportation system by linking land development and the provision of transportation facilities. Proper land development is essential for creating conditions that foster sustainable housing and neighborhoods. Housing for central Arkansas should be safe, affordable, energy-efficient, geographically available and accessible.

2.1 **Land Use Plans, Master Street Plans, and Capital Improvement Plans.** Incentivize local governments to link their land use plans to their master street plans and capital improvement plans, so that changes in the land use plan will be reflected in capacity improvements to the transportation system.

2.2 **Access Management on Key Corridors.** Develop access management plans for the regional arterial network, and educate local public works and planning officials to make them sensitive to the issue on other facilities.

Note (2.2): Managed access to and from adjacent property in key corridors (1) improves vehicular and pedestrian safety, and (2) safeguards investment in those facilities by protecting traffic capacity.

2.3 **Design for All Modes.** Incentivize local governments and private developers to consider all modes of access (pedestrian, transit, and bicycle) in the development process.

2.3.1 Incorporate ADA-standard pedestrian facilities into all urban roadway designs, except freeways.

2.3.2 Adopt complete street policies ensuring that all modes are considered as part of design.

2.3.3 Encourage compact, mixed-use development.

2.3.4 Develop alternative housing types, such as micro-houses and adaptive re-use of under-utilized structures, to meet a variety of economic, physical, and social needs.

Note (2.3.2): Complete Streets are designed and operated to enable safe use and support mobility for all users. The design of pedestrian facilities and property development together should make walking both safe and inviting. Planner and developers should consider elements such as the distance of building fronts to the sidewalk, the closeness of adjoining buildings, the percent glazing on building fronts, the width of the sidewalk, and the separation of sidewalks from the roadway with greenways, plantings and/or on-street parking. Connections to the pedestrian network should even be incorporated into cul-de-sacs or dead end streets.

2.4 **Regional Development Pattern.** Incentivize local governments in the metropolitan area to adopt land development plans that encourage compact, mixed-use development patterns that are efficient in the use of infrastructure and public facilities and that complement the regional transportation framework.

Note (2.4): Compact residential developments should provide a mixture of housing prices affordable to a wide range of incomes. Low density sprawl increases the cost of providing needed public infrastructure (including transportation systems), reduces open spaces, generates congestion, threatens ecologically sensitive areas, intrudes on rural and small town communities and, over time, lowers the region's quality of life.

2.4.1 Stabilize existing neighborhoods by facilitating the routine maintenance and renovation of existing structures and infill construction of new compatible housing units, in a manner that is most conducive to investment and revitalization efforts.

2.4.2 Develop alternative housing types, such as micro-houses and adaptive re-use of under-utilized structures, to meet a variety of economic, physical and social needs.

2.4.3 Adopt energy-efficient housing standards for both the renovation of existing structures and construction of new housing units.

2.4.4 Promote universal design to ensure accessibility for all.

2.4.5 Identify and provide incentives for infill development and innovative solutions for adaptive re-use of under-utilized structures for housing.

Note (2.4.4): Universal design meets or exceeds ADA standards.

2.4.6 Remove impediments in existing codes and administrative procedures to facilitate renovations of existing buildings.

2.4.7 Reduce vacant and abandoned structures through stricter code enforcement/compliance, purchase and/or rehabilitation and when necessary, demolition of derelict and dangerous structures.

2.5 **Neighborhood Infrastructure.** Build, repair, and maintain existing neighborhood infrastructure, which includes but is not limited to: housing, schools, drainage facilities, transportation network, lighting, parks and open space.

Note (2.5): Keeping infrastructure in good repair can create community pride and improve the safety of the neighborhood.

2.5.1 Build and maintain sidewalks that facilitate walkability and connectivity within the community.

2.5.2 Reduce vacant and abandoned housing in neighborhoods through code compliance, purchase, rehabilitation, and when necessary, demolition of derelict and dangerous structures.

2.5.3 Supply transit that provides efficient, frequent, reliable bus service and access, with comfortable, sheltered transit stops.

2.5.4 Develop neighborhood parks, community centers, and recreational open spaces.

2.5.5 Increase community value through renovation and investment in historic properties.

2.6 **Housing Choice and Availability.** Increase the variety and geographic availability of housing types for homebuyers and renters alike.

Note (2.6.2): This is not simply referring to the provision of subsidized housing, but the actual local and regional issues that may influence the price of housing and/or household incomes.

2.6.1 Develop and expand existing programs that provide residential education workshops.

2.6.2 Identify and help communicate local and regional barriers to affordable housing.

2.6.3 Create policies, education, training, and legislation that support and encourage appropriate landlord accountability and improves renters' rights.

Note (2.6.3): According to a report issued by the Non-legislative Commission on the Study of Landlord-Tenant Laws, Arkansas ranks at or near the bottom in landlord accountability and tenant rights.

2.6.4 Develop alternative housing types, such as micro-houses and adaptive re-use of under-utilized structures, to meet a variety of economic, physical, and social needs.

2.6.5 Enforce Fair Housing Laws

2.7 **Combine Household and Transportation Cost.** Reduce the percentage of central Arkansas households that spend more than 45 percent of their income on combined housing and transportation costs.

Note (2.7.1): This recognizes that the full cost of home ownership includes heating and cooling costs, maintenance, and transportation costs in addition to principal, interest, taxes, and insurance (PITI)—which is all that is considered now.

2.7.1 Adopt accessible, energy-efficient housing standards for both new and renovated construction.

2.7.2 Encourage compact, mixed-use development.

2.7.3 Improve transit via (1) efficient, frequent, reliable bus service to employment centers; (2) accessible, comfortable and sheltered transit stops; and (3) expanding transit service coverage area and increasing frequency of service.

Potential resources to implement Goal 2 and its Objectives:

- Jump Start neighborhood project results
- Fair Housing Equity Assessment (FHEA) report

GOAL 3: ENVIRONMENTAL QUALITY AND SUSTAINABLE ENERGY

Protect and enhance the quality of the natural and built environments within central Arkansas.

3.1 Air Quality

Maintain good air quality as measured by attainment with the Clean Air Act pollution standards and greenhouse gas emissions.

Note (3.1): The transportation sector can minimize air pollution by managing roadways for greater efficiency and by reducing the need to make automobile trips through mixed-use land development and use of alternative modes of transportation. It is also important to support the overall vehicle fleet fuel efficiency and converting large public and private fleets to alternative fuels.

3.1.1 Promote the Ozone Action Days program to help reduce harmful vehicle emissions and the number of ozone alert days.

3.1.2 Promote alternative modes of transportation, such as walking, biking, ride-sharing, and transit.

3.1.4 Improve fuel efficiency of vehicle fleets and increase the use of cleaner energy sources.

Provide infrastructure to support alternative fuel vehicle fleets.

3.1.5 Promote anti-idling policies for municipal and commercial fleets.

3.2 Water Quality

Maintain good water quality in the region's rivers, streams, and groundwater.

3.2.1 Reduce non-point source urban runoff by minimizing the amount of impervious surfaces (i.e. roads and surface parking lots).

3.2.2 Protect water sources and watersheds.

Strategies include:

- Build on the work already produced in the Regional Green Guide by developing a regional green infrastructure plan that identifies areas to protect as natural, in order to preserve watersheds, protect drinking water sources, and guide land development. Align local development plans with the regional green infrastructure plan.
- Use innovative and best practices strategies for water conservation in buildings, with public facilities leading the way.
- Use best practices to design and manage unpaved roads to reduce the amount of sediment entering waterbodies from storm runoff.

3.2.3 Protect water sources by educating people on the importance of water as a valuable resource.

3.3 Sensitive Lands

Reduce development impacts on sensitive environmental areas (wetlands, aquifer recharge areas and surface stream buffers) that can be attributed to transportation facilities through better transportation facility siting and design.

Note (3.3): Local governments should adopt land use regulations that are responsive to this issue.

3.4 Reduce fossil fuel consumption and carbon emissions

3.4.1 Incentivize local governments to adopt policies that allow mixed use/compact clusters to meet a portion of housing and commercial demand. Promote development forms that reduce driving distances, increase use of alternative modes of transportation, and that will create more walkable areas that will have positive impacts on air quality and provide increased opportunities for preserving open space, critical habitats, and other natural resources.

3.4.2 Substitute communication technology for transportation (for example, telecommuting and e-commerce) that will reduce the number of trips at congested peak hours.

Strategies include:

- Improve fuel efficiency of governmental vehicle fleets and cleaner energy sources.
- Promote anti-idling policies for municipal and commercial fleets.

3.4.3 Provide modal options—walking, biking, and high-occupancy vehicles such as buses and streetcars—that reduce emissions per trip and will improve transportation system efficiency by reducing roadway congestion.

3.5 Energy Efficiency

Increase energy efficiency in residential and commercial structures.

3.5.1 Conduct comprehensive energy evaluations of existing buildings (private, commercial, and government) and recommend modifications.

3.5.2 Develop and adopt energy and resource efficient building standards for all existing municipal facilities.

3.5.3 Contribute to the coordination of regional and local energy efforts with state and federal energy plans to maximize funding and efficiency.

3.5.4 Update codes to incorporate the latest provisions for energy efficient and healthy buildings.

3.5.5 Increase energy efficiency in affordable housing by working with housing authorities.

3.5.6 Assist small businesses, community organizations, and public agencies in gaining access to energy efficiency services.

3.5.7 Energy rate new homes and include energy efficiency ratings on all new homes being sold in the MLS system.

3.5.8 Assist with programs that increase the availability of home energy audits.

3.6 Renewable Energy

Increase the use of renewable energy in central Arkansas.

3.6.1 Assist in identifying local renewable energy sources. (Examples may include, but are not limited to: methane, hydro, solar, and biofuel.)

3.6.2 Evaluate potential energy savings through more efficient use of transportation technology and alternative fuels.

3.6.3 Identify barriers in municipal codes for small scale renewable energy installation and deployment.

3.6.4 Increase use of renewable energy for a percentage of total regional energy productions by exploring the development of a regional renewable profile standard.

3.6.5 Increase residential access to distributed energy.

Note (3.6.5): Defined by the Department of Energy as pooling resources to purchase and share renewable energy for multiple residences.

Strategies include:

- Participate in Virtual Net Metering (VNM).

Potential resources to implement Goal 3 and its Objectives:

ADEQ, Recycling Branch; regional solid waste management districts:

- Faulkner county Regional Solid Waste Management District (for Faulkner County)
- Central Arkansas Regional Solid Waste Management District (for Lonoke, Monroe, and Prairie Counties)
- Regional Recycling and Waste Reduction District (for Pulaski County)
- Saline County Solid Waste Management District (for Saline County)
  https://www.adeq.state.ar.us/sw/programs/rswmd.aspx

GOAL 4: HEALTHY AND SAFE COMMUNITIES

Create and support the conditions that will enable central Arkansas to become known as the healthiest and safest community in America.

4.1 **Neighborhood Safety.** Healthy communities are ones where people do not have to be concerned about their personal safety. For our region to be labeled as "healthy" the crime rate for each central Arkansas community must not only rank below the national average, but where the number of murders is zero.

4.1.1. Institute a "Fix the Broken Window" policy. This means taking quick, deliberate action to stem acts of vandalism, graffiti, and neglect that lead to greater problems if not addressed.

4.1.2 Enforce existing misdemeanor laws, including truancy.

4.1.3 People who are able to provide economically for themselves and their families are less prone to resort to crime. Central Arkansas must commit to a coordinated effort to reduce crime.

Strategies include:

- Coordinate current workforce development resources that target the chronically unemployed or under-employed.
- Educate the future workforce in skills and thinking needed to stay relevant and competitive during periods of rapid change.
- Retrain and align education programs for jobs that are currently unfilled.
- Identify high demand jobs and skills trends for the future and begin training for future workforce needs now.

4.1.4 Create neighborhood watch programs.

4.2 **Active Transportation.** Increase central Arkansans' universal access to active transportation.

4.2.1 Provide ADA-standard sidewalks between residential areas and developments that provide goods, services, and jobs and provide safe pedestrian crossings of busy roadways at appropriate locations.

4.2.2 Develop the regional bike system that provides safe routes of travel between home, work, and services as an alternative means of transportation.

4.2.3 Develop a more robust, expanded transit system that can serve as a primary transportation mode for the general public.

4.3 **Multi-modal Transportation Network.** Increase transit-oriented development, mixed-use development and intermodal connectivity.

4.3.1 Provide clusters of mixed-use (jobs, services, and residences in close proximity) and high-density development along major transportation arteries in land use and zoning plans.

4.3.2 Reinforce region-wide complete streets policies with increased safety for all modes.

Strategies include:

- Adopt a standard design of streets that promote safety for all travel modes and encourage economic development.
- Incorporate complete streets policies into existing infrastructure by applying standards to resurfacing projects.

4.4	**Safety, Efficiency and Convenience.** Improve the safety, efficiency and convenience of active transportation modes.
4.4.1	Make routes on the regional arterial system attractive public spaces for pedestrians, cyclists, and drivers by providing amenities such as street furniture and landscaping.
4.4.2	Increase the safety of sidewalks and bike paths by providing appropriately scaled lighting and signage to all neighborhood facilities.
4.4.3	Design and operate the metropolitan transportation system to reduce the likelihood of accidents and correct dangerous situations for all modes of transportation.
4.4.4	Increase public awareness for safe travel and sharing the road for all modes of travel.
4.5	**Access to Healthy Foods.** Expand central Arkansans' access to healthy foods.
4.5.1	Increase accessibility to affordable fresh fruits, vegetables, and other foods that make up the full range of a healthy diet to all central Arkansas residents.
4.5.2	Collaborate with educational programs and activities that promote healthy living.
4.5.3	Identify and help reduce policy barriers to local farmers markets, mobile markets, and local food production.
4.6	**Environmental regulations.** Protect and enhance public health through environmental regulations.
4.6.1	Minimize pollutants entering the air, soil, and water.
4.6.2	Minimize risks that environmental problems pose to human and ecological health.
4.6.3	Expand the multi-modal transportation system to minimize pollution and motor vehicle congestion, and ensure safe mobility and access for all without compromising our ability to protect public health and safety.

Potential resources to implement Goal 4 and its Objectives:

- State Health Department (website: www.healthyarkanss.com)
- Arkansas Coalition for Obesity Prevention (ArCOP)
- Arkansas Coalition of Housing and Neighborhood Growth for Empowerment (ACHANGE)
- Clinton Health Matters Initiative

GOAL 5. ECONOMIC GROWTH AND VITALITY

Maintain and grow the central Arkansas economy as a diverse, globally competitive market through responsible development practices to attract people and businesses that contribute to economic growth and vitality.

5.1 Provide a world class education to the residents of central Arkansas, and increase the proportion of skilled workers in central Arkansas. Recognize that education is the key to be globally competitive and to create jobs and human capital needed to meet the ever-changing requirements of the global market place in the 21st Century.

Strategies include:

Note (5.1): The economy of central Arkansas cannot compete or prosper while absorbing the loss of human capital. This begins by finding ways to reduce "chronic absenteeism" among students.

- Reduce the high school dropout rate to zero.
- Raise the percentage of college educated within central Arkansas beyond the current 26.7 percent of persons 25 years or older, to above the national average.
- Retrain and coordinate education programs for jobs that are currently unfilled.
- Educate the future workforce in skills and thinking needed to stay relevant and competitive during periods of rapid change.
- Effectively utilize and coordinate workforce development resources.
- Connect all schools, universities, and research labs via advanced communications network.
- Educate people for current technologies, and prepare them for future technological innovations.

5.2 **Build and operate a multi-modal metropolitan transportation system that supports the economic growth of central Arkansas through the safe and efficient movement of people and goods.**

5.2.1 Freight. Build a multi-modal transportation system that provides for critical intermodal freight connections in order to improve competition and service and to lower transportation costs to businesses and consumers in the metropolitan area.

Note (5.2.1): A strategic objective for the Little Rock-North Little Rock-Conway metropolitan area is to reduce freight drayage between Little Rock and Memphis on I-40, thereby reducing damage to the highway and the environment and improving highway safety. This could be accomplished by bringing a freight hub to the central Arkansas region or by providing modal options for freight travel between the two regions (new railroad).

Strategies include:

- Fully develop **intermodal hubs** in the region to support economic growth. Develop the Port of Little Rock/Clinton National Airport complex as the primary intermodal freight hub in the region. Provide container traffic to and from the Little Rock Port via effective rail access to several trans-continental rail carriers (multiple class 1 railroads). Improve connectors to other intermodal freight facilities in the region from the National Highway System.
- Market ***river*** transportation by emphasizing the Port of Little Rock's connection to all the ports of the world via the inland river system connections to the Port of New Orleans and other Gulf ports. Complete a twelve foot channel along the Arkansas River connecting the MSA with the Mississippi River.
- Improve ground access to airport facilities consistent with airports' master plans.
- Improve interstate **truck** movement by widening the interstate highways in the metropolitan area to six main travel lanes, removing freight bottlenecks, and providing driver information on urban congestion to allow truckers to take alternative routes. Increase accessibility to commercial and industrial areas for freight movement.
- Separate highway and rail at all high-use crossings in the metro area in order to improve rail efficiency and highway safety. Complete remaining top priority grade-separated crossings by 2020. Construct a high speed rail connecting Little Rock with Dallas, Memphis, and St. Louis.

5.3 **Quality of life**. Contribute to a high quality of life and place in the metropolitan area by minimizing congestion, providing modal choice, encouraging high quality design in transportation facilities, and by providing an adequate and well-maintained public infrastructure at a reasonable cost.

5.3.1 Maintain quality infrastructure that can support regional growth for all citizens.

Strategies include:

- Create higher density developments
- Analyze the long-term cost of maintaining infrastructure when making development decisions.
- Create more walkable communities.
- Invest in technology infrastructure that provides universal access to high speed internet.

Note (5.3.1): higher density developments decrease transportation cost and public sector expenditures on infrastructure maintenance and increase supporting tax revenue per acre.

Note (5.3.1): As shown in property valuation studies, high "walk scores" for cities and neighborhoods are strongly correlated with greater desirability and higher property values. http://blog.walkscore.com/wp-content/uploads/2009/08/Walking TheWalk_CEOsfor Cities.pdf

5.3.2 Creative Spaces. Create places where people want to live, work, and play.

Strategies include:

- Create and rehabilitate active, walkable town and neighborhood centers.
- Contribute to a high quality of life in the metropolitan area by minimizing congestion, providing modal choice, encouraging high quality design in transportation facilities, and providing an adequate and well-maintained public infrastructure, at a reasonable cost.
- Promote recreational use of rivers and water features.

Note (5.3.2): High quality jobs are mobile. Employers increasingly locate where people want to live. Foster places and local amenities that will be attractive to knowledge-based workers. Vibrant public spaces, entertainment, nightlife, arts and culture all contribute to a unique sense of place that attracts people.

5.4 **Increase Regional Community and Economic Development**

Strategies include:

- Collaborate on regional projects.
- Create a community-based resource directory for central Arkansas.
- Support the technology sector and other sectors that have been identified by the state and economic development organizations as targeted industries for central Arkansas.
- Participate in development of an internal and external marketing plan based on regional assets.
- Build the capacity of local leaders to work regionally and develop their local economies through training, sharing of best practices, and regular roundtable discussions of regional issues related to community and economic development.
- Support economic development activities that address business retention and expansion, entrepreneurship and small business support.
- Enhance technological infrastructure, specifically communications technology, to encourage business recruitment.
- Prepare for future technological innovation by having the infrastructure necessary to support advancements.

Potential resources to implement Goal 5 and its Objectives:

- University of Central Arkansas, Center for Community & Economic Development www.uca.edu/cdi
- UALR Small Business Resource Center
- Local Chambers of Commerce and Economic Development Commissions
- Little Rock Metro Alliance

GOAL 6: FUNDING ADEQUACY

Identify and provide funding sources adequate to build, maintain, and operate metropolitan infrastructure systems, including: both soft and hard infrastructure systems—transportation, utilities, schools, universities, and housing—with the safety and protection services necessary to make them usable.

6.1 Maintain and preserve the existing capital assets of the metropolitan infrastructure systems as a high priority for funding. This should include a systematic inventory of the condition on all infrastructure systems, particularly the transportation network.

6.2 Secure sources of new funding that can be used to complete the metropolitan infrastructure systems as needed to support economic growth.

Infrastructure
The word immediately brings to mind the "hard" infrastructure that is part of our daily life, such as roads and bridges, and municipal water and sewer. But infrastructure also includes parks and trails, libraries, schools, museums — as well as police, fire, and ambulance services. Infrastructure underpins our built environment and is critical to our quality of life.

6.2.1 Utilize innovative financing methods to accelerate construction and improvements to the federal-aid roadway systems and other metropolitan infrastructure systems.

6.2.2 Identify new sources of local revenue for infrastructure systems, such as a local option fuel tax or public private partnerships (PPPs), and seek authority for them from the General Assembly.

6.2.3 Identify grant-making institutions and grant writers that can partner to seek funding for specific Plan Goals and Objectives.

6.2.4 Develop proposals for dedicated local funding for major transportation projects—roadway and transit—that might be referred to the voters.

6.2.5 Fund the Regional Arterial Network through the development of a Regional Mobility Authority.

6.3 System Efficiency and Preservation. Maximize the capacity of existing facilities on regionally significant routes through use of intelligent transportation system (ITS) technology, access management and land use practices that protect roadway capacity. Improve overall system performance by utilizing public transit and informing the public of its transportation choices. Preserve the public's capital assets by adequately maintaining the transportation system.

Preservation is defined as below in the LRMTP. Transportation asset management in U.S. law (23 U.S.C. § 101 (a)(2)) is a "strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on both engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the life cycle of the assets at minimum practicable cost."

6.3.1 Sustainability. Develop land in a pattern that fully supports urban services and infrastructure within the available tax base and minimize energy consumption, per-mile travel, greenhouse gas emissions, and criteria pollutants.

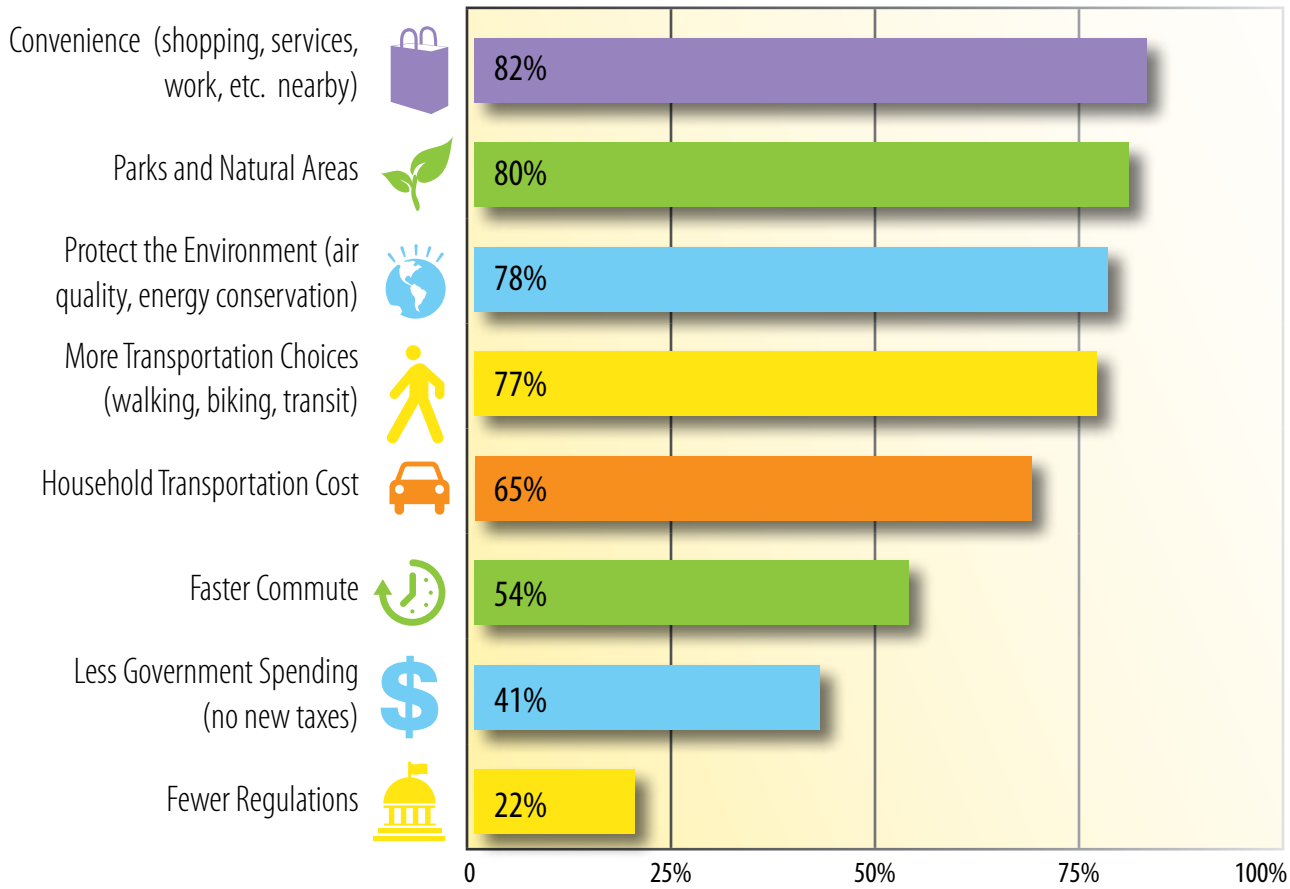
Incentivize? What does this mean?
Offering incentives to local governments may come in a variety of forms depending on the unique needs of the jurisdiction. Providing technical expertise in updating codes or assisting with grant applications is often a welcome incentive.

6.4 System Safety and Reliability and Crash Reduction

6.4.1 Develop infrastructure systems that provide reliability, and a transportation system that minimizes delays.

6.4.2 Design and operate the metropolitan transportation system to reduce the likelihood of crashes and correct dangerous situations where they exist.

Figure 5-2. Public Input for Top Priorities



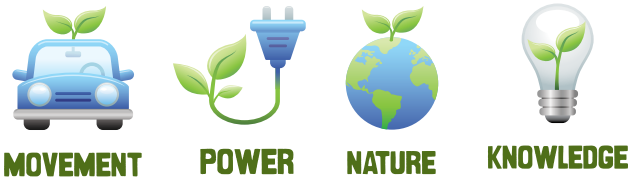
The chart shows the number of times the items were selected as a priority divided by total completions during the public outreach phase of Imagine Central Arkansas.

5.3.1 Building a Vision: the Livability Index and the Green Agenda

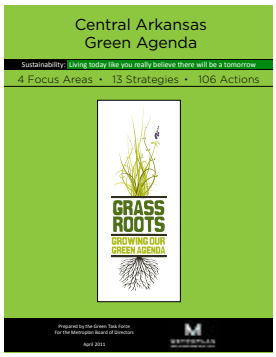
Central Arkansas Livability Index

Once the Vision, Goals, and Objectives were identified, key measures or indicators to gauge the community's progress in attaining this ideal were formulated. These indicators have been organized into three key areas: Opportunity, Enterprise, and Interaction and by regularly monitoring these indicators the community believes that it can actively work toward sustainability.

The selected indicators come from a variety of reputable sources. Indicators were chosen for gauging the community's fitness in key sectors. The sectors include housing, transportation, health and safety, the economy, education, and access to cultural activities among others. The index, when progressively tracked, will show where the community is excelling and will also expose deficiencies. Visit centralarkansaslivability.org for more information.



The Green Agenda



In 2010, Metroplan dove deeper into sustainability by establishing the Green Agenda Task Force and drafting the *Central Arkansas Green Agenda*. Adopted in 2011, the Green Agenda was driven by over 200 ideas and more than 22,000 votes from community members. Four areas of focus: movement, power, nature, and knowledge; 13 strategies and 106 actions guide today's leaders with sustainable principles. Strategies include: improve bicycling options, encourage energy efficiency, plan for thriving communities, and showcase successful sustainability efforts.

Themes from the Green Agenda are woven throughout the *Central Arkansas 2050* plan, and can help guide the region toward 2050 and beyond. While the Green Agenda kick-started sustainability efforts in 2010 and 2011 through research, public input, and community buy-in, *Central Arkansas 2050* transforms these strategies into a comprehensive vision and plan. Visit www.metroplan.org/content/central-arkansas-green-agenda to view the document in its entirety.

Living today like you really believe there will be a tomorrow

5.4 Transportation and Mobility

***Central Arkansas 2050* envisions a metropolitan transportation system that allows citizens of all ages, abilities, and incomes reasonable access to services and jobs by providing transportation choices.**

The region seeks to achieve economic vibrancy and high quality living through the development of an efficient, multi-modal transportation network that serves the needs of all citizens. In *Central Arkansas 2050*, transportation is woven into the fabric of sustainability, and reaffirms transportation's role in improving livability within the region with improvements to freeways, the regional arterial network, transit, and pedestrian and bicycle networks. Residents came together to identify an overall desired blueprint and policy direction for land use and development, transportation systems, and other infrastructure, and other environmental and social equity considerations that form the basis of this Plan.

5.4.1 Planning Mobility for People

Metropolitan regions that plan successfully for the future provide a clear vision of their goals, along with very specific actions to implement them. The mobility element of the regional vision describes the seamless, multimodal, transportation system to be operated by the Arkansas Department of Transportation (ArDOT), Rock Region Metro (RRM) and the cities and counties responsible for developing and constructing transportation infrastructure.

Transportation Vision Statement

The Metropolitan Transportation Plan will contribute to a more livable and efficient environment in central Arkansas. This plan should significantly change how we allow our transportation systems and our communities to develop, by defining an intermodal transportation system that:

- Maximizes the mobility of people and goods;
- Minimizes transportation related fuel consumption and air pollution; and
- Establishes a strong link between transportation infrastructure and land use.

Previous Long-Range Transportation Plans

Every five years Metroplan updates its long-range transportation plan. The Vision was first articulated by the citizens of central Arkansas in METRO 2020 and continues to be refined each update.

Plans over time:

- METRO 2020 July 26, 1995
- METRO 2025 August 30, 2000
- METRO 2030 September 28, 2005
- METRO 2030.2 February 24, 2010 (Transit section: March 24, 2010)
- *Imagine Central Arkansas* September 24, 2014

Central Arkansas has historically focused the largest part of its transportation investments on roadway improvements. The end result is an expensive system in which most central Arkansans are dependent on single-occupancy automobiles. While central Arkansans value roadways and the mobility they provide, the vast majority of central Arkansans engaged through *Imagine Central Arkansas* efforts in 2012 envision a region rich in transportation choices, such as expanding transit, walking, and cycling opportunities. (See Appendix A for a comprehensive description of the public outreach process and results.)

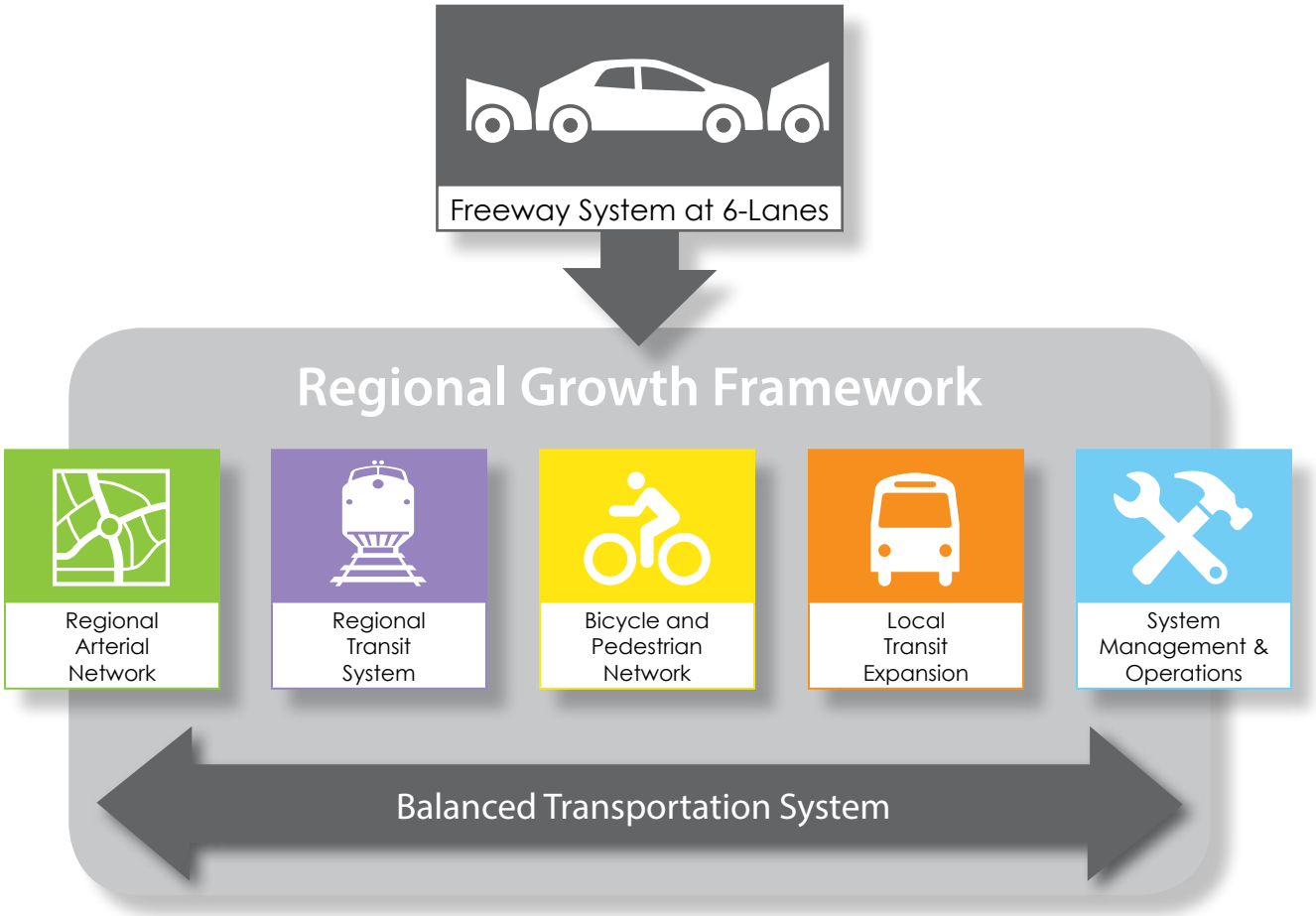
Thinking long term, if the region desires to maintain high levels of mobility for its residents and its economic competitiveness, it must rehabilitate

existing roadway facilities, build 21st century transit facilities, and pedestrian and bike systems all within the context of ongoing maintenance costs. To achieve access to a robust set of affordable transportation choices that will expand regional mobility, leaders and stakeholders must become proactive in developing additional infrastructure for walking, cycling, and transit with responsible land development practices in mind. Long term planning of the region's infrastructure must consider how freight will move, whether primarily by truck or through a balance of modes, including water and rail. As a result, the *Central Arkansas 2050* Transportation and Mobility Vision reflects a balanced approach to the development of our transportation system over the next several decades (Figure 5-3).

5.4.2 Regional Growth Framework: The Transportation and Land Use Connection

The cornerstone of an effective, sustainable transportation network is complementary land use. When land use and transportation are closely coordinated, key destinations (work, school, shopping, and services) are within a short walk, bike, or transit ride, or drive. Residents and visitors have a number of viable alternatives to sitting in traffic, and less energy is consumed. Walkability (i.e the ability to traverse a place with access to living spaces, working places, and services on foot), is crucial to sustainable regional development and must be integrated into the region's transportation infrastructure.

Figure 5-3. A Balanced Approach to Mobility



The Vision for *Central Arkansas 2050* includes a regional growth framework that uses the existing roadway network and proposed regional transit network as fundamental organizing element (Figure 5-4). This framework can be described in terms of a few key components:

Core: Downtown Little Rock and surrounding areas form the region's "core" where transportation corridors converge. In this area, continuation of large-scale infill and redevelopment/intensification is encouraged, surrounded by compact urban neighborhoods with a mix of multi-family and single family housing.

Regional Mixed-Use Centers: Outside the core, major employment and commercial centers are encouraged to be developed or redeveloped at strategic locations along rail lines, including the Medical Center Corridor along I-630, West Little Rock and I-630 and I-430 and in Conway. These would form major station areas and would include a mix of office, retail, and multi-family residential, surrounded by walkable neighborhoods.

Neighborhood Mixed-Use Centers: Secondary station areas would form neighborhood-scale mixed-use centers, including retail/services, small office and multi-family units surrounded by walkable neighborhoods. This includes traditional towns (Mayflower, North Little Rock, Jacksonville, Benton, Bryant) as well as other important destinations (UA Little Rock).

Corridor "wedges": The areas in between regional transit corridors – the "wedges" - would include a mix of walkable neighborhoods and more conventional suburban residential neighborhoods.

Rural development: Some residents of central Arkansas may choose a rural lifestyle. The regional Vision acknowledges this choice through the provision of rural development away from urban/suburban places but near rural arterials.

Industrial/Business Parks: Outside of mixed-use centers, industrial development (manufacturing, distribution, etc.) is encouraged at industrial parks throughout central Arkansas.

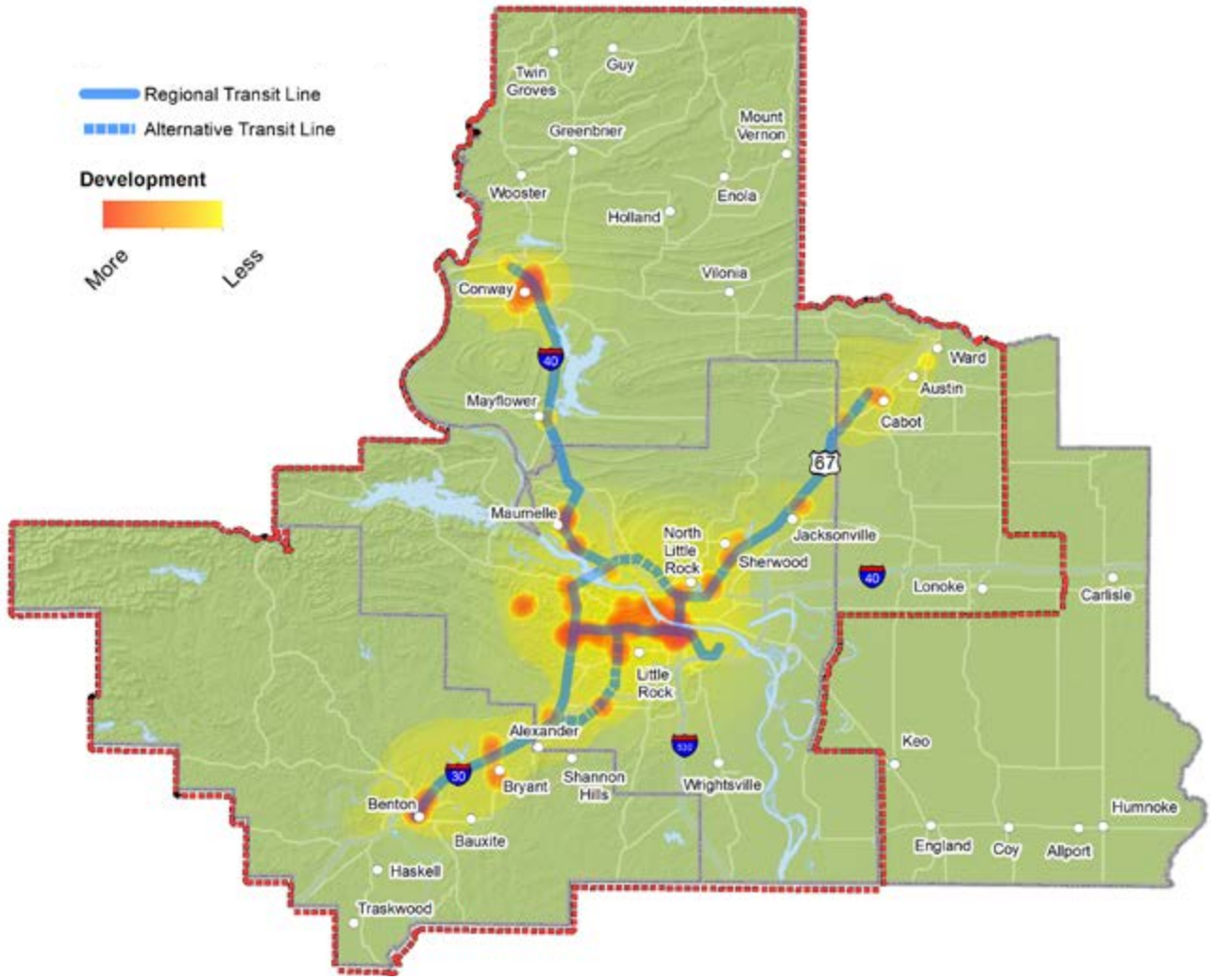
5.4.3 Roadway Network

Freeway Vision

The primary purpose of the regional freeway network is to connect the central Arkansas economy with the state, national and global economies. As such, freight movement and long-distance travel are their primary missions. An important secondary mission is to provide intra-regional connections that enlarge market areas for businesses and consumers and to enlarge the potentially available work-force for central Arkansas businesses. Without a balanced metropolitan transportation system, these two missions can come into conflict with each other.

The investment strategy developed in 1995 was to complete the area's circumferential freeway system, *i.e.* East Belt (440) and Northbelt Freeways, and to widen all freeways in the metro area to six through lanes to more safely accommodate rapidly increasing truck freight and commuter demands. At that point, freeway investments would focus on correcting choke points at interchanges, maintaining pavement quality and bridge structures on an aging system, and improving traffic flow by more actively managing the system through the use of advanced technology.

Figure 5-4. Regional Vision Concept Map



Area-wide Freeway System

Freeways are an important part of our regional system of personal, freight, and goods movement. Expanding the regional freeway system to six lanes (three in each direction) should be completed by 2025.

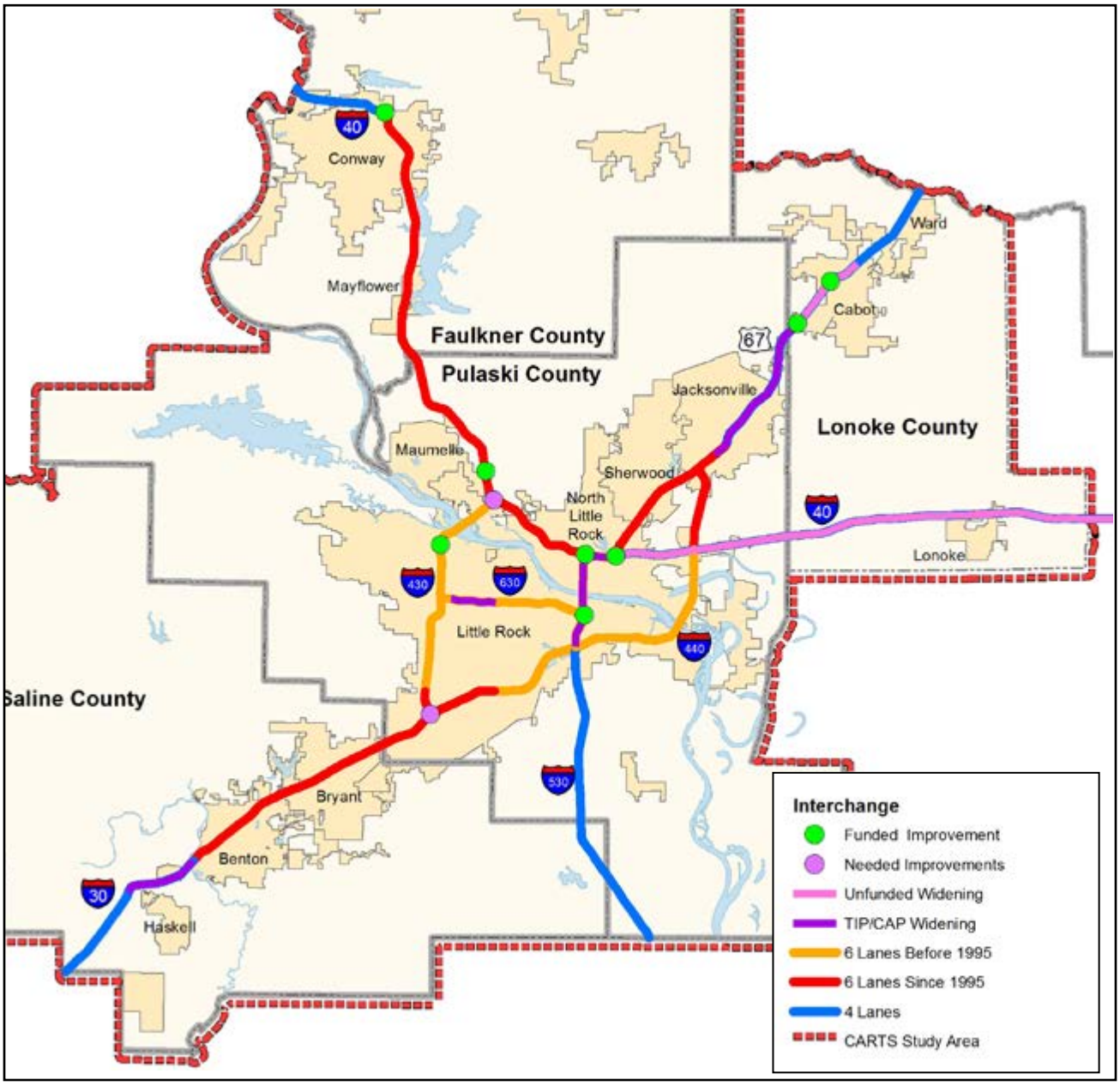
Additional lane capacity needs should be revisited after investments are made in robust regional arterial and transit systems that provide a balanced metropolitan system and allow the freeway network to focus on its primary mission (Figure 5-5).

Regional Arterial Network (RAN)

The Regional Arterial Network (RAN) was created by Metroplan as a system of high functioning surface streets throughout central Arkansas that provide feasible alternatives to freeways for regional travel. These high functioning roadways located along 23 corridors in central Arkansas are:

- Feasible alternatives to freeways for regional travel;
- Serve intra-regional travel;
- Receive first priority for funding, and;
- Typically, are locations where cost-saving operational improvements are made prior to major roadway widening.

Figure 5-5. Central Arkansas Freeway Improvements Map



North Belt Freeway

The North Belt Freeway would have completed the freeway network surrounding Little Rock and North Little Rock. Included in the 1991 Highway Improvement Program of ArDOT, alignment disputes and funding halted the project. A study revealed an estimated increase in cost to $648 million. Consequently, the North Belt Freeway has been removed from the plan.

Highway 89 improvements, Coffelt Crossing interchange construction in Jacksonville, and extensions to Kiel Avenue, Oakdale Road, and Batesville Pike can mitigate North Belt's omission.

RAN VISION

The vision of the Regional Arterial Network (RAN) is to develop this network of high functioning arterials that serve intra-regional travel and major traffic generators, thereby providing a viable alternative to the freeway network. Regional arterial roadways are designed to integrate pedestrian, transit and (if on a designated route) bicycle travel.

The strategy for RAN development will require a significant investment of state resources, since over 70% of RAN miles are state routes. Local governments or a regional mobility authority must expect to partner in RAN development with the state (Figure 5-6).

A mix of projects and strategies are recommended for each corridor, segment, and bridge to ensure a high level of mobility. Corridor improvement recommendations for existing roads include intersection improvements, access management, grade-separated rail crossings, widening at select locations, intelligent transportation systems (ITS), bridge improvements, alternative transportation modes, and roadway widening. The RAN also includes the completion of several key road connections.

5.4.4 Advanced Transportation Management Systems

Advanced Transportation Management Systems include the use of electronic and communications technology and other equipment to monitor and manage the transportation system, especially the freeway and arterial systems.

Some key features include:

- Cameras linked to the region's traffic control centers;
- Changeable message boards and other warning systems;
- Traffic control centers, and
- A "quick response" incident management system.

Roundabouts

A roundabout is a one-way, circular intersection without traffic signals in which traffic flows around a center island. Because of this, injury-causing crashes are substantially reduced and, typically, less severe.

Benefits:

- 90% fatalities reduction
- 76% injury crashes reduction
- 30-40% pedestrian crashes reduction
- 30-50% traffic capacity increase
- 15 year longer service life than signal equipment
- Aesthetic benefits

5.4.5 System Maintenance and Operations

Most important is the need to properly maintain the infrastructure already in place before starting on new transportation facilities. Many of the arterials and freeways, especially bridges, are in need of repair, or will be soon (Figure 5-7 Pavement Condition map).

System maintenance and operations focuses on four major activity areas:

- A "fix it first" policy to avoid incurring higher maintenance and operations costs in the future by avoiding/deferring repairs that are needed,
- Preventive maintenance activities to keep infrastructure in good repair and lessen the potential for more costly repairs in the future, and

Railgrade Separations

During development of Metro 2020, residents in all parts of the region raised significant concern regarding at-grade railroad crossings. Their concerns included safety risk, noise impacts and delay for school buses, emergency vehicles and motorists due to the high frequency of trains per day. Metro 2020 targeted $26 million of future federal funds for up to twelve rail grade separations.

In 1996, the Metroplan Board of Directors (MPO) directed the Technical Coordinating Committee (TCC) to review and prioritize regional rail grade separations. Using quantifiable evaluation factors (delay, accessibility, connective, geographic distribution,and safety) and preliminary engineering studies, twelve rail grade separations were recommended to the Metroplan Board.

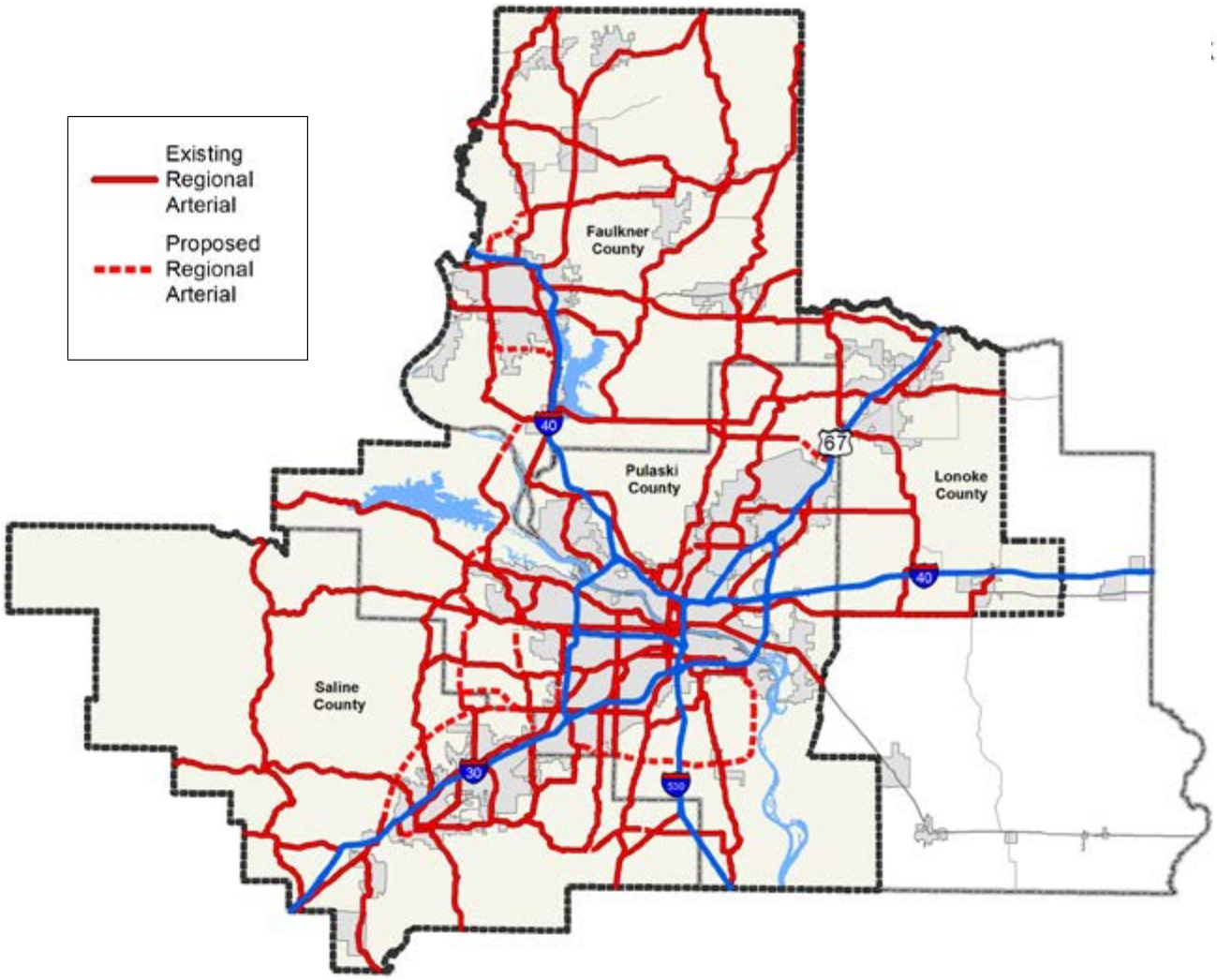
In 1997 the Metroplan Board committed to funding for the following 12 Rail GradeSeparations by 2020 (requesting ArDOT to fund 4 of the projects). To date eight of the rail grade separations have been completed at a cost over $45 million, with an additional 3 separations scheduled in the TIP at a cost of $43 Million.

Table 5-1. Railgrade Separations

Rail Grade	Location	Current Status
East Main Street	Jacksonville	Completed
Baseline Road (SH 338)	Little Rock	Completed
South Loop	Little Rock	Completed
Hwy 89 Extension	Mayflower	Scheduled for 2020
North Cabot Railroad Overpass (SH 38)	Cabot	Completed
Salem Road	Conway	Completed
Edison Avenue (SH 35/183)	Benton	Completed
McCain Blvd	North Little Rock	Completed
Maumelle Blvd (SH 100)	Maumelle	Completed
Geyer Springs	Little Rock	Scheduled for 2018
JP Wright Loop	Jacksonville	Considered for 2019
Springer/Confederate Blvd (SH 365)*	Little Rock	Cancelled

*During *Imagine Central Arkansas* ArDOT and the City of Little Rock requested that the Springer /Confederate Blvd project be removed due to construction disruptions and changing train traffic patterns which reduced the need for the grade separation.

Figure 5-6. Regional Arterial Network



- Rehabilitation and repairs to undertake needed major repairs on a scheduled basis to extend the lifecycle of the equipment, and to minimize the need to replace infrastructure with more costly expenditures.
- Include maintenance cost in any new project recommendations.

As freeway expansion becomes more costly, and funding less certain, system maintenance and operations are crucial in improving regional mobility. Metroplan and ArDOT have embarked on a managed lanes study for central Arkansas' freeways to explore new traffic mitigation methods. Managed lanes can improve operations by proactively responding to changing traffic conditions. Flexibility and efficiency are hallmarks of managed lanes. These facilities can take several forms, such as lanes reserved for vehicles with multiple passengers, or toll prices determined by current traffic congestion.

5.4.6 Economic Implications of Automobile Ownership

The American Automobile Association (AAA) estimates that Americans spend on average $8,469 each year on their cars. Of that amount, only 20 percent stays in the local economy. The rest goes out of the state or out of the country (Figure 5-8).

Intelligent Transportation Systems

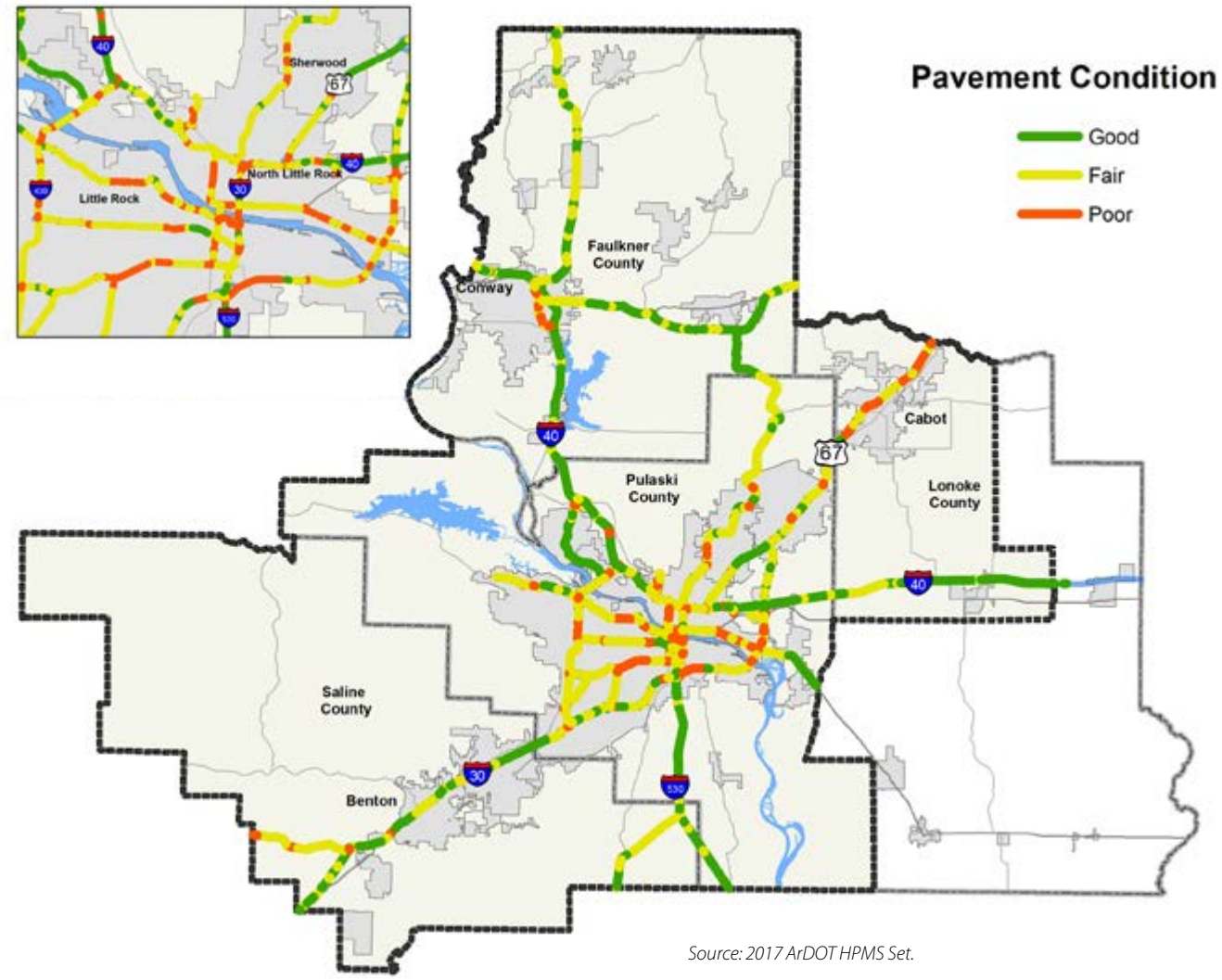
Intelligent Transportation Systems (ITS) provide a proven set of strategies for assuring safety and reducing congestion, while accommodating the growth in transit ridership and freight movement. ITS improves transportation safety and mobility, and enhances productivity through the use of advanced communications, sensors, and information processing technologies. When integrated into transportation infrastructure, and into vehicles themselves, these technologies relieve congestion, improve safety, and enhance productivity.

ITS includes advanced traffic signal operations, to automated monitoring of traffic conditions, weather monitoring and disseminating real-time traveler information to the public.

Examples of ITS applications and their benefits to a metropolitan region are:

- Advanced arterial signal systems can reduce motorists delay up to 42%, reduce stops up to 35%, increase average travel speeds up to 22%, and reduce fuel consumption up to 18%
- Freeway management systems can increase travel speeds by 16-62%, reduce travel time 20-48%, increase capacity by 17-25%, and reduce accidents up to 50%
- Roadway weather management systems can reduce weather-related accidents by over 70% through enhanced detection and motorist warning or guidance
- Advanced transit routing and scheduling applications can reduce passenger travel times by 30% and increase para-transit trips by 55%
- Surveys have found that 18% of drivers changed travel routes more than 5 times per month based on traveler information posted on Dynamic Message Signs
- Computer Aided Dispatch (CAD) and Automatic Vehicle Location (AVL) technologies can improve on-time bus performance up to 23%
- Mobility as a service (MAAS) technology harnesses GPS data to provide real-time bus arrival information to personal mobile devices. Real-time traffic data and geo-specific amenities information can advise trip decisions, like when to leave work to catch the bus on time.

Figure 5-7. Pavement Condition



Source: 2017 ArDOT HPMS Set.

Figure 5-8.
Cost of Owning a Car (per year)

2017 AAA report data.

A typical family of four, with children of driving age, owns at least three vehicles. If Arkansans could eliminate just one motorized vehicle from their household, not only would they pocket nearly $8,500 of after tax income for discretionary spending, but that additional

money would remain in the local economy. Middle class and lower income people tend to spend more on household necessities and small luxuries.

On a broader scale, fewer automobiles translate to more sales tax in the coffers, and also less wear and tear on roadway infrastructure. The same AAA report suggests that if a city could reduce car ownership by

15,000 cars, a little over $127,000,000 could stay in the local economy. That could translate to increases in funding for schools, libraries, law enforcement and fire fighters, a more sustainable way of financing essential services .

5.4.7 Transit Vision

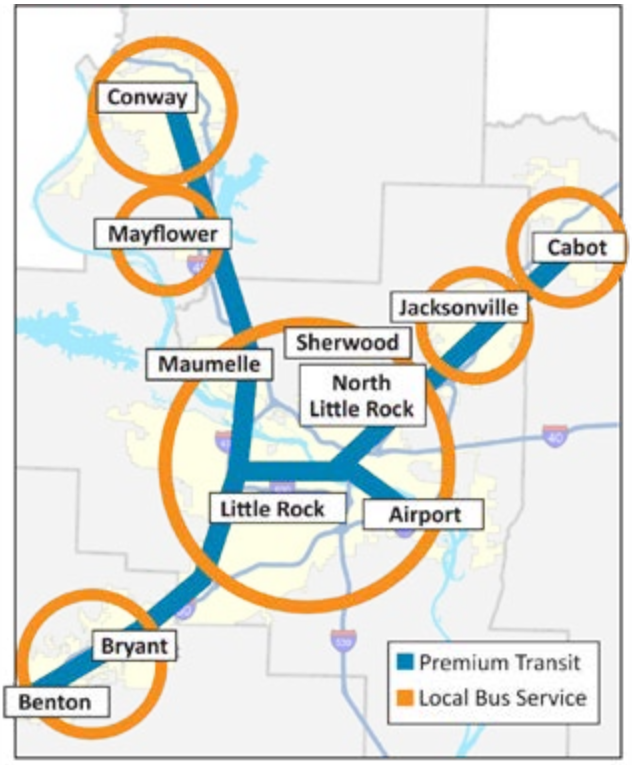
Central Arkansans envision a region where transportation options are rich and plentiful, where a majority of our citizens live within walking distance of safe, affordable, and frequent transit services, and where major population centers within the region are connected with premium transit service (light-rail or bus rapid transit).

The strategy for implementing the vision will require a dedicated revenue source for transit services to allow enhanced bus service in the short to mid-term, and provide premium regional transit services on a regional scale in the long-term. Improved transit services must be underpinned with strategic planning for appropriate development, parking facilities, implementing policies, and public awareness (Figure 5-9).

Regional Transit System

A regional transit system for central Arkansas allows people to travel between virtually all major destinations safely and efficiently via transit. Regional transit is expected to begin as express bus and van pool serving major commuting corridors and local transit systems. As demand for this service increases, high-frequency service would be implemented followed by premium transit (whether light rail, commuter rail or bus rapid transit). Exact alignments and modes

Figure 5-9.
Transit Vision



require further study. Regional transit will require the encouragement of regional mix-used centers throughout central Arkansas that can be serviced by regional transit and local transit systems. Broadly, the system must connect the region's populations to central economic hubs.

Transit corridors should connect downtown Little Rock to medical centers along I-630, west Little Rock and Clinton National Airport to the east; Cabot, Jacksonville, Sherwood, and North Little Rock to downtown Little Rock; Conway, Mayflower, and Maumelle to downtown; and Benton and Bryant to the West Corridor in west Little Rock. General alignments for these corridors are detailed in Chapter 7, section 7.1.2.2.

Certainly in areas without local transit, convenient park and ride lots near regional transit stops are needed for ease of use. Denser development with limited parking opportunities works better in the urban core. Increased ridership on the local transit lines allows it to feed into the larger, more robust regional transit network.

Local Transit System

Successful regional transit relies on widespread local transit networks that feed into the regional system. Only about one in four central Arkansas residents currently have access to fixed route transit services. The regional vision for local transit means that a majority of our region can live within a quarter-mile walking distance of safe, affordable frequent transit services. This requires more frequent service, an expanded service area, and new transfer options. Micro-transit service may be established to service declining or emerging areas. Specific fixed-routes and alignments would be determined through further study. This transit vision includes the expansion and coordination of demand response and human services transit services to rural and small urban areas that have a high need but no existing transit service.

Rock Region METRO

Rock Region METRO's METROtrack mobile app is an example of MAAS (Mobility as a service). Riders can now access METRO transit data alongside other transportation information.

Planning for Transit

Ultimately, transit must be supported by strategic planning for appropriate land development. This includes policies that encourage denser transit-oriented development (TOD), promote citizen awareness of transit benefits, and facilitate population growth and density.

TOD focuses denser development at transit stops with frequent boardings, such as the Travel Center in downtown Little Rock. This links locations of abundant pedestrian activity with areas of elevated transit service. Equitable TOD focuses around low- and middle-income housing, as well as businesses and activity centers frequently used by these individuals. The resulting effect is a built-in ridership base that benefits from high quality transit and accessible activities and services.

TOD is one solution to the lack of density and transportation options in Central Arkansas, but it must be accompanied by a robust pedestrian network. Provisions for pedestrian access and amenities should be included for all proposed developments along transit lines. Transit—bus or rail - does not operate in isolation from other travel modes and the community at large; rather, it contributes to the overall synergy of the built environment.

In addition to TOD, planning for the future transit network must also consider technology enhancements that fully integrate transportation networks and incentivize ride-sharing. Examples of technology include intelligent transportation systems, traffic signal prioritization, mobile fare payment systems, and en-route commuter messaging systems.

Paratransit

The Americans with Disabilities Act (ADA) makes paratransit service available to persons whose disabilities prevent them from accessing fixed-route transit lines. Paratransit connects disabled riders that are within three-quarters of a mile from non-express, fixed bus routes to the service with on-demand shuttles that operate in certain zones. In the four-county region, Pulaski County residents within three-quarters of a mile from Rock Region METRO fixed routes have paratransit service. Human service, private, and non-profit agencies serve communities around the region as well with limited paratransit. However, the majority of the region is still left without this crucial service. As regional development continues beyond eligible fixed transit routes, so barriers to providing paratransit service will persist.

ADA Accessibility

ADA-accessible infrastructure is critically important to seniors and persons with disabilities. Wide sidewalks accommodate motorized wheelchairs, and textured curb cuts and digital crosswalk signals with audio prompts keep impaired residents safe. A robust ADA-accessible environment can reduce dependence on private automobiles and expensive on-demand paratransit service.

Expanded transit service in these underserved areas is essential to accommodate paratransit eligible riders.

5.4.8 Pedestrian and Bicycle Facilities

Many of our streets lack adequate accommodations for bicyclists and pedestrians, such as sidewalks, bike lanes/shoulders, opportunities for safe crossing, etc. Additionally, there are very limited opportunities to travel via bicycle or foot between different places in central Arkansas. To make the region more bicycle and pedestrian friendly, streets should be transformed to include safe, comfortable accommodations for all users.

The Regional Bikeways Vision for central Arkansas includes a network of multi-use paths and on-road bike facilities that enable cyclists to access centers of employment, shopping, other services, and homes throughout central Arkansas.

The strategy for implementing the Bikeways Vision calls for the construction of signature pieces of the network, such as the Arkansas River Trail, that serve both transportation and recreational purposes, as a means to stimulate bike ridership in the region. The regional plan calls for connecting the region with on-road bike facilities to connect major cities within our region, feeding into locally developed bike networks.

The Regional Vision for bicyclists includes:

Inclusion of bicycle facilities on new and retrofitted streets. Bicycle facilities could include dedicated lanes, wide shoulders, shared lanes or parallel facilities, depending on the context. Although significant strides have been made in the area recently, less than two percent of central Arkansas roads have designated bicycle facilities and fewer than 100 miles of paved off-road trails exist in the region.

Completion of a regionally connected system of off-road trails and on-road bicycle routes. In some cases, this could be a stand-alone project (such as the Arkansas River Trail and portions of the Southwest Trail), but in most cases this will occur concurrent with other projects. For example, many of the regional bicycle routes are located on the Regional Arterial Network (RAN) system. Projects for RAN facilities that are part of the regional bikeway network specify the inclusion of bike lanes, shoulders and/or parallel off-road trails.

Pedestrian Friendly

The Regional Vision for pedestrians includes:

Sidewalks or other facilities (multi-use trails) concurrent with new road construction/ reconstruction. Currently, only about one in seven central Arkansas roads have sidewalks. Construction and maintenance of pedestrian walkways is a basic element necessary for creating a seamless multimodal transportation system.

Careful consideration of other pedestrian features when transportation facilities are designed or improved. Elements such as intersection design and medians can have a significant impact on pedestrian safety and accessibility.

The creation of walkable places within our region. Homes, schools, shopping, services, and employment can be connected by compact development. Walkable block systems will result in places where walking is safe and convenient.

While Chapter 5 lays out the Vision for transportation by network, Chapter 7 includes the steps and financial requirements to reach that vision.

Transportation Alternatives Program

Funding for bicycle and pedestrian projects relies heavily on the Transportation Alternatives Program (TAP). ArDOT apportions money to Metroplan to fund mobility enhancements for modes other than autos.

Bicycle and Pedestrian Initiatives

Several exciting developments are underway since the adoption of *Imagine Central Arkansas*. In 2014, multiple cities, state agencies, and citizen groups united to plan the Southwest Trail. When completed, the 65-mile trail will stretch from downtown Little Rock to downtown Hot Springs. Its path will trace the former Rock Island-Missouri Pacific Railroad line and old Southwest Trail, known as Military Road. The trail will provide a continuous route for cyclists and pedestrians. Users will experience central Arkansas' beautiful environment, from rivers to urban streetscapes, abundant forests, and natural hot springs.

Initiatives by State agencies have worked to inform regional pedestrian and bicycle planning efforts. ArDOT adopted its Arkansas Bicycle and Pedestrian Transportation Plan, and has begun exploring potential corridors for US Bike Routes, including in central Arkansas. Hub Communities is an initiative, spearheaded by the Arkansas Department of Health, that seeks to identify cities that provide accommodations and amenities for cyclists utilizing bike routes.

These efforts have inspired shifts in regional planning. In 2018, Metroplan convened a committee to define better regional bicycle route connections, especially within city boundaries. Existing municipal plans formed the foundation of intra-city routes, while also allowing flexibility for new pathways. This work informs decision-makers of where targeted investments could enhance implementation of a robust alternative transportation network. Between upgrades on existing facilities and proposed shared paths, pedestrians, and cyclists will have multiple options for traversing their communities.

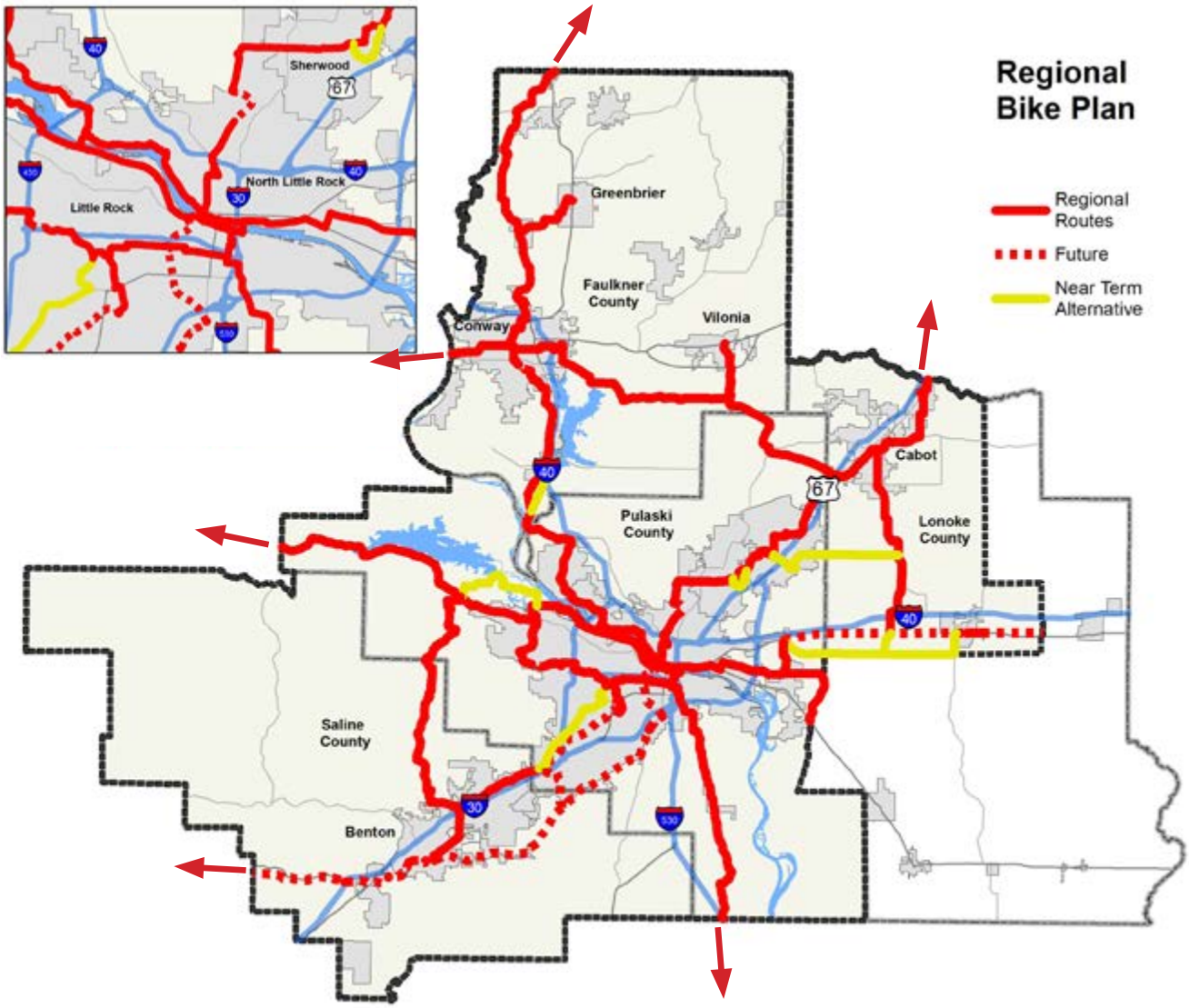
Bicycle and Pedestrian Planning

Central Arkansas 2050's regional bike plan recognizes short term alternative routes that can be utilized with minimal investment, and ideal routes that will arise over the next several years. A combination of shared use paths and bike lanes spur from the core of Little Rock out towards Faulkner, Lonoke, and Saline Counties. Routes were selected because of their proximity to population centers and their potential positive impact on regional mobility. The new routes are shown in Figure 5-10.

Bicycle and pedestrian roadway accommodation design should follow recommendations from the CARTS study at minimum. However, unique contexts may call for greater standards such as larger lane and shoulder widths, increased buffers between cars and other modes, and even determine whether an off street shared use path should be used instead of on-road facilities. Project development should consider, roadway width, vehicle speeds, locations of bike lanes with on-street parking, and driveway conflicts when selecting a design standard. For State Highway System projects, accommodations will be considered if the route has been designated by a locally adopted bicycle or master street plan, and ArDOT concurs.

A popular technique, "road diet," can provide equitable access for pedestrians and cyclists. As suggested by the Federal Highway Administration, "road diets" remove car travel lanes in favor of other modes on streets where traffic counts allow. Narrower travel lanes have shown to reduce vehicle speeds and make roads safer for pedestrians and cyclists. *Central Arkansas 2050* recognizes the need for alternative transportation facilities to adapt to unique environments.

Figure 5-10. Regional Bike Plan



5.4.9 Making Connections: Transportation and Mobility

Movement influences how we live. The ease with which we travel from point A to point B and everywhere in-between directs us to determine where we want to live and how we interact with our environment. Transportation affects the region's settlement pattern, and with it, the access to important features in the community.

Affordability

Transportation has become a costly endeavor. Cheaper, more active and healthy forms of mobility (namely, the ones that require human power) are unable to succeed in current land development patterns that favor cars. Although cars have provided convenient and fast travel, they can be financially draining. Certain responsibilities, such as insurance premiums, fuel, and maintenance costs can stretch a budget thin; studies have shown that households located in walkable mixed-use neighborhoods reduce transportation costs. Banks have recognized this advantage and may offer better mortgage terms in such areas.

Transportation costs are not only a burden to individuals, but to the region as a whole. Expanding road infrastructure comes with a high price tag. Every new road will require maintenance. The cost may not only be financial, but environmental. Expanding roads attract higher volumes of vehicles and stretching new roads to previously undeveloped places will create greater distances in which residents have to travel. This will only increase greenhouse gas emissions. Considering the costs of the system that is already on the ground, it is wise to weigh how much the region can afford.

Efficiency

Central Arkansas can develop a more efficient system of transportation. Universal adoption of complete streets policies will ensure planning is being done for pedestrians, bicyclists, and transit riders, in addition to the attention placed on private vehicles. Denser communities can allow residents freedom to move quickly from destination to destination. With these practices, the regional average travel can decrease, thus reducing traffic congestion, air pollution, energy consumption. Greater physical activity, reduced social isolation and reduced maintenance costs are added benefits.

Opportunity

Opportunities increase in areas that favor a mobile population. Every trip made without a car saves money—money that can be saved to increase an individual's financial security or spend on local businesses that provide jobs for residents. Increasing, mobility options can also help certain populations, such as people with disabilities, children, or the elderly, become more independent and better connected to their community. When the region can spend less on building and maintaining new roadways it can focus its investments on better housing, community health and safety, economic development, and educational advancements.

5.5 Housing and Development in Central Arkansas

***Central Arkansas 2050* envisions housing that is safe, affordable, energy-efficient, geographically available and accessible to all citizens.**

Housing in central Arkansas consists primarily of single family detached units (Table 5.2), dispersed across almost 223,000 developed acres. This pattern of development is largely the result of design rather than organic movement. Government policies in the mid-twentieth century favored the auto industry and new house construction. The "American dream" of suburban home ownership was urged onward by unprecedented investment in roadway infrastructure. A booming economy and cheap fuel enabled "on-the-go" Baby Boomers and their parents to thrive in an auto-dependent suburban culture.

In 2013, a report from the Urban Land Institute (ULI) underscores the influence that growing demographic groups in the US are exerting in reshaping the urban built environment. Based on the nationwide survey, the report suggests that demand continues to rise for infill development, development that fills in the gaps of the traditional community footprint without expanding, that is less auto-dependent. Across the three major generations—Baby Boomers, Gen-X and Millennials—the preference was for smaller houses closer to all the amenities and opportunities afforded in an urbanized area.

People born between 1980 and 1994 — the Millennials (also known as Gen Y) — comprise the largest, most ethnically diverse generation, that but are still not fully immersed in the housing and job market. ULI predicts that this generation will have a dramatic impact on housing and transportation, spurring development of compact, mixed-use communities with reliable, convenient transit service. Compared to earlier generations, younger generations are delaying their entrance into the housing market. Gen Y is more burdened by debt - often due to education loans - and graduation coincided with the country's recession and economic downturn. Most recent reports indicate that jobs are increasing and consumer confidence is building. If this trend continues, the region should experience growth in housing demand.

Table 5-2. Units in Structure

	Faulkner County	Lonoke County	Pulaski County	Saline County	Four-County Region
1-unit, detached	31,365	20,656	119,597	34,281	205,899
1-unit, attached	584	529	2,768	364	4,245
2 units	2,347	829	5,326	585	9,087
3 or 4 units	884	836	6,906	655	9,281
5 to 9 units	2,212	654	10,959	1,041	14,866
10 to 19 units	3,657	387	11,528	871	16,443
20 or more units	1,530	249	13,994	878	16,651
Mobile home	6,134	4,350	10,073	8,058	28,615
Boat, RV, van, etc.	40	63	81	67	251
Total Housing Units	48,753	28,553	181,232	46,800	305,338

Source: 2016 American Community Survey

5.5.1 The Housing-Location Connection

Until very recently, Americans have shown an inclination to move out of urban areas to suburbs. Thanks to the car, "drive till you qualify" became the key to owning an affordable single-family-detached dream home.

Now, the era of cheap oil that allowed this sprawling style to persist appears to be over. Suburbanites who enjoy large-lot homes in exchange for long commutes to the workplace and major service hubs must now reconcile the budget to pay for their homes, plus much higher energy and transportation costs.

Higher energy costs may factor into development changes that trend toward more compact lifestyles with closer access to work, recreation, and services. While these developments are more pronounced in the region's urban core, compact developments are beginning to appear in our traditional suburban areas as residents look for a variety of housing options. Some residents can now make fewer trips into Little Rock and North Little Rock and save on transportation cost and energy consumption. Sixty years of low density suburban sprawl development

The Rockwater development in North Little Rock is located on the Arkansas River Trail with a combination of up-scale single-famliy homes and apartments.

will make for a slow transition. Today, with population projected to grow steadily in the upcoming decades, along with the need to replace aging housing stock, there should be ample opportunity for new housing patterns to develop. The goal is to encourage more walkable, mixed-used developments offering a variety of housing options within major existing transit corridors to reduce transportation costs and encourage regional mobility.

5.5.2 Creating Options in Housing

The Fair Housing Equity Assessment (FHEA) was undertaken to help inform *Imagine Central Arkansas*.

One of the five findings of the FHEA indicated that there was a need for housing diversity in the region. The lack of housing diversity was cited as a contributing factor to urban decline, the dispersion of resources, and the consolidation of poverty.

Throughout the metropolitan area, different neighborhoods tend to be homogenous and display distinct socio-economic traits. Commercial and public resources tend to cluster around those areas with greater disposable incomes, creating a service gap in other areas. This pattern of development creates a barrier for many residents to accessing affordable living spaces that are close to good jobs and services.

To increase opportunity, job access, safety, and social and environmental equity in the region, the FHEA endorses the development and expansion of neighborhoods containing a diverse array of housing types and a wide variety of price points. Options for single family and multifamily housing can increase the affordability for residents and help mitigate homelessness, discussion of which is detailed in the FHEA. The development of diverse neighborhoods encourages commercial development, promotes job creation, density, and cross cultural interaction; it can also alleviate the effects of poverty. Denser than their suburban predecessors, these neighborhoods tend to consolidate their populations near shared resources and job locations. They encourage a variety of uses, are walkable and do not require all residents to make lengthy commutes to job sites. Reduced dependence on automobiles provides residents with ample opportunities to engage in more active modes of transportation, bicycling and walking, and thereby encourages healthier and more environmentally friendly lifestyles—all while saving money.

Fair Housing Equity Assessment

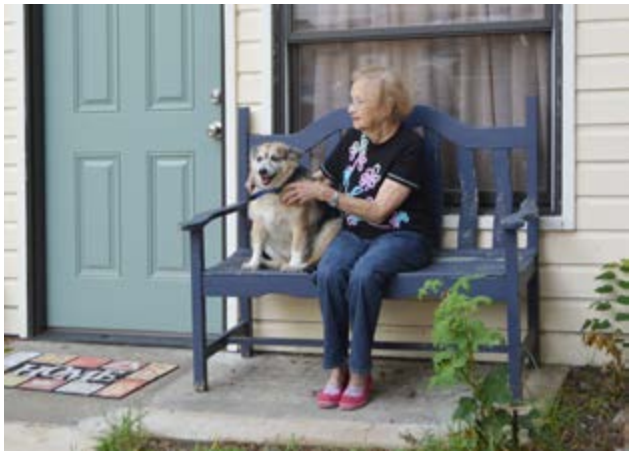
One of the deliverables for the Imagine Central Arkansas planning process was the Fair Housing Equity Assessment (FHEA) Report. The information in the FHEA has been used to inform the overall plan development as well as the Jump Start project selection process. The FHEA examines elements of housing in central Arkansas by asking three questions: where are we today; how did we get there; and what should we do to improve deficiencies and continue those things that we do well?

The FHEA is included in Appendices.

5.5.3 Creating Affordable Living

Fifty years ago, affordable housing often meant income-segregated apartment complexes typically in public housing projects. More recently, discussions on meeting affordable housing demand include a variety of housing types at different pricing.

Today, our understanding of affordable housing has broadened. "Affordable" for a bank executive is not the same for a teacher, firefighter, or restaurant worker—but all must work within a household budget to afford a place to live.



With that concept in mind, "affordable" housing is currently defined as spending no more than 45 percent of household income on combined housing costs plus the cost of transportation. This new definition emerged from private and public economic research on how these cost impacts on the American family, and has been adopted by US Departments of Housing Urban Development (HUD), Department of Transportation (DOT), and the Environmental Protection Agency (EPA). Combined housing cost plus transportation cost (the H+T Index) represents a more comprehensive way of thinking about housing and what is truly affordable to most people.

If housing cost is the only factor considered, then most places in central Arkansas have affordable living options. Housing costs vary from a low of 24 percent of median household income in Lonoke County, 25 percent in Faulkner County, to a high of 26 percent in Pulaski and Saline Counties.

Based on the H+T Index, most places in central Arkansas are unaffordable. The index shows 77 percent of families spend more than 45 percent of their household income on housing and trans-

portation. Families find themselves spending a disproportionate percentage of their household budget on fuel and mortgages or rent. Lack of investment in other transportation options — bus, walking, biking— exacerbates this condition. The implication for our region is that money is not spent on goods and services that will contribute to the local economy (for example, clothing, groceries, and entertainment, or even education and health care) as they take a back seat to the more urgent need for house and car payments. Affordable living can help families save money and inject new life into the local economy.

How can we change this unsustainable dynamic? Decision makers must craft land development policies around a diverse transportation system that reduces the number of households that spend more than 45 percent of their income on combined housing and transportation costs. *Central Arkansas 2050* is focused on making this goal reality.

5.5.4 Making Connections in the Built Environment

"WE SHAPE OUR DWELLINGS AND AFTERWARDS OUR DWELLINGS SHAPE US."
—WINSTON CHURCHILL

***Central Arkansas 2050* envisions proper land development to foster sustainable housing and neighborhoods.**

It is a theme that has saturated *Central Arkansas 2050*, and is well represented on the pages of this plan. How we build effects how we live, move, feel, and interact. The built environment is a cornerstone that provides the foundation for every facet of sustainability.

What is the built environment? Collins Dictionary defines the built environment as "consisting of buildings and all other things that have been constructed by human beings." It is an environment over which humans have complete dominion, but as we build this environment, it starts to have a great deal of influence over us.

To Sprawl or Not to Sprawl

The Environmental Law Institute (ELI) defines sprawl as "a pattern of land use that is characterized by dispersed, automobile-dependent development outside of compact urban and village centers, along highways and in the rural countryside." The following conditions characterize low density development.

- Low density development can contribute to a loss of support for public facilities and amenities. Consider that a typical two-income family in central Arkansas may own or rent a house in one city, commute to work in another city (or maybe two cities), and their children may attend a school located in still another city. They shop in areas that are located far from their neighborhoods. Understandably, such families can feel less of a personal connection in the community to which they drive home to each evening. They are less likely to vote in favor of taxes to support local infrastructure.

- Low density development can create a burden on municipal governments' ability to effectively maintain existing infrastructure. The most readily observed examples of this are found in pot-hole pocked roads. Sprawl also places stress on providing emergency services such as ambulance, and police and fire protection. To meet those vital needs, jurisdictions often must resort to cutting budgets for other infrastructure, such as libraries, schools, parks, and museums.
- Societal costs for low density development can be serious and varied. Loneliness is endemic in many metropolitan areas. The loss of a sense of community leads to a decline in social interaction and the isolation of vulnerable populations, such as elderly, disabled, or very poor.
- Furthermore, the financial cost is felt by everyone. The Automobile Association of America (AAA) calculates that the average annual cost per automobile owned is just under $8,500. This figure includes gas and oil, insurance, routine maintenance, purchase price over time, finance charges, plus licenses, taxes, and tires. Further compounding the dent to the economy is that only about 20 percent of that amount stays in central Arkansas. The rest of the money goes out of state or overseas.
- Low density development may degrade water and air quality, and can permanently alter or destroy natural habitats. Alluded to in the Transportation and Mobility, and the Environment, Energy and Natural resources sections, this is discussed in greater detail in Chapter 6.
- Low density development can limit choice. While promising more choice, sprawl actually delivers more of the same, erasing unique community character, limiting personal choice, and increasing transportation and maintenance costs for residents and governments alike.

Benefits of Creating Density

Compact development places value on long-range sustainability. Wise use of tangible resources — land, infrastructure, and money — allows people to appreciate and enhance elements that contribute to community cohesiveness, including unique community character and its natural and cultural resources. Compact design of buildings and neighborhoods can help communities use land more efficiently, which has several advantages.

- Reducing the building footprint conserves rural and open spaces, which are valued by central Arkansans. Compact development accommodates more uses on less land.
- Compact communities can provide a wide range of housing choices, from single-family detached homes to apartments and townhouses, all within the same area. This allows people of different incomes and at different stages of life to live in the same neighborhood.
- Compact development leads to increased density, which reduces costs of maintaining existing infrastructure and providing new infrastructure. This results in economic benefits for the entire community.
- Increased density provides opportunities for public transportation, which in turn promotes more physical activity such as walking and bicycling.

The Environmental Protection Agency (EPA) advocates compact development as a strategy of fostering better air and water quality, which affects the health of individuals. From an EPA report, "Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality:"

Separating land uses, spreading development out and providing little or no public transportation or safe walking and biking routes foster greater reliance on motor vehicles. As development grows more dispersed, people must drive further to reach their destinations, leading to more and longer trips. These increased trips create more air emissions and greenhouses gases that contribute to global climate change. Ultimately, air pollution and climate change can also harm water quality and wildlife habitat.

Making the Neighborhood Connection

Communities are not composed of discrete components — they are a rich fabric, knit together by infrastructure and neighborhoods. This infrastructure includes the obvious—houses, streets, sidewalks—but also schools, libraries, parks, and open spaces.

A multi-faceted approach to creating "safe, affordable, energy-efficient, geographically available, and accessible" neighborhoods produces the results envisioned by central Arkansas residents. Policy makers can encourage the kind of development that creates a synergy of positive impacts. For example, keeping neighborhood infrastructure in good repair helps to stabilize the community, affect home values, and even helps suppress criminal activity. Encouraging compact, mixed-use development facilitates the kind of density necessary for efficient public transit service. Adopting standards for energy-efficient new and renovated homes decreases utility costs for homeowners and overall energy consumption.

The integration of shared spaces within a variety of housing types creates a community simply from the proximity they provide to goods, services, and recreation. Aspiring to this sense of community is critical to creating and nurturing the kind of safe, healthy, and happy quality of life expressed by central Arkansans.

Investing in the existing bus system with expanded service times and area can provide mobility connections for the population. The transit plan is discussed in detail in Chapter 7 but in terms of strengthening existing communities, bus service could be easily improved by providing accessible, comfortable and sheltered stops. More significant investment is required for expanding bus service to include wider coverage and increased frequencies.

Central Arkansas 2050 recognizes that quality of life, economic vitality and the way we transport ourselves and our products are not discrete components to be considered, but are synergistically woven together.

The H+T Index, mentioned in section 5.5.3 makes the transportation costs of a place transparent to people and policy makers so that they can make wise decisions about where they live and how they invest public dollars.

5.5.5 Consequences of the Built Environment

Active Transportation, Health and the Environment

Short trips, often a mile to a grocery store or other activity center, are made convenient with the automobile and the abundance of free parking. In many ways, this luxury has afforded individuals with flexibility and quick transportation. But such convenience has a dark side. We miss the opportunity to enjoy the abundant health benefits that active trans-

portation can offer, as well as substantially cut down on carbon emissions.

The presumed convenience has evolved into an automobile-dependent urban structure dominated by dispersed development that discourages or renders it impossible to choose other travel modes. Fast moving cars on streets with no sidewalks or bike lanes can make personal travel dangerous for those who choose more active modes. Instead of providing more choice, the effect of our built environment has reduced choices.

This "autoscape" influences health outcomes like increased obesity, including among children, and a laundry list of ailments from diabetes and heart disease to depression. The lack of infrastructure for easy walkability or bike use has also influenced the way we interact in our communities. Social isolation, especially among vulnerable populations such as the elderly and disabled, has also led to increases in physical and emotional illnesses. Our built environment can shape the way feel and the way we think about moving around in central Arkansas.

The Effect of Abundant Parking

"PARKING SPACES ATTRACT CARS: SO THEY GENERATE CAR TRAFFIC. PARKING NEEDS SPACE, WHICH IS NOT AVAILABLE FOR OTHER STREET USES. NOTHING ELSE HAS CHANGED THE TRADITIONAL STREETSCAPE AS DRAMATICALLY AS PARKED CARS HAVE DONE DURING THE LAST FEW DECADES"
— HARTMUT H TOPP, PHD,
GERMAN MOBILITY EXPERT

The balance between a parking-abundant infrastructure to pedestrian friendly environments has a profound effect on land use, economic development, the development of a transit system, and sustainable growth.

Unbalanced parking reserves create unintended consequences. With an overabundance of parking, traffic may increase as residents get in their cars for short trips to park directly in front of a building. These extra parking spots take up vast amounts of land that could house other commercial and residential developments. Furthermore, large abandoned lots attached to closed businesses can become unsightly or unsafe, causing pedestrians to avoid the area and investors to hesitate when looking to develop.

The ideal situation is to provide efficient use of existing parking resources without excessively expanding supply.

Economic Development and How We Build

When sustainable principles such as denser populations, more walkable neighborhoods, and mixed priced housing are introduced to economically depressed neighborhoods, these areas are transformed. The introduction and improvement of sidewalks, lighting, and landscaping encourage residents to go outdoors. Increased foot traffic and the presence of residents on the streets, particularly

in the evening hours, can discourage crime. As crime diminishes, residential developers are willing to develop more housing and as new residents interact with the old, a new community identity is forged.

The return of the affluent and residents with higher disposable incomes to urban neighborhoods are critically important indicators for commercial development and social change. The introduction of these socio-economic classes raises the median income, the level of educational attainment, and increases the political recognition of the community. Commercial development responds to this concentration of disposable income by providing goods and services that are within walking distances of the homes. These businesses and restaurants provide jobs for many residents and help make the area a destination for those living outside of the community.

The social interaction, safety, aesthetics, and the convenience of having popular businesses within walking distance from homes bolster the popularity of the community. The demand to live in and be a part of sustainable communities also drives the desire of prospective residents and increases property values within the neighborhood, while mixed price point housing ensures that the poorest residents of the community are not priced out of their homes.

5.5.6 Making Connections: Housing and Development

When we think about sustaining our quality of life, housing is one of the first thoughts that comes to mind. Housing is an individual's little piece of central Arkansas, and it influences how they interact in their communities. Housing location and land development patterns determine the amount of travel that is necessary to get to essential destinations and how much energy will be expended to do so. Better housing options can help the region attain sustainability.

Affordability

Denser urban development and housing that provides varying prices throughout the community can lower the cost of living. Economically diverse neighborhoods promote equitable dispersion of resources, since most neighborhoods can attract commercial development. In these communities, residents live closer to amenities and employment, so that they can opt for cheaper travel. Diverse and dense living patterns save time and money.

Efficiency

Development where homes are close to everything residents need can promote a more efficient transportation infrastructure, waste less energy, limit harmful impacts on the environment, and ultimately lead to a healthier and safer population. Denser neighborhoods coupled with abundant green space encourage residents to get out, walk, and become physically active. Efficient housing developments can help alleviate traffic congestion and unhealthy pollutants that come from a herd of idling cars. Not only does the correlation between dense housing and less car traffic limit pollution, it also may reduce accidents between cars, pedestrians, and bicyclists.

Opportunity

Neighborhoods should offer ample opportunity for a higher quality of life. Housing that has access to grocery stores and farmer's markets with fresh foods, employment hubs, and other services within walking distance can help residents increase physical activity, social interactions, and reduce costs of healthcare and transportation. These benefits may be missed in a less connected neighborhood. Greater pedestrian activity on the streets can deter criminal activity and help attract commercial investment in the neighborhoods.

5.6 Environment, Energy, and Natural Resources

***Central Arkansas 2050's* Vision wishes to enhance the quality of the natural and built environments in central Arkansas.**

Central Arkansas' natural environment is cherished by its residents. It is an asset that enhances quality of life and attracts new people and businesses with fresh ideas for a better community. For our region to remain beautiful, healthy, and competitive, we must keep air clean, water clear, energy use efficient, and emphasize public green space.

Conserving our natural resources is not a new priority for central Arkansas. When Metroplan received the Sustainable Communities Initiative grant to integrate housing, economic development, environment, and health issues along with transportation into its plan, the transition was easy. HUD's Sustainable Communities Resource Center explains "A sustainable community is an urban, rural, or suburban community that has a vibrant local economy, more housing and transportation choices, is closer to jobs, schools, and shops, is more energy independent, and helps protect clean air and water."

5.6.1 Beautiful Green Spaces

The natural environment, with parks and open spaces for the public to gather, is one of the region's top assets. Central Arkansans participated in "Treasured Places," an outreach event where residents submitted a picture of their favorite places in central Arkansas. Several natural areas, such as Murray Park, Big Dam Bridge, the Covered Bridge at Burns Park, and areas close to parks like the Little Rock River Market, Maumelle Pool/Community Center, Hendrix College, and the Argenta District were most favored.

The results solidify the need to invest in quality green spaces. The American Planning Association (APA) suggests maintaining at least 883 acres of parkland for every 100,000 residents. Parks of varying sizes and functions should be spread throughout the community so they are accessible to several neighborhoods. Pocket parks, small neighborhood parks, can raise nearby home values, and provide a safe environment for children to play without the threat of traffic. Larger community parks can offer cultural amenities such as outdoor theaters, museums, or community gardens.

Central Arkansas 2050 wishes to promote its natural environment to provide opportunities for physical activity, affordable entertainment, and scenic views. Setting aside green space can be a powerful recruitment tool because it shows that the region is committed to quality of life for its residents. More investment in parks will continue to make our region attractive to new residents and developers while keeping current residents healthier and happier.

"THERE IS NOTHING SO AMERICAN AS OUR NATIONAL PARKS. THE SCENERY AND THE WILDLIFE ARE NATIVE. THE FUNDAMENTAL IDEA BEHIND THE PARKS IS NATIVE. IT IS, IN BRIEF, THAT THE COUNTRY BELONGS TO THE PEOPLE, THAT IT IS IN PROCESS OF MAKING FOR THE ENRICHMENT OF THE LIVES OF ALL OF US. THE PARKS STAND AS THE OUTWARD SYMBOL OF THE GREAT HUMAN PRINCIPLE."
—FRANKLIN D. ROOSEVELT

Burns Park

Burns Park is one of the nation's largest municipal parks, with close to 1,600 acres of lighted ball fields, hiking trails, fishing, and a 36-hole championship golf course. Recreational opportunities abound at North Little Rock's Burns Park as well as sports activities along with a unique urban equestrian trail, scenic River Trail, Emerald Park Mountain Bike and Multi Use Trails.

Arkansas River Trail System

In 2012, a "Memorandum of Understanding" established the Arkansas River Trail System to be extended 88 miles across multiple cities and counties. The signatories to that MOU are the cities of Little Rock, North Little Rock, Maumelle, Mayflower, Conway, and Bigelow, Pulaski and Faulkner Counties, the Arkansas Department of Parks and Tourism, the Arkansas State Highway and Transportation Department, and the US Army Corps of Engineers. It began as a 14-mile loop between Little Rock and North Little Rock, transecting and connecting the riverfront parks of both cities. Today it has become the Rock Region lyst for the development of bicycling, walking, and running trails in the entire metropolitan area, traveling west on both sides of the Arkansas River to Pinnacle Mountain State Park over the Two Rivers Park Bridge.

The Arkansas River Trail System connects a total of 38 different parks across the metropolitan area. The most prominent of which are Pinnacle Mountain State Park, Two Rivers Park, Burns Park, North Shore Riverwalk Park, Rebsamen Park, Maumelle Park, and Riverfront Park.

Figure 5-11. Arkansas River Trail System

5.6.2 Air Quality

Air quality continues to impact the planning process, public involvement, funding, and the development and implementation of CARTS transportation plans, programs and projects. The United States Environmental Protection Agency (EPA) is required under the Clean Air Act of 1970 (CAA), as amended, to set National Ambient Air Quality Standards (NAAQS) for ozone, particulate matter and four other "criteria" air pollutants. No portion of central Arkansas has ever been designated as "nonattainment" under NAAQS; however, at various times since 1970, ambient ozone and particulate levels have threatened our region's clean air status.

Within the last decade, central Arkansas exceeded the EPA's ozone requirements, only to be saved from non-attainment by a federal re-evaluation of the standard. Now, with even tighter standards, the region has made major strides towards reduced ozone (Figure 5-12). The 2015-2017 three-year average ozone count fell to 63 parts per billion (ppb) from the 2010-2012 average of 76 ppb. This consid-

Ozone Action Days

In central Arkansas, Ozone Action Days notifies residents of harmful days of ground-level ozone. In addition to Ozone Action Days, "Ditch the Keys," a summer-long initiative that begins with National Bike to Work Day, raises awareness about ground level ozone's relationship with transportation.

erable improvement falls below the 70 ppb threshold currently mandated by EPA standards. Continued improvements in vehicle technology and point source emission reductions will be key to maintain attainment, as will behavioral changes in consumers' use of petroleum based energy.

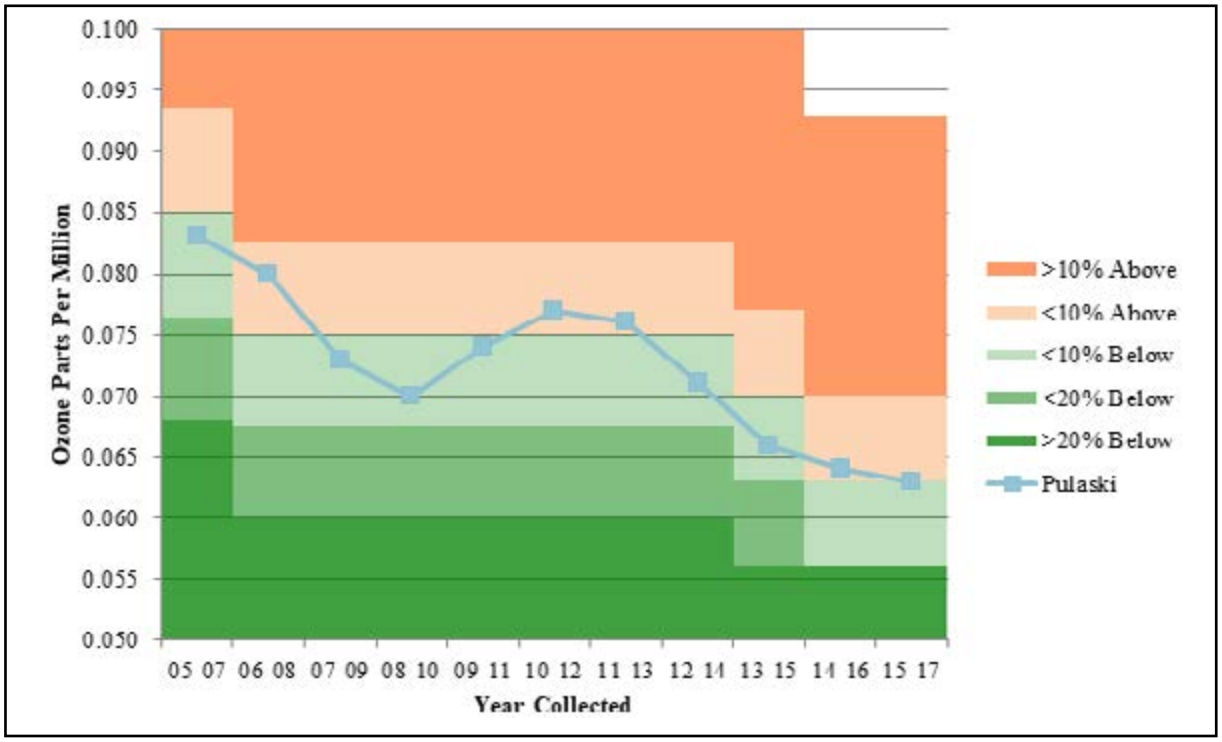
Under nonattainment, central Arkansas would be required to conform to a new level of standards with EPA and DOT regulations. This is not a sustainable scenario. Aside from the added costs, *Central Arkansas 2050* recognizes the importance of air quality to the well-being of the region's residents and economy, and aims to protect it through Ozone Action Days, a public awareness program that encourages central Arkansas residents to protect air quality by choosing alternate modes of transportation and cleaner, more efficient energy options. Equally important is the reduction of point source emissions, pollution from a clearly identified source, from non-transportation pollution through improved technology. Ultimately, the region seeks to not only stay in attainment of the national ozone standard, but improve air quality to increase livability for its residents.

5.6.3 Energy and Carbon Emissions

"I'D PUT MY MONEY ON SUN AND SOLAR ENERGY. WHAT A SOURCE OF POWER! I HOPE WE DON'T WAIT UNTIL OIL AND COAL RUN OUT BEFORE WE TACKLE THAT."
- THOMAS EDISON, 1931

Central Arkansas residents overwhelmingly cited "rising energy costs" as a trend that could have a great impact on the future of the region in the coming decades. This is likely due to the fluctuating cost of gasoline and the high number of commuters who travel long distances between counties for work. Similarly, residents cited environmental factors such as dwindling natural resources, insecure energy sources, climate change, and degrading air quality as also having a strong impact on the future of central Arkansas.

Figure 5-12 Central Arkansas Ozone
Compared to National Air Quality Standards



Air Quality and Minority Populations

The relationship between air pollution with children in the minority population is important. A recent study by the University of California at San Francisco revealed that exposure in infancy to nitrogen dioxide is strongly linked with development of childhood asthma. The study says that since minorities tend to live in highly concentrated, polluted areas near interstate corridors, which increases the risk of developing asthma.

Source: Early-Life Air Pollution and Asthma Risk in Minority Children The GALA II and SAGE II Studies
https://www.atsjournals.org/doi/10.1164/rccm.201508-1706OC

Energy Consumption and Renewable Energy

Improving energy efficiency was identified as essential in the Green Agenda and is a target of *Central Arkansas 2050*. For a state of its size, Arkansas — ranked 17th according to the Energy Information Administration— consumes a lot of energy, which is reflected in residents' higher bills. The Plan realizes that central Arkansas must become energy efficient to be sustainable. Seventy percent of the total amount of energy consumed in the U.S. is by buildings that could be made much more efficient with simple techniques, and new products. One way to lower consumption is to identify and measure energy use in our buildings. Energy audits should be accessible to residents looking to save on their bills.

Communities can reduce energy consumption by updating energy codes for all new buildings and homes and making sure they meet standards during the permitting process. "Since air infiltration accounts for substantial heat loss, heat gain, and moisture migration in a building," code compliance of proper insulation would make huge strides in lowering energy consumption . In addition to proper building codes, energy labeling can help potential homebuyers and renters know the true costs of living and exactly what utility costs to expect.

Renewable energy can not only lower energy consumption but also total costs. Renewable energy like captured methane, hydro, solar, biofuel, and other sources can drastically reduce the consumption of non-renewable energy. Likewise, updating existing policies to promote and enhance energy efficiency in buildings would advance energy sustainability.

Economic development gravitates towards areas focused on sustainability and livability. Lower energy bills increases the amount of money available to be spent in the local economy, especially for impoverished families who could use additional money for food, healthcare, and transportation. Furthermore, a diversification of energy sources can reduce the demand for fossil fuels, like coal, and improve regional air quality. Dollars spent due to energy inefficiency do not flow back into the local economy; growth may be missed as a result. More dollars saved leads to bigger budgets, and a big relief for central Arkansans!

Housing and Energy Consumption

During public outreach, many central Arkansans identified energy cost as a primary concern.

According to the Arkansas Energy Office (AEO), Arkansas ranks as 11th highest in overall energy consumption and the fourth highest for average gallons used per registered vehicle in the United States. The EPA suggests that "how and where communities are constructed has an enormous effect on our energy consumption."

LEED Certification

U.S. Green Building Council (USGBC), the authority in green building certification, uses a point system based on sustainability principles like green construction designs, water conservation and energy efficiency to determine a building's silver, gold or platinum certification status. According to USGBC, LEED-certified buildings reduce costs of energy and water use by as much as 40%. A reduction in these costs frees up valuable capital that can be used to create new jobs, attract and retain top talent, expand operations and invest in emerging technologies.

Source: http://www.usgbc.org

Buildings and transportation together account for about 70 percent of energy use in the United States. In a 2012 report commissioned by the EPA, the Jonathan Rose Companies studied energy use associated with a wide range of development approaches. The report contrasts energy use in suburban-style, automobile-dependent locations with transit-oriented locations; multi-family construction with single-family detached and attached housing types; and conventional cars and homes with their energy-efficient counterparts. The paper concluded that housing type and location, along with energy-use features of homes and vehicles, all have an important role to play in achieving greater energy efficiency. Findings suggest that a multi-faceted approach is the most effective. Energy savings can be achieved with fairly modest actions on the part of individuals and communities, but these actions should be part of a regionally coordinated effort.

Financing Help for Energy Efficient Upgrades

Property assessed clean energy legislation (PACE) helps finance energy efficient upgrades or renewable energy installations for buildings. PACE legislation was adopted in Arkansas in 2013, which allowed municipalities to form "energy improvement districts." Local governments offer specific bonds to investors and then loan money for consumers and businesses to perform an energy retrofit. Unlike traditional loans, PACE program loans are attached to the property rather than the individual; usually with a 15 – 20 year assigned term.

Source: http://www.nrel.gov/docs/fy10osti/47097.pdf

Energy Emissions

When examining greenhouse gas emissions (GHG) central Arkansans generated approximately 14.3 million tons of equivalent carbon dioxide units (CO2) according to research done for *Central Arkansas 2050*. Central Arkansas' per capita GHG emissions are higher than larger cities like Chicago and Portland. Emissions include both direct and indirect sources from residential energy use, industrial sources, and regional transportation.

Overwhelmingly, the transportation sector is the largest producer and consumer of energy, contributing over 32.4 percent of the region's GHG and consuming 36 percent of the region's energy. Strategies, like utilizing energy efficient automobiles, and promoting density of housing, workplaces, and conveniences diminishing the need for car travel, provide an opportunity to reduce transportation-related energy consumption. Reduction of GHG will also positively impact air quality, water quality, and the health of residents.

Central Arkansas 2050 expands upon the Green Agenda by tackling energy consumption and promoting renewable energy. The ICAP, like the Green Task Force, came up with several energy efficiency goals and strategies to implement in central Arkansas. The regional vision embraces Corporate Average Fuel Economy (CAFE) standards to increase fuel efficiency, promotes active transportation like walking and biking, and advocates for energy reduction planning for communities in central Arkansas.

5.6.4 Water Sources and Watersheds

How we develop our land directly impacts our water source quality and flooding events. *Central Arkansas 2050* wishes to protect this important resource from harmful pollution and runoff by developing our region smarter.

Watersheds

Arkansas has abundant water resources. A watershed is any geographic area where water, either on the land's surface or under it, drains or flows into the same place. Since all flowing water collects in these watersheds, it is imperative to prevent their contamination, as well as clean and maintain them.

Transportation byproducts and the design of streets significantly affect storm water and water quality. Water contaminated by transportation related pollutants can lead to serious health conditions, including cancer. Thoughtful street design and materials can improve proper filtering of pollutants.

Lake Conway and Lake Maumelle Watershed Management Plans

Two of central Arkansas' largest water bodies, Lake Conway and Lake Maumelle, are valuable resources that must be protected. Development in these watersheds profoundly impacts water quality. Fortunately, efforts over the past decade have worked towards sustainable futures for these valuable assets.

Metroplan works with Central Arkansas Water to assist with protecting and planning the future of the Lake Maumelle watershed. This 137.4-square-mile area drains into the Lake Maumelle reservoir, which is the largest source of drinking water in central Arkansas. In 2007, CAW adopted the Lake Maumelle Watershed Management Plan, and has been working in collaboration with several of the region's jurisdictions to maintain it. The plan's aim is to preserve potable water for regional residents today, tomorrow, and far into the future.

In 2013, Metroplan assisted the University of Arkansas Community Design Center in development of a management plan for the Lake Conway watershed. This effort led to the creation of the Lake Conway Point Remove Watershed Alliance, designated to promote environmentally responsible development. In 2016, the awarding winning Conway Urban Watershed Framework Plan was adopted to guide low impact development across the watershed. The plan tackles runoff mitigation strategies for new development within the watershed area. Lake Conway's management plan is another example of what the region can accomplish in other watersheds. *Central Arkansas 2050*'s vision is to expand these efforts to create a regional watershed system that contains minimal pollution.

Storm Water Management

Storm water runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up contaminants like oil and grease, chemicals, pesticides, fertilizers, dirt, sediment from erosion and debris. These contaminants flow into the sewer system or directly into the natural ecosystem. This is called non-point source pollution and is the biggest threat to Arkansas' water quality. Non-point source pollution is linked to adverse health condi-

tions, because contaminants leak into drinking water, recreational waterways, and even seafood. Sprawling urban areas, with endless acres of impervious surface, increase storm water run-off that washes untreated chemical pollutants into local streams, wetlands, lakes, and groundwater during storms.

Infrastructure design plays a major role in managing storm water volume and flow. Impervious surfaces like concrete and asphalt accelerate storm water runoff, and often interfere with the natural storm water management and filtration processes. Transportation infrastructure, like roads, parking lots, and sprawling land development that follows, make up much of our impervious surfaces. Studies show that runoff measured from suburban developments can be 1.5 to 4 times greater than from rural areas, resulting in flooding of downstream areas. In fact, according to CEOs for Cities, "the first hour of urban storm water runoff has a pollution index greater than raw sewage."

Increases in rainfall could have a profound impact on drainage infrastructure, some of which is barely adequate now. Moreover, studies like "Drainage and Storm Water Management Strategies for Low-income Urban Communities have shown that storm water management affects residents at or below the poverty level. In areas with poor storm water management, neighborhoods are susceptible to flooding. A study by Jonathan Parkinson on storm water management strategies for low-income urban communities, found that natural hazards can have great impact on the poor. Groups at risk include children, elderly, and the physically disabled that experience difficulties in dealing with disasters. They are all vulnerable to adverse health effects from floods.

How do we fix these problems? Reducing the amount of impervious surface can help. There are a variety of alternatives to impervious surfaces. The low impact development (LID) approach seeks to preserve open space and the natural water filtration systems through site design and features such as rain gardens and bio-retention. The LID approach significantly increases retention of storm water and pollutants on site and generally does not threaten groundwater pollution. Porous pavements are extremely effective in filtering pollutants and reducing site runoff as much as 98 percent.

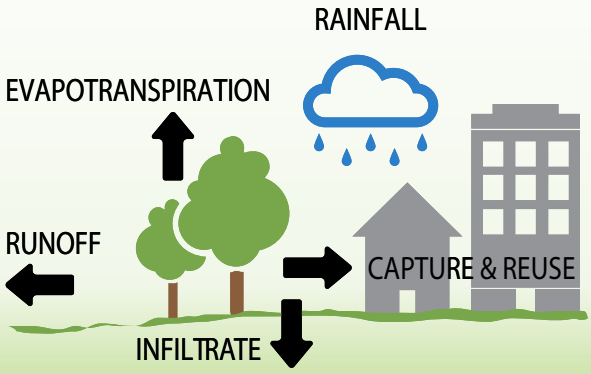
Projects in central Arkansas have already begun employing LID techniques. One example, Main Street in downtown Little Rock, transformed a multilane road into a beautiful rain garden with bioswales and brick pavement. Jump Start projects, Markham Street in downtown Conway and Camp Robinson Road in North Little Rock's Levy neighborhood, have incorporated LID features as well. Street trees, brick

Rain Gardens & Bioretention

A Low Impact Development (LID) design on Main Street in Little Rock reduces rainwater runoff using a natural water filtration system.

Green Infrastructure

Evapotranspirate, infiltrate, capture and reuse. this is the essence of green infrastructure.



pavers, and bioswales reduce storm water runoff and provide an attractive environment for residents.

The Green Infrastructure Handbook for Local Governments provides additional solutions for storm water management using three basic strategies: evapotranspiration, infiltrate and capture, and reuse. For highway runoff, leaders can consult the *Evaluation of the Best Management Practices for Highway Runoff Control*. These guides provide ways to avoid or mitigate the negative impacts of various pollutants that can seep into water resources. Green infrastructure and new storm water management techniques can prevent pollution, directly and indirectly stimulate economic activity, and guide our community to improved recreational opportunities and health benefits.

Water Sources

Abundant, high-quality and affordable water is critical to the quality of life and future development of central Arkansas. Recent water shortages have affected other areas of the United States. These situations illustrate the importance of a secure water supply. When reserves falter, utility rates climb, limits are placed on farms, production falls, and the economy suffers. However, central Arkansas is proactively working to secure its water resources. The Mid-Arkansas Water Alliance (MAWA) is a cooperate effort among twenty-seven water utilities within the region that work to acquire new long-term drinking water sources.

Mid-Arkansas Water Alliance

MAWA is a not-for-profit membership corporation organized for the purpose of requesting water allocations from U.S. Army Corps of Engineers' lakes (Greers Ferry Lake and Lake Ouachita). Member entities are located in the counties of Cleburne, Conway, Faulkner, Garland, Lonoke, Pulaski, and Saline. Assisting the cities and water user groups in this regional initiative are the Little Rock and Vicksburg district offices of the Corps of Engineers, the Arkansas Natural Resources Commission, and the Ouachita River Water District. The charge of the Alliance is to identify and secure the additional water needs for our customers for the next 50 years.

Priority Watersheds

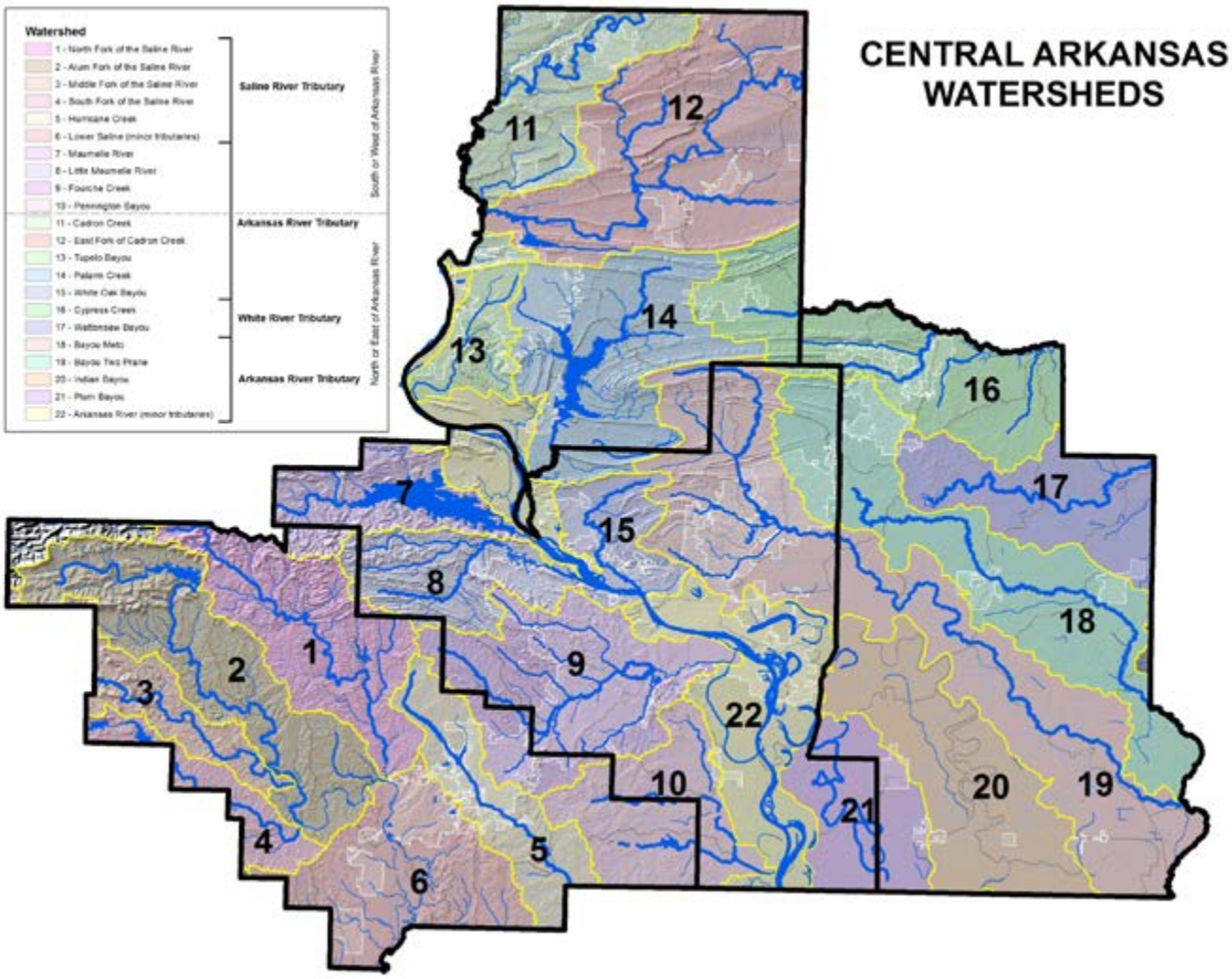
The Nonpoint Task Force in conjunction with Arkansas Natural Resources Commission identifies priority watersheds for the region. A priority watershed is any watershed that has been contaminated by an excess of nonpoint source pollution. Fortunately, priority watersheds are eligible to receive federal monies from EPA.

Priority watersheds for 2011 – 2016:

- Lake Conway - Point Remove
- Upper Saline

The path to water security is multi-faceted. The physical development of our communities can greatly impact natural water systems. Surfaces covered by asphalt and concrete cannot absorb rainwater back into the Earth. New developments should allow for breaks in pavement so that water can filter back into the system. Although finding water is beyond the power of your average everyday citizen, residents can help extend existing water resources. Central Arkansas Water offers water conversation tips for businesses and residents alike to identify efficient water use.

Figure 5-13. Central Arkansas Watersheds



Significant Watersheds in Central Arkansas

Pulaski County

- Fourche Creek
- Little Maumelle River
- Maumelle River
- Plum Bayou
- Pennington Bayou
- White Oak Bayou

Faulkner County

- Cadron Creek
- East Fork of the Cadron
- Palarm Creek

Saline County

- North Fork of the Saline River
- Alum Fork of the Saline River
- Middle Fork of the Saline River
- South Fork of the Saline River
- Hurricane Creek

Lonoke County

- Cypress Creek
- Bayou Meto
- Bayou Two Prairie
- Wattensaw Bayou

Did You Know?

Did you know that only one percent of the world's water can be used for drinking? Nearly 97 percent of the world's water is salty or undrinkable, and the other two percent is frozen in ice caps and glaciers.

Source: https://oceanservice.noaa.gov/facts/wherewater.html

Common Household Uses of Drinking Water

Bathing 20 gpcd*

Toilet Flushing 24 gpcd

Lawn Watering and Pools 25 gpcd

Laundry 8.5 gpcd

Dishwasher 5 gpcd

Car Washing 2.5 gpcd

Drinking and Cooking 2 gpcd

Garbage Disposal 1 gpcd

*Gallons per capita per day

Source: https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1008ZP0.txt

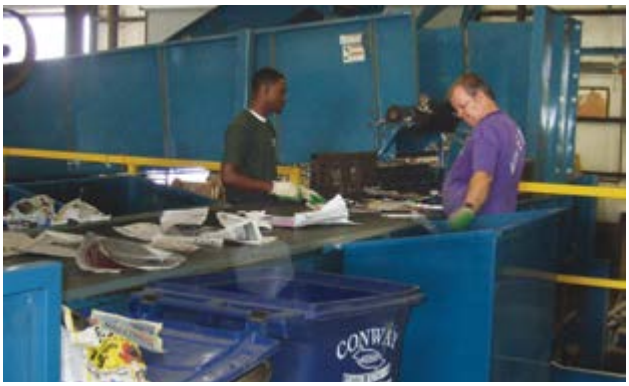
5.6.5 Solid Waste

Everyday central Arkansans are faced with the decision of where to throw their trash. It has to go somewhere, but how do we sustain exponential solid waste growth? *Central Arkansas 2050* advocates reducing the amount of trash in landfills by recycling or composting instead of overburdening our landfills.

Though the percentage of waste sent to landfills has decreased over time, much of what still goes to the landfill is recyclable. Recycling is easy, and benefits the environment. Materials, like plastics that take several years to decompose, are diverted away from landfills; thus, extending the lifespan and limiting expansion of new landfills. Communities save costs of land acquisition for new landfills, and can generate revenue through the sale of recyclable materials. In the process, new jobs will be created to staff a materials-recycling-facility (MRF). Recycling also reduces the amount of new raw material that is consumed, which can preserve natural resources and protect delicate ecosystems.

In central Arkansas, only residents in single-family dwelling units located within city limits of Conway, Little Rock, North Little Rock, Sherwood, Jacksonville, and Cabot have access to curbside recycling programs. In 2015, Little Rock began recycling for multi-family units with over 100 residential units. This program includes educational materials to raise recycling awareness for landlords and tenants. Central Arkansas must expand recycling to prevent our landfills from becoming overburdened.

Composting organic waste can also cut down on the size of landfills and mitigate harmful greenhouse gases. According to the US Composting Council, when organic elements are left in the landfill, a different type of gas is released due to management of the landfill known as "dry tomb." Buried organic matter creates landfill gas, including methane, that is



much more hazardous than waste naturally decomposing outside of a landfill.

As central Arkansans voiced the desire to preserve open spaces, it will be essential to maximize capacity of existing landfills. The region should invest in new techniques and technologies to expand materials that can be recycled. All cities in the region should be able to accept textiles, electronics, and other items in their recycling program. Curbside composting services, found in a few communities already, should be widespread in central Arkansas.

5.6.6 Preserving Central Arkansas' Natural Character

It is no surprise why central Arkansans value living, working, and playing in the Natural State. With over eighty miles of trail and the Arkansas River Trail, proximity to state parks, and sophisticated urban cores, central Arkansas has the best of both worlds – the conveniences of city living alongside the beauty of nature. In the decades to come, the region will need to preserve its drinking water sources, air quality, parks and natural areas, as well as look to diversify energy resources if it wants to maintain the uniqueness of what its residents call home.

5.6.7 Making Connections: Environment, Energy and Natural Resources

Residents who are concerned with finite resources, cost-savings, and job growth realize that moving toward a sustainable future in the natural environment is the best course of action. Sustainability serves as more than just a good feeling and a pat on the back; it translates to tremendous cost savings, not only monetary but health-wise, and economic opportunity for individuals and businesses.

Affordability

Energy efficient homes and access to alternative forms of energy can lower energy bills, and leave greater disposable income that could stay in the local economy. Using sustainable designs is more cost effective from the start. Water drainage systems using LID principles usually have lower maintenance costs than traditional underground drainage and catch basins. In other cases, retrofitting structures to improve energy efficiency in HVAC systems and LED lighting will provide substantial cost savings in the long run. LED lighting reportedly uses at least 75 percent less energy than incandescent lighting, produces very little heat, and lasts 35 to 50 times longer than incandescent lighting. (Source: https://www.energystar.gov/index.cfm?c=ssl.pr_why_es_com)

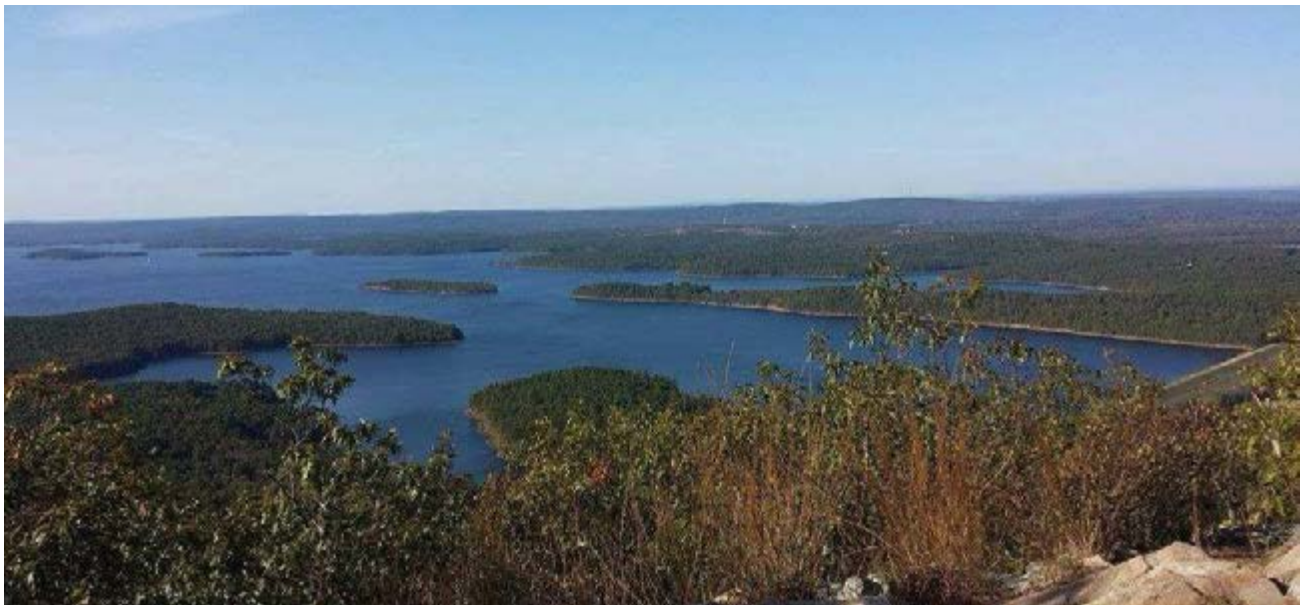


Photo credit: Beverly Griffin

Efficiency

Efficiency is key to sustainability with central Arkansas' environment and energy. As population grows, efficient use of water is essential to secure reserves for the future. In the past five years, efficiency has improved and average household water usage among Central Arkansas Water's customers has fallen by 748 gallons per month. This amounts to total annual savings of nearly one billion gallons. (Source: "Does the Future Hold Water for Arkansas?" and *Central Arkansas Green Agenda*)

Waste reduction will also impact the future. Wider use of recycling reduces waste in landfills which can lengthen their lifespans, reduction in cost of waste removal, and profits gained from the selling of recyclable materials like paper, tin, aluminum, and glass.

Opportunity

Opportunities abound when the region strives for environmental and energy sustainability. Educational opportunities for students on how to conduct energy audits and weatherize buildings are available at local schools. These students can find many "green" jobs with the rising demand for alternative energy.

According to The Solar Foundation, a research and education nonprofit dedicated to advancing solar energy, from 2010 to 2017 over 157,000 new jobs were created in the solar industry.

Careers are not the only benefit of moving toward a sustainable future. By incorporating green practices that enhance housing, economy, mobility, health, and the environment together—quality of life can improve which can attract new investments to the region. Alternative energies and less auto-dependent forms of transportation can improve air quality and reduce pollution. Residents can become healthier with a cleaner environment.

5.7 Health and Safety

***Central Arkansas 2050* envisions our region to become known as the healthiest and safest community in America. This is an admirable and ambitious vision – achievable, but not easy.**

The Arkansas Department of Health (ADH) keeps data on behavioral, environmental, policy, and clinical care factors and the likely outcomes of those determinants. The 2016 summary of those determinants and outcomes is displayed in Table 5-3. Although some behavioral and policy determinants, such as smoking and lack of health insurance, are beyond the scope of *Central Arkansas 2050*, the impact of such issues on the local economy is great. Other determinants—obesity, physical inactivity, air pollution —have implications to the way we build and move in our environment.

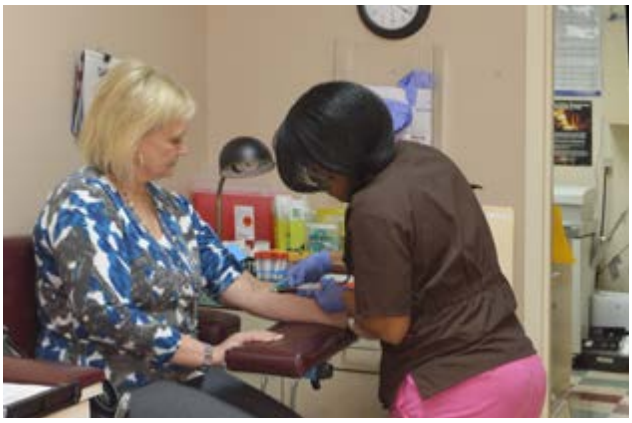
5.7.1 Physical Inactivity Health Risks of a Sedentary Lifestyle

I'VE BEEN THROUGH EVERY DIET UNDER THE SUN, AND I CAN TELL YOU THAT GETTING UP, GETTING OUT, AND WALKING IS ALWAYS THE FIRST GOAL.
—OPRAH WINFREY

Dispersed land development has produced a number of unforeseen consequences to the environment, economy, foreign policy - and to our health. Becoming dependent on the private automobile has effectively limited physical activity among both adults and children. According to the World Health Organization, physical inactivity is the fourth leading cause of death worldwide and has been identified as the greatest public health challenge of the 21st century. [Source: As cited in July 2014 ITE Journal, "The Transportation Profession's Role in Improving Public Health", by Daniel Bornstein and William J. Davis] Physical inactivity leads to loss of muscle and bone mass, which in turn can exacerbate conditions, like osteoporosis and vascular problems.

Furthermore, chronic diseases are associated with physical inactivity and obesity. These diseases are steadily increasing the amount of health care dollars spent for conditions that are largely preventable. According to the Milken Institute, assuming this trend in obesity continues, up to one-fifth of health care expenditures will be required to treat the consequences. As calculated by the ADH, by 2023 over $42 billion will be spent in Arkansas if nothing is done to reverse the trend toward overweight and obesity. In central Arkansas, nearly a third of the adult population is classified as medically obese. The growing epidemic is especially troubling now that so many American children are overweight or obese. Numerous studies have shown that lack of physical activity is a major factor.

Heart disease, hypertension, diabetes, arthritis, sleep apnea, depression and anxiety-related disorders, gallstones, and some forms of cancer (breast, endometrial, kidney, pancreatic, colorectal, and esophageal) have risen in recent years. These diseases are thought of as "old people's ailments", but,



Healthy Active Arkansas

Healthy Active Arkansas is a state-wide initiative to address wide-ranging health challenges from nutrition to physical activity, and healthier environments. Healthy Active Arkansas: A 10 year plan for Arkansas is a 2015 report to holistically address residents' health over the next decade. Visit healthyactive.org to read the plan and learn how to become more healthy and active.

alarmingly, are becoming more common in children. Moreover, these chronic diseases are not a natural part of the aging process. They are not found in great numbers in developed countries that have an infrastructure supportive of active lifestyles.

Economic Effect of Physical Inactivity

Being physically active is not just a personal decision. Community design, availability of open spaces and recreation areas, and the perception of security are factors that strongly influence how people interact with their community. Many of these interactions are subtle. For example, the decision to take an elevator to the second floor is influenced by the prominent placement of elevator banks versus the hidden, unadorned stairway. The unconscious message received is that the elevator is the way you should go up to the second floor.

In the United States, and more specifically in central Arkansas, the health and well-being of individuals is interwoven with community economic vitality. People make many trips within the urban area, often fewer than two miles, using automobiles rather than walking, bicycling, or taking the bus. The loss in productivity results in lower economic activity, which in turn often translates to decreased tax revenues for cities. Higher insurance premiums increase the cost of medical care. Money that is needlessly spent on medical care and insurance is money that is taken out of the local economy.

Becoming Physically Active

Central Arkansas boasts miles of scenic on- and off-road biking and walking facilities that are used for both recreation and transportation. Demand for additional connecting bikeways and trails is increasing as residents and jurisdictions alike discover the economic, recreational, and health benefits to becoming physically active.

Bicycling is considered a base training activity. Base training activities are those that provide endurance and aerobic benefits at the same time. Walking is aerobic exercise. Neither requires a high level of skill, nor are they limited to a single age group. These activities can be enjoyed by the whole family without a large investment.

Bicycling builds strength holistically, in that every part of the body is involved. Regular cycling strengthens leg muscles and improves mobility of hip and knee joints. It can even improve arm-to-leg, feet-to-hands, and body-to-eye coordination.

Number of calories a 150-pound person burns walking at a moderate pace (3 mph)

Time	Distance	CaloriesBurned
10 minutes	0.5 mile	44
20 minutes	1 mile	88
30 minutes	1.5 miles	132
40 minutes	2 miles	176
60 minutes	3 miles	263

Table 5-3. Health Determinants & Outcomes

		COUNTY				STATE
		Faulkner	Lonoke	Pulaski	Saline	Arkansas
DETERMINANTS	BEHAVIORS					
	Smoking (Percent of adult population)	18.0	21.0	20.0	24.0	23.0
	Excessive Drinking (Percent of adult population)	14.0	14.0	16.0	11.0	13.0
	Obesity (Percent of adult population)	33.0	34.0	32.0	31.0	32.0
	Physical Inactivity (Percent of adult population)	28.0	31.0	29.0	26.0	31.0
	High School Graduation (Percent of 9th graders)	87.0	79.0	68.0	85.0	81.0
	COMMUNITY & ENVIRONMENT					
	Violent Crime (Offenses per 100,000 population	300.5	409.8	1103.9	271.9	508.2
	Children in Poverty (Percent of persons under age 18)	17.7	18.8	23.3	15.2	27.8
	Air Pollution (Micrograms of fine particles per cubic meter)	12.0	12.1	11.9	11.8	11.8
	POLICY					
	Lack of Health Insurance (Percent < 65 without health insurance)	17.9	17.6	18.3	16.4	20.6
	CLINICAL CARE					
	Low Birthweight (Percent of live births)	7.7	7.8	10.5	8.3	9.1
	Primary Care Physicians (Ratio of pop to primary care physicians)	47.0	17.0	102.0	40.0	62.0
	Preventable Hospitalizations (Rate per 1,000 Medicare enrollees)	54.0	79.0	64.0	60.0	79.0
OUTCOMES	Diabetes (Percent of adult population)	10.0	11.0	11.0	11.0	11.0
	Poor Mental Health Days (Days in previous 30 days)	3.5	4.0	3.4	4.3	3.9
	Poor Physical Health Days (Days in previous 30 days)	4.2	3.5	3.2	4.0	4.1
	Infant Mortality (Deaths per 1,000 live births)	6.9	7.3	9.7	8.4	7.9
	Cardiovascular Deaths (Deaths per 100,000 population)	251.1	271.5	248.7	243.4	284.9
	Cancer Deaths (Deaths per 100,000 population)	175.7	205.2	188.0	185.8	193.7
	Premature Death (Years lost per 100,000 population)	7296	9021	9374	7307	9290

Source: Arkansas Department of Health

According to the British Medical Association, cycling just 20 miles a week can reduce the risk of coronary heart disease by 50 percent. Steady cycling burns approximately 300 calories per hour. Cycling for 30 minutes every day burns 11 pounds of fat in a year, while building muscle and boosting the body's metabolic rate long after the ride is finished.

Walking is also good for your heart. A recent Harvard study shows that walking at a moderate pace (3 mph) for up to 3 hours a week—or 30 minutes a day--can cut the risk of heart disease in women by as much as 40%. This is the same benefit a person would get from aerobics, jogging, or other vigorous exercise. The benefits to men are comparable.

Along with their benefits to the heart, walking and biking improve circulation and lower blood pressure, help breathing, combat depression, bolster the immune system, help prevent osteoporosis, help prevent and control diabetes, help control weight, decrease chronic pain, and improve digestion and lung function.

Studies have also shown that people are most likely to stick to exercise when it is part of their daily lives. When individuals start looking for opportunities to use a bike or walk, they are often amazed at how many there are. For example, biking or walking to the nearest bus stop can combine physical activity with cost savings. An added financial benefit is that these activities do not require expensive fuel or parking fees. These also cut down on air pollutants from

burning fuel, which can provide additional health benefits

As central Arkansas develops it should consider a pattern that encourages physical activity. This could mean greater connectivity to a robust network of parks, nature trails and also infrastructure dedicated to active forms of mobility. With an abundance of natural, scenic land, the region is uniquely positioned to provide high-quality amenities that will attract users from within and outside the state.

5.7.2 Access to Healthy Food

Food is a fundamental need for central Arkansas. Food provides security, displays culture, stimulates community interaction and economic growth, but most importantly influences health. Providing access to healthy, affordable food is a priority for central Arkansas.

Fresh Markets

Community gardens are increasing in popularity. Several have sprouted up throughout central Arkansas. Although there is currently no hard data on health outcomes, anecdotes abound. Healthcare and community workers note that where gardens have been established, neighborhoods have blossomed in others ways. Residents have come together to undertake other neighborhood projects and become more active in neighborhood watch groups.

The proliferation of farmers' markets throughout the region is another indicator that people have an appetite for healthy foods and are willing to pay for locally grown fresh produce and meat. According to the Arkansas Agriculture Department (AAD), as of 2018, there are 100 active farmers markets in the four county region. To reach a large concentration of consumers, most farmers' markets are located in urban centers, such as Little Rock's River Market District and North Little Rock's Argenta. The success of these and other farmers' markets has highlighted the desirability of broadening the availability of the products to suburban areas. In fact, the number of farmers' markets has increased four-fold since the adoption of *Imagine Central Arkansas*, many cropping up in smaller communities.

Another innovation has rolled into central Arkansas to increase access to healthy food. The Arkansas Hunger Relief Alliance partnered with Rock Region METRO to convert a bus into a "mobile farmers' market" that travels to outlying parts of Little Rock and North Little Rock. This mobile farmers' market has the ability to reach people whose access to healthy, fresh food is limited by suburban design that fosters isolation and auto-dependency. This mobile effort is young, but it has the potential to influence neighboring communities who wish to address access to healthy foods.

Food Deserts

The USDA defines a "food desert" as areas "void of fresh fruit, vegetables, and other healthful whole foods." Food deserts occur typically in lower-income neighborhoods. Maintaining a healthy diet is difficult for families who don't have convenient access to affordable healthy foods. A grocery store or convenience store may be present and within a short drive or walk; however, food choices are limited to cheap products with "filler" ingredients that increase shelf life but provide limited nutrition, and fresh produce is of poor quality. Although the cost of this low-nutritional/low-quality food is often nearly equal to higher quality offerings found in other communities, residents in food deserts may not have the means to travel longer distances to obtain healthy food. As community gardens and farmers' markets proliferate, the availability of nutritious alternatives to high calorie, low nutritional value options may prompt grocery stores in those areas to compete by providing a high quality and better variety of products.

The ADH, in coordination with ARCOP, has championed efforts to ensure that lower-income Arkansans have access to fresh fruits and vegetables. Working together, these agencies have promoted the development of several farmers' markets and have advocated and provided training for merchants desiring to accept Supplemental Nutrition Assistance Program (SNAP) cards and vouchers. They have also provided incentive programs such as "Double Bucks", to promote healthier diets. Programs like Double Bucks allow SNAP recipients to purchase healthy alternatives to junk food by doubling the purchasing power of their SNAP vouchers in farmers' markets. The program has proven to be both beneficial to the SNAP recipients and the merchants in the markets.

Still, it is important to extend the reach of fresh food to outlying areas. These foods can help residents improve their nutrition, and ultimately lower the cost of their healthcare. Every cent saved translates to greater disposable income which improves the residents' economic standing, and ultimately helps secure a sustainable food system.

Food Insecurity

Arkansas is third for food insecurity among households with children, as 24.9 percent of households struggle. Source: 2016 Food Hardship in America report from Gallup data.

Fighting food insecurity :

- **Arkansas Supplemental Nutrition Assistance (SNAP)**
  SNAP, administered by the Arkansas Department of Human Services , helps low income families afford groceries. Benefits are delivered monthly through debit cards that can be used at most grocery stores and some farmers markets. Intended to be a short-term solution for individuals and families, most participants stay on the program less than a year.
- **Women, Infants, and Children (WIC)**
  WIC, administered by the Arkansas Department of Health, provides nutritious food through a Special Supplemental Nutrition Program for Women, Infants and Children. During critical infant growth and development, the program provides nutrition education to improve dietary habits and health, information for breast-feeding, and referrals to other health service

5.7.3 Safe Communities Constructing a Safe Environment

A plethora of variables determine an individual's decision to roam free in his or her community. One of those variables is the sense of personal safety, both real and perceived. Plans for roadway improvements such as sidewalks and bike paths (complete streets) will improve the quality and appearance of

the neighborhood. Establishing crime prevention programs and personal safety programs (for example, bike helmet and car seat safety checks) will improve the safety of residents.

The National Crime Prevention Council (NCPC), working in concert with planners, architects, landscapers, neighborhood stakeholders, and law enforcement professionals, provides training that specifically addresses community improvement through a program called Crime Prevention through Environmental Design. The principles outlined focus on crime prevention, but the strategies mirror "smart growth" concepts long discussed within planning and "new urban" circles. More importantly, *Central Arkansas 2050*'s Vision also unites with these principles.

Following are NCPC principles that can help the region achieve its sustainable Vision:

- **Maintenance and management of space.** Proper upkeep - mowing grass, trimming trees and landscaping, picking up trash, repairing broken windows and light fixtures, and erasing graffiti or other signs of vandalism and neglect – There are signal factors that a neighborhood is well cared for and its residents attentive to what goes on within the area.
- **Access control.** Designing streets, sidewalks, building entrances, and neighborhood gateways to clearly indicate transitions from the public environment to semi-private and private areas.

At Bici Fiesta in Levy, children received new helmets and bicycles, as well as instruction on riding a bike and making repairs.

- **Territorial reinforcement.** Sidewalks, landscaping, and porches help distinguish between public and private spaces. Neighborhood residents display signs of ownership that convey a message to mischief makers or criminal offenders.
- **Surveillance.** It is vital to maximize the visibility of people, parking areas, vehicles, and site activities through strategic placement of windows, doors, walkways, parking lots, and motorways.

While the NCPC's mission is crime prevention, its multi-pronged strategy promotes neighborhood cohesiveness, personal safety and freedom from fear of criminal activity. For example, well-maintained properties and public infrastructure increase land values and provide safe use of sidewalks, bike lanes, and parks. They also send the subliminal signal that residents are on the alert in their neighborhoods. Keeping sidewalks in good repair enables elderly residents to safely access nearby retail destinations and transit stops. Biking is safer and a more attractive activity when the bicycle lanes are free of trash and debris, and the roadway is in good repair. Street lighting that is scaled to human dimension was frequently cited by central Arkansans as a factor that contributes to community safety and security.

5.7.4 Making Connections: Health and Safety

The prosperity and economic resilience of any community is directly linked to the health and safety of its residents. Health is a beneficiary of and a contributor to development, and a key indicator of what people-centered, equitable, and sustainable development seeks to achieve.

Affordability

Healthcare costs have increased substantially and are expected to continue rising. The best defense against these rising costs is a healthy lifestyle. Those who stay physically active and maintain a healthy diet have lower rates of obesity, a wide array of cardiovascular diseases and even anxiety and depression. These lifestyle choices may help residents avoid numerous

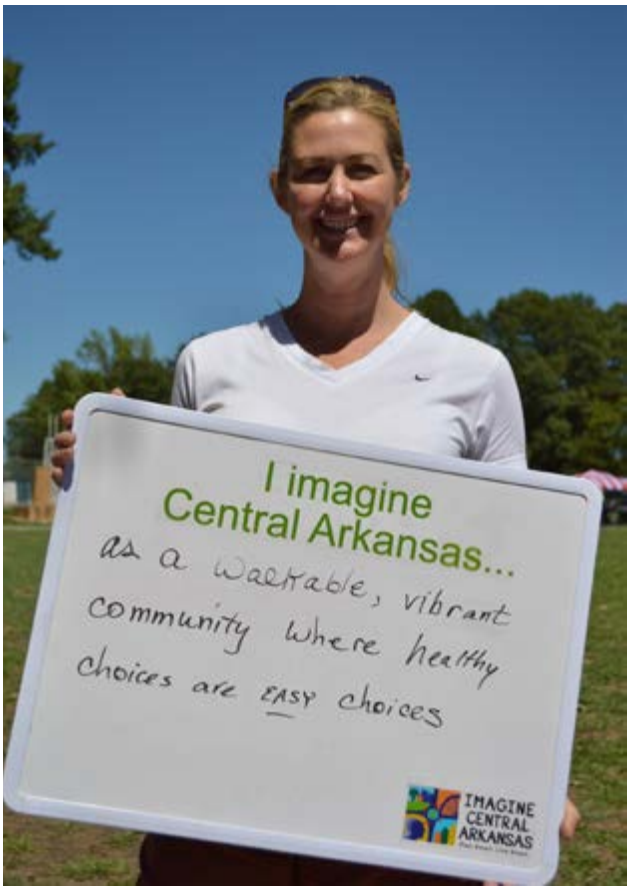
doctor visits, pricey medications or expensive procedures which could lower the amount of capital dedicated towards healthcare. Businesses may also benefit from healthy employees by paying less for insurance services which could lead to increases in individuals' coverage.

Efficiency

Efficient land development and street designs can lead to a healthier and safer population. Denser development coupled with abundant green space encourages residents to get out, walk around and become physically active. This could help alleviate traffic congestion and the unhealthy pollutants that come from a herd of idling cars. Furthermore, complete streets can accommodate all forms of mobility and make movement smoother and safer for all individuals.

Opportunity

A safe and healthy community increases opportunity. Access to grocery stores with fresh foods and neighborhood farmer's markets within walking distance from large populations can help residents reduce costs of healthcare and transportation, as well as increase physical activity and provide social interactions that may be missed in a less connected environment. Greater activity on the streets can deter criminal activity and attract commercial investment in the neighborhood. A safe, healthy community optimizes opportunity.



5.8 The Economy

***Central Arkansas 2050* envisions an economy that is diverse, globally competitive with responsible development practices to reach vitality.**

The economy, so vital to central Arkansas' sustainability, must be strong for the region to grow and prosper. Improving the economy means providing opportunities for individuals to maintain a higher quality of life, and businesses to invest and expand. Central Arkansas wants to catapult itself to the pinnacle of competitiveness and to be recognized as a leader in education, innovation, and job creation.

5.8.1 World Class Education

The education of our citizens is a priority. Education is the key to global competitiveness and the essential means to develop the human capital necessary for a 21st century economy.

The first goal must be to reduce the high school dropout rate. There are many good quality jobs that do not require a college degree, but they do require specialized training, on-the-job training, and mentoring/apprenticeship relationships. Partnerships between local corporations and educational institutions are the essential ingredient to success in this area. Local colleges have already developed programs that match students with mid-range skill levels to jobs in manufacturing, culinary, construction, repair, maintenance, and other specialties. These efforts must be supported and extended.

The second educational goal must be to raise the share of college-educated citizens in central Arkansas above the current 29 percent share of persons 25 and older. This can be done in two ways. The first is by attracting well-educated people from other parts of the country. There is evidence that the central Arkansas region is already able to do this. High-quality urban design characteristics, good recreational assets, and so-called "cultural infrastructure" like a lively arts scene can help achieve this goal. The second means is to educate a higher share of local young adults and to keep them in the region after graduation.

Despite a marked improvement in the overall rates of graduation and educational attainment, the achievement rates and test scores of the region's poorest residents have remained below those of students in median income or above households. Although efforts to reduce this disparity have been in place for decades, bridging the educational achievement gap has proven elusive. The close correlations between poverty and parental educational achievement have forced educators to reconsider previous assumptions about the achievement gap and adopt a broader approach which includes creating safe study and play areas in the area's lower-income communities. The Central Arkansas Library

System has promoted a wide variety of after school and evening activities that have included snacks, meals, and educational experiences for children and teens. This effort provides students with access to books, structured Interaction of other children, and a safe environment to learn.

5.8.2 Quality Infrastructure

By developing and maintaining high-quality infrastructure, the region can increase the speed of economic exchange.

Evidence from around the country suggests that high-quality pedestrian environments are increasingly the best economic boosters around, because pedestrian-friendly environments mix people and ideas together more cohesively than any other system. The highest-quality economic output is generally found in pedestrian-friendly environments, and academic literature has suggested that the higher the density of workers in an area, the greater their economic output.

The cost of future infrastructure must be carefully assessed when making development decisions. The mix of infrastructure with land development is a vital element. Several downtown environments in the region are already mixing higher-density land use with infrastructure, particularly in proximity to the METRO Street car system in downtown Little Rock-North Little Rock.

Since the bulk of the region's land use is suburban in nature, the "retrofitting of suburbia" theme could be a useful template for the future. Developers must be encouraged to recognize the hidden value of "underutilized asphalt" seen in many suburban parking lots, particularly where retail centers have entered a cycle of decline. In many cases, these declining retail nodes are well-located within the regional transportation web. There are opportunities for innovation-minded developers, and local governments must be willing to engage them with transportation projects that assist with suburban redevelopment.

5.8.3 Regional Community and Economic Development

Since regional community and economic development is already a priority, the key here is to re-think and re-invigorate efforts already underway. The public sector must become better able to understand and engage with the private sector, which remains the source for most of the capital, land ownership, and creativity that drives community economic development. At the same time, government leaders can develop affirmative outlooks that encourage private developers to see the benefits of public-private engagement.

Governments can play a useful role by working with private businesses to identify internal and external marketing plans based on analysis of existing regional assets and strengths. The public sector must also play a key role as a promoter of locally-owned and minority businesses.

5.8.4 Skilled Workforce

There are already numerous dynamic workforce development efforts underway in central Arkansas. The effort to link academic knowledge with workplace needs must be expanded. Academic research has shown that job-specific workforce training is particularly effective, because it gives workers an opportunity to apply newly-learned skills on the job, and hence to learn more quickly and effectively than in a purely abstract academic environment.

Unique opportunities for acquiring work skills have arisen since the adoption of *Imagine Central Arkansas*. Innovation hubs and maker spaces offer entrepreneurs support with skills training, affordable office space, administrative services, and collaborative environments populated by like-minded peers. These establishments typically offer training for in-demand

careers and access to equipment that may be too expensive for an upstart business. Organizations, like the Arkansas Regional Innovation Hub in North Little Rock and the Conductor in Conway, are preparing residents for fulfilling careers and inspiring entrepreneurship in central Arkansas.

5.8.5 Creative Spaces

There is little doubt that the quality of the built environment has a lot to do with the human creative capacity.

Fortunately, the central Arkansas region approaches this challenge with several already-existing advantages. The region is physically attractive. Its varied landscape lies at the intersection of four of the six geographic regions of Arkansas. The Arkansas River is a particularly attractive feature that bisects the region, and its potential has yet to be fully exploited.

In addition, there are many elements of the existing built environment that already comprise a useful hub of attractive landscapes. These can be found near the State Capitol in Little Rock, in the varied and pleasant streets of the River Market District, Argenta, Hendrix Village, several university and college campuses, a presidential library and a number of extraordinary parks that round out the existing high-potential landscape. Seven communities in central Arkansas have undertaken innovative new zoning codes through Metroplan's Jump Start program. Five of these areas have also engineered infrastructure projects that will incorporate sustainable techniques into the built environment. The projects will serve as

a model for the way the region's places can develop effectively and efficiently.

While the region already owns the potential for creative spaces, much more can be done. Again, public-private cooperation is key. Modern visioning tools can become a powerful means of getting leaders and decision-makers together to maximize the potential for developing further creative spaces.

The different themes of future economic development include education, infrastructure, skilled workforce, and creative spaces. None of these characteristics is worth as much in isolation as they are working in unison. Together, they can form a culture of creative entrepreneurship that will build a future that is fun, equitable, and prosperous.

5.8.6 Making Connections: Economy

Arguably, the most important component to a successful, sustainable region is its economy fueled by a well-educated population. It are these elements that give people opportunities to grow and thrive and achieve what the kind of livable lifestyle that they have articulated since the early 1990s.

Affordability

Businesses are attracted to areas with an educated population. As businesses compete for skilled workers and new clientele, wages rise and prices of goods and services are driven down. Also, education can help inform an individual to make sound financial decisions and achieve an affordable lifestyle. Access to information for job training skills, healthy

lifestyles, and affordable, high-quality transit service, safe and abundant bike lane and well-lit, ADA-accessible pedestrian walkways can empower residents to manage their budgets. Together, these concepts can help the region attain affordability and make wallets a little bit fatter.

Efficiency

The health of our economy and educational system is tied directly to how efficiently we build our environment. Grouping essential services, employment hubs, and entertainment options with places to live can help residents keep costs down while promoting efficient movement of people and products. Businesses close to residents can benefit greatly. A study that classified 66 places within the Washington, D.C., metropolitan region based on their walkability, found that a 19-point increase in walkability was associated with an 80 percent increase in retail sales and a nearly $7 per square foot increase in retail rents. (Smart Growth and Economic Success: The Business Case)

Opportunity

Economy and education are the quintessential components of opportunity. Knowledge is power; it provides social and economic mobility. Educational attainment directly correlates to the economic potential of an individual and a community as a whole. Businesses look to invest in communities with highly skilled workers. Typically, these communities enjoy better health, higher earning power and an all-around greater quality of life. Creative professionals tend to flock to communities that display these facets of livability.

5.9 Crystal Ball: Foreseeing Trends

5.9.1 Emerging Trends: Technology's Influence

We can never clearly see what the future holds, but we know for certain our lives depend on mobility. We know that transportation affects land development and housing, and impacts the environment, which can contribute to our health and economic success. Shifting public expectations, dwindling transportation budgets, and advances in technology will disrupt the status quo. Why we move, how we move, and how often we need to move, will adjust to technology changing our world.

Communications

Technology influences our lives more every day. As technology continues to advance, the connection among people grows and less face-to-face contact is required. Personal mobile devices now make it possible to be connected at all times. How will technology impact our future? It will influence how and how much we travel; it will affect where we work; it will affect our education and healthcare systems; it will affect everything!

Autonomous Vehicles

It is currently possible to purchase vehicles that park themselves, adjust speeds according to surrounding traffic, warn drivers of potential dangers, and direct drivers around congestion. These technologies and the emergence of crash avoidance systems reduce auto crashes and increase roadway capacity. The next automotive advancement is likely to include the widespread availability of autonomous (driverless/assisted) vehicles. The impact of driverless vehicles may be dramatic and lead to greater efficiency within our existing roadway network. However, concerns are mounting that full autonomy may greatly increase automobile trips, escalating traffic congestion and accelerating wear and tear on our roadway infrastructure.

Driverless cars could provide our most vulnerable residents another mobility option, impact freight movements, lead to changes in car ownership and personal car sharing, and parking requirements. While many see improved convenience, better safety, and other benefits in driverless cars, others see possibilities like increased dispersion of population, and increased pollution and fuel use due to the ease of travel. Fleets of autonomous, on-demand ridesharing services may impact transit ridership, affecting its revenue and potentially diminishing its service capabilities. As this technology develops, central

Arkansas must consider how to incorporate it into the regional transportation system to ensure mobility remains equitable for all.

Roadways

Intelligent Transportation Systems (ITS) seek to improve the efficiency and safety of our transportation system through technology. Existing use of ITS focuses on driver information, signal systems, and roadway performance. As use continues, ITS will include direct communication between vehicles and other roadway infrastructure. Imagine a traffic signal that turns green before you arrive, or a car that tells you when it is okay to continue through the intersection.

"Sharing" Transportation

Over the past decade, we have seen a shift towards a "sharing economy" where private citizens rely directly on each other, often through internet or mobile apps, to meet specific needs. The sharing phenomenon has boomed in transportation, and is increasingly visible in central Arkansas. Vehicle and bike travel are transforming in this new economy to meet mobility needs.

Ridesharing services match users by location to optimize vehicle trips. This means a driver may be close to a passenger, looking to hitch a ride, who recently tapped a button on their phone. Instead of waiting for a taxi to dispatch or relying on fixed schedule public transit, riders are able to hail rides on-demand. Rideshare has steadily increased, and some cities are seeing changes in traffic patterns and demand for transit. Leaders must maintain vigilance while the trend grows and explore ways to better integrate this new technology into the regional transportation system.

Cycling is reemerging as a legitimate means of transportation, but bike ownership can be inconvenient for many. Fortunately, bike-sharing has emerged to increase access. Bike share is a program that allows users to rent bikes at self-service stations located across cities for short, often spontaneous trips. Originally launched in larger cities with lots of potential riders, new docking methods have allowed smaller markets to start services of their own. For these programs to maintain success, communities must consider how to accommodate cycling. All ability users must feel safe on designated bike routes and paths that connect to essential destinations. Bike

share could provide a cheaper alternative to other modes of transportation, so leaders should watch as the trend grows.

Freight Movement: Online Shopping and 3D Printing

Online sales represent 9.1% (US Census) of total retail sales in the United States at the end of 2017, an increase of 4.4% since the adoption of *Imagine Central Arkansas* in 2014. As online sales comprise a larger percentage of total sales, fewer trips are made on roadways, while the number of local freight deliveries increases. This impacts our transportation system and ultimately our built environment. Technology continues to change the face of commerce. Imagine your refrigerator ordering grocery items to be delivered to your home.

The majority of items that we currently buy are manufactured off-site and then stored in a warehouse or store until purchased. By developing three-dimensional digital models of items it is possible for shapes (or molds) to be printed by various 3D printing machines. Many experts believe that this technology has the ability to change the world economy by reducing the need for centralized manufacturing, global trade and the cost of product development and testing. Imagine calling a local

print store and having the replacement part for your car, (the same device that is currently manufactured and shipped twelve time zones and 10,000 miles away), printed before you arrive.

5.9.2 Trending Perspectives

While the *Central Arkansas 2050* plan attempts to explore future possibilities, it recognizes the limitations of attempting to predict the interactions of technology and socioeconomic trends. Nonetheless, the following precepts may offer wisdom that will endure, and can provide guidance amid continuing technological and socioeconomic changes:

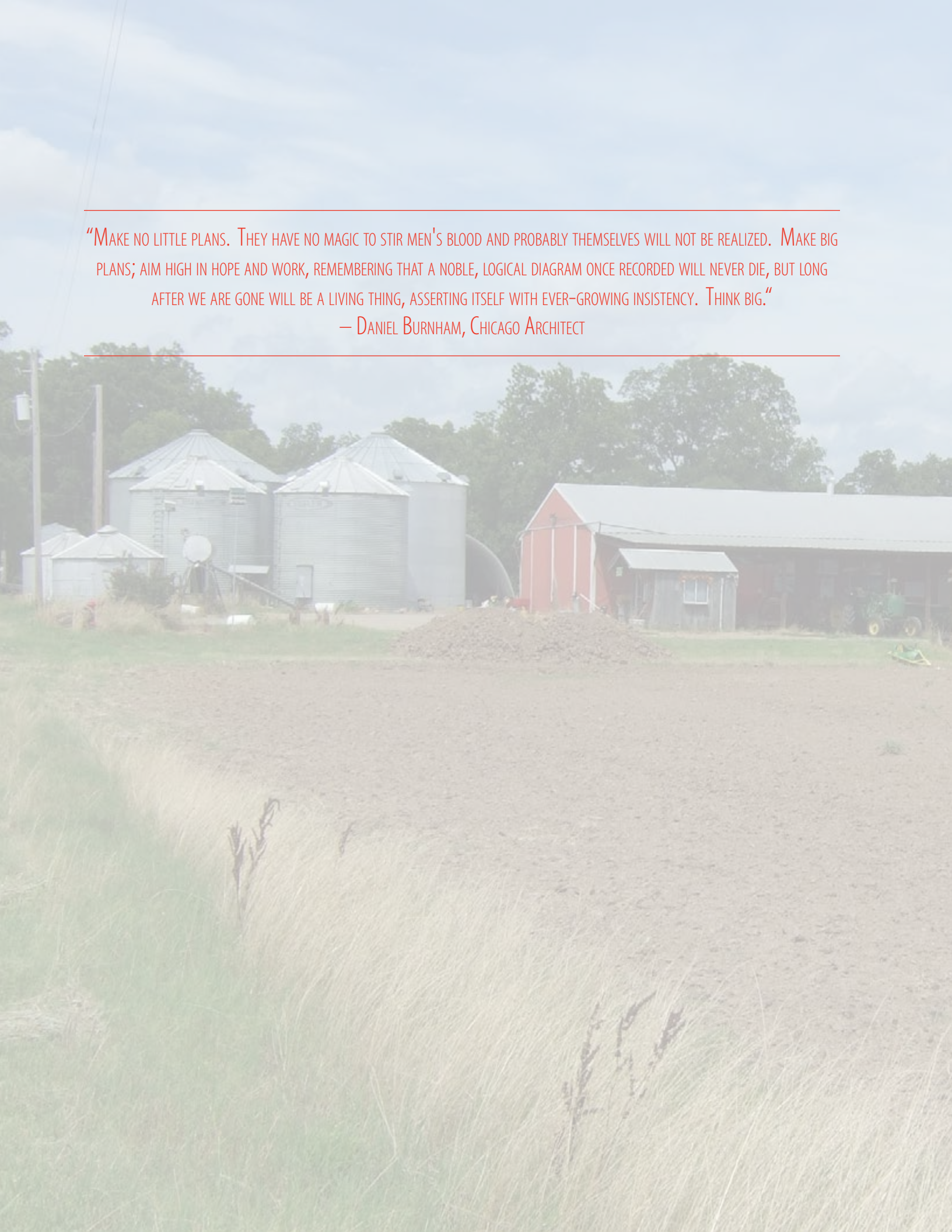
- Pedestrian flows are the beginning and end of all trips.
- Non-pedestrian transportation systems must not be allowed to prevent pedestrian flows, either through blocking access directly, or by making vital destinations inaccessible for reasons of distance.
- Land use and transportation are closely linked. The most successful land developments incorporate good accessibility, both in terms of interaction with powered transportation systems and also with pedestrians.
- There must be equity in transportation. The ease of mobility for some must never be allowed to stand in the way of mobility for all.
- Health is a growing part of the socioeconomic picture. Health concerns must be recognized as part of the overall planning process.
- Environmental problems, like air pollution and excessive land consumption, will affect the region's future quality of life.
- Environmental problems impose real economic costs by affecting quality of life and requiring remediation. This requires a careful balancing between short-term and long-term measures of cost.

Housing affordability is linked to transportation access. Opportunities exist for redevelopment in selected areas, often inner-city neighborhoods with good transportation access. Such redevelopment can improve equity, overall urban quality of life, and affordability.

Will the future include people living to the age 150, high-speed rail lines connecting our region with other metropolitan areas, driverless cars, a fully renewable energy source, the decentralization of jobs and education, or environmental impacts to our air and water? Each of these and countless other scenarios are distinct possibilities that can shape our region at some point in the future. In planning for the future each needs to be considered.

Chapter 5 Source Material:

- *National Crime Prevention Council (NCPC)," Best Practices for Using Crime Prevention Through Environmental Design in Weed and Seed Sites", 2009*
- *Nationwide Children's Hospital, "Safe and Accessible Neighborhoods", 2013*
- *http://archives.huduser.org/scrc/sustainability/about.html*
- *http://www.nlrpr.org/*
- *http://thesolarfoundation.org*
- *https://www.epa.gov/green-infrastructure/green-infrastructure-municipal-handbook*
- *http://www.trb.org/Publications/Blurbs/158397.aspx*



"Make no little plans. They have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Think big."

– Daniel Burnham, Chicago Architect

Chapter 6. Charting the Course

6.1 Scenario Planning

Central Arkansas 2050 includes a scenario planning process to explore alternatives for growth, development and transportation investment. The intent of scenario planning is to spur discussion of long range planning and the regional Vision by analyzing the impacts of two land use scenarios.

Scenarios explain the outcomes of different growth and development patterns, and determine if the regional Vision optimally meets the intent of the plan's Vision statement, goals, and objectives. Although these scenarios, developed as a part of *Imagine Central Arkansas, reflect the planning horizon year 2040, they will denote potential development patterns until the next major plan update. Projections are based off of year 2013 base data.*

Scenario planning process questions:

- Can future development be built in ways to preserve natural areas by reducing land consumption and reducing impervious surface?
- In the future, would new homes be built in places with more access to walking, biking and transit opportunities as viable options to the car?
- How accessible are homes to public transit, major employment centers, retail areas, and parks?
- Will workers in the future have good access to their jobs and choices about how they will get to work?

The scenario planning process begins with the identification of "placetypes," representations of different development types that could happen. The placetypes are organized into regional growth scenarios. Finally, scenarios are compared using indicators, which are quantitative and qualitative descriptions of key characteristics. The planning process and results are described in the following sections.

6.2 Placetypes

When modeling land use, many places throughout the country are transitioning from conventional land use designations to "placetypes" when developing their growth scenarios. This change is driven by a renewed interest in the interrelationship between land use and urban design for creating unique places. Since the objective of scenario planning is not to map future land uses but rather to compare different patterns and forms of development, each placetype represents a "snapshot" example of a typical pattern of development. Thus, each placetype varies in mixture of land uses, development densities/intensities and open space allocation. *Placetypes are not meant to be synonymous with zoning districts, nor are they intended to replace rules or requirements in locally-adopted comprehensive plans and zoning ordinances.*

The Placetypes Summary (Table 6.1) gives detailed descriptions and representative photos of each placetype used in the scenario planning process. Each placetype provides guidance on the elements of design that make them unique.

Figure 6-1. The Scenario Planning Process

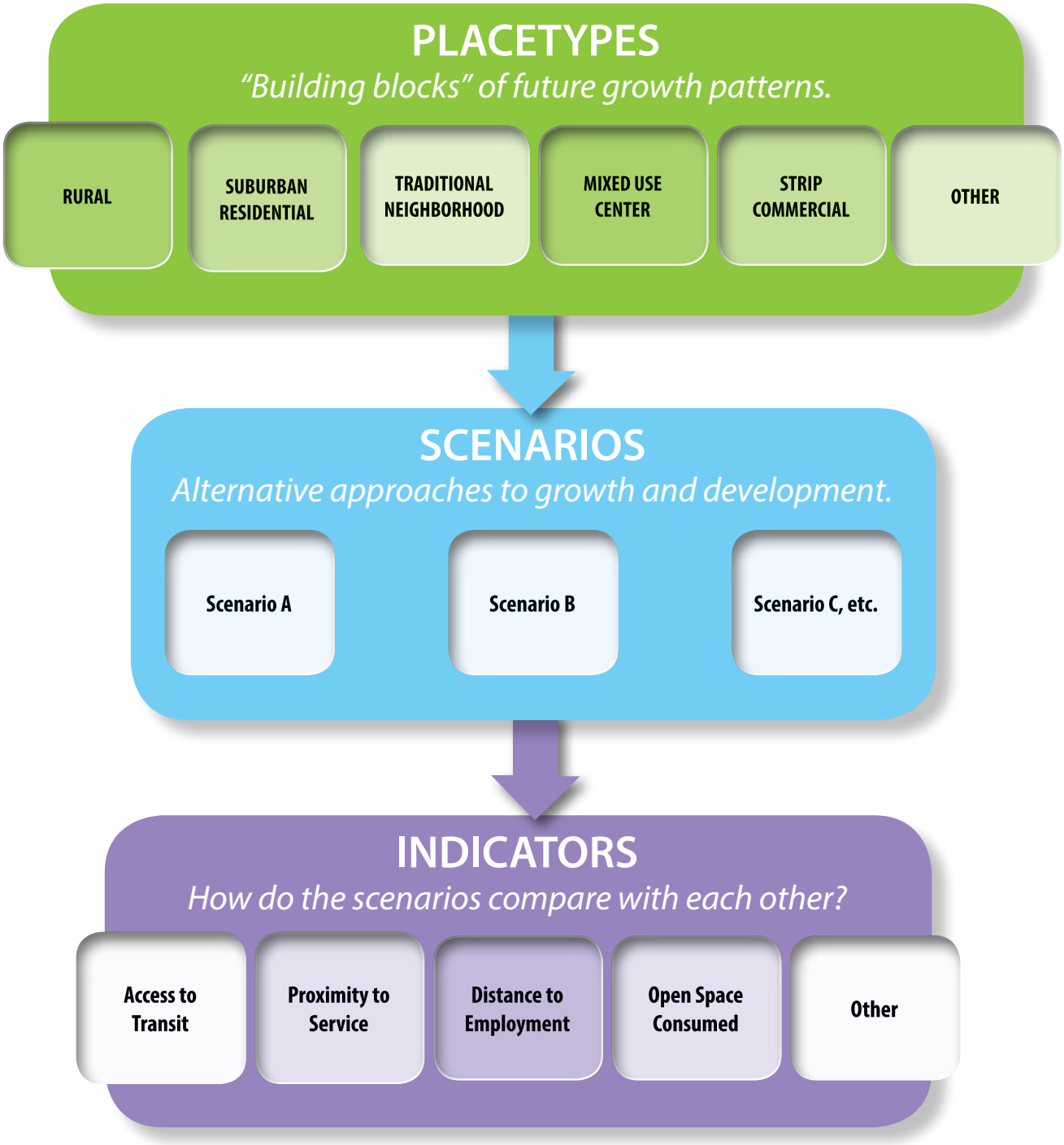


Table 6-1. Placetypes Summary

PLACETYPE	RURAL RESIDENTIAL	RURAL CLUSTER
Character/description	Large lot, single-family home sites within a rural setting. Each lot typically has direct access to the main arterial.	Single-family and two-family homes set in a semi-rural setting characterized by smaller lot sizes, clustered around a local street surrounded by large amounts of common open space.
Average scale	10 acres	10 acres
Primary Uses	Single-Family Detached	Single-Family Detached and Two-Family Homes
Secondary Uses	Farming/Agriculture	Farming/Agriculture
Residential Density	0.2 - 0.4 du/ac (single-family)	1 - 2 du/ac (single-family)
Non-residential Intensity	N/A	N/A
Building Heights	1-2 stories	1-2 stories
Open Space	10% Passive	70% Passive (open space, recreational park, farmland)
Parking Placement	Attached garages	Attached garages
Connectivity	Low	Medium
Street Pattern	Curvilinear	Curvilinear
Primary Modes	Automobile	Automobile
Secondary Modes	None	None
Representative Photos	   	

Table 6-1. Placetypes Summary (continued)

PLACETYPE	SUBURBAN RESIDENTIAL	TRADITIONAL NEIGHBORHOOD RESIDENTIAL
Character/description	Low-density, suburban-style home sites on larger lots of 7,000 - 12,000 sq. ft., characterized by curvilinear cul-de-sac street networks with few access points.	Compact, village style setting pre-1960 neighborhoods, and a few new developments, characterized by a mix of uses, higher densities, gridded streets and pedestrian-scale network.
Average scale	60 acres	40 acres
Primary Uses	Single-Family Detached	Single-Family Detached
Secondary Uses	Townhomes	Townhomes / Condos / Apartments
Residential Density	3- 4 du/ac (single-family)	5 du/ac (single-family) 10 du/ac (multi-family)
Non-residential Intensity	N/A	N/A
Building Heights	1-2 stories	1-2 stories
Open Space	5% Active and Passive	10%, Active and Passive
Parking Placement	Attached garages	Detached garages behind homes/ buildings
Connectivity	Low	Medium
Street Pattern	Modified Grid	Grid
Primary Modes	Automobile	Automobile, Walking
Secondary Modes	Walking	Biking
Representative Photos	   	

Table 6-1. Placetypes Summary (continued)

PLACETYPE	SUBURBAN APARTMENT	WALKABLE NEIGHBORHOOD
Character/description	Single use apartment communities, gated with an internal circulation system. Generally located in proximity to commercial areas.	Characterized by a pattern of small, walkable blocks and an interconnected street grid with a high level of connectivity. Predominantly single-family neighborhoods, with mixed-lot sizes, are clustered around a commercial and civic/institutional uses.
Average scale	10 acres	40 acres
Primary Uses	Multi-Family Residential (apartments)	Single-Family Detached Homes, Two-Family and Three-Family Residential Units, Townhomes
Secondary Uses	None	Multi-Family Res. (apartments, condos), Commercial, Civic/Inst.
Residential Density	12 du/ac (multi-family)	5 du/ac (single-family), 8 du/ac (multi-family)
Non-residential Intensity	N/A	0.20 - 0.30 Floor Area Ratio
Building Heights	2-4 stories	1-2 stories
Open Space	5% Passive	10% Active (pocket parks, neighborhood parks) and Passive (public squares)
Parking Placement	Structured parking or on-street	Detached garages behind homes/ buildings
Connectivity	Low	Medium / High
Street Pattern	Modified Grid	Grid
Primary Modes	Automobile	Automobile, Walking, Biking
Secondary Modes	Walking	Transit
Representative Photos	   	

Table 6-1. Placetypes Summary (continued)

PLACETYPE	URBAN NEIGHBORHOOD	SUBURBAN COMMERCIAL
Character/description	Characterized as mix of primarily single-family homes and multi-family structures in an urban, walkable environment.	Big box and strip-style commercial development adjacent to arterials, characterized by single lot depth and large setbacks. Some office uses.
Average scale	40 acres	20 acres
Primary Uses	Single-Family Detached, Two-Family And Three-Family Residential Units, Townhomes; Multi-Family Residential (apartments, condos)	Commercial
Secondary Uses	Civic/Institutions	Office
Residential Density	6 du/ac (single-family) 24 du/ac (multi-family)	N/A
Non-residential Intensity	0.25 Floor Area Ratio	0.20 - 0.25 Floor Area Ratio
Building Heights	1-4 stories	1 story
Open Space	5% Active (pocket parks) and Passive (public squares)	0% Passive
Parking Placement	Detached garages behind homes/ buildings and on-street parking	Surface parking
Connectivity	High	Low
Street Pattern	Grid	
Primary Modes	Automobile, Walking, Biking	Automobile
Secondary Modes	Transit	None
Representative Photos	   	

Table 6-1. Placetypes Summary (continued)

PLACETYPE	NEIGHBORHOOD MIXED-USE CENTER	MIXED-USE CENTER / CORRIDOR
Character/description	A mix of locally-oriented retail and office uses at the center, with connected single and multi-family residential uses at the edge. They integrate a civic use that establishes the identity of the center as a focal point in the community, typically located at busy arterial intersections.	Urban-style destination intended to serve as a center to live, shop, work and play in the community. Characterized by office, retail, mixed uses that have higher intensities intended to cater to an 'urban' lifestyle.
Average scale	15 acres	30 acres
Primary Uses	Single-Family Detached, Townhomes, Apartments, Condos, Office	Commercial/Retail, Multi-Family Residential (apartments, condos, senior housing)
Secondary Uses	Commercial, Retail, Civic/Inst.	Office
Residential Density	6 du/ac (single-family) 20 du/ac (multi-family)	20 du/ac (multi-family)
Non-residential Intensity	0.40 - 0.60 Floor Area Ratio	0.60 - 1.0 Floor Area Ratio
Building Heights	1-3 stories	1-4 stories
Open Space	5% Passive	5% Passive (public plaza)
Parking Placement	Screened surface parking in rear of buildings; on-street	Structured parking, surface lots behind buildings
Connectivity	Medium / High	Medium / High
Street Pattern	Modified Grid	Modified Grid / Grid
Primary Modes	Automobile	Automobile, Walking, Biking
Secondary Modes	Walking, Transit	Transit
Representative Photos	   	

Table 6-1. Placetypes Summary (continued)

PLACETYPE	URBAN CORE	INDUSTRIAL / BUSINESS PARK
Character/description	A hub for employment, shopping, civic, and entertainment activities, and provides a mix of housing types and quality of life amenities. It is intended to be a compact, walkable environment and with a mix of uses that support multiple modes of transportation.	Typically located near major roads, highways, and railways. These areas may include industrial and business parks, manufacturing centers, warehouse and distribution centers and assembly operations.
Average scale	10-40 acres (infill / redevelopment)	80 acres
Primary Uses	Office, Commercial/Retail and Multi-Family Residential (apartments, condos)	Light and Heavy Industrial, Warehousing and Manufacturing Activities
Secondary Uses	Civic/inst.	Office
Residential Density	40 du/ac (multi-family)	N/A
Non-residential Intensity	0.50 - 2.0 Floor Area Ratio	0.15 Floor Area Ratio
Building Heights	1-5 stories	1-2 stories
Open Space	10% Passive (public plaza)	None
Parking Placement	Structured parking and surface parking lots behind buildings	Surface parking
Connectivity	High	Low
Street Pattern	Grid	Curilinear/Cul-de-sac
Primary Modes	Automobile, Walking, Biking, Transit	Automobile
Secondary Modes	None	None
Representative Photos	 	 

Regional Growth Projections (2013-2040)

Both scenarios were developed using the same assumptions about regional growth in population, housing and employment between now and 2040. These scenarios were developed as part of ICA, but will represent the Vision for this update as well. The projections, prepared by Metroplan, are based on historical growth, assumptions about birth and migration rates and key economic indicators. Population within the region is expected to increase by approximately 269,000 people to 936,500 people by 2040. Current growth forecasts estimate that roughly 380,000 new homes will be built in the central Arkansas region by 2040, a 43 percent increase compared to today. Over 125,000 jobs are expected to be added, which means more work trips that will have to be accommodated and that will have impacts on land use and transportation. The main difference between the scenarios is where new population and employment growth locate over the next 25 years.

6.3 Choosing Our Future

Future growth is inevitable, and the choices we face are not about how much the region's population grows, but how can the region be developed to accommodate growth in a fiscally responsible way that maintains a desirable quality of life. The choices the region makes in terms of the type and character of development will have a profound influence for decades to come.

Two growth scenarios were developed that represent hypothetical growth for how the region could develop by the year 2040: Emerging Trend Scenario and the Regional Vision Scenario. While there are a limitless number of potential ways in which growth can occur, these scenarios represent distinctly different choices about growth policy and serve as a basis for drawing inferences about the impacts of those choices. Each scenario is composed of varying combinations of placetypes. The Emerging Trend Scenario serves as a baseline for comparison against the Regional Vision Scenario. *The scenarios do not predict how future growth actually occurs, but how housing, employment, and transportation growth could occur.*

6.4 Emerging Trend Scenario

The Emerging Trend Scenario (Figure 6-2) shows how the region could develop if new growth were to continue under current development and growth patterns. Over the past several decades, development occurred in a dispersed pattern of low density, with detached homes on large lots located in the region's periphery, but now market trends have shifted to where new homes are being built on smaller lots and less suburban sprawl is occurring. Under the Emerging Trend Scenario, growth is allocated in a pattern that continues the emerging suburban development pattern of moderate-density residential subdivisions, low density rural development and highway oriented commercial, but that also includes a limited amount of smaller scale mixed use centers surrounded by compact, walkable traditional neighborhoods. Redevelopment and

Emerging Trend Scenario

- *Moderate density residential subdivisions*
- *Low-density rural development*
- *Highway-oriented commercial*
- *A limited amount of mixed-use centers surrounded by compact, walkable traditional neighborhoods*
- *Redevelopment in downtown areas*

Figure 6-2. Emerging Trend Scenario

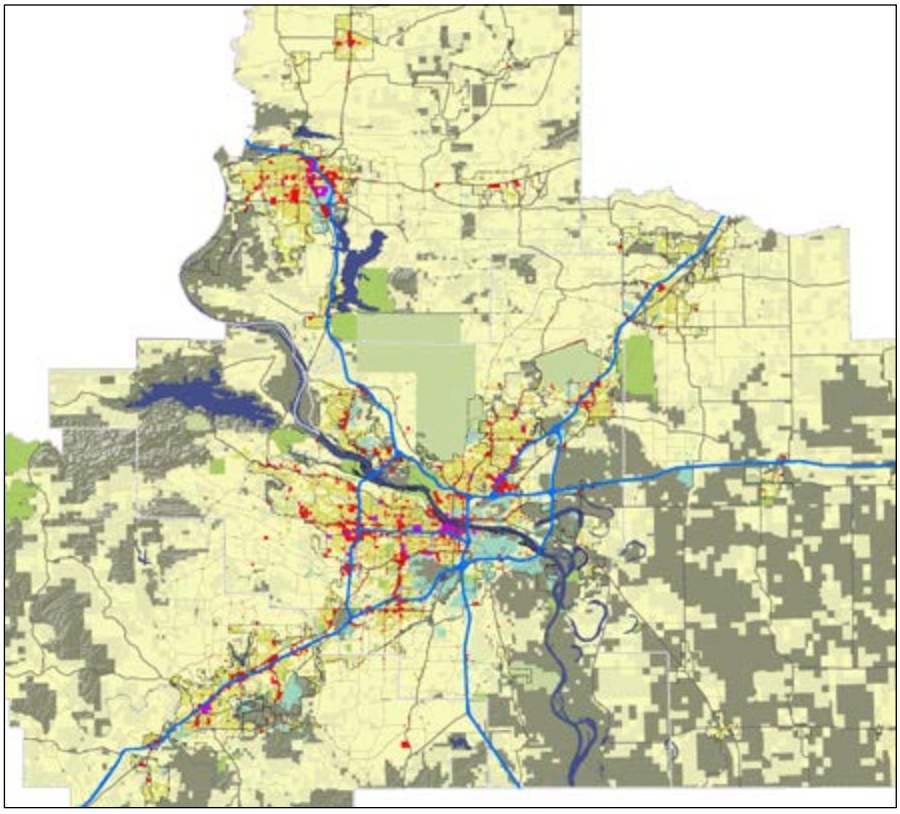
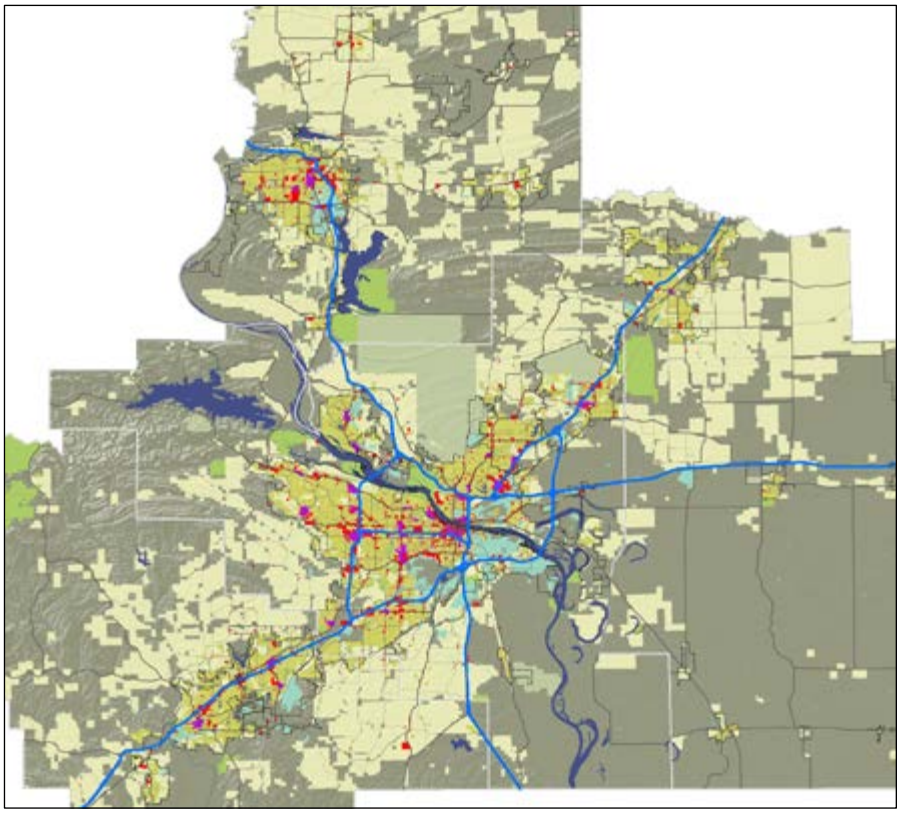


Figure 6-3. Regional Vision Scenario



These maps represent the amount of new land expected to be consumed based on current land development patterns versus land development under the *Central Arkansas 2050* Vision. Much more new land is consumed under the Emerging Trends Scenario.

some intensification in downtown core areas (such as in Little Rock and North Little Rock) is also depicted.

Overall, the Emerging Trend Scenario lends itself toward more rural and suburban-scale development placetypes, although some walkable and mixed-use placetypes are incorporated. Under the Emerging Trend Scenario, few acres are redeveloped and new areas of development compete with existing rural communities and require further expansion of water, roads and sewer systems.

6.5 Regional Vision Scenario

Outreach conducted as part of *Imagine Central Arkansas* reaffirmed the Vision Plan originally cast in Metro 2020 and further refined by Metro 2030 and Metro 2030.2. The Regional Vision (Figure 6-3) brings the vision, goals, and objectives of those plans and this 2040 Plan to fruition. It balances highway investments with a shift toward robust regional transit and bicycle and pedestrian networks that frame a more compact, mixed-use development pattern. The Regional Vision Scenario articulates the regional Vision for *Central Arkansas 2050* that is detailed in the Mobility Section of Chapter 5.

6.6 Alternative Futures

The construction of new homes, retail and employment centers and all that comes with it—families, commutes, etc.— undoubtedly has major impacts on everything from parks and schools to natural areas. The growth of the central Arkansas region could proceed in any number of directions. The purpose of the two hypothetical development scenarios is to depict distinct ways of thinking about growth patterns and subsequent policy and infrastructure issues. The eventual ultimate growth pattern could include elements from both scenarios.

The Emerging Trend Scenario and the Regional Vision Scenario were evaluated against a wide range of indicators that fall under different categories: Land Use, Transportation, Environment, Economy and Workforce, Housing and Neighborhoods, and Infrastructure. The Scenario Indicators Summary, Table 6-2, shows the comparison of indicators between existing conditions in 2013 to both the Emerging Trend Scenario and the Regional Vision for the horizon year 2040. The results of the evaluation of scenarios are intended to provide insight into the potential impacts of growth decisions on the central Arkansas region over the next 25 years. Key differences are addressed in this chapter, and the full explanation of each indicator is included in Appendix D (Scenario Evaluation Results).

Regional Vision Scenario

- *Focused on compact, mixed use growth*
- *Defined centers across the region that vary in scale and function*
- *Mix of compact, walkable neighborhoods and suburban/rural residential areas*
- *Shaped by regional transit network*

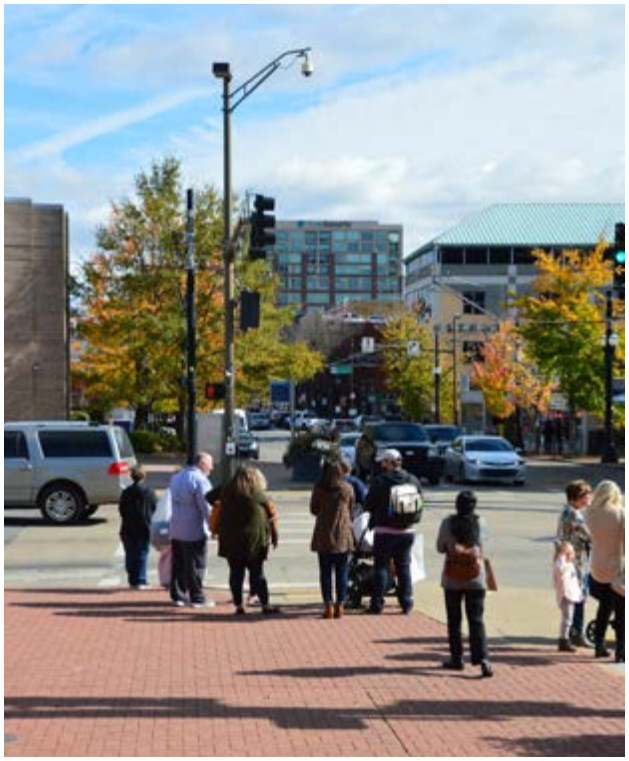


Table 6-2. Scenario Indicators Summary

	Existing (2013)	Emerging Trend Scenario (2040 Horizon)	Regional Vision Scenario (2040 Horizon)	Change Between Scenarios
TRANSPORTATION				
Walk Potential				
Total homes 1/4 mile within walking distance of retail/service areas.	49,529 (18%)	68,269 (18%)	77,999 (20%)	9,730 (14%)
Total homes within 1/4 mile walking distance of existing and planned city/county parks.	68,767 (26%)	77,190 (20%)	83,615 (22%)	6,425 (8%)
Total homes within 1/4 mile walking distance of existing and planned regional parks.	1,466 (1%)	2,191 (1%)	2,238 (1%)	47 (2%)
Bike Potential				
Total homes within 1 mile biking distance of retail/service.	151,697 (57%)	209,882 (55%)	232,757 (61%)	22,875 (11%)
Total homes within 1 mile biking distance of existing and planned city/county parks.	182,062 (68%)	230,031 (60%)	258,318 (68%)	28,287 (12%)
Total homes within 1 mile biking distance of existing and planned regional parks.	10,492 (4%)	17,141 (4%)	16,329 (4%)	-812 (-5%)
Local Transit Potential				
Total homes within 1/4 mile walking distance of existing transit routes	70,320 (26%)	76,530 (20%)	88,042 (23%)	11,512 (15%)
Total homes within 1/4 mile walking distance of existing and expanded transit routes.	N/A	195,824 (51%)	218,096 (57%)	22,272 (11%)
Total employment within 1/4 mile walking distance of existing transit routes.	195,223 (59%)	227,153 (49%)	273,079 (59%)	45,926 (20%)
Total employment within 1/4 mile walking distance of existing and expanded transit routes.	N/A	350,799 (76%)	380,200 (83%)	29,401 (8%)
Regional Transit Potential				
Total homes within 1/2 mile walking distance of Regional Transit Vision stations.	N/A	8,948 (2%)	53,899 (14%)	44,951 (502%)
Total employment within 1/2 mile walking distance of Regional Transit Vision stations	N/A	97,151 (21%)	235,596 (51%)	138,445 (143%)

Table 6-2. Scenario Indicators Summary

	Existing (2013)	Emerging Trend Scenario (2040 Horizon)	Regional Vision Scenario (2040 Horizon)	Change Between Scenarios
ECONOMY & WORKFORCE				
Average distance between a home and the nearest major employment center (miles).	4.5	4.7	2.0	
Total homes within 2 miles driving distance of major employment centers.	126,152 (47%)	160,388 (42%)	264,342 (69%)	103,954 (65%)
Total employment within 2 miles driving distance of major employment centers.	242,523 (73%)	328,063 (71%)	426,015 (93%)	97,952 (30%)
ENVIRONMENT				
Acres of new impervious surface.	N/A	13,607	10,803	-2,804
HOUSING & NEIGHBORHOODS				
Added Homes within walkable placetypes.	N/A	680 (1%)	63,408 (56%)	62,728 (9,225%)
Added Employment within walkable placetypes.	N/A	7,290 (6%)	116,840 (93%)	109,550 (1,503%)
Total homes within existing service areas/city limits.	204,765 (76%)	279,732 (72%)	295,538 (78%)	15,806 (6%)
Total homes outside of existing service areas/city limits.	63,344 (24%)	102,694 (27%)	85,444 (22%)	-17,250 (-17%)
Total employment within existing service areas/city limits.	307,190 (92%)	421,117 (92%)	430,692 (94%)	9,575 (2%)
Total employment outside of existing service areas/city limits.	26,310 (8%)	38,512 (8%)	28,751 (6%)	-9,761 (-25%)
INFRASTRUCTURE				
New Infrastructure: Miles of new water line	N/A	266	101	-165
New Infrastructure: Miles of new sewer line	N/A	346	164	-182
New gallons of water consumed	N/A	38,938,452	29,097,206	-9,841,246
New tons of solid waste generated	N/A	2,738,874	2,025,161	-713,713
Homes within existing water service districts.	260,859 (97%)	349,085 (91%)	364,090 (96%)	15,005 (4%)

6.6.1 Compact Growth

A shift toward more compact growth types, such as those represented by the mixed-use center/ corridor and walkable neighborhood placetypes, has a fundamental impact on the amount of residential and non-residential land consumed. The scenarios represent a progressively intensive shift from less compact and more dispersed rural and suburban development patterns (Emerging Trend Scenario) to more compact growth in the form of higher densities and smaller lot sizes (Regional Vision Scenario). This shift results in a clear and measurable impact in the form of:

- Reduced infrastructure needs and costs in sanitary sewer and potable water supply infrastructure needs and costs, and less water consumed.
- 50,000 fewer acres developed, thereby preserving a greater amount of open space.
- Up to 20% less impervious surface, resulting in less stormwater impacts and a reduction in urban footprint.
- Shorter automobile trips and greater potential for walking, bicycling, and riding transit.

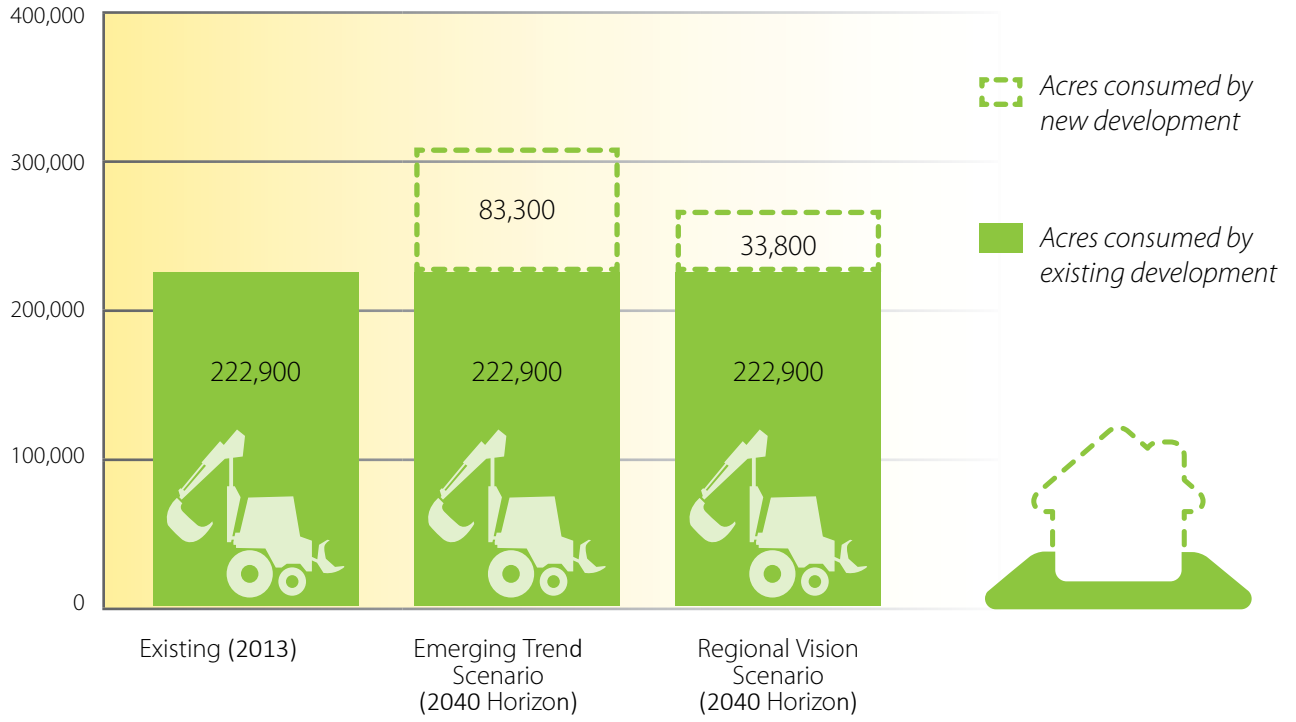
New development in the form of buildings, pavement, sidewalks, parking lots, and the like, all combine to form impervious surfaces, which reradiate solar energy , producing "heat islands," impacts on native habitats and, perhaps more importantly, adds to stormwater runoff.

Generally speaking, the greater the amount of impervious surface, the greater the potential for stormwater flooding and harmful runoff. Impervious surface can be minimized by:

- Smaller home sizes, consistent with smaller lot sizes;
- Smaller parking lots due to shared parking for mixed-use;
- Less pavement, hardscape, etc. due to more compact development and redevelopment; and
- A more vertically-oriented building style as evidenced by higher floor area ratios.

People value open space for the continuity it provides with natural systems, venues for public gatherings, and recreational opportunities. Compact growth consumes far less land, but the result is essentially a trade-off between personal and shared

Table 6-3. Consumption of Land



PERSPECTIVE

To put things in perspective, the McCain Mall site has approximately **70 acres** of **impervious surface**.

Under the **Emerging Trend** scenario, about **13,600 acres** of new impervious surface are added to the region, or the equivalent of approximately **194 McCain Malls.**

By contrast, under the **Regional Vision** scenario, roughly **10,800 acres** of new impervious surface are added, or the equivalent of approximately **154 McCain Malls.**

open space. Compact development places more emphasis on shared, designated open space, resulting in significantly smaller residential yards and lot sizes, and shorter average travel distances.

6.6.2 Neighborhood Accessibility

For many central Arkansans, the personal automobile is the only option for travel. Currently, only one in four homes has access to local transit, only 15 percent of the streets have sidewalks and although bicycling is growing in popularity the region still lacks critical connections. For a number of reasons, including quality of life , cost of living, health, and the environment, a growing number of central Arkansans are interested in having a variety of transportation options available to them whether it be walking, bicycling, riding transit, or driving. In large part, the ability or potential to use one of these mobility options relies on proximity: the distance between origins (homes) and destinations (work, retail, parks, etc.). Clustering compact neighborhoods around mixed-use centers increases the potential for walking, cycling and transit, putting more homes in close proximity to retail and parks, and placing more homes in closer proximity to jobs.

One-quarter mile, which translates into a five-minute walk, is the average maximum distance that a healthy person will walk. But walk potential is also dependent on the availability of sidewalks, as well as street connections and networks, which can vary from dense urban grids of highly interconnected, straight streets, to sparse suburban networks of curving streets forming loops and cul-de-sacs.

Bicycling can be a healthy, environmentally friendly, and cost-effective alternative to driving under the right circumstances. Although a two-mile radius is an appropriate distance for experienced cyclists, less experienced and younger cyclists may not be willing or able to ride that far, in which case a smaller radius, such as a mile, is more appropriate measure of biking potential. Adequate facilities must be in place for the potential to be realized. This includes a robust, interconnected network of low-volume, low-speed streets, shoulders and bike lanes on higher-speed, higher volume facilities and off-road paths when possible (utility easements, greenways, and riparian corridors).

Good access to parks is an important part of quality life. The park proximity indicator took into account existing parks and planned parks in the region, at both the city/county and regional scale of parks. Planned parks include those that are identified in regional comprehensive land use plans.

In terms of walk and bike potential to retail and service areas and to parks, incremental differences are shown between the scenarios. The number of homes within walking distance of destinations represents a fraction of the overall number of homes

in the region. The findings could be a result of two factors: it is more difficult to change land use patterns around parks that have already been built and a fundamental change in density would be required to have a significant impact on walk and bike potential. Co-locating parks and schools is a more efficient siting process that creates walking and biking benefits for both places.

6.6.3 Transit Accessibility

Existing fixed-route transit service is provided by Rock Region METRO (Rock Region) and is limited to linking neighborhoods and activity centers in Pulaski County. Today, 26 percent of homes and 59 percent of jobs are located within walking distance to Rock Region routes. Less compact, dispersed development patterns make it difficult to serve efficient fixed-route service.

In addition to the fixed-route and streetcar service, Rock Region also provides Links paratransit services to customers who have been certified as paratransit eligible (unable to always access the fixed-route system) under the Americans with Disabilities Act. The Links paratransit service utilizes 24 vehicles and travels during the same hours and within the same areas of Pulaski County that are served by the fixed-route buses. In 2017, RRM announced a partnership with the City of Conway to provide a van shuttle service between the city and downtown Little Rock. This partnership will mark the first time Rock Region has operated in Faulkner County, which works towards more robust regional transit. Demand

Table 6-4. Total Homes with Walk Potential to Retail and Service Areas

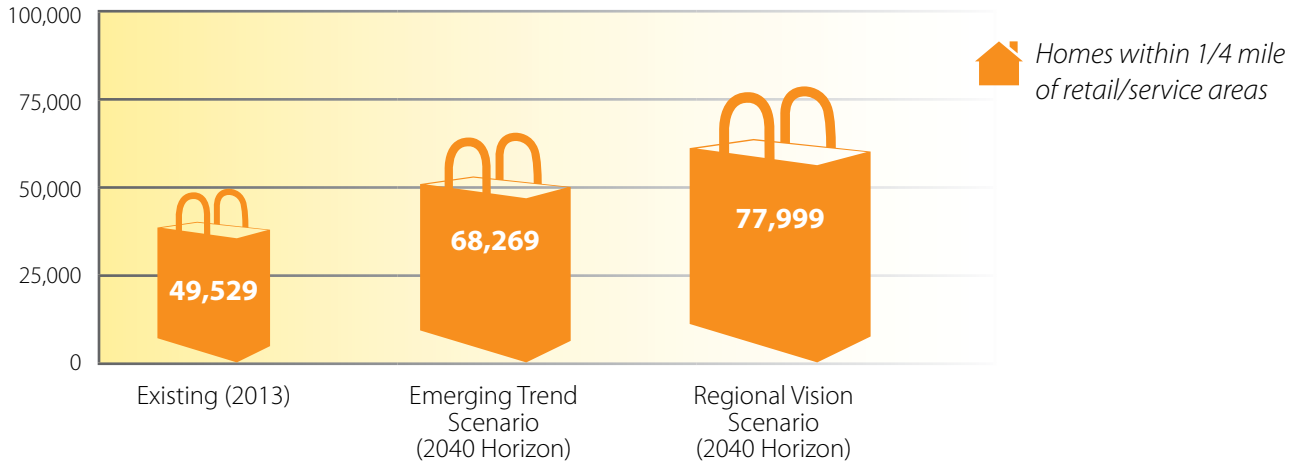


Table 6-5. Total Homes with Walking Potential to Parks

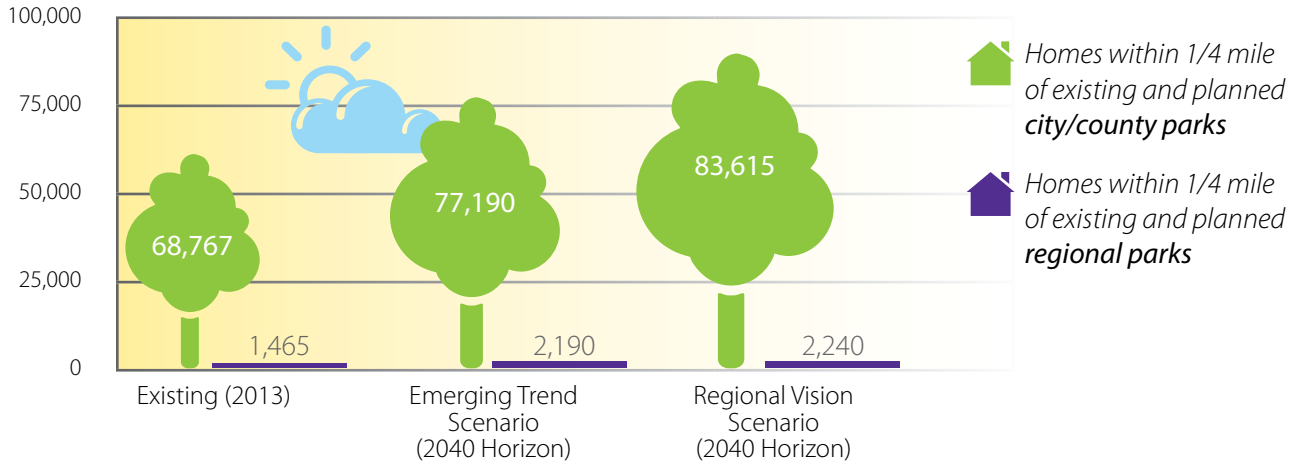


Table 6-6. Total Homes with Bike Potential to Retail and Service Areas

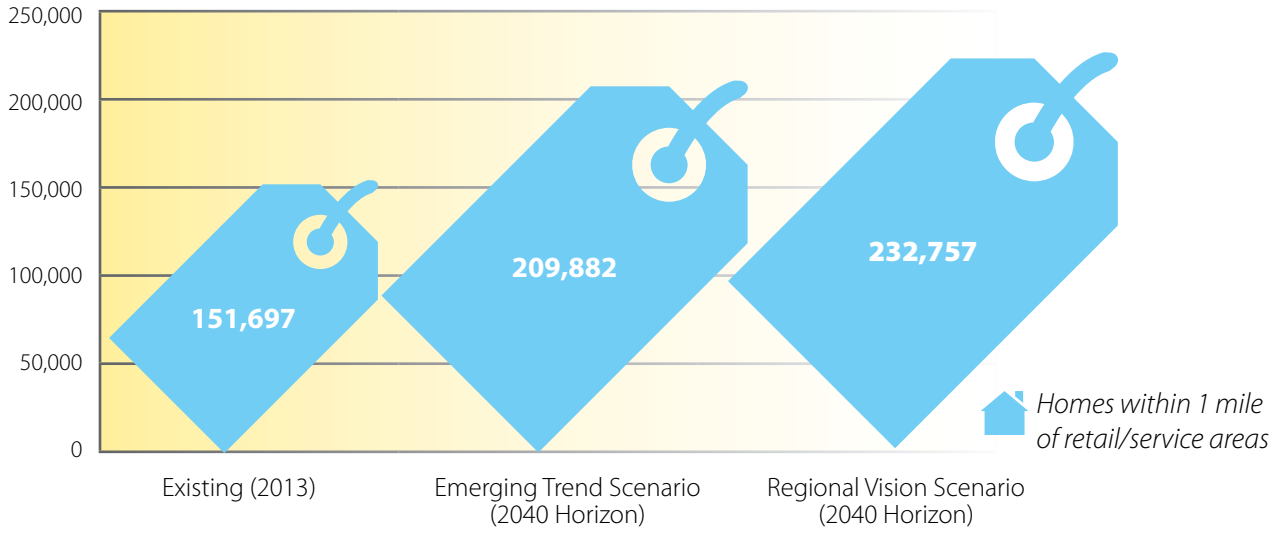
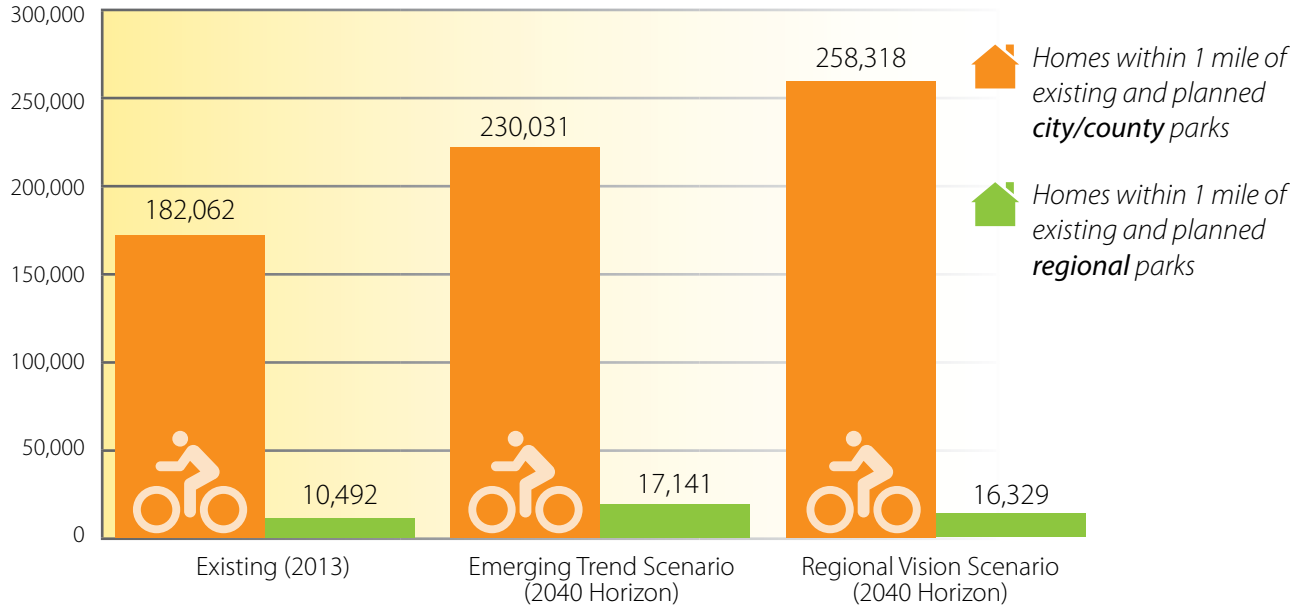


Table 6-7. Total Homes with Bike Potential to Parks



response transit service is provided to portions of Saline County by South Central Arkansas Transit (SCAT) and human service agencies who serve particular eligible participants.

Although the percentage of homes and jobs located within walking distance to existing local transit service routes declines under the Emerging Trend Scenario, the total number of homes and jobs serviced by transit in the region would increase. The percentage of households with transit access is less under the Emerging Trend Scenario compared to existing conditions because most new residential growth occurs in areas where there is not existing Rock Region service. In contrast, the Regional Vision Scenario shows more homes and jobs in areas within one-quarter mile of existing service areas.

If agencies pursue a balanced transportation investment strategy and people begin to seek out

options for local and regional travel as the region becomes more urbanized, then local transit service areas will be able to expand. Assuming that local transit service were to be expanded into Faulkner County, northern Lonoke County and southeast Saline County, then approximately 57 percent of the homes and 83 percent of the jobs in the region would be within one-quarter mile of the existing and expanded local transit service routes, a vast improvement from existing transit accessibility.

As described in the previous chapter on mobility, the creation of a regional transit system is envisioned.

Table 6-8. Total Homes within Walking Distance of Local Transit Service

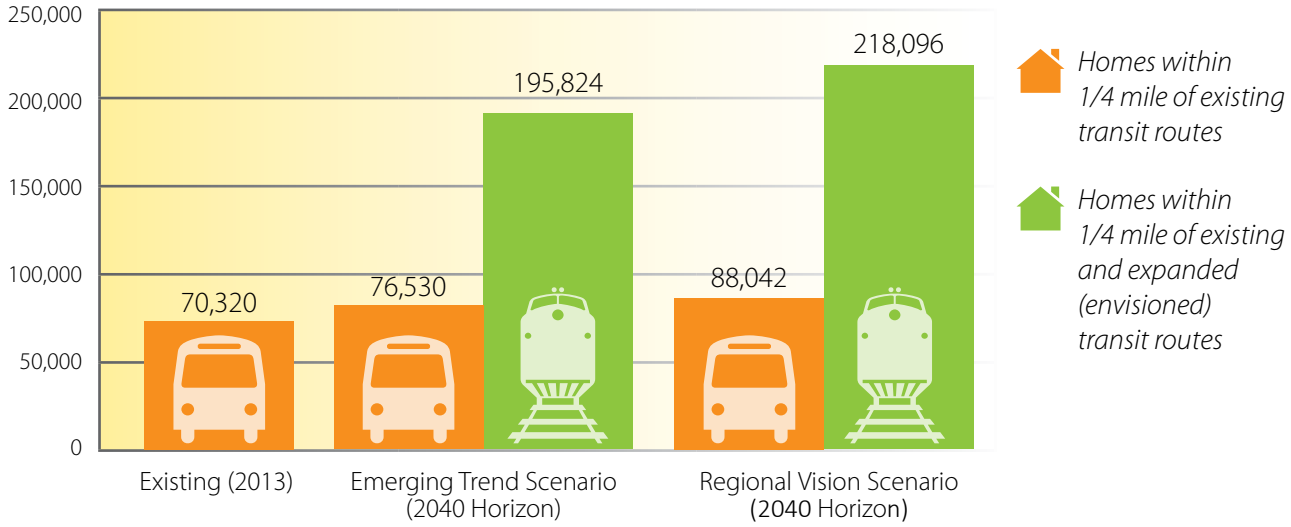
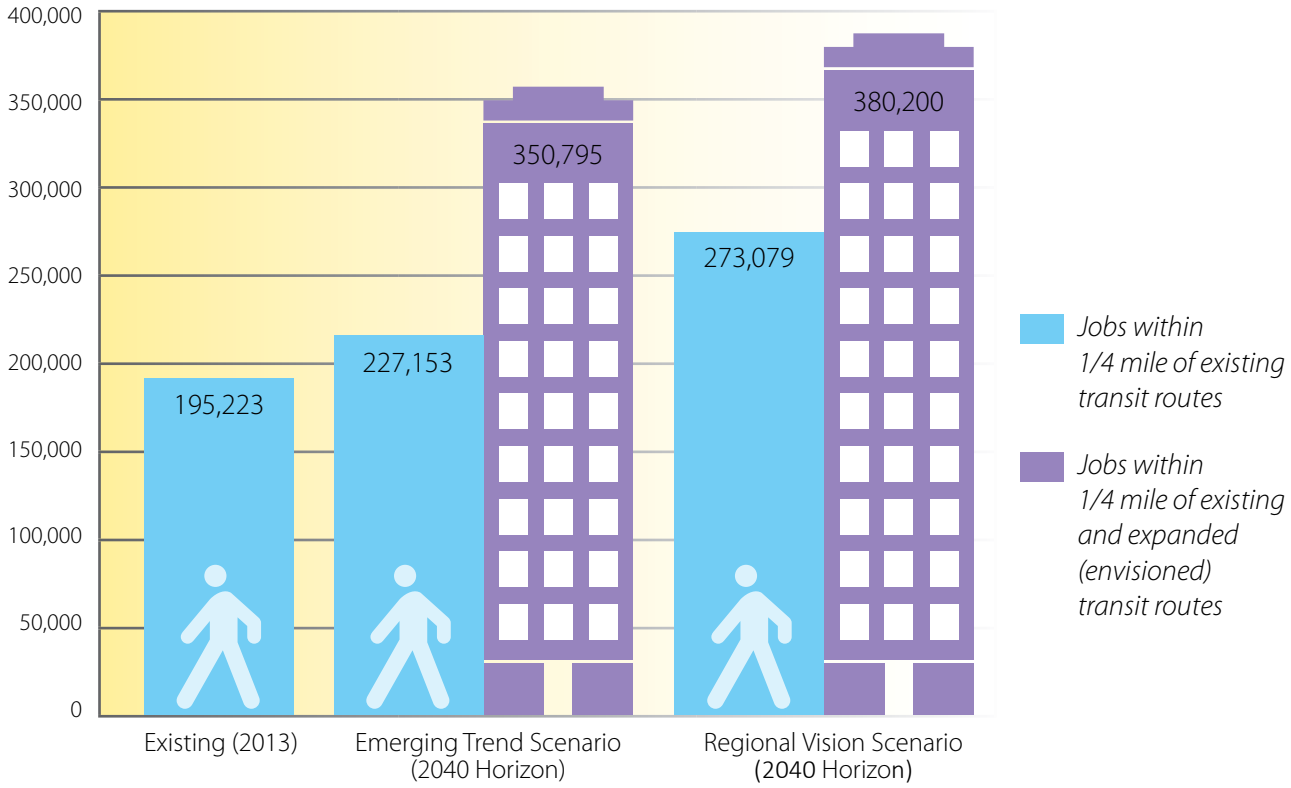


Table 6-9. Total Employment within Walking Distance of Local Transit Service



It could include: bus rapid transit, light rail transit and commuter rail lines that would link places within each county to regional destinations, such as downtown Little Rock, the Little Rock Airport, Conway, Cabot, and Benton. A limited number of stops/stations would be accessed via car (park and ride), walking, cycling, or local transit. The greater potential for regional transit service under the Regional Vision Scenario (14 percent of the homes and 51 percent of the jobs within a half-mile radius of proposed stations) is a direct result of compact development in mixed-use centers (areas where regional transit stops would be located).

6.6.4 Job Accessibility

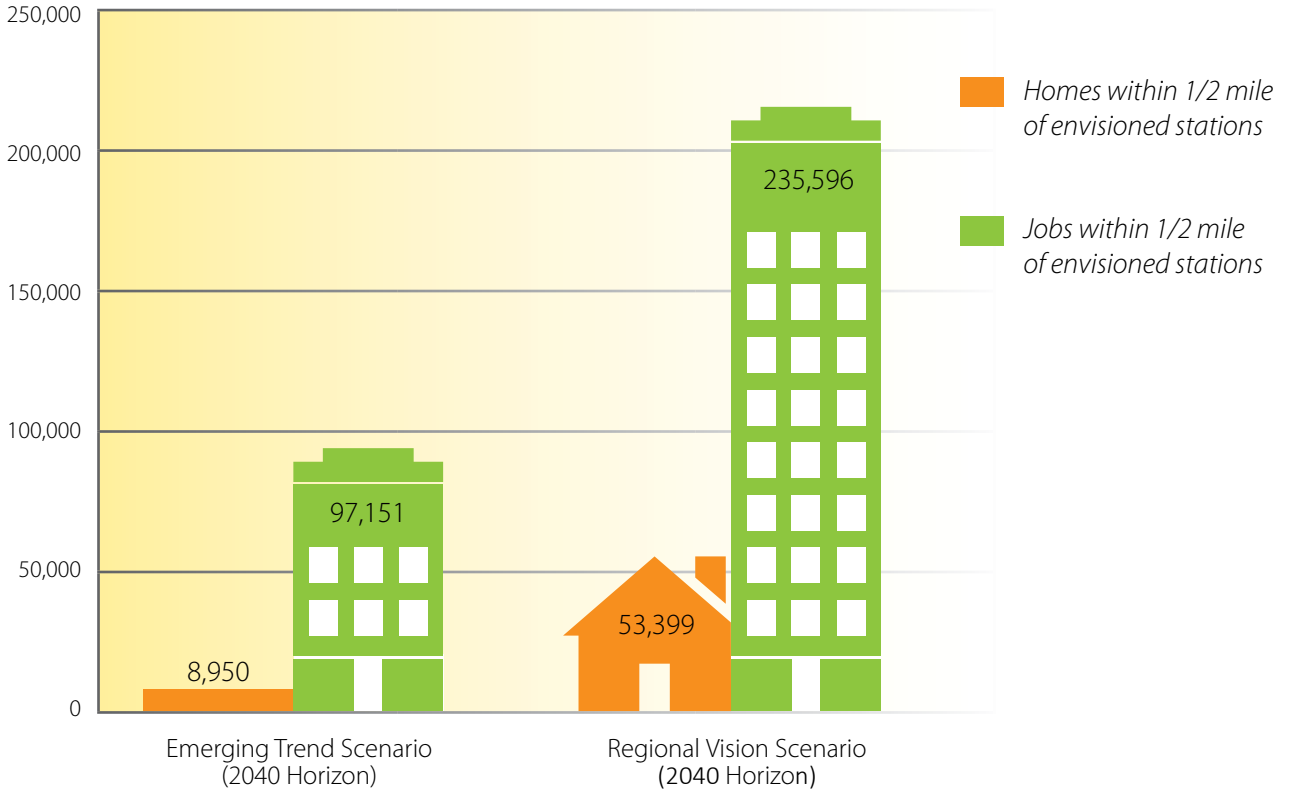
During the *Imagine Central Arkansas* outreach phases, people expressed a desire to ensure that the region remains a globally competitive hub for economic activity. One way to make central Arkansas stronger and more economically competitive is to tie the region's employers more closely to the workforce.

Currently, housing tends to be dispersed relative to employment. The average home in central Arkansas is roughly 4.5 miles from the nearest employment center (downtown Little Rock, UAMS/Medical District, Conway or Little Rock Air Force Base), and that increases slightly to 4.7 miles under the Emerging Trend Scenario since homes become more spread out. Under the Regional Vision Scenario, the average home in central Arkansas is roughly 2.0 miles from the nearest employment center. This distance shortens due to compact development in the form of more mixed-use centers around the potential transit stations. Under the Regional Vision Scenario, 69 percent of homes and 93 percent of the total employment would be located within two miles of major employment centers, compared to 42 percent of the homes and 71 percent of the employment under the Emerging Trend Scenario.

6.6.5 Neighborhood Walkability

Connected street networks can have a powerful influence on the ability to walk. A rich street

Table 6-10. Total Homes and Employment within Walking Distance of Regional Transit Vision Stations



network diffuses traffic, creates a highly walkable block system and results in smaller streets that are more suitable for walking and bicycling. A recent analysis of more than 50 studies of travel and the built environment found that intersection density – the number of four-way intersections per square mile – had the greatest impact on walking among a range of variables studied, including population density, distance to a store, distance to transit or distance to jobs (*Cervero and Ewing, Travel and the Built Environment: A Meta-Analysis*).

Across central Arkansas today, the quality of street networks (as measured by four-way intersection density) varies. Downtown Little Rock, built on a grid street system, has the greatest density at about 200 four-way intersections per square mile. Most other areas in central Arkansas have few closely spaced intersections that result in any degree of network quality.

The walkable places indicator addresses potential for walking based on a street intersection density of more than 160 four-way intersections per square mile. The percentage of homes and employment added within walkable places is highest under the Regional Vision Scenario (63,000 new homes and 117,000 new jobs) than the Emerging Trend Scenario (680 homes and 7,300 new jobs).

More compact developments have street networks that are dense, urban grids of highly interconnected streets. In comparison, rural and suburban places have sparse suburban street networks of curving streets forming loops and cul-de-sacs. For example, mixed use centers are intended to concentrate retail, office, service, and high residential uses at busy intersections, and are intended to provide a walk-friendly environment because of their emphasis on a robust, interconnected local street network. Keep in mind that other characteristics, such as connectivity, safety and adequate facilities also factor into the ability to walk.

6.6.6 Efficient Infrastructure

As the region grows and expands, keeping up with the demand on infrastructure and community

Table 6-11. Total Homes and Jobs within 2 miles of Major Employment Centers

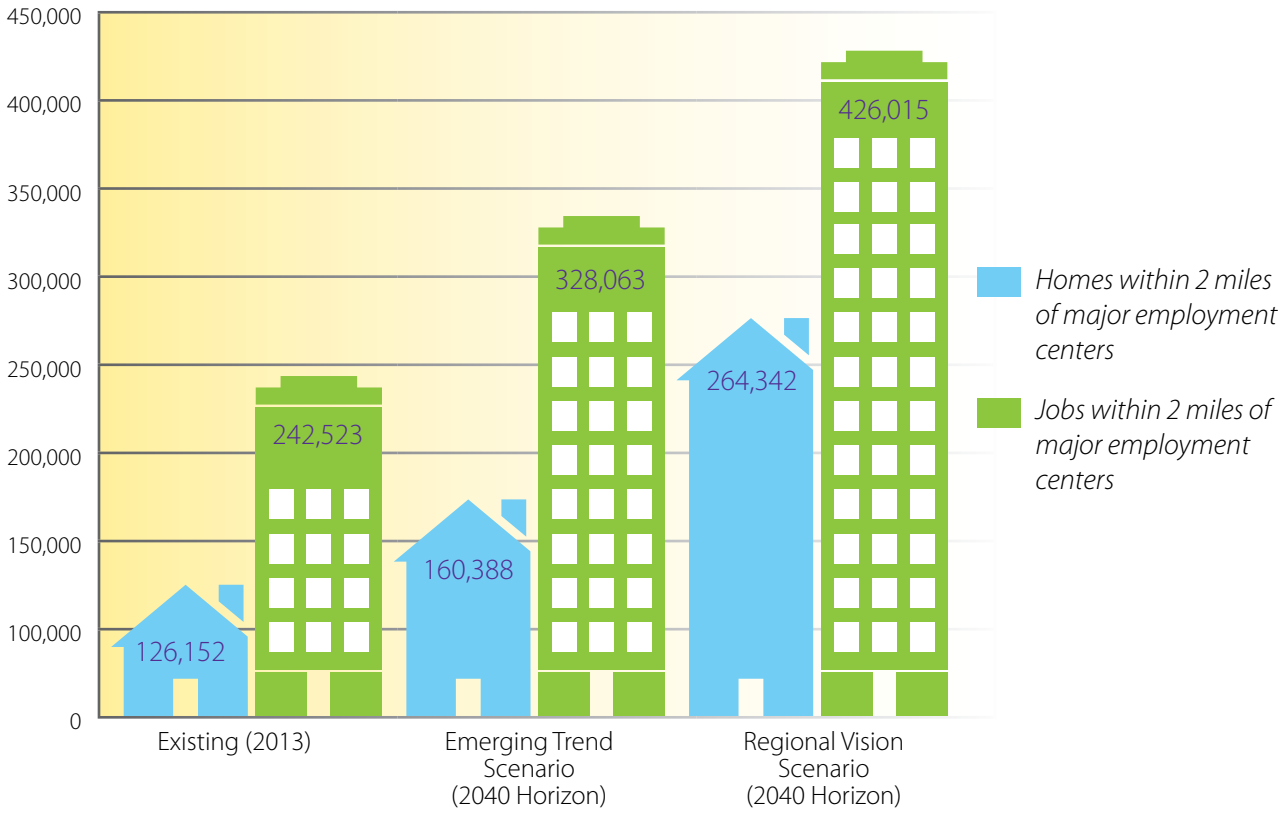
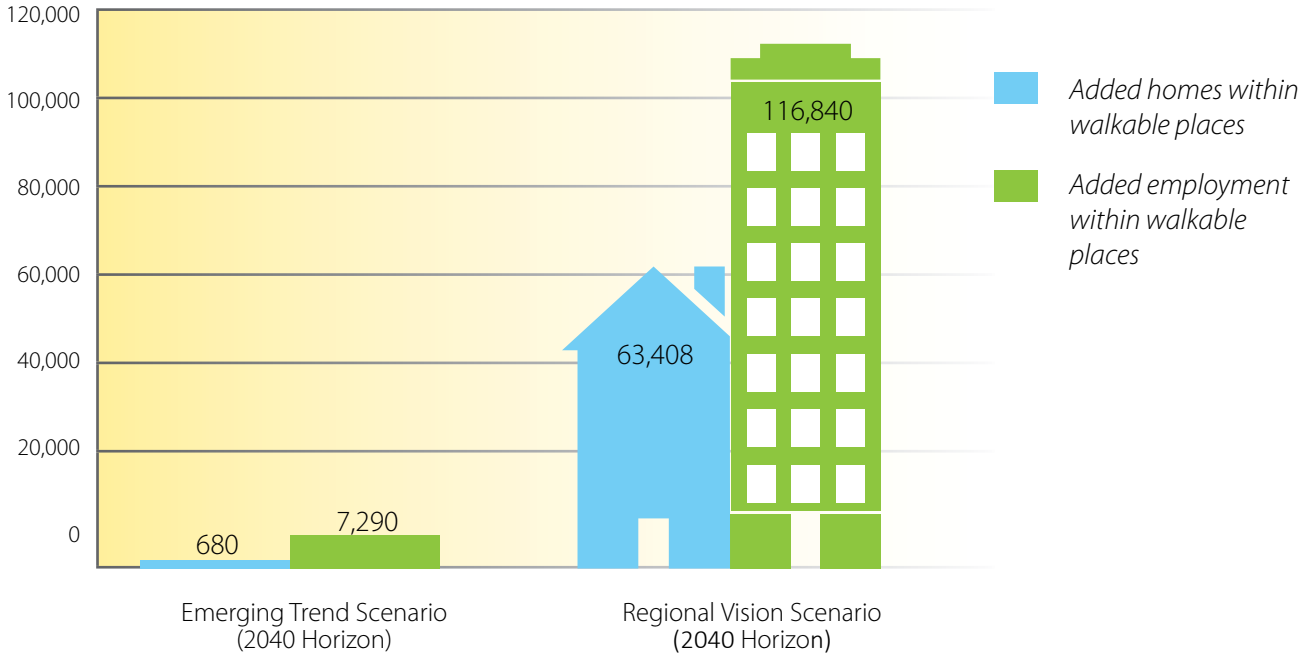


Table 6-12. Total Homes and Employment Added within Walkable Places



services will be paramount. Expanding development footprints place a strain on service coverage, such as the amount of land that must be covered by police patrols and fire/EMS facilities, and additional roads. It can become difficult to maintain adequate response times and levels of service. The existing incorporated areas or city limits in the region are already expansive. The Regional Vision Scenario reduces the number of homes and employment that are located outside existing incorporated areas. Although there is not a large difference between the scenarios, homes under the Emerging Trend Scenario place stress on existing infrastructure because they are more spread out.

The availability of central water and sanitary sewer service is an essential infrastructure component for any large-scale residential, commercial or industrial development. There is a direct relationship between the amount and location of growth and the cost to provide infrastructure. New growth in the region under the Emerging Trend Scenario is anticipated to generate 38.9 million gallons per day of demand for water, but that amount decreases under the Regional Vision Scenario to 28.1 million gallons per day. The discrepancy between scenarios is largely attributed to larger yard sizes for irrigation under the Emerging Trend Scenario.

More compact development requires fewer miles of new infrastructure to serve growth, and thus, the cost to provide new water and sewer service to accommodate additional growth is estimated to be higher under the Emerging Trend Scenario. This higher cost is attributed to the additional miles of water service infrastructure required to serve new areas, as well as the cost to augment existing water treatment plants. Also factored into this estimate are the additional sewer lines, lift stations and other infrastructure necessary to transport waste over longer distances, and to the construction of localized treatment plants where line extensions are unfeasible.

6.6.7 2040 CARTS Model Results

The Central Arkansas Regional Transportation Study Travel Demand Model (CARTS TDM) is a conventional trip based 4-step model (Generation, Distribution, Mode Choice, and Assignment) with feedback loop from traffic assignment to trip distribution and transit components. This model uses the land use scenarios, but adds a transportation network in order to evaluate the impacts on vehicle miles of travel (congestion), transit ridership and vehicle emissions. A full report of the CARTS TDM outputs is included in Appendix C.

Table 6-13. Homes Within and Outside of Existing Service Areas/City Limits

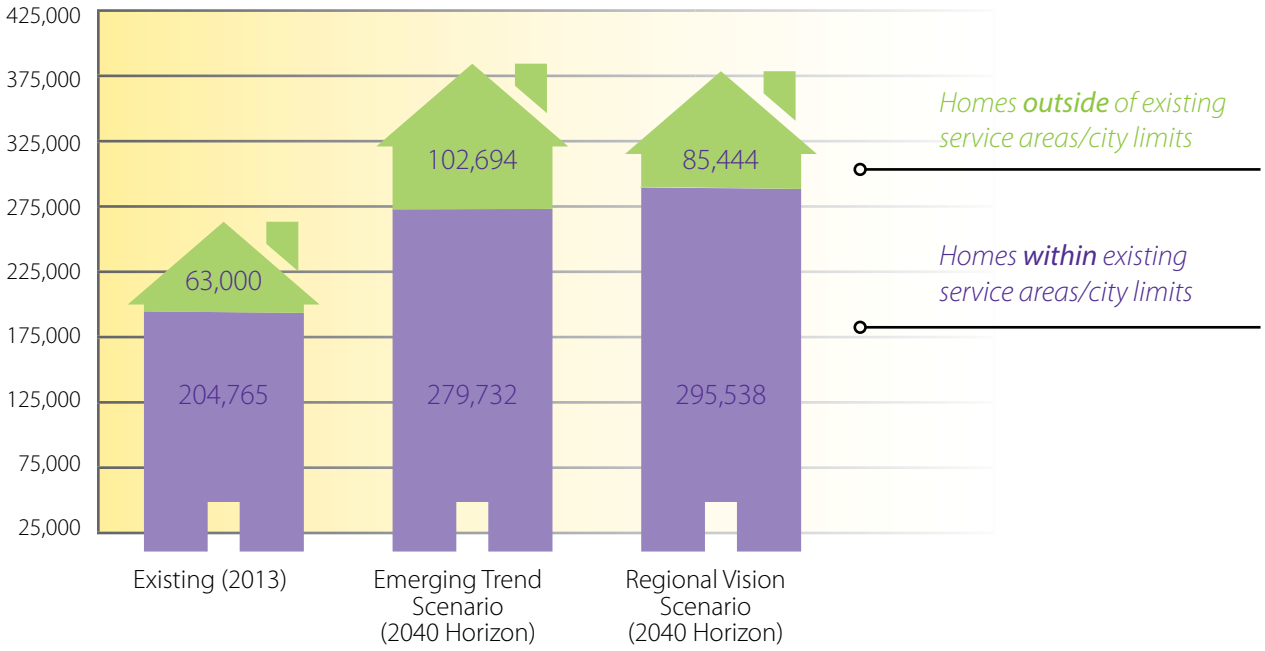
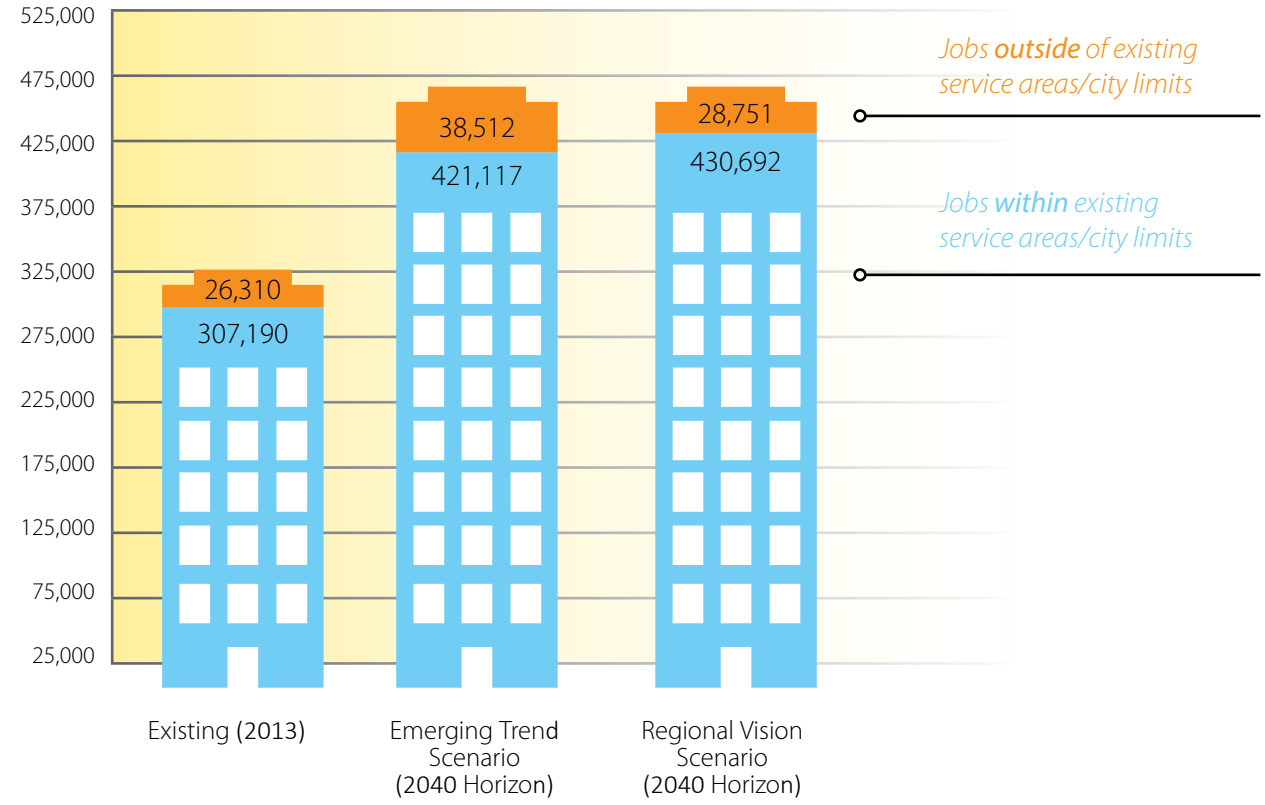


Table 6-14. Employment Within and Outside of Existing Service Areas/City Limits



2040 Transit Scenarios

To complement the Emerging Trend and Vision land use scenarios, three transit systems were developed: A continuation of the existing transit network; the MediLink–I-630 corridor; and the Full Transit Vision. The MediLink can be considered as an "in-between" scenario. It uses the alignment described in the I-630 Fixed Guideway Alignment Study (February 2010) as the primary transit corridor to connect the medical institutions along I-630 to the Airport through Downtown Little Rock, via Bus Rapid Transit (BRT) or Light Rail Transit (LRT). The Full Transit Vision assumes a full build-out of the transit system as discussed in Chapter 5-4, Transportation and Mobility Section. Included is a regional train system that connects Benton/Bryant to Jacksonville/Cabot through Downtown Little Rock (using the MediLink I-630 alignment) and a second alignment that connects Conway to Little Rock through Maumelle. New park–and-ride facilities and an expanded and enhanced feeder bus system connect to the main stations of the Benton to Cabot alignments and the Conway to Little Rock alignments in order to increase accessibility and provide a multi-modal approach for the full system.

Summary of Findings

Five variables are used to compare the results of each travel demand model scenario. Vehicle miles of travel (VMT) is an indicator for the highway component of the scenarios. Indicators for the transit component of the scenarios include: daily ridership, peak hour ridership, passenger miles, and passenger hours. The following tables and charts compare the results of the travel demand model between the existing transit network (in 2010), the 2040 Emerging Trend Scenario (based on the existing transit network) and the 2040 Regional Vision Scenario (based on the build-out of the Full Transit Vision).

By 2040, daily VMT in the metropolitan region is expected to grow by 35 percent, resulting in more traffic, congestion and road maintenance needs. Without an expansion of the transit system, little change in transit ridership is expected. Implementing the Regional Vision Scenario could reduce VMT by 3 percent (or one million miles), and could increase transit ridership by 450 percent.

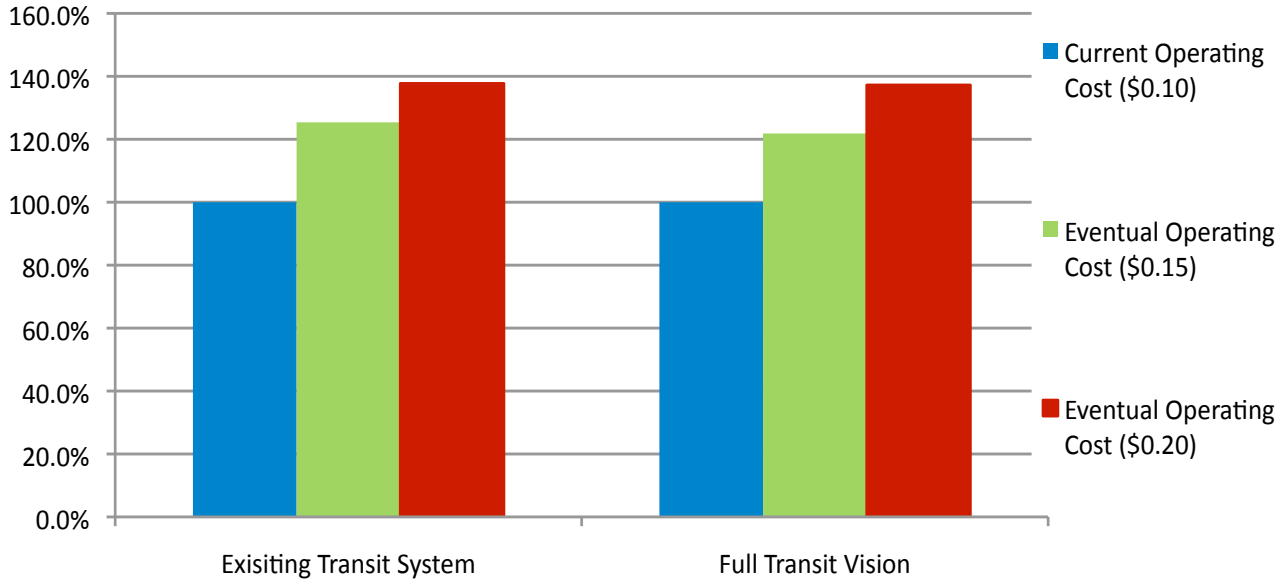
Further analysis of the travel demand model shows that transit ridership could be increased by another 20+ percent if more interconnected and walkable areas are developed. Changes in vehicle operating or parking cost could also dramatically impact transit ridership, with increases ranging from 50-100 percent under some scenarios. Parking availability affects transit use as found in a study by Bianco, et al. As indicated in Table 6-16, as operating costs for automobiles increase, daily ridership of transit also increases.

Successful implementation of the regional transit vision requires serious attention to many regional and local policy issues regarding land use, built environment, and parking.

Table 6-15. Summary of Travel Demand Model Scenario Analysis

		Vehicle Miles Traveled (VMT)	Daily Ridership	Peak Ridership	Passenger Miles	Passenger Hours
Existing Transit Network (in 2010)	2010	22,203,416	9,348	4,706	33,581	1,921
Emerging Trend Scenario (based on the existing transit network)	2040	30,127,678	10,133	5,181	35,982	2,133
Regional Vision Scenario (based on the Full-Transit Vision)	2040	29,072,168	46,264	28,500	265,333	7,841

Table 6-16. Operating Cost Per Mile and Daily Ridership



6.7 The Preferred Vision

To more rapidly achieve the vision of a truly integrated transportation network, as confirmed in this long range planning process, the elements of the Regional Vision Scenario must be pursued.

The Regional Vision Scenario accommodates most new growth in mixed use centers and walkable neighborhoods, as well as in infill development located in the region's existing centers. These types of development patterns enhance quality of life for residents by offering more mobility choices, preserving open space, and reducing the proximity of households to jobs, retail, transit, and parks. Mixed use and compact land use developments can shorten distances between origins and destinations, which means that transit and alternative modes of transportation are crucial to fulfilling future travel needs.

The Regional Vision Scenario provides for housing options closer to public transit, jobs, retail, and parks. In addition, the Regional Vision Scenario supports the concept of a robust transit network for the region by concentrating development along existing transportation corridors, which are likely candidates for future bus rapid transit, light rail transit and commuter rail, and by minimizing outer-suburban growth. This scenario also concentrates new jobs not only in existing centers but in new mixed-use centers and corridors, creating additional economic development opportunities in the future.

In contrast, the Emerging Trend Scenario envisions impacts that likely happen if outward movement from the existing centers accelerates. Residents in these growing suburbs and rural areas are less likely to have nearby access to transit, leading to higher household rates of vehicle ownership, higher household transportation costs and more vehicle miles traveled. The Emerging Trend Scenario would result in increased growth in the number of households without easy transit access because it continues the pattern of locating new residential growth in suburban and rural communities farther away from existing centers and corridors, which lack the requisite density needed to support transit.

Chapter 6 Source Material
Bianco, Martha J., Kenneth J. Deuker, and James Strathman. (1997) "Parking Strategies to Attract Auto Users to Public Transportation." Center for Urban Studies College of Urban and Public Affairs, Portland State University, Portland, Oregon.

Table 6-17. Scenario Comparison

Indicator	Regional Vision Scenario Compared to the Emerging Trend Scenario
Consumption of land	50,000 less acres developed, thereby preserving more open space.
Impervious surface	20 percent reduction in urban footprint, with less impact on the natural environment.
Neighborhood accessibility via walking and biking	Central Arkansas already has good proximity to a park system. A marginal improvement of accessibility of homes to retail and service areas under the Regional Vision Scenario.
Neighborhood walkability	63,000 new homes and 117,000 new jobs in walkable places.
Transit accessibility	Vast improvement. 140,000+ more homes and 157,000+ more jobs with local transit access. One in seven homes and one in two jobs with regional transit access.
Job accessibility	Over 137,000 more homes within two miles of employment centers than Emerging Trend.
Efficient infrastructure	Municipal service boundaries are already expansive. Regional Vision Scenario does reduce the amount of far flung developments to be served.

"A goal without a plan is just a wish."
– Antoine de Saint-Exupéry

Chapter 7. Long Range Metropolitan Transportation Plan

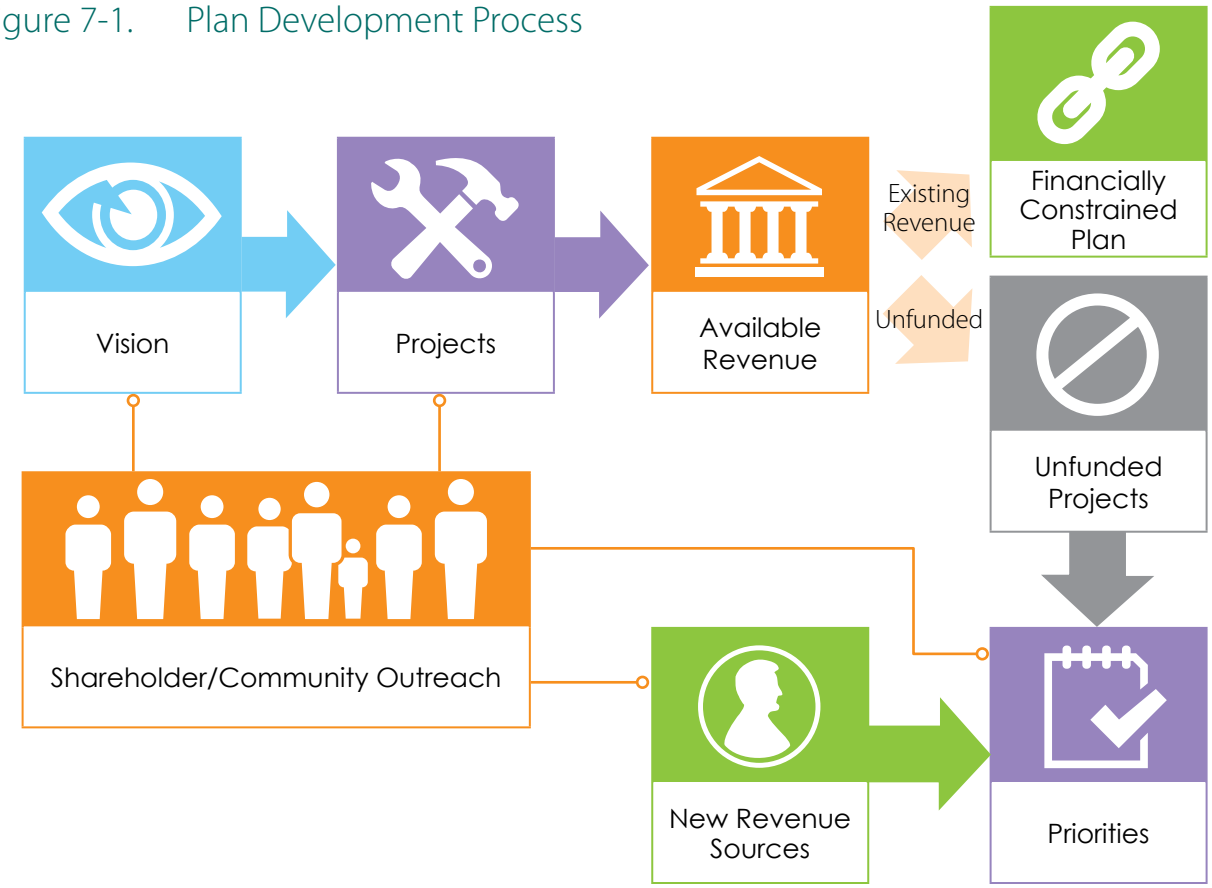
Central Arkansas 2050 conveys the vision for the future of central Arkansas (see Chapter 5). That Vision was subjected to technical analyses and performance measure evaluations to gauge the impact of its implementation upon the region (see Chapter 6). To make the Vision a reality, it must be given life through the development of a plan that is equal parts practical and aspirational.

Chapter 7 of *Central Arkansas 2050* serves as the region's Long-Range Metropolitan Transportation Plan (LRMTP), a requirement for Metropolitan Planning Organizations (MPOs) and transportation planning. However, it is much more than just a legal requirement, as it launches implementation of *Central Arkansas 2050* with specific projects, policies, actions, and other recommendations.

This plan takes the policy recommendations from *Imagine Central Arkansas*, extends financial plan projections by ten years to 2050, updates existing and recommended projects, and adds federal performance measures.

The Plan's biggest concern is the cost to maintain the current transportation system while building infrastructure necessary to implement the Vision, as needs far exceed projected revenues. Tough choices must be made to arrive at a financially feasible plan. This plan prioritizes current funding sources towards maintenance and improvement of existing transportation infrastructure, consistent with the investment strategies of the Arkansas Department of Transportation (ArDOT) and Rock Region METRO. The LRMTP identifies sources of potential additional revenue, and prioritizes projects for new funding, should it

Figure 7-1. Plan Development Process



become available during the 2050 planning horizon. The Plan advocates for policy that focuses resources on maintaining our existing infrastructure before taking on the burden of new facilities.

7.1 Transportation Infrastructure: Project Development

Chapter 5 describes the Vision for central Arkansas in which the freeway system is built-out at six through-lanes of capacity. Future demand is met through a balanced strategic transportation approach, which includes: a robust regional arterial network, development of an extensive regional transit system, expanded local transit and more walking and cycling options for local travel. Of course, this big picture Vision will not happen overnight; it will be realized incrementally over the course of several decades.

Project Development Sources

Many of the projects identified in the 2050 LRMTP are derived from a number of existing plans, programs and studies, including:

- 2019–2022 Transportation Improvement Program
- ArDOT's Interstate Rehabilitation Program
- ArDOT's Connecting Arkansas Program
- *METRO 2030* and *Metro 2030.2*
- *Imagine Central Arkansas*
- CARTS Areawide Freeway Study
- 2012 CARTS Regional Arterial Network Study
- Conway Transit Study
- River Rail Phase 2
- CARTS ITS Conceptual Plan

Inherent to this incremental approach is the need to implement individual projects. These stand-alone projects represent smaller, "bite-size" pieces that can be programmed, designed and built, but when taken together enable the Vision for *Central Arkansas 2050*.

7.1.1 Roadways

Roads serve the primary mode of transportation in central Arkansas. The LRMTP prioritizes investment toward the freeway system and the Regional Arterial Network because these accommodate a majority of regional travel.

Projects on freeways and arterials are typically broken down into four categories: maintenance, operational improvements, widening, and new facilities.

7.1.1.1 Maintenance

Maintaining roads to provide facilities that are in good repair, safe, and efficient is a primary objective of the LRMTP.

Routine Maintenance

Routine maintenance must be undertaken regularly to keep facilities in working order. This generally consists of work done by agency public works staff, and includes tasks such as maintaining joints, minor roadway repairs, traffic signal repair, lane striping, signs, and mowing. Pavement overlays and resurfacing, which can extend the life of a facility, may also fit into this category. There are approximately 911 lane miles of interstate freeway facilities and 5,176 lane miles of arterials that need routine maintenance; see Table 7.1.

Major Rehabilitation and Repair

As roadways reach their useful design life, major reconstruction or rehabilitation may be necessary. These projects typically require complete pavement removal and replacement, utility upgrades and improved or added pedestrian or bicycle infrastructure. Major projects constitute a large portion of roadway expenditures. The recent Interstate Rehabilitation Program (IRP), financed by ArDOT through a bond issue to be repaid with federal funds, and the Connecting Arkansas Program (CAP) have addressed

Table 7-1. Mileage of Roadway Facilities

Facility Type	CARTS Lane Miles Existing	New[1]	Total
Interstate/Freeway	911	53	964
Arterial /Collector	5,176	400	5,576
Total	**6,087**	**453**	**6,540**
Local[2]	10,734	2,900	13,634

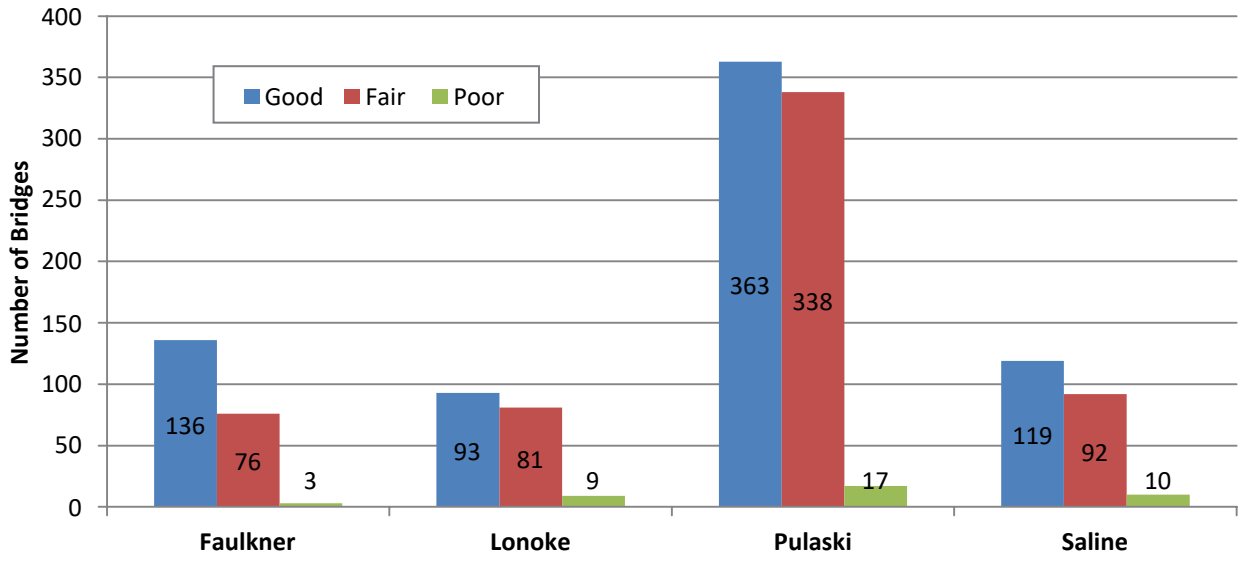
Notes:
[1] New road lane miles for interstates and arterials are based on LRMTP projects. Local road lane miles are assumed based on population growth.
[2] Data for local roads is presented for informational purposes only.

many critical needs on area freeways and principal arterials. Still, over the plan's time horizon several facilities will need to be reconstructed, including I-430, parts of I-630 and Hwy 67, I-30, and many local arterials. Recently completed projects may also require extensive repair, if not a full replacement.

Bridge Replacement

Bridges are rated as in good, fair, or poor condition. Bridges that are classified as in poor condition and those that are functionally obsolete (do not meet current standard) should be replaced. Bridges that are in fair condition are likely to need extensive maintenance or replacement during the plan period. Recent analysis shows that 3% (or 7% of the deck area) of the region's more than 1,350 bridges are rated in poor condition and 44% (or 53% of the deck area) is rated in fair condition (see Table 7.2).

Table 7-2. CARTS Area Bridge Evaluation



Source: Arkansas Department of Transportation and National Bridge Database

7.1.1.2 Operational Improvements

Projects that improve the operation of existing facilities and do not entail the addition of capacity with new through lanes are considered operational improvements. Operational improvements may be conducted as part of larger maintenance projects.

Corridor Operational Improvements: Projects on existing facilities to make them operate more safely and efficiently, including the addition of turn lanes, signals and/or other minor intersection improvements, or deployment of intelligent transportation systems.

Intersection Improvements: Either minor or major projects at intersections that increase vehicle capacity, efficiency, and/or address safety issues.

Interchanges: Improvements to existing freeway interchanges or the construction of new ones to address problems similar to those of intersections. This includes ramp modifications and the addition of auxiliary lanes between intersections.

Rail Grade Separation: Projects (typically overpasses or underpasses) intended to separate and minimize vehicular/rail conflicts and delay, increase overall safety and help rebuild community ties severed by rail traffic within the region. Twelve projects were identified and committed to as part of *METRO 2020* adopted in 1995. The final two projects are included in this plan.

7.1.1.3 Widening

Where additional travel lane capacity is needed, widening of freeways and arterials may be considered to address recurring congestion. Technology changes may also impact capacity needs in the long-term; therefore, widening projects are largely based on current needs. Widening projects are often conducted in association with major rehabilitation projects.

Six Lane Policy

When the number of proposed through lanes exceeds six, the sponsor is expected to do a thorough analysis of alternative methods of meeting travel demand in the corridor. This strategy will be revisited following completion of the Managed Lane Study slated for 2019.

7.1.1.4 New Facilities

New proposed roadways can serve several purposes: relieve congestion on an existing facility, strengthen the road network or provide better connection between destinations. New facilities are expected to be constructed with substantial local contributions.

Figure 5-5 in Chapter 5 identifies regional freeway projects while Figure 5-6 identifies projects on the Regional Arterial Network.

7.1.2 Transit

Transit is a major component of the *Central Arkansas 2050* Vision and was prominent in all phases of public and stakeholder feedback. The vision for transit includes both a regional and local system that work in unison to increase mobility.

7.1.2.1 Local Transit

The Transit Vision calls for expansion of local bus service so that a majority of our residents live within walking distance of safe, affordable transit service that operates frequently throughout the day. To meet this vision the frequency of current buses (headways)

will have to be increased, serve area expanded, and serve hours extended. In addition, local transit routes that feed into transfer stations is an important supporting element of the regional transit system.

Figure 5-9 in Chapter 5 shows areas where local bus service expansion is most likely. In many cases, it is premature to identify specific routes and other improvements to make this happen. The LRMTP identifies subareas of the region for transit investment where specific projects and service providers can be identified through further study.

7.1.2.2 Regional Transit

Regional transit service is used to connect major cities and employment centers. For the time horizon of this financially constrained plan, it is reasonable to envision regional transit as high-frequency enhanced transit service using conventional buses. For major commuting corridors, regional service would start as limited express bus service before transitioning into branded routes. As sufficient demand is established within the corridors, options for providing the "Premium" transit, like rail service described in the regional vision, should be considered (Figure 7.2.) Priorities for this service include:

West Corridor: The West Corridor along I-630 connects west Little Rock, between emerging employment and retail centers along Chenal Parkway, Baptist, St. Vincent and UAMS campuses, downtown Little Rock and Bill and Hillary Clinton National Airport.

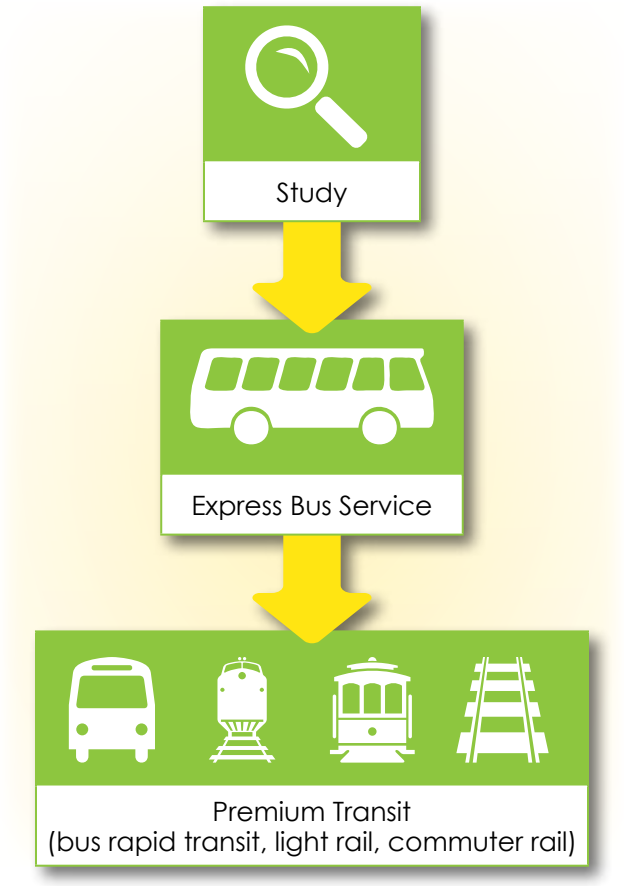
Northeast Corridor: The Northeast Corridor connects Cabot, Jacksonville, Sherwood and North Little Rock to downtown Little Rock along the Highway 67/167 corridor. An alternative alignment runs along Highway 107/JFK Boulevard/Main Street in Sherwood and North Little Rock.

Northwest Corridor: The Northwest Corridor connects Conway, Mayflower, and Maumelle to downtown Little Rock via an alignment following I-40, Maumelle Boulevard, I-430 and I-630. An alternative alignment runs down the existing railroad right-of-way into North Little Rock and downtown Little Rock.

Southwest Corridor: The Southwest Corridor connects Benton and Bryant to the West Corridor in west Little Rock along I-30 via either I-430 or University Avenue.

Successful regional transit cannot be achieved without additional investments and integration with the local transit network. Shared parking opportunities must also be considered along regional routes to provide access to individuals that prefer park and ride opportunities.

Figure 7-2.
Regional Transit Corridor Development



7.1.2.3 Human Service Agencies

In addition to the fixed route and paratransit public transportation services operated by Rock Region METRO in Pulaski County, and the demand-response services operated by SCAT in portions of Saline and Lonoke counties, a number of human service

agencies operate buses or vans to provide specialized transportation to clients of those agencies for travel to agency program activities. The operation of these services are funded largely through human service programs supported by the Department of Health and Human Services, various state programs, local government sources and private grants or contributions. Capital funding for vehicles is available through State administered FTA programs. In all cases, the service provided is limited in scope to designated program related activities. However, all public transportation providers who receive federal or state

money are required to coordinate their services where possible.

7.1.2.4 Transit Maintenance and Operations

Rock Region, which operates transit service in Pulaski County, and SCAT, which operates demand- response service for seniors and persons with disabilities in portions of Saline and Lonoke counties, must provide adequate maintenance and operations to keep existing services between now and 2050. With an anticipated decrease in the availability of federal funds (as a percentage of current cost), it will become increasingly important to generate local funds to fund transit operations.

This includes regular maintenance and repair of vehicles, vehicle replacement, and operation (drivers, fuel, etc.). In FY 2017, Rock Region budgeted $17.6 million to maintain existing transit service. Extrapolated over the course of the LRMTP planning horizon and factoring in real cost increase, the total cost to maintain existing Rock Region service is $925 million through 2050.

7.1.3 Bicycles

The Vision for bicycles includes a regionally connected, contiguous system of on-street and off-road facilities on new and retrofitted streets. This includes completion of the Arkansas River Trail and the Southwest Trail. To the extent possible, bicycle improvements should include dedicated lanes, shoulders and/or parallel paths on RAN road projects, rather than as separate, stand-alone projects.

Regional bicycle connectors and through routes are depicted in Figure 5.10 in Chapter 5. Routes on city and county bike plans are also part of the Vision. For cost purposes, these bicycle routes have been pooled into distinct subareas for additional investment in bicycle facilities. This investment could occur in the form of additional street retrofits, new off-road facilities and/or facilities linking future transit stations with surrounding destinations. Before any facility can become a part of the regional system, jurisdictions must officially adopt bike routes in their local plans.

7.1.4 Pedestrians

Provision of pedestrian facilities is essential to an intermodal transportation network. Pedestrian facilities must be incorporated on all new and retrofitted streets. Pedestrian facilities include sidewalks, parallel paths and/or crossing treatments (both at intersections and at mid-block locations). Expansion of the pedestrian network is primarily accomplished through roadway projects and stand alone Transportation Alternative Projects (TAP).

Bicycle and Pedestrian Facility Maintenance

As central Arkansas adds bicycle and pedestrian facilities to its networks, funds must be set aside for their maintenance. For on-road facilities, these costs are typically included as part of roadway maintenance. For stand- alone facilities, routine resurfacing and general maintenance is typically budgeted by the local jurisdictions. Bridges over the Arkansas River require greater resources to maintain, with jurisdictions entering into local agreements for annual funding. Local funding is the primary source for bicycle and pedestrian facility maintenance.

7.2 Financial Resources

Inherent to a fiscally sound plan is the need to carefully consider available revenue. This section presents a forecast of revenue expected during the course of the plan, considering conventional federal, state and local sources and long term trends. Federal regulations require that plans be financially constrained by year of expenditure. This means that projects in the plan can be implemented only with committed or available revenue sources.

Given that the resources required to achieve the Vision far exceed available revenue, additional revenue sources are necessary for the Vision to become reality. Section 7.5.2.4 includes a look at revenue potential of various sources. Additional detail can be found in Appendix F: Financial Resources.

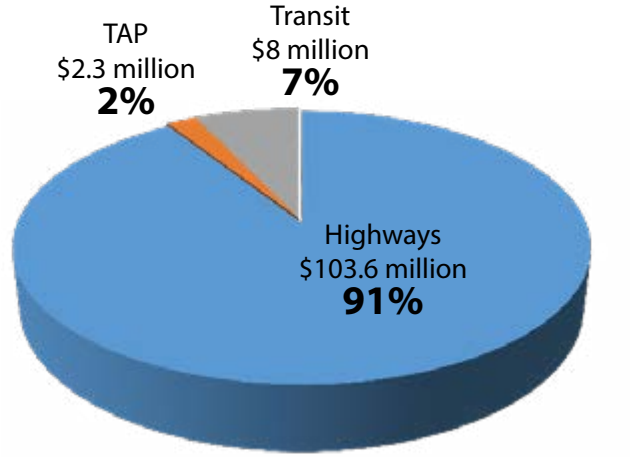
7.2.1 Putting It In Context: Available Revenue

Where Does The Money Come From?

Building, maintaining, and operating our roads, providing a first-rate transit system, expanding pedestrian and cycling options and other basic mobility elements requires significant financial resources. Funding for transportation projects in the CARTS area comes from a mix of federal, state, and local sources. Funding estimates for future revenue are derived from federal fund marks provided by ArDOT, current allocations to urbanized areas by the Federal Transit Administration (FTA) , historical local street budgets, and local contributions to transit.

The central Arkansas Region expects to receive $113.8 Million in federal transportation funds on average based on historical expenditures and ArDOT's fund marks. Figure 7-3 shows this breakdown by funding category. NHP, HSIP, STBG, and CMAQ funds are used exclusively for highways and represent 91% of the total. FTA categories are used to support transit service and planning, which represent 7% of the total, while TAP, used for transportation alternatives (such as biking and walking), represents 2% of the total.

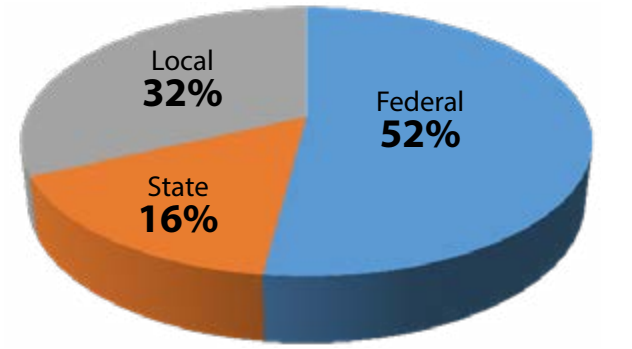
Figure 7-3. Federal Transportation Sources in Central Arkansas



Federal funds are provided largely through fuel taxes collected by the state and distributed via the federal government. In addition to federal funds, state, and local funds are also used to support transportation in central Arkansas. These funds come from their respective share of state fuel taxes (70% ArDOT, 15% Cities, 15% Counties), taxes and fees collected by individual jurisdictions, and general fund transfers.

State and local funds are used to match federal funds with remaining portions used on general maintenance activities. Figure 7-4 shows the estimated breakdown of federal, state, and local funds.

Figure 7-4. Transportation Spending Sources in Central Arkansas



One time or temporary funding sources are not reflected in these totals. These sources, like the CAP program and city initiatives supporting transportation improvements, provide a noteworthy percentage of funding to the region, but vary annually. These funds are reflected in individual years of the financial plan based on project expenditure information. These initiatives are largely used to support the transportation vision or to complete critical projects.

7.2.2 Long Term Revenue Trends That Impact Central Arkansas

A reasonable projection of existing revenue sources requires an understanding of three long term trends.

1. Fuel efficiency standards: Federally mandated Corporate Average Fuel Economy (CAFÉ) standards govern fuel efficiency rates on all vehicles sold in the United States. While these standards were recently relaxed, fuel economy will continue to increase via a combination of government regulations and automaker innovation. In addition to improvements in fuel efficiency, driving's popularity may be leveling off. Slower growth in the amount of car travel will impact fuel consumption. While this is beneficial for energy conservation and the environment, it presents dire circumstances for transportation revenue. Fuel taxes, which make up the majority of existing transportation revenue, are collected on a per-gallon basis. Increased fuel efficiency and slower growth in automobile travel means fewer gallons consumed, and therefore less revenue.

2. Alternative fuel vehicles: The percentage of alternative fuel vehicles on U.S. Roads has steadily increased. Plug in electric vehicle sales are expected to be near 1.6% of all vehicles sales in the US during 2018. While Arkansas has been slow to embrace electric vehicles, sales have been steadily increasing since the first vehicles were sold in 2010. Electric cars are anticipated to represent a greater percentage of US auto sales, reaching 15-20 percent by 2025. The increase in vehicles not using gasoline or diesel would have major implications for fuel tax revenue, first at the federal level followed by the state.

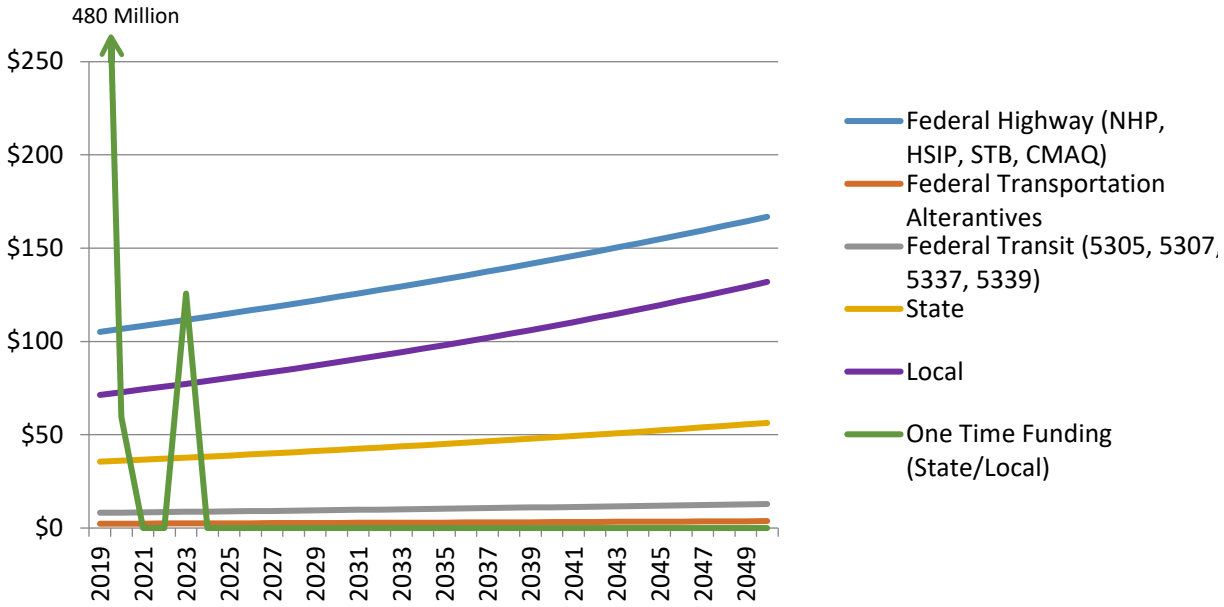
3. Highway Trust Fund and Mass Transit Account Solvency: Recent budget issues at the federal level are well- documented. The portion of federal transportation revenue attributed to transfers from the general fund (intended to keep dedicated highway funds solvent) increased steadily in recent years. The Congressional Budget Office estimates that the Highway Trust Fund will be fully exhausted in 2022, with an annual deficit of $17 billion or 29 percent of the scheduled spending budget. Without a new revenue source, increased general fund transfers will be required if the current budgets are to be maintained.

7.2.3 30-Year Revenue Projections

While the future of federal transportation spending is largely in doubt, Congress has continually found a way to fund both the highway trust fund and

Figure 7-5. Annual Estimates of Funding Availablility

Projection of Revenue 2019 to 2050 (in millions)



mass transit account with annual increases through general fund transfers. An increase in the transfer or general funds, or a new revenue source will be required to maintain current funding levels. A 1.5% annual growth is assumed for federal and state transportation spending throughout the plan as an average over the next 30 years. For the local funding share, which is less dependent on gas receipts, two percent annual growth is assumed. Figure 7-5 shows the projected revenue from federal, state, local, and one time sources for the plan period. Estimates show the CARTS area will have $10.1 billion available to spend on transportation facilities through 2050. This

Table 7-3. Estimates of Available Funding

Category	Fundmark	FY19-22	FY23-26	FY27-30	FY31-40	FY41-50	Total 2019-2050
Federal Highway	**$105.8**	**$439.5**	**$466.4**	**$495.1**	**$1,374.7**	**$1,595.4**	**$4,371.1**
NHPP/NHFP	$61.3	$254.6	$270.2	$286.8	$796.4	$924.3	$2,532.3
STP/CMAQ	$35.3	$146.5	$155.5	$165.0	$458.1	$531.7	$1,456.8
HSIP	$7.0	$29.0	$30.7	$32.6	$90.6	$105.1	$288.0
TAP	$2.3	$9.5	$10.0	$10.6	$29.6	$34.3	$94.0
Federal Transit	**$7.0**	**$29.2**	**$31.0**	**$32.9**	**$91.4**	**$106.1**	**$290.7**
FTA 5307 - Urbanized Areas Formula Grants	$6.1	$25.2	$26.7	$28.3	$78.7	$91.3	$250.3
FTA 5337 - State of Good Repair-High Intensity Fixed Guideway	$0.4	$1.5	$1.6	$1.7	$4.8	$5.6	$15.3
FTA 5339 - Bus and Bus facilities	$0.6	$2.5	$2.7	$2.9	$7.9	$9.2	$25.2
State	**$35.0**	**$145.3**	**$154.2**	**$163.7**	**$454.6**	**$527.6**	**$1,445.5**
Local	**$70.0**	**$294.3**	**$318.5**	**$344.8**	**$991.5**	**$1,208.7**	**$3,157.8**
One Time (State/Local)	**$0.0**	**$534.8**	**$125.7**	**$0.0**	**$0.0**	**$0.0**	**$660.5**
Total		**$1,443.1**	**$1,096.0**	**$1,036.5**	**$2,912.2**	**$3,437.7**	**$9,925.6**

Numbers may not add due to rounding.

*Maintaining this level of funding will require Congress to solve the current solvency of the Highway Trust Fund and Mass Transit Account and the longer-term impact of fleet fuel efficiency and alternative fuel vehicles impacts of federal fuel tax receipts. Without this assumption federal funding revenue will drop by 30% beginning in 2023.

*Expiration of the half-cent sales tax: The statewide half-cent sales tax for transportation projects, Connecting Arkansas Program (CAP), was passed by referendum in 2012 and enacted in 2013. This plan includes $534 million in CAP projects for central Arkansas and state projects with another $13 million distributed to local governments annually. The tax is authorized for ten years, meaning that unless it is extended it will result in a significant drop in revenue beginning in 2023. This drop is assumed in the local revenue estimates. It is anticipated that the voters will be asked to consider an extension of this tax based on a preselected project list. If approved by voters this additional funding will be added to the financially constrained plan.

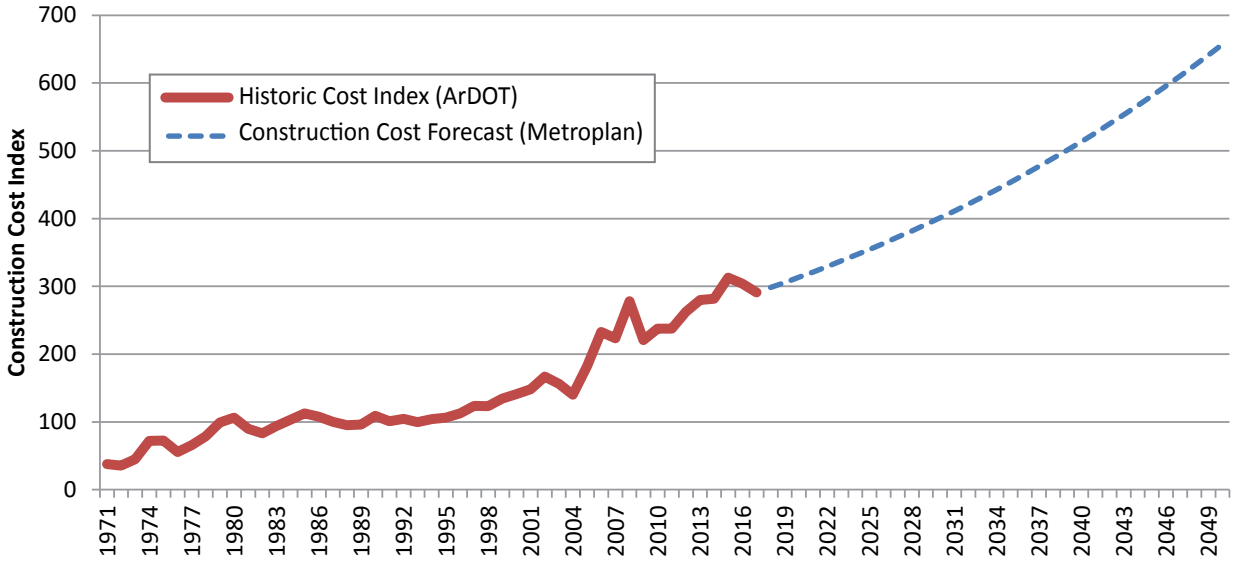
includes $4.7 billion in federal revenue, $1.5 billion state revenue, $3.2 billion local (spent primarily on local road maintenance and transit) revenue, and $.6 billion in one time sources. Figure 7.5 and Table 7.3 (previous page) show these funding amounts.

7.2.4 Year of Expenditure Estimated (Accounting for Inflation)

LRMTP projects must be matched with revenue projections by year of expenditure to make sure the plan is financially constrained, but costs tend to rise each year with inflation. ArDOT's historic construction cost index and the US Energy Information Agency (an approximation for construction cost) were reviewed to estimate annual inflation costs for future projects. For plan years 2023 to 2050, a 2.5% annual

inflation factor, from 2019, is assumed. Project cost for 2019-2022 is taken directly from the TIP. This inflation factor is used for highways, transit, and bicycle/

Figure 7-6. Rising Cost of Transportation Construction



Energy costs, competition from developing nations, and other national and international trends have contributed to significant increases in the cost to build, operate, and maintain transportation facilities. These trends will continue to impact transportation in the future, however, it is difficult to predict the exact effect over the long term. The forecasted price of diesel fuel, prepared by the US Energy Information Agency for the Annual Energy Outlook (AEO), is a good proxy for potential impacts. Using the historical cost index and the AEO's forecast as a basis, transportation costs could grow by over 130 percent between now and 2050

Increases in cost do not directly affect the amount of revenue the CARTS area receives; however, it does impact the region's purchasing power, which has the same net effect as a reduction in revenue.

pedestrian project. The impact of construction cost increased is depicted in Figure 7-6.

Funding Deficit

While transportation revenue is forecast to increase at only a marginal rate, the cost to provide transportation facilities and services continues to rise significantly. *Central Arkansas 2050* includes a number of roadway, transit, bicycle, and pedestrian projects to meet the growing mobility needs of central Arkansas and to ensure an economically competitive, livable place.

In addition to new infrastructure, maintaining existing transportation infrastructure to ensure it remains in good, safe working order is imperative. Finally, recent and projected trends indicate that construction costs will see a steady increase over the next several decades. As the transportation needs far exceed the funding availability (the cost to simply maintain the current network is estimated at $12.9 Billion—see section 7.5.2.2) a system for prioritizing funding is needed.

7.3 Vision and Project Evaluation

Central Arkansas 2050 represents a significant undertaking, one that cannot be fully implemented with existing revenue sources. The LRMTP imparts a sense of order, or priority, in which to implement Vision projects. To that end, a project evaluation process was created to provide a consistent, objective process for evaluating each individual project.

Projects proposed as part of *Central Arkansas 2050* were scored against 11 criteria, ranging from ten to thirty points, for a maximum possible score of 200. The project evaluation criteria, shown in Table 7-4, are intended as one measure of how well a given project serves to implement *Central Arkansas 2050* Vision, Goals, and Objectives. Note that the score ranking does not represent ordinal project priorities. The ranking score only measures how well each project aligns with the Vision, Goals, and Objectives. The result of the project evaluation process is but one of the factors considered as projects are prioritized. Project scoring methodology and project evaluation results are shown in Appendix E (based on *Imagine Central Arkansas*).

Additional projects suggested by Metroplan Board Members as part of *Central Arkansas 2050* were also added to the vision plan. Projects selected for the constrained plan are based on evaluation and the priorities of Metroplan Board Members, principally representing immediate transportation needs. Technology changes are expected to have a significant impact on future transportation needs (those beyond 10 years). Project priorities, selection and their impact on performance measures will be revisited during the TIP development process.

Table 7-4. Project Evaluation Criteria

Criteria	Description	Goal 1. Quality Corridors and Transportation Choice	Goal 2. Land Development and Housing	Goal 3. Environment Quality and Sustainable Energy	Goal 4.Healthy and Safe Communities
Route Significance and Scale	To what extent does the project impact central Arkansas?				
Freight and/or Passenger Intermodal Connectivity	Does the project enhance connectivity of two or more modes?	●			
Safety	Does the project address a high crash location (motorized or non-motorized)?				●
Efficiency - Congestion and Reliability	What is the congestion level at the project location (or parallel facility)?				
System Preservation	Does the project address a maintenance or operations need?				
Choice in Transportation & Complete Streets	Does the project enhance access to or quality of transit, walking and/or cycling opportunities which can contribute to complete streets, lower household transportation cost and increased physical activity?	●			●
Connectivity	Does the project enhance connectivity to a major activity center (downtown, town center, campus, hospital/wellness center, sports complex, etc.) via alternative modes?	●	●		
Compact, Mixed-Use Development and Reduced Impacts on Environmentally Sensitive Lands	Does the project complement compact, mixed-use development consistent with the development framework in the Vision and/or reduces land consumption and impervious surface??		●	●	●
Air Quality & Energy Efficiency	Is the project likely to improve air quality and/or reduce energy consumption (through improved efficiency or reduced demand)?			●	●
Complementary Land Use	Does the corresponding local government have complementary plans and development practices in place?		●		
Existing Neighborhoods	Does the project support an existing neighborhood through improved local infrastructure (i.e. sidewalks) or improved access?		●		

● *Represents goal impacted by criteria*

[1]*See Appendix E for Project Scoring Methodology and Project Evaluation Results*

Goal 5. Economic Growth and Vitality	Goal 6. Funding Adequacy	Lower <<<<<<<<<<<<<< Score >>>>>>>>>>>>>> Higher[1]			
●		Local 0	Regional 10		
●		No 0	Two 6	Three 4	Four 20
●	●	No 0	Indirectly 10	Directly 20	
●		NA 0	Moderate (0.7 to 0.8) 3	Significant (0.8 to 1.2) 7	Severe (Greater than 1.2) 10
●		No 0	Future Need 5	Existing Need 10	
	●	No 0	Some Elements 10	Local Scale 20	Full Implementation/ Regional Scale 30
		No 0	Yes 20		
	●	No 0	Somewhat 20	Yes 30	
	●	No 0	Somewhat/ Indirectly 10	Significantly/ Directly 20	
		No/Don't Know 5	Yes 10		
		No/ Unknown 0	Indirectly 10	Directly 20	

7.4 National Performance Measures

In 2012, President Obama signed into law the Moving Ahead for progress in the 21st Century Act (MAP-21), which provided needed funds and transformed the policy and programmatic framework for investments for vital transportation infrastructure. Specifically, the act places new responsibilities on MPOs to establish performance- based transportation decision –making and development of plans. The Fixing America's Surface Transportation (FAST) Act was signed into law December 2015 after *Imagine Central Arkansas'* adoption in 2014. One of its aims is to continue performance-based planning outlined in MAP-21.

The law establishes seven goal areas to improve Federal-aid Highway Program funded projects:

1. Safety
2. Infrastructure Condition
3. Congestion Reduction
4. System Reliability
5. Freight Movement and Economic Vitality
6. Environmental Sustainability
7. Reduced Project Delivery Delays

Each of the seven areas is accompanied by a specific goal (Figure 7-7). To reach these goals, the Department of Transportation called for states, as well as MPOs, to adopt performance measures in their planning efforts. From these measures, targets have been set by ArDOT. Metroplan opted to support the State's targets.

Data must be collected for pavement condition on the Interstate System and National Highway System (NHS), reliability of the Interstate System and NHS, bridge condition on the NHS, the number and rate of fatalities and serious injuries on all public roads, traffic congestion, on-road mobile source emissions, and freight movement on the Interstate System.

Appendix H is a full performance measure report for central Arkansas. The report contains specific time requirements for performance measure adoption, a description of each measure, State and regional targets for individual measures, and data for central Arkansas in maps and graphs (Table 7-5).

National performance measures provide another avenue to evaluate our existing infrastructure and tailor project planning to meet the region's needs through 2050 and beyond.

Figure 7-7. National Performance Goals

National Performance Goals
Significantly reduce traffic fatalities and serious injuries on all public roads
Maintain the highway system in a state of good repair
Significantly reduce congestion on the National Highway System
Improve efficiency of the surface transportation System
Improve national freight network, strengthen rural communities access to trade markets, and support regional economic development
Enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduce project costs, promote jobs and the economy, and expedite mobility through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving work practices

MPO/State Measures

Safety

1. Fatalities
2. Serious Injuries
3. Fatality Rate
4. Serious Injury Rate
5. Bicycle/Pedestrian Fatalities and Serious Injuries

Infrastructure Condition

1. Bridge Condition (good/poor)
2. Interstate Pavement (good/poor)
3. Non-Interstate NHS Pavement (good/poor)

Travel Time Reliability

1. Percent of freeway that is reliable
2. Percent of non-interstate NHS that is reliable
3. Truck travel time reliability.

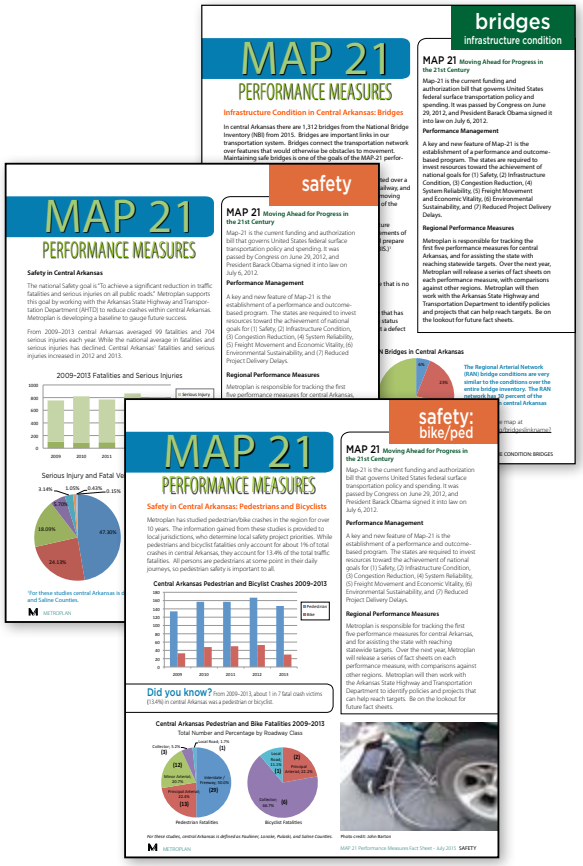


Table 7-5. Performance Meaures

CARTS Baseline Data

2017 Safety	Baseline
Fatalities	95.2
Fatality Rate	1.18
Serious Injuries	631.4
Serious Injury Rate	7.83
Non-Motorized Fatalities and Serious Injuries	34.6
2017 Bridges	**Baseline**
NHS Bridges in "Good" Condition	33.50%
NHS Bridges in "Poor" Condition	7.50%
2017 Pavements	**Baseline**
Interstate Pavements in "Good" Condition	51.30%
Interstate Pavements in "Poor" Condition	10.80%
non- Interstate NHS Pavements in "Good" Condition	27.60%
non- Interstate NHS Pavements in "Poor" Condition	15.20%
2017 Travel Time Reliability	**Baseline**
Person Miles Traveled on the Interstate that are Reliable	91.20%
Person Miles Traveled on the non-Interstate NHS that are Reliable	89.68%
2017 Truck Travel Time Reliability	**Baseline**
Truck Travel Time Reliability on the Interstate System (LOTTR)	1.39

Table 7-6. Summary of 2019-2050 Revenue Projections and Project Eligibility

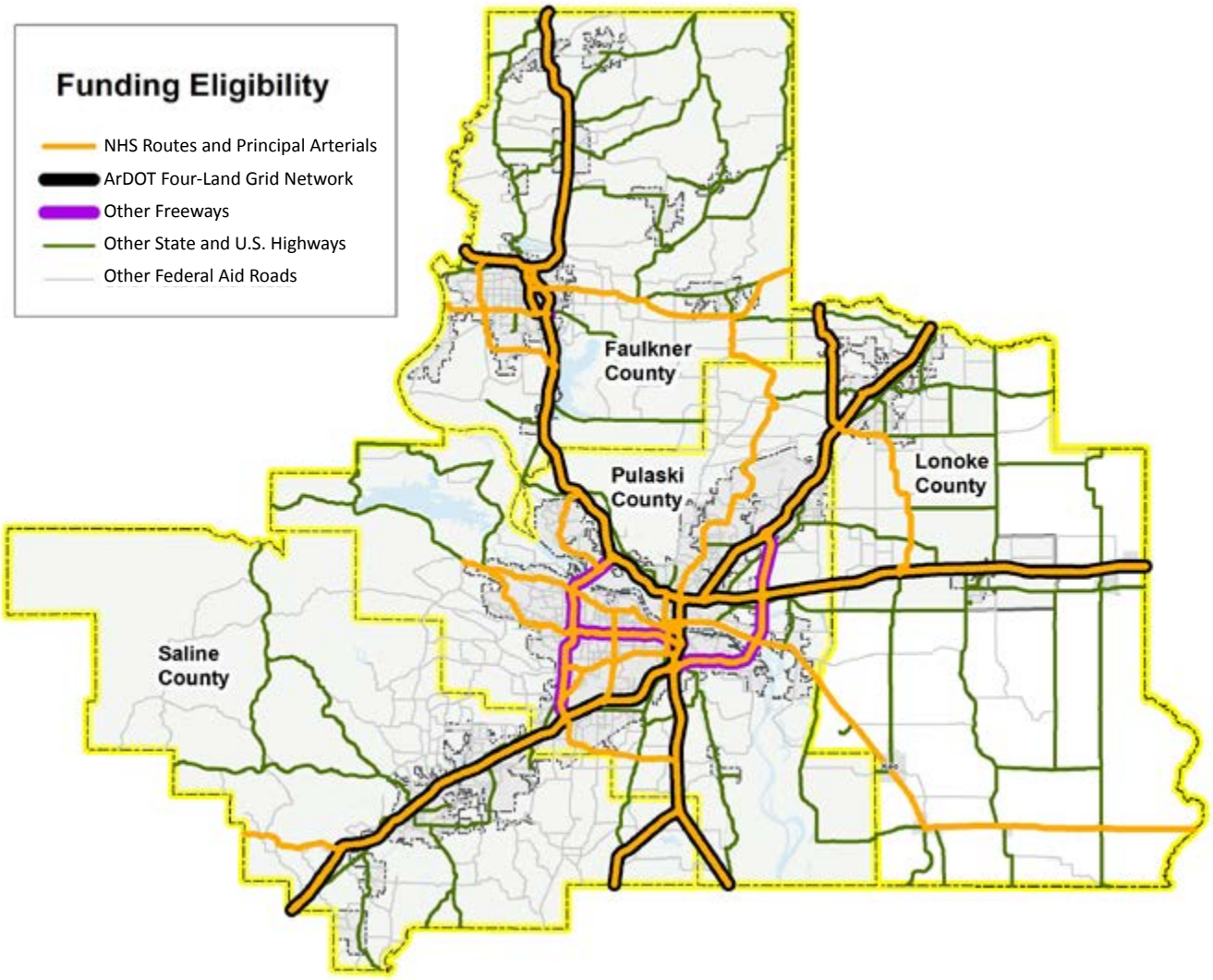
Source	Interstates	Four Lane Grid System	National Highway System	Other Federal Aid Roads	Local Roads	"Off-system" Bridges
Federal Funds:						
National Highway Performance Program[1]			●			
Surface Transportation Program	●	●	●	●		●
Highway Safety Improvement Program (HSIP)	●	●	●	●		
Transportation Alternatives Program (TAP)						
FTA 5307 - Urbanized Areas Formula Grants						
FTA 5337 - State of Good Repair- Fixed Guideway						
FTA 5339 - Bus and Bus facilities						
TOTAL FEDERAL FUNDS						
TOTAL STATE FUNDS	●	●	●	●		
TOTAL LOCAL FUNDS	●	●	●	●	●	●
ONE TIME SOURCES						

Construction	Maintenance	Transit Capital	Transit Operating	Non-motorized Transportation	Estimated Revenue x 100,000
●	●				$2,532
●	●	●		●	$1,457
●					$288
				●	$94
		●	●		$250
		●			$15
		●			$25
					$4,661
●	●	●			**$1,651**
					$3,157
●	●	●	●	●	**$660**
			TOTAL FUNDS		**$10,129**

7.5 Financially Constrained Plan

The results of the financial analysis clearly demonstrate a significant gap between what is needed to achieve the Vision and the financial resources available to the CARTS area between now and 2050. Integral to this resource gap is the need to prioritize investments to the limited resources that are currently available and those that may become available during the course of the Plan. Figure 7-8 and Table 7-6 (previous page) identify the funding eligibility of different transportation networks for existing revenue sources.

Figure 7-8. Funding Eligibility



7.5.2 Prioritization Strategy

The prioritization strategy endorsed by Metroplan is a relatively simple one: (1) cover our existing obligations, (2) maintain what we have already built, (3) optimize our existing networks through critical connections, and (4) identify new revenue sources for major new projects. The following sections describe this strategy in more detail. Individual projects are listed in Table 7-8 and shown in Figure 7-10 (page 180).

7.5.2.1 First Priority: Cover our Existing Commitments

A number of project commitments were generated prior to the development of the LRMTP. These are projects that are already "in the pipeline" and should be followed through to completion. They are included in the financially constrained long-range transportation plan. These include:

- The 2019-2022 Transportation Improvement Program (TIP): Projects identified in the 2019-2022 TIP are considered part of this first priority. About $1.3 billion is programmed for TIP projects.
- Connecting Arkansas Program (CAP) Projects: The CAP program identifies specific projects for the CARTS area to be funded with anticipated revenues generated by the state-wide half-cent sales tax. The plan includes $534 in CAP funding for 30 Crossing and Widening of Hwy 67 through Jacksonville. This total is included in the TIP Amount.
- Construction Funding for Projects in the TIP for Design Only: The 2019 - 2022 TIP includes nine (9) projects for design only. Construction funding for these projects is included in the LRMTP for a total of 311 Million.

7.5.2.2 Second Priority: Maintaining What We Already Have

Central Arkansas has a significant amount of transportation infrastructure that must be maintained to be kept in good, working order. This includes routine maintenance and major rehabilitation needs of our

Figure 7-9.
Overview of Prioritization Strategy

interstates, arterials, and collectors, plus maintaining existing transit service that will occur between the adoption of this plan and 2050. It is estimated as much as $12.9 Billion in funding would be needed to fully fund this category through 2050 (cost inflated —Table 7.7). Funding for this category includes $925 Million to maintain the current transit service provided by Rock Region through 2050. Highway projects for this priority will be selected based on need during the TIP development process utilizing the non-project specific funding line of the LRMTP.

Table 7-7. Cost to Maintain Existing Infrastructure

Project	Cost (millions)
Regular Maintenance	
Bridges	$680
Freeways	$368
Arterials	$937
Local[1]	$814
Total	$2,779
Rehabilitation (Major and Overlays)	
Bridges	$1,256
Interstates	$1,474
Arterial/Collector	$5,418
Local	$1,085
Total Rehabilitation	$9,233
Transit	
Maintain Existing Service (RRM)	$925
TOTAL COST	**$12,937**

7.5.2.3 Third Priority: Optimization Project and Critical Connections

Given the significant gap that exists between maintenance needs and available revenue, new project commitments should focus on projects that optimize the existing transportation network (see Section 7.1.1.1) and critical network projects. Critical projects that are a priority of the Metroplan Board are included in the first 10 years of the constrained project list. Additional projects may also be selected from this priority during the TIP development process utilizing the non-project specific funding line of the LRMTP

7.5.2.4 Fourth Priority: New Project Commitments

New major projects (widening and new location) are anticipated to come from new revenue sources (one time/temporary funding). Funding for these types of projects has previously come through the CAP program and city initiated taxes. The highest of these project priorities are included in the plan's project list, but are without funding. In the event that new revenue sources become available, Metroplan can assist the sponsoring agency with identifying the highest priority projects. These unfunded projects comprise the Vision and are prioritized in the following sections and Appendix G. Upon finding a funding source, projects will be included in the constrained project list.

Where to Raise New Revenue

To meet central Arkansas' growing transportation needs and achieve the Vision, the significant gap between cost and available revenue must be closed. New revenue is needed both to fully maintain the current transportation system and for new projects. The Regional Planning Advisory Council (RPAC) considered a number of different strategies for generating more revenue. Potential sources range from sales taxes to fuel taxes to property taxes. The following were identified as potential new revenue sources, representing federal, state, and regional levels. *Metroplan has taken no position on the support of an particular new revenue or extension of an existing revenue source.

This information is taken from the *Imagine Central Arkansas* adopted in December 2014.

New Sales Tax

Taxes collected at the point of sale, expressed as cents per dollars spent, can be dedicated to transportation projects. This could be collected at the state or regional level. Currently, a half-cent sales tax (CAP) is being used to fund ArDOT road projects but is set to expire in 2023.

Transfer of Sales Tax on Auto-Related Goods
Currently, sales taxes collected on auto-related goods, such as new and used vehicle purchases and auto parts, go to the state general fund. A transfer of the sales tax on these auto-related goods could generate additional revenue for transportation

facilities. This does not constitute a "new" tax, but a diversion of existing tax revenue. To mitigate loss of revenue from existing recipients, this tax could be phased in over a number of years, so that natural growth in tax revenue could smooth out the transfer.

New Tax on Motor Vehicle Fuel
For each gallon of fuel purchased, central Arkansans pay 40.2 cents for gasoline and 47.2 cents for diesel. The tax must be implemented in multiple-cent increments to have a major impact.

Wholesale Fuel Excise Tax
Taxes are currently collected to transportation fuel consumption based on the gallons consumed. A tax leveled on the wholesale price of motor vehicles would vary with cost of fuel.

Fuel Tax Index
Rather than increase the number of cents levied per gallon of fuel purchased, another strategy for fuel tax revenue is to index fuel taxes. A fuel tax index adjusts the tax rate based on established criteria (i.e. construction cost/fuel economy). The index is intended to mitigate the flat nature of fuel tax rates to maintain buying power. Three specific indices were considered, each implemented at the state level, but may also be executed at the federal level:

1. Index to fuel efficiency
2. Index to construction cost
3. Index to fuel efficiency and construction cost

Facility Tolling
Tolling has been successfully used in other metropolitan areas to construct new capacity on controlled-access facilities. A recently study by ArDOT found that widening of I-40 between North Little Rock and Memphis could be accomplished with tolls collected on the same stretch of freeway. A similar study found that less than 20% of the construction cost of Northbelt Freeway could be paid for with tolls. The managed lane study will also consider exclusive tolls for express lanes.

Property Tax
Arkansas counties are currently permitted to issue three mills property tax for the County Road and Bridge Fund. Not all counties level a full three mills while other could benefit from an allowable increase in property tax for transportation.

Electric Vehicle Fee
Motor vehicle users generate revenue for transportation through taxes paid on gasoline and diesel fuel purchases. Because electric vehicles do not consume gasoline or diesel fuel, they do not pay taxes. One strategy to generate revenue from the use of electric vehicles is a flat annual fee. The success of such a fee would be closely tied to adaptation of the current gas/diesel fleet to an electric one.

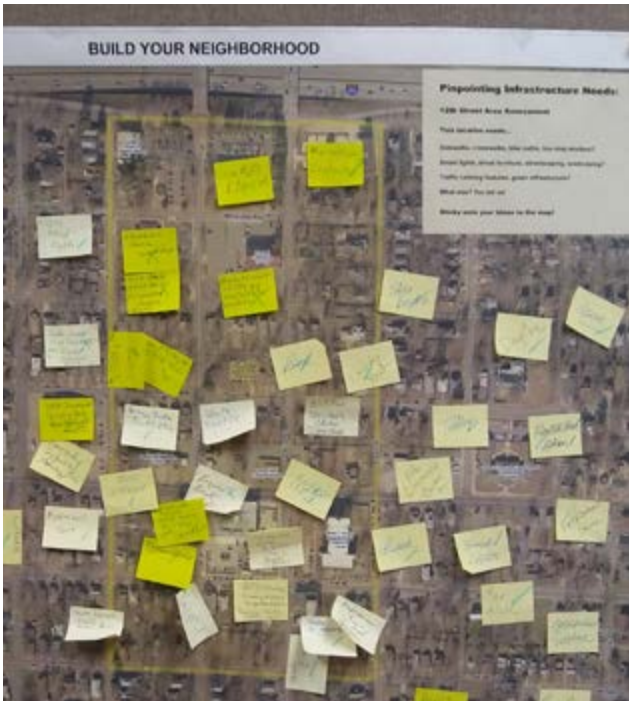


Table 7-8. 10 Year Project List by Year of Expenditure (cost in millions of dollars)

Project Number	Facility	From / To	Improvements	Let Year	Project Cost Estimate *1000	2019	2020
080496	I-40	Siebenmorgen Rd.-Mill St. Noise Barrier Wall (I-40) (Conway) (S)	Noise Abatement	2019	$1,700	$ 1,700	$ -
080505	225	Greenbrier Creek Str. & Apprs. (S)	Str. & Apprs.	2019	$700	$ 700	$ -
061509	321	Hwy. 367 - Hwy. 89 (Cabot) (S)	Major Widening	2019	$15,900	$ 15,900	$ -
061190	I-40	I-40 Interchange (Maumelle)	New Interchange	2019	$14,000	$ 14,000	$ -
061331	10 & I-430	Pleasant Ridge Rd. - Pleasant Valley Dr. (L.R.) (F)	Major Widening	2019	$40,000	$ 40,000	$ -
061506	176	Shilcotts Bayou Str. & Apprs. (S)	Str. & Apprs.	2019	$700	$ 700	$ -
061507	365	Palarm Creek Str. & Apprs. (S)	Str. & Apprs.	2019	$2,100	$ 2,100	$ -
061510	5 & 70	Hwy. 70/Hwy. 5/University Ave. Inters. Impvts. (S)	Intersection Improvements	2019	$2,300	$ 2,300	$ -
061527	CS	JP Wright Loop Rd. Rail Grade Separation (S)	RR Grade Separation	2019	$7,000	$ 7,000	$ -
CA0602	I-30 & I-40	I-530 - Hwy. 67 (Widening & Reconst.) (I-30 & I-40) (F)	Capacity Improvements & Reconstruction	2019	$631,700	$ 631,700	$ -
CA0601	I-30	Hwy. 70 - Sevier St. (Widening) (F)	Major Widening	2019	$132,000	$ 132,000	$ -
012227	25	Guy - Heber Springs (Safety Impvts.) (Sel. Secs.) (S)	Safety Improvements	2020	$1,600	$ -	$ 1,600
080457	89	UPRR Overpass & Realign. (Mayflower) (S)	RR Grade Separation	2020	$27,055	$ -	$ 27,055
080508	I-40 & 65	I-40/Hwy. 65 Intchng. Impvts. (Conway) (S)	Interchange Improvements	2020	$3,500	$ -	$ 3,500
012290	36	Hwy. 64 - Hwy. 5 (Safety Impvts.) (Sel. Secs.) (S)	Safety Improvements	2020	$8,500	$ -	$ 8,500
061166	176	47th St. - Remount Rd. Safety Impvts. (NLR)	Safety Improvements	2020	$900	$ -	$ 900
061454	10	Gill St. & RR Overpass Strs. & Apprs. (S)	Strs. & Apprs.	2020	$7,800	$ -	$ 7,800
CA0602	I-30 & I-40	I-530 - Hwy. 67 (Widening & Reconst.) (I-30 & I-40) (F)	Capacity Improvements & Reconstruction	2020	$20,000	$ -	$ 20,000
CA0604	67	Main St. - Vandenberg Blvd. (Widening) (S)	Major Widening	2020	$76,500	$ -	$ 76,500
061442	5	Garland Co. Line - Benton (Safety Impvts.) (S)	Safety Improvements	2020	$4,500	$ -	$ 4,500
061508	5	I-30 - Alcoa Rd. (Benton) (S)	Major Widening	2020	$7,700	$ -	$ 7,700
BB0808	I-40	Hwy. 65 - West (P.E.)	Project Development	2021	$300	$ -	$ -
08X071	65B	Hwy. 60 - I-40 Inters. Impvts. (Conway) (P.E.)	Project Development	2021	$500	$ -	$ -
08X105	89	Beaverdam Creek Str. & Apprs.	Str. & Apprs.	2021	$200	$ -	$ -
061371	67	Hwy 67 Interchg. Impvts. (Hwy 5 and Hwy 89)	Interchange Improvements	2021	$28,000	$ -	$ -
06X011	38	Mill Creek Str. & Apprs.	Str. & Apprs.	2021	$300	$ -	$ -
06X013	15	I-40 Str. & Apprs. (L.M. 168.58)	Str. & Apprs.	2021	$1,600	$ -	$ -
06X061	31	I-40 Str. & Apprs. (L.M. 174.58)	Str. & Apprs.	2021	$1,200	$ -	$ -
BB0607	I-40	Pulaski Co. Line - Hwy. 31 (P.E.)	Project Development	2021	$500	$ -	$ -
BB0608	I-40	Hwy. 31 - Prairie Co. Line (P.E.)	Project Development	2021	$500	$ -	$ -
BB0606	I-40	Hwy. 161 - Lonoke Co. Line (P.E.)	Project Development	2021	$500	$ -	$ -
CA0602	I-30 & I-40	I-530 - Hwy. 67 (Widening & Reconst.) (I-30 & I-40) (F)	Capacity Improvements & Reconstruction	2021	$20,000	$ -	$ -
061262	5	Bryant - Pulaski Co. Line (Widening) (P.E.)	Project Development	2021	$1,200	$ -	$ -
080364	65B	Hwy. 64 - Bruce St. (Conway) (P.E.)	Project Development	2022	$400	$ -	$ -
061549	67	Hwy. 5 - White Co. Line (S)	System Preservation	2022	$48,100	$ -	$ -
11X016	67	Cypress Creek Strs. & Apprs.	Strs. & Apprs.	2022	$3,000	$ -	$ -
061382	10	Taylor Loop Rd. - Pleasant Ridge Rd.	Major Widening & Operational Improvements	2022	$19,000	$ -	$ -
BB0605	I-40	Hwy. 67 - Hwy. 161 (P.E.)	Project Development	2022	$500	$ -	$ -
BB0619	I-30	65th St. - South Terminal (Little Rock) (P.E.)	Project Development	2022	$500	$ -	$ -
CA0602	I-30 & I-40	I-530 - Hwy. 67 (Widening & Reconst.) (I-30 & I-40) (F)	Capacity Improvements & Reconstruction	2022	$20,000	$ -	$ -
CA0602	I-30 & I-40	I-530 - Hwy. 67 (Widening & Reconst.) (I-30 & I-40) (F)	Capacity Improvements & Reconstruction	2023	$142,300	$ -	$ -
BB0606	I-40	Hwy. 161 - Lonoke Co. Line (P.E.)	Reconstruction & Capacity	2025	$48,000	$ -	$ -
BB0607	I-40	Pulaski Co. Line - Hwy. 31 (P.E.)	Reconstruction	2026	$71,040	$ -	$ -
BB0608	I-40	Hwy. 31 - Prairie Co. Line (P.E.)	Reconstruction	2027	$68,480	$ -	$ -
BB0808	I-40	Hwy. 65 - West (P.E.)	Reconstruction	2025	$5,000	$ -	$ -
061262	5	Bryant - Pulaski Co. Line (Widening) (P.E.)	Widening	2027	$27,600	$ -	$ -
08X071	65B	Hwy. 60 - I-40 Inters. Impvts. (Conway) (P.E.)	Widening	2024	$15,000	$ -	$ -
BB0605	I-40	Hwy. 67 - Hwy. 161 (P.E.)	Reconstruction	2025	$9,600	$ -	$ -
BB0619	I-30	65th St. - South Terminal (Little Rock) (P.E.)	Reconstruction & Capacity	2026	$13,696	$ -	$ -
080364	65B	Hwy. 64 - Bruce St. (Conway) (P.E.)	Widening	2023	$3,600	$ -	$ -
0	25	Beaverfork Lake to Wooster	Widening and Safety	2025	$24,624	$ -	$ -
0	5	Gateway - Cleland	Operations	2023	$750	$ -	$ -
0	38/CR	Hwy 67 - Hwy 319	New Location	2023	$27,300	$ -	$ -
0	I-430	I-430 Interchanges at I-40 and Hwy 100	Interchange Improvements	2023	$50,000	$ -	$ -
0	I-40 & 365	Hwy 365/I-40 Interchange Impvts. (Morgan)	Interchange Improvements	2023	$10,000	$ -	$ -
0	300	I-430 Interchange at Colonel Glenn/Hwy 300	Interchange Improvements	2024	$10,000	$ -	$ -
0	107	General Samuels - Republican	Major Widening	2023	$23,275	$ -	$ -
0	107	North Hills Blvd	Intersection Improvements	2024	$500	$ -	$ -

Year of Expenditure													$
2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2040	2041-2050	Total
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,700
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 700
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,900
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 700
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,100
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,300
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 631,700
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 132,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,600
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,055
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,500
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,500
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 900
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,800
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 76,500
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,500
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,700
$ 300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300
$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ 200	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 200
$ 28,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,000
$ 300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300
$ 1,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,600
$ 1,200	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,200
$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
$ 1,200	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,200
$ -	$ 400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 400
$ -	$ 48,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,100
$ -	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000
$ -	$ 19,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 19,000
$ -	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ -	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
$ -	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
$ -	$ -	$ 142,300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 142,300
$ -	$ -	$ -	$ -	$ 55,665	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 55,665
$ -	$ -	$ -	$ -	$ -	$ 84,444	$ -	$ -	$ -	$ -	$ -	$ -	$ 84,444
$ -	$ -	$ -	$ -	$ -	$ -	$ 83,436	$ -	$ -	$ -	$ -	$ -	$ 83,436
$ -	$ -	$ -	$ -	$ 5,798	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,798
$ -	$ -	$ -	$ -	$ -	$ -	$ 33,628	$ -	$ -	$ -	$ -	$ -	$ 33,628
$ -	$ -	$ -	$ 16,971	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,971
$ -	$ -	$ -	$ -	$ 11,133	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,133
$ -	$ -	$ -	$ -	$ -	$ 16,280	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,280
$ -	$ -	$ 3,974	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,974
$ -	$ -	$ -	$ -	$ 28,556	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,556
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ 30,134	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,134
$ -	$ -	$ 55,191	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 55,191
$ -	$ -	$ 11,038	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,038
$ -	$ -	$ -	$ 11,314	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,314
$ -	$ -	$ 25,691	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,691
$ -	$ -	$ -	$ 566	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 566

Table 7-8. 10 Year Project List by Year of Expenditure (cost in millions of dollars)

Project Number	Facility	From / To	Improvements	Let Year	Project Cost Estimate *1000	2019	2020
0	176Y	176/176Y (Brockington, Brookswood/Keihl) - Hwy 67	Corridor Improvements	2024	$2,000	$ -	$ -
0	5	Bryant Parkway	Intersection Improvements (Safety)	2023	$750	$ -	$ -
0	5	Springhill	Intersection Improvements (Safety)	2023	$750	$ -	$ -
0	35	Military	Intersection Improvements (Safety)	2023	$750	$ -	$ -
0	88	Benton Parkway/Alcoa	Intersection Improvements (Safety)	2023	$750	$ -	$ -
0	183	Hill Farm Road	Intersection Improvements (Safety)	2023	$750	$ -	$ -
0	183	4th Street - Hill Farm Road	Safety and Widening	2024	$3,800	$ -	$ -
0	183	System Preservation	Hwy 35 to 4th Street (Bryant)	2024	$10,240	$ -	$ -
0	229	Hwy 67 - Grant County	System Preservation	2024	$15,200	$ -	$ -
0	CS	(Bryant Parkway) I-30 - Hwy 183	New Location	2019	$12,000	$ 12,000	$ -
0	CS	(Kanis Road) Shackleford Rd. - Gamble	Major Widening	2019	$5,600	$ 5,600	$ -
061517	5	Salt Creek Rd. - I-30 (Benton) (S)	System Preservation	[1]	$800	$ -	$ -
061524	35	Holly Creek - Hwy. 190 (S)	System Preservation	[1]	$500	$ -	$ -
06X022	5	Bodie Creek - Hwy. 70 (Little Rock)	System Preservation	[1]	$1,000	$ -	$ -
06X023	5	Hwy. 183 - Pulaski Co. Line	System Preservation	[1]	$700	$ -	$ -
06X027	70	I-30 - Asher Ave. (Little Rock)	System Preservation	[1]	$1,200	$ -	$ -
06X030	161	Vandenberg Blvd. - Wooten Rd. (Jacksonville)	System Preservation	[1]	$1,000	$ -	$ -
06X031	67	I-40 - S. Redmond Rd.	System Preservation	[1]	$4,500	$ -	$ -
06X033	5	Hwy. 367 - White Cypress Bayou (Sel. Secs.)	System Preservation	[1]	$2,000	$ -	$ -
06X034	176	Hwy. 107 - Lee Ave. (Sherwood)	System Preservation	[1]	$1,600	$ -	$ -
06X035	365	S. Broadway St. - E. Roosevelt Rd. (Little Rock)	System Preservation	[1]	$500	$ -	$ -
06X039	35	Depot Creek - Grant Co. Line (Sel. Secs.)	System Preservation	[1]	$2,000	$ -	$ -
06X040	89	Pinewood Dr. - Lincoln St. (Cabot)	System Preservation	[1]	$700	$ -	$ -
06X042	107	Kiehl Ave. - Stonehenge Dr. (Sherwood)	System Preservation	[1]	$2,800	$ -	$ -
06X047	10	Reservoir Rd. - Mississippi Ave. (Little Rock)	System Preservation	[1]	$800	$ -	$ -
06X048	167	I-530/Hwy. 167 Interchange Ramps	System Preservation	[1]	$100	$ -	$ -
06X050	338	I-30 - Hwy. 367	System Preservation	[1]	$1,700	$ -	$ -
06X052	89	Furlow - North	System Preservation	[1]	$500	$ -	$ -
06X053	70	University Ave. - Roosevelt Rd. (LR)	System Preservation	[1]	$600	$ -	$ -
06X067	165	Hwy. 391 - Hwy. 70 (Little Rock)	System Preservation	[1]	$1,400	$ -	$ -
08X004	89	Clinton Rd. - I-40	System Preservation	[1]	$1,200	$ -	$ -
08X014	319	Lonoke Co. Line - Hwy. 107	System Preservation	[1]	$900	$ -	$ -
08X028	36	Hwy. 64 - Hwy. 36	System Preservation	[1]	$900	$ -	$ -
08X053	365	Hwy. 60 - Hwy. 89	System Preservation	[1]	$1,700	$ -	$ -
08X057	64	Harkrider St. - Hwy. 64B (Sel. Secs.) (Conway)	System Preservation	[1]	$2,200	$ -	$ -
08X062	64	Cadron Creek - Hwy. 64B	System Preservation	[1]	$1,300	$ -	$ -
08X064	65	Damascus - Greenbrier (Sel. Secs.)	System Preservation	[1]	$2,500	$ -	$ -
Individually Listed Highway Projects (local match included)						**$865,700**	**$158,055**
CARTS Suballocation (Includes local match)							
CARTS STP Attributable Group Category		**Various CARTS Attrib Projects**	**Miscellaneous**	**2019-2050**		**$ 9,366**	**$ 5,893**
P Attributable Group Category		**Vatious CARTS TAP Attrib Projects**	**Miscellaneous**	**2019-2050**		**$ 924**	**$ 934**
Transit (Includes local match)							
Rock Region Metro		**RRM Capital and Operations**	**Transit**	**2019-2050**		**$ 19,605**	**$ 20,135**
Conway Transit		**Conway Transit Capital and Operations**	**Transit**	**2019-2050**		**$ 2,380**	**$ 1,486**
2Non-Project specific funding (Maintenance, System Preservation and Group Categories)							
Federal Highway				**2019-2050**		**$ (22,682)**	**$ 23,779**
TAP (State)				**2019-2050**		**$ 1,571**	**$ 1,598**
State				**2019-2050**		**$ 9,105**	**$ 20,462**
Local				**2019-2050**		**$ 20,633**	**$ 54,075**

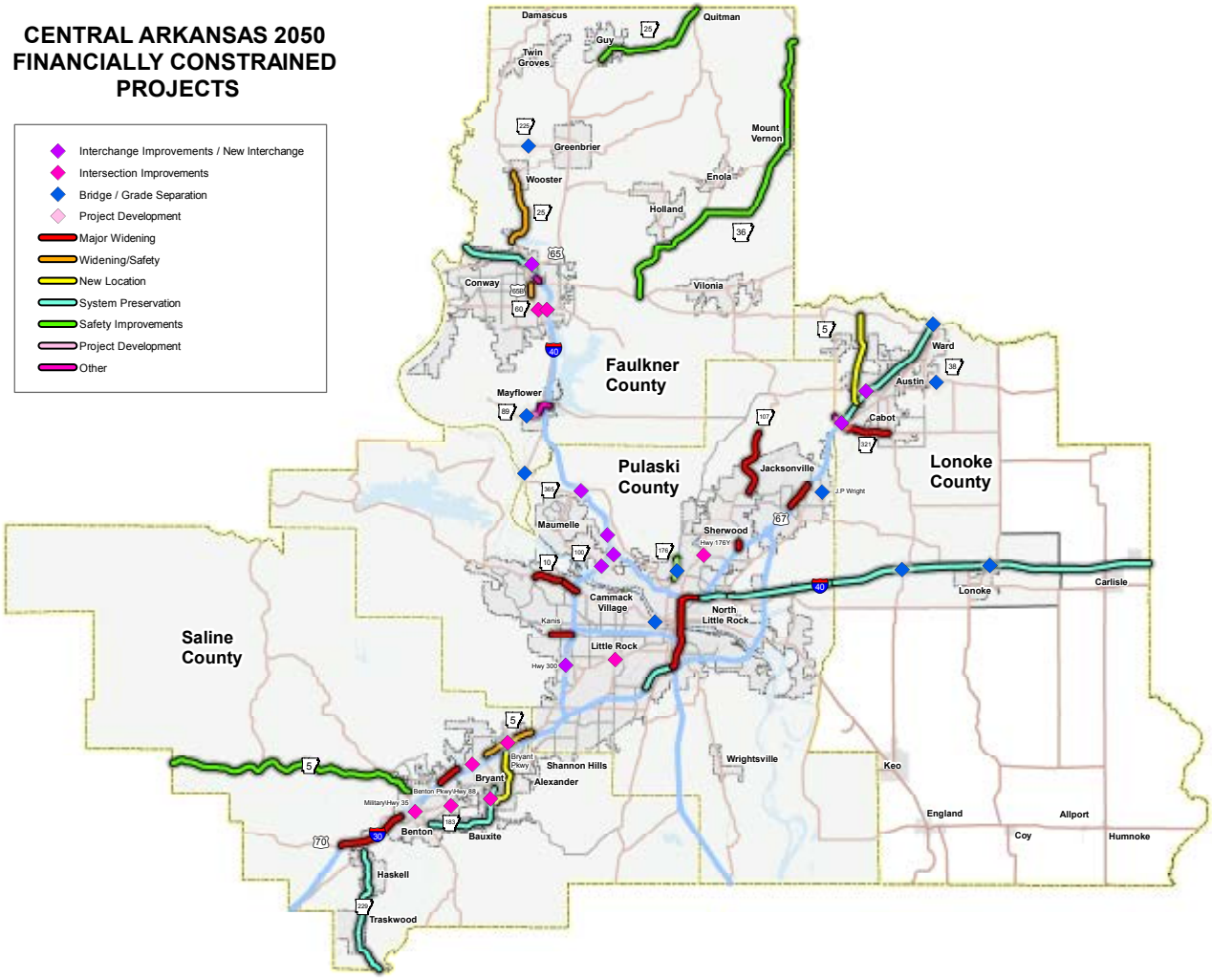
[1]Pavement preservation projects are shown for informational purposes. Projects have been established but no let year set. Actual locations are subject to change as schedules and priorities warrant. Funding for these projects will come from the non-project specific funding line item of the LRMTP.

Year of Expenditure												$
2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2040	2041-2050	Total
$ -	$ -	$ -	$ 2,263	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,263
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ 828	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 828
$ -	$ -	$ -	$ 4,299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,299
$ -	$ -	$ -	$ 11,586	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,586
$ -	$ -	$ -	$ 17,197	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,197
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,000
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,600
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$54,800	**$91,500**	**$273,295**	**$64,196**	**$101,153**	**$100,724**	**$117,064**	**$0**	**$0**	**$0**	**$0**	**$0**	**$ 1,826,488**
$ 18,343	**$ 18,993**	**$ 15,343**	**$ 15,500**	**$ 15,772**	**$ 16,047**	**$ 16,205**	**$ 16,485**	**$ 16,769**	**$ 17,057**	**$ 184,574**	**$ 221,805**	**$ 588,153**
$ 944	**$ 954**	**$ 1,038**	**$ 1,064**	**$ 1,090**	**$ 1,117**	**$ 1,145**	**$ 1,174**	**$ 1,203**	**$ 1,233**	**$ 13,184**	**$ 15,430**	**$ 41,434**
$ 20,678	**$ 21,239**	**$ 21,640**	**$ 22,181**	**$ 22,736**	**$ 23,304**	**$ 23,887**	**$ 24,484**	**$ 25,096**	**$ 25,723**	**$ 287,190**	**$ 367,628**	**$ 925,527**
$ 1,515	**$ 1,546**	**$ 1,656**	**$ 1,697**	**$ 1,740**	**$ 1,783**	**$ 1,828**	**$ 1,873**	**$ 1,920**	**$ 1,968**	**$ 22,601**	**$ 28,931**	**$ 72,924**
$ 52,417	**$ 24,933**	**$ (27,830)**	**$ 49,431**	**$ 21,377**	**$ 23,255**	**$ 11,741**	**$ 106,973**	**$ 108,577**	**$ 110,206**	**$ 1,197,198**	**$ 1,389,397**	**$ 3,068,773**
$ 1,625	**$ 1,653**	**$ 1,622**	**$ 1,638**	**$ 1,654**	**$ 1,670**	**$ 1,686**	**$ 1,702**	**$ 1,718**	**$ 1,735**	**$ 19,014**	**$ 21,963**	**$ 60,849**
$ 25,919	**$ 19,078**	**$ (20,941)**	**$ 28,826**	**$ 18,614**	**$ 19,282**	**$ 16,606**	**$ 40,619**	**$ 41,228**	**$ 41,847**	**$ 454,591**	**$ 527,571**	**$ 1,242,807**
$ 54,764	**$ 55,782**	**$ 42,242**	**$ 55,692**	**$ 60,061**	**$ 61,049**	**$ 62,190**	**$ 63,234**	**$ 64,268**	**$ 65,337**	**$ 729,163**	**$ 865,909**	**$ 2,254,400**

[2]The unallocated, or non-project specific, group category is intended to represent general maintenance of the transportation system. This is also intended to represent all regional and statewide generic group projects, including but not limited; IRP Debt Service; Various Project Development Activities; Various Roadway System Preservation Projects; Various Bridge Preservation Projects; Rehabilitation and Replacement Projects; Various Safety Improvement Projects; Various Signal and Intersection Improvement Projects; Various Transportation Alternative Program Projects; and other Programs, Services and Activities. These project will be selected during the TIP development process.

Figure 7-10. Financially Constrained Projects

(Project limits subject to change based on final construction cost)



*Pavement preservation projects are shown for informational purposes. Actual locations are subject to change as schedules and priorities warrant.

7.5.4 Financial Constraint Determination

The financial constraint determination is summarized in Tables 7-9 and 7-10 on the following page. The unallocated, or non-project specific, total is intended to represent general maintenance and system preservation of the transportation system. This is also intended to represent all regional and statewide generic group projects, including but not limited to; IRP Debt Service; Various Project Development Activities; Various Roadway System Preservation Projects; Various Bridge Preservation Projects; Rehabilitation and Replacement Projects; Various Safety Improvement Projects; Various Signal and Intersection Improvement Projects; Various Transportation Alternative Program Projects; and other Programs, Services and Activities. These projects will be selected during the TIP development process.

Table 7-9. LRMTP Project List Funding Expenditures

Category	FY19-22	FY23-26	FY27-30	FY31-40	FY41-50
Federal Highway	$365.8	$519.3	$150.7	$158.2	$189.8
NHPP/NHFP	$220.2	$353.5	$66.7	$0.0	$0.0
STP/CMAQ	$128.7	$162.4	$80.1	$147.7	$177.4
HSIP	$14.0	$0.0	$0.0	$0.0	$0.0
TAP	$3.0	$3.4	$3.8	$10.5	$12.3
Federal Transit	$28.5	$31.0	$32.4	$90.2	$105.0
FTA 5307 - Urbanized Areas Formula Grants	$24.5	$26.7	$28.0	$77.9	$90.5
FTA 5337 - State of Good Repair-High Intensity Fixed Guideway	$1.5	$1.6	$1.7	$4.6	$5.3
FTA 5339 - Bus and Bus facilities	$2.5	$2.6	$2.7	$7.8	$9.2
State	$70.8	$108.5	$23.4	$0.0	$0.0
Local	$109.0	$99.5	$89.8	$262.4	$342.8
One Time (State/Local)	$536.3	$0.0	$0.0	$0.0	$0.0
Total	$1,110.4	$758.2	$296.2	$510.8	$637.6

Numbers may not add due to rounding

Table 7-10. Non-Project Specific Totals (General Maintenance and System Preservation)

Category	FY19-22	FY23-26	FY27-30	FY31-40	FY41-50
Federal Highway	$73.7	$72.9	$344.4	$1,216.5	$1,405.6
NHPP/NHFP	$34.4	$42.5	$220.1	$796.4	$924.3
STP/CMAQ	$17.8	-$6.9	$84.9	$310.5	$354.3
HSIP	$15.0	$30.7	$32.6	$90.6	$105.1
TAP	$6.4	$6.6	$6.8	$19.0	$22.0
Federal Transit	$0.7	$0.1	$0.5	$1.2	$1.1
FTA 5307 - Urbanized Areas Formula Grants	$0.7	$0.0	$0.4	$0.8	$0.9
FTA 5337 - State of Good Repair-High Intensity Fixed Guideway	$0.0	$0.0	$0.0	$0.2	$0.2
FTA 5339 - Bus and Bus facilities	$0.1	$0.0	$0.1	$0.2	$0.0
State	$74.6	$45.8	$140.3	$454.6	$527.6
Local	$18.5	$21.9	$25.5	$72.9	$86.6
One Time (State/Local)	$0.0	$0.0	$0.0	$0.0	$0.0
Total	$167.5	$140.6	$510.7	$1,745.2	$2,020.9

Numbers may not add due to rounding

7.6 Implementation and Next Steps

As demonstrated by the results of *Imagine Central Arkansas*' public outreach, central Arkansas has collectively expressed its desire to pursue a balanced, seamless multimodal transportation system that supports a wide range of users. This balanced approach stands in contrast to the practice of isolated transportation investments that ignore the impacts of these individual projects on the system's overall functioning.

While having a clear vision for mobility is important, there are a number of other challenges to implementing this balanced system. This section describes the actions necessary to implement the Vision, beginning with each of the plan's mobility elements: freeways, the RAN, regional transit, local transit, and bicycle and pedestrian facilities. Also addressed are other key actions, including integrating complementary systems, a strategy for selecting projects, policy changes, and tracking progress, and performance.

7.6.1 Freeways

The Financially Constrained Plan includes a number of projects that will improve the capacity and operation of central Arkansas' freeway system. Major widening on capacity-constrained segments of I-30, I-40, I-430 and I-630 are all either underway or programmed as part of the Connect Arkansas Program (CAP). Rehabilitation is planned or recently been completed along segments of I-30, I-40, I-440, I-530, and Hwy 67 as part of the Interstate Rehabilitation Program (IRP) or National Highway System funding.

Even with considerable progress toward achieving the freeway vision, a number of projects remain.

Top Projects

The Freeway Vision projects will take many years to plan, program, design and build, and will continue to compete for limited resources. While each project carries its own significance to the overall vision, the following are recommended to pursue first, based on cost, imminent need, and consistency with goals and objectives.

- **Close the Funding Gap for Maintenance:** If central Arkansas' roadways are to continue to function adequately, they must remain in good repair and working order. For this to happen, the sizable gap between funding needs and available revenue must be closed, as shown in Table 7-11-A.
- **System Wide Operational Improvements:** The efficiency and function of the freeway system is enhanced through improvements to the way it operates. This emphasis on systems operations management continues to be stressed at the federal level. To that end, the deployment of a system- wide Intelligent Transportation System (ITS) for central Arkansas' freeways should be pursued in the coming years. Additional focus on TSMO should be considered.
- **Interchange Improvements:** In many cases, freeway operations and capacity can be improved by eliminating bottlenecks that preclude the need for large-scale widening via additional general lanes. Several interchange improvements are recommended to address existing capacity issues. See Table 7-11-B.
- **Freeway Operation Improvements**: Additional freeway capacity, through interchange improvements, auxiliary lanes, or mainline widening may be considered for some corridors. See 7-11-C.

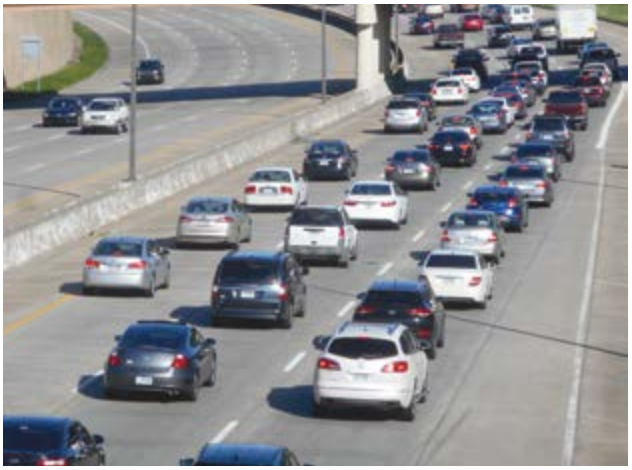


Table 7-11-A. Freeway Maintenance Project Priorities

Facility	From	To	Improvement
I-430	I-30	I-40	Pavement Rehabilitation
I-630	UPRR Viaduct		Bridge Replacement

Table 7-11-B. Freeway Interchanges Project Priorities

Facility	Cross Street	Improvement
I-430	I-40 & Hwy 100	Ramp Improvements and Widening
I-30 & I-430	I-30 EB and I-430 NB	Ramp Improvements and Widening
I-430	Hwy 300 (Colonel Glenn)	Interchange Modification

Table 7-11-C. Freeway Operational Improvements Project Priorities

Facility	From	To	Improvement
I-30	I-40	I-530/I-440	Supplemental CAP Funding
I-30	South Terminal	65th Street	Operational Improvements
I-630	University	I-30	Operational Improvements
Hwy 67	Hwy 5	Hwy 89/North Cabot Interchange	Widening
I-40	I-440	Hwy 31/Lonoke	Widening
I-40	Hwy 67	I-40	Widening
I-30*	I-430	Benton	Operational Improvements

*I-30 Corridor Study Short-Term Recommendations

Projects Linked with 30 Crossing (CA0602)

Three freeway segments have noticeable impacts on or will be impacted by the proposed 30 Crossing improvements. Improvements to these corridors would be necessary to avoid forming bottlenecks, which will impact traffic operations and safety within the 30 Crossing corridor. These projects would be subject to individual corridor and environmental studies. Until funded these projects are considered illustrative.

Capacity Improvements

1. Interstate 30 - I-530/I-440 (South Terminal) to 65th Street (funded in plan)
2. Interstate 30 - 65th to I-430
   - After widening to 65th
3. Interstate 630 - I-30 to University

FHWA Definition of Illustrative Project

Illustrative project means an additional transportation project that may be included in a financial plan for a metropolitan transportation plan, TIP, or STIP if reasonable additional resources were to become available.
See Appendix G for a list of Illustrative Projects.

7.6.2 Regional Arterial Network

The Regional Arterial Network (RAN) is intended to absorb much of the travel demand as an alternative to interstate travel. A host of capacity, intersection, access management, systems operations and bridge projects were identified as part of the RAN vision.

Top Projects

Improvements to the RAN are necessary for it to function as a viable alternative to the freeway network. Top unfunded projects to implement the RAN Vision focus on strategies to keep existing facilities in good repair and to make RAN corridors operate more safely and efficiently.

- **Close the Funding Gap for Maintenance:** Similar to freeways, closing the sizable gap between funding needs and available revenue to keep the region's arterials in good working order is a top priority.
- **Intersection and Operational Improvements:** In keeping with an emphasis on transportation operations, many of the recommended projects are focused on improving how RAN corridors operate. This includes intersection improvements, turn lanes and correction of geometric deficiencies. Advanced traffic control systems are also included in this category.
- **Access Management:** RAN Corridors, by design, plan a prominent role in regional mobility. As such, the corridors should include access management measures commensurate with their high mobility function. A number of projects include access management strategies such as medians and driveway consolidation to align the corridors with prescribed standards.
- **Widening:** Even after corridors have been made as efficient as possible, some may not have enough capacity to handle projected traffic volumes. In these situations, widening to accommodate general purpose lanes or a median/center turn lane should be considered.

Table 7-12. Regional Arterial Network Project Priorities

Highway	Street Name	Location	Length	Improvement Type
65B	Harkrider	Hwy 64 - Bruce Street	0.76	Widening
25		Beaverfork Lake to Wooster	5.4	Widening and Safety
65B	Dave Ward Drive	Hwy 60 - I-40 Interchange	-	Widening
107		General Samuels - Republican	4.9	Major Widening
300	Colonel Glenn	I-430 Interchange at Colonel Glenn/Hwy 300	-	Interchange Improvements
107	JFK	North Hills Blvd	-	Intersection Improvements
365		Ramp Improvements - Morgan	-	Interchange Improvements
176Y	Brockington	176/176Y (Brockington/Brookswood) to Hwy 67/167	-	Corridor Improvements
5		Bryant Parkway	-	Intersection Improvements (Safety)
5		Springhill	-	Intersection Improvements (Safety)
35		Military	-	Intersection Improvements (Safety)
88		Benton Parkway/Alcoa	-	Intersection Improvements (Safety)
183	Reynolds	Hill Farm Road	-	Intersection Improvements (Safety)
183	Reynolds	System Preservation	6.4	Hwy 35 to 4th Street (Bryant)
183	Reynolds	4th Street - Hill Farm Road	0.8	Safety and Widening
229		Hwy 67 - Grant County	9.5	System Preservation
38/CR		Hwy 67 - Hwy 319	4.2	New Location
5		Gateway - Cleland	0.3	Operations

7.6.3 Transit

Building a regional transit system and the basic framework for future growth and mobility of central Arkansas is one of the major elements of *Central Arkansas 2050*. Implementing the vision for regional transit is a significant undertaking considering that no such service exists at this scale today and there is no dedicated source of funding.

The first priority is developing a regional dedicated funding source for transit.

Top Projects

The transit vision calls for an expansion of regional transit in central Arkansas that amounts to an almost complete overhaul of the existing service. As such, there is much work to be done if this vision is to be achieved. As the region's current primary provider of transit, Rock Region will be involved in an significant transit expansion. New service areas may be served by Rock Region or coordinated through another transit provider. Given additional revenue sources, top projects would include updates to transit stop infrastructure (pedestrian access), improvements to current levels of service, and an expansion of service to areas currently not serviced across the region. Many early projects would focus on laying the groundwork for high-quality regional transit through express bus service.

- **Pedestrian Improvements and Marketing:** One of the greatest impediments to using fixed route service is a lack of adequate pedestrian accommodations providing safe and convenient connections between bus stops and origins and destinations. Improvements such as sidewalks, pedestrian indicators at traffic signals and better marked and signed crosswalks create a safer transit user experience.

- **Service Enhancement and Expansion:** Several existing places currently served by fixed route transit are in need of service enhancement and expansion. The creation of branded high frequency routes on Markham and JFK/Hwy 107/ McCain is the first step to providing premium transit service in these corridors. This includes new and expanded routes, increased frequency and expanded operating hours.
- **New Local Service in Conway:** Conway was designated an urbanized area following the 2010 US Census, signifying its growth and giving it a separate allocation of FTA funds for transit (that currently go unused but are planned for a shared ride, commuter van pool). A study completed in 2010 recommended specific fixed routes that could serve local mobility needs and provide connectivity to proposed regional transit.
- **Express Bus Service:** The ultimate vision for regional transit includes fixed guideway—light rail, commuter rail or bus rapid transit—linking Little Rock's central core with each of region's the main corridors: West Little Rock/I-630, Conway/ I-40, Cabot US 67/167 and Benton/I-30. Prior to designating parts of these corridors for transit right-of-way, providing express bus service in the existing right-of-way is a logical first step.

Table 7-13. Rock Region (Maintaining Existing Services- Cost in Millions)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2040	2041-2050
Federal Funds	$5.8	$5.9	$6.1	$6.2	$6.5	$6.6	$6.6	$6.7	$6.8	$6.9	$6.9	$6.9	$76	$86
Locally Generated Funds*	$13.8	$14.2	$14.6	$15.1	$15.1	$15.6	$16.1	$16.6	$17.1	$17.6	$18.2	$18.8	$211	$281
Total	**$19.6**	**$20.1**	**$20.7**	**$21.2**	**$21.6**	**$22.2**	**$22.7**	**$23.3**	**$23.9**	**$24.5**	**$25.1**	**$25.7**	**$287**	**$367**

*A portion of the local funds expected to be offset by transit competitive grants

Table 7-14. Local Transit Vision Project Priorities

Service Area	Project
Region-wide	New local routes and expanded existing service. Addition of flex service. Improvements to pedestrian signals and crosswalks and sidewalks.
Conway/Central Faulkner County	New branded service: Local/paratransit service as recommended in the Conway Transit Feasibility Study plus new local routes.
Central Little Rock	New local routes and expanded hours of existing service. Addition of flex services and thirty-minute headways on all routes.
North Little Rock	New local routes and expanded hours of existing service. Addition of flex services and thirty-minute headways on all routes.

Table 7-15. Regional Transit Project Priorities

Service Area	Project
Conway to Little Rock (RAN Corridor 8/I-40)	Express bus service/fixed guideway study.
West Little Rock to Little Rock/Airport (I-630 corridor)	Short term: Fifteen minute headways on existing bus routes and transit hub Long term: Light Rail Transit
Benton to Little Rock (RAN Corridor 6/I- 30)	Express bus service/fixed guideway study.
Cabot to Little Rock (RAN Corridor 7/US 67/167)	Express bus service/fixed guideway study.

7.6.4 Bicycle and Pedestrian

Many central Arkansans indicated they would walk and cycle more if good, safe facilities were available to them. In many cases, bicycle and pedestrian facilities can be incorporated into the design of new roads and road improvements; however, it may be necessary for bicycle and pedestrian facilities to be standalone projects.

Top Projects

The top projects for implementing the vision for bicycle and pedestrian mobility include a mix of regional connectors and local facilities. These include:

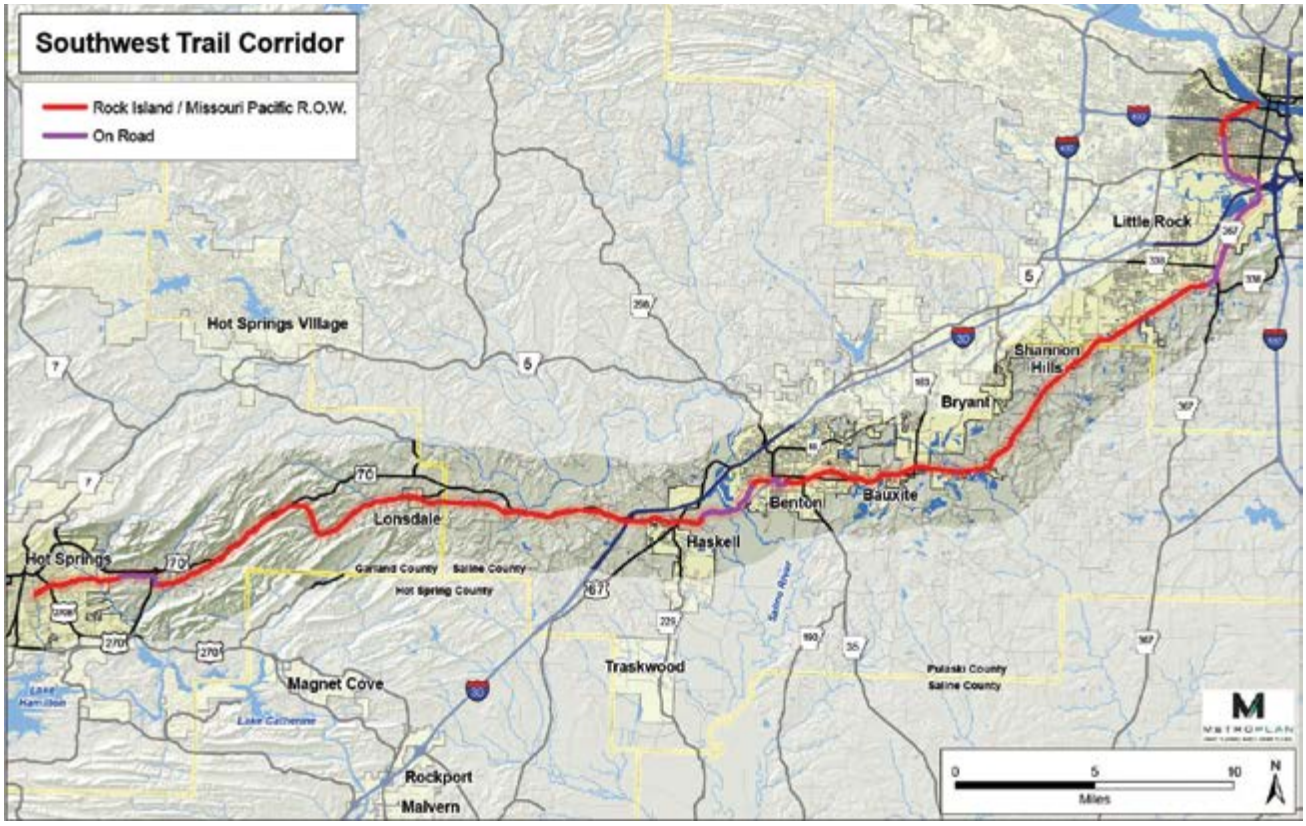
- **Completion of the Arkansas River Trail:** The Arkansas River Trail is one of the most popular outdoor venues in central Arkansas. Completion of the Trail, which included a combination of off- road paths, crossing treatments and on-road facilities, was identified many times as an important initiative during outreach for *Imagine Central Arkansas*. Not only would its completion be a boon for recreation and tourism, it would also create a contiguous bicycle connection between Conway and Little Rock.
- **Southwest Trail:** The Southwest Trail is a proposed multi-use path connecting Little Rock with Hot Springs utilizing abandoned railroad ROW. The trail would serve as a primary connection from communities in Saline County to Little Rock.
- **Regional Connectors:** In addition to the Arkansas River Trail and Southwest Trail, the bicycle and pedestrian vision includes other important connectors that make regional bicycle travel possible. Top projects include a regional connector to Sherwood, Jacksonville, and Cabot and one to the west Little Rock/west Pulaski County.

Local projects: Many areas lack adequate facilities for bicycle and pedestrian travel in and around neighborhoods, corridors, and communities. Investments in sidewalks, crossing treatments, and a mix of on-road and off-road bicycle facilities will make cycling and walking possible on these corridors.

Table 7-16. Bicycle and Pedestrian Vision – Top Projects

Facility	Location	Project
Complete Arkansas River Trail	Maumelle/Faulkner County connection (Hwy 365)	On-road and off-road facilities
	River Bluffs section in Little Rock	Complete off-road path and provide bike alternative
Southwest Trail	Little Rock/State Capitol to Garland County	New multi-use path
Northeast Regional Connector	Little Rock/Levy to Cabot	Regional connector in in Jacksonville/Northeast Pulaski County
West Regional Connector	Downtown Little Rock to Hwy 10	Regional connector along I-630 and Chenal Corridors (combination of on-road and off-road)

Figure 7-11. Southwest Trail



In a 2014 Memorandum of Understanding between nine local jurisdictions, citizen-led groups, and four state agencies, the Southwest Trail was born. Through this effort, multiple central Arkansas communities will be connected by an alternative transportation corridor. When completed, the 65-mile trail will stretch from downtown Little Rock to downtown Hot Springs.

Its path will trace the former Rock Island-Missouri Pacific rail line and the old Southwest Trail, known as Military Road. This massive undertaking will develop through a combination of Federal, State, and local funds over the next several years. Major funding strides in 2017 may accelerate construction on some segments within the next few years.

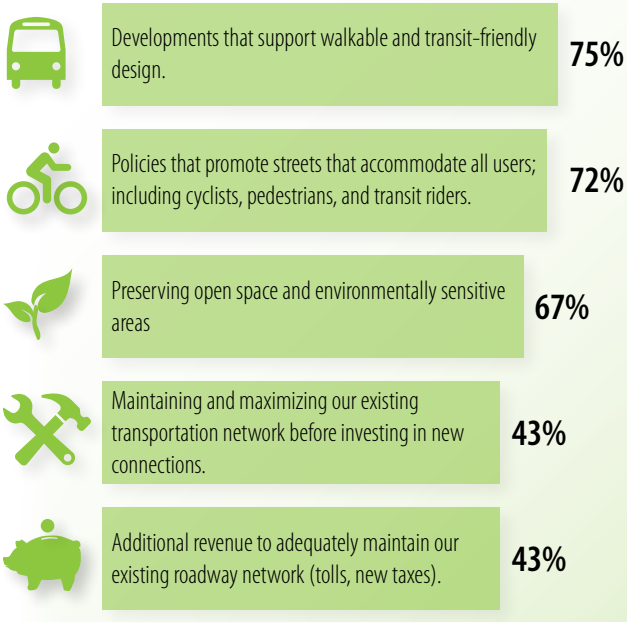
7.7 Project Selection

For a project to be built with federal funds, it must be included in the Transportation Improvement Program (TIP), one of two federally mandated documents produced by Metroplan (with the LRMTP being the other). Project must first be included in the LRMTP before they can be included in the TIP. To be added to the LRMTP and included in future TIPs a project must demonstrate:

- Extent of consistency with and achievement of *Central Arkansas 2050* Vision, Goals, and Objectives as measured through:
  - Improved operations of existing facilities.
  - Quality design in terms of access management, accommodation of all users and consistency with surrounding land use and local government plans.
  - Improved safety for motor vehicles, pedestrians, cyclists and transit riders.
- Availability of federal and state funding (based on the project eligibility).
- Ability of the appropriate local government(s) to provide matching funds for federal and state funded projects.
- Assessment of project readiness to proceed through the project development process.
- Identification of any factors that would preclude the project based on environmental issues.

Figure 7-12. Public Support for Local Policy Changes

Percent who selected 'greatest' or 'second-greatest' support.



Note: Results from the "Are We There Yet?" online tool. For complete details see Appendix B.

7.8 Collaboration, Policy Changes and Actions

The focus of the LRMTP is on a formally adopted Financially Constrained Plan, 10-Year Project list and recommendations for new sources of revenue and top unfunded projects. However, to fully implement the *Central Arkansas 2050* Vision, additional measures are necessary. These include programs, policies and actions.

7.8.1 Collaboration/Organization

There is not one single entity that can achieve the Vision on its own. Instead, it is a combination of key players —Metroplan, ArDOT, local governments, community, and business leaders – that collectively make it happen. Thus, a significant amount of collaboration is necessary. Following are recommendations for programs that engage the region collaboratively. Other opportunities for collaboration may emerge as *Central Arkansas 2050* moves toward implementation.

Regional leadership: Metroplan will engage regional leaders to attain a consensus on new funding sources for achieving the Vision.

Communication and engagement: *Central Arkansas 2050* carries implications for land development decisions that are within local governments' control. Metroplan encourages local governments to support the regional Vision by developing land use plans that are consistent with the preferred growth concept. One way this will occur is through the Jump Start program and similar initiatives that benefit communities. Additionally, Metroplan will continue to develop materials to communicate the Vision and associated strategies.

Economic development: Metroplan maintains an active relationship with regional chambers of commerce, sharing information on how the evolving transportation picture affects quality of life and the ability to attract new growth in central Arkansas. Metroplan will continue and expand relationships with chambers across the region to ensure *Central Arkansas 2050* and regional economic development goals are consistent and to raise awareness of, and advocacy for, new revenue sources for transportation.

Committee Restructure: In 2018, the Metroplan Board voted to reorganize itself, its technical coordinating committee (TCC), and citizen advisory board (RPAC) to enhance communication and funnel expertise into three topic-based planning committees. The Transportation Systems, Livable Communities, and Economic Vitality Committees will approach regional planning from their unique viewpoints, and provide the Board with multiple perspectives for making important policy decisions. The new structure kicks off in 2019. Committees will be tasked with interpreting strategies in *Central Arkansas 2050*, and recommending the best course of action to the Board.

7.8.2 Policy Recommendations

Metroplan is guided by a set of policies, both formal and informal, as it goes about its business of coordinating regional transportation decisions. The findings and recommendations of *Central Arkansas 2050* suggest that new policies and emphasis on and/or strengthening of some existing policies would help to better implement the Vision.

Fix it first: Central Arkansas has many critical transportation infrastructure maintenance needs as documented in this LRMTP. Projected revenue falls short of meeting these needs. As a matter of policy, Metroplan will focus first on addressing maintenance and safety needs before committing to new capacity projects.

Full lifecycle project costing: One reason that central Arkansas, like most regions, finds itself with a funding deficit is because the current project planning and programming process does not take into consideration the "full cost" of transportation projects. Typically, when allocating funds, only the immediate capital cost (i.e. design and construction) is taken into consideration. In future planning and programming efforts, Metroplan and its partners

must include the full lifecycle cost, Including ongoing maintenance and repair/replacement of projects. Additionally, on-going planning efforts, like the managed lane study, would inform existing policies —such as the six lane policy—during the next update).

Operations over capacity: Rather than invest in new and/or expanded facilities which can be costly and add to ongoing untended maintenance liability, Metroplan partners are encouraged to first seek strategies that improve the operation of existing facilities. This could be implemented through prioritization measures for projects seeking committed funding via the TIP process. A similar measure has been included in the LRMTP project evaluation scoring.

New revenue sources: The LRMTP identifies a Ten Year List of new transportation projects to be funded with projected revenue as part of the Financially Constrained Plan. The inclusion of new major projects as part of the Financially Constrained Plan is discouraged until new revenue sources are identified.

Quality design and balance of modes: *Central Arkansas 2050* goals and objectives place significant emphasis on providing for a balance of travel modes, developing high-quality, aesthetically pleasing and livable corridors through access management and other design strategies and being responsive to the surrounding context and local land use plans. Although corridor projects that demonstrate these characteristics are already encouraged, this can be strengthened by assigning higher priority to those projects that achieve the design goals in the TIP project selection process. Several similar measures are included in the LRMTP project evaluation scoring.

Safety: Providing for the safe movement of motor vehicles, pedestrians, cyclists, and transit riders continues to be of prime importance. Adoption of prioritization measures can solidify this position. Safety is reflected in the LRMTP project evaluation scoring. Beyond that, safety studies for specific facilities and locations, as warranted, will be developed.

7.8.3 Actions

In addition to collaboration and policy issues, several actions must be taken to fully achieve the *Central Arkansas 2050* Vision. These actions range from plans and studies to active pursuit of new revenue sources. Some can be completed within the next few years, while others may take up to a decade.

Local government initiatives: Metroplan will continue to champion best practices by creating and supporting local government initiatives that result in efficient transportation and land use patterns and supportive sustainable, livable neighborhoods. Most recently, the Jump Start program provides resources to develop small sub-area plans that implement *Central Arkansas 2050*. Future efforts include additional small sub-area plans or corridor studies, local transit and bicycle/pedestrian plans, design guidelines or fiscal impact analyses that show how different development types impact a jurisdiction's revenue stream.

New revenue sources: The LRMTP identifies several new sources to close the gap between Vision needs and available revenue. Pursuit of these sources must begin in earnest. The source that shows the most immediate promise in terms of revenue potential, ease of public and political receptiveness and administrative feasibility going first.

Scientific survey: Ad hoc feedback tools used during *Imagine Central Arkansas* public outreach showed very high levels of support for new

revenue sources among people who participated. As a first and very specific step toward pursuing these new revenues, a scientific sample survey to more accurately gauge the public's receptivity is required. Such a survey would include a statistically significant participant sample, meaning that results are designed to be reflective of the region's entire population.

Regional Mobility Authority: A Regional Mobility Authority (RMA) is a formally-designated, legislatively authorized, independent body comprised of local government members created to fund construction and operation of regional transportation systems. The findings and conclusions of *Central Arkansas 2050* confirm the need for an RMA in central Arkansas and heighten the importance for the continued pursuit of such an agency.

Promote design for all users: "Complete Streets" is an increasingly popular strategy for communities and regions to support the creation of safe, walkable streets for all users. To date, over 500 jurisdictions in the US have adopted Complete Streets policies. All local governments and ArDOT are encouraged to create and formally adopt a Complete Streets policy or resolution and develop design guidelines. This includes ongoing education on Complete Streets and their benefit.

Rail grade separations: The LRMTP Project Priorities identify a number of rail grade separations that are a top priority for the region. These projects will be completed or substantially underway by 2020.

Regional ITS Architecture: Intelligent Transportation Systems (ITS) represents one of the best ways to improve the operation of central Arkansas freeways and arterials. The Regional ITS Architecture will be updated to reflect changes in technology and local conditions and deployed by 2020.

Arkansas River Trail: The Arkansas River Trail is an important component of central Arkansas' recreation, tourism and regional mobility. Projects necessary to finish the Trail will be completed or substantially underway by 2020.

Access management: To support access management as an effective strategy for safe efficient operation of arterials, Metroplan will continue to develop corridor-specific access management plans. The plans will be consistent with preferred regional growth concept by placing emphasis on more access within designed centers and less access elsewhere. In addition, Metroplan will provide education and technical support to its member agencies on good corridor and access management practices.

7.9 Integration with Complementary Systems

As described elsewhere in this document, transportation in central Arkansas is part of a larger set of interrelated systems that affect and are affected by each other. There are a number of such systems, but some of the more important ones include land development, housing and the environment, energy and natural resources. The future health and prosperity of the region depends in large part on how much care and attention is given to these interrelationships.

7.9.1 Land Development

Transportation investments and other decisions can either complement and support land use or enforce its separation. Likewise, land development decisions will play a large role in determining whether trips can be made via transit, walking, cycling, or a short drive versus a long, cross-town commute.

More often than not, transportation and land development decisions are made independently of one another. This is due in large part, to the fact that many of our transportation decisions are made regionally, while land use decisions are made locally.

As a regional planning entity, Metroplan is in a unique position to encourage and support the integration of transportation and land use planning decision-making. Even though land development decisions reside primarily within the jurisdiction of local governments, Metroplan can engage local governments to share the Vision for mobility and how it influences and is influenced by their land use decisions. The Jump Start Program is an excellent example of collaboration with local governments to coordinate transportation and land development.

7.9.2 Housing

The Housing + Transportation (H+T) Affordability results show that many areas of central Arkansas are considered unaffordable for the average family. This is due, in large part, to the costs associated with long commutes that are required to access much of the region's housing stock and a lack of integration between transportation and housing decisions.

Central Arkansas 2050 represents an opportunity to provide families with a more robust and affordable set of housing options through close integration with transportation. This may happen through a number of ways, including:

- Higher-density housing options adjacent to future transit stations with compact, walkable single family neighborhoods in close proximity.
- The creation of walkable, interconnected neighborhoods served by attractive multi-modal corridors, regional trails and off-road paths.
- Avoiding transportation investments that encourage large-scale, suburban housing developments that are located far from employment centers.

These strategies support recent trends of a slowdown in suburban single-family housing growth and a return to more urban areas. Those trends are expected to continue with an expanding demographic of Millennials and Baby Boomers who demand more medium to high-density and low-maintenance housing options in walkable environments with close-by activities.

As with land development, most housing decisions are made at the local level. Again, programs such as Jump Start are an excellent way to encourage the integration of transportation and housing decisions.

7.9.3 Environment, Energy and Natural Resources

Metroplan's 2011 *Grassroots: Growing Our Green Agenda* documents the link between transportation, energy, and the natural environment. With guidance from the Green Task Force and extensive public input, the Green Agenda features multiple strategies and suggested actions for movement, power, nature, and knowledge in central Arkansas. This coordinated effort supports interagency planning efforts regarding:

- Maintaining good air quality as measured by National Ambient Air Quality Standards (NAAQS).
- Maintaining good water quality by minimizing paved surfaces and reducing urban runoff.
- Reducing the impacts of transportation facilities on sensitive lands.
- Reducing fossil fuel consumption through:
  - The development of mixed use/higher density clusters.
  - Support the substitution of communication technology for transportation.
  - Higher CAFE standards and improved combustion/alternative fuel technologies.
  - Enhanced modal options that reduce roadway congestion and emissions per trip.
- Achieving greater energy efficiency and reliance on renewable energy sources.

Clearly, transportation has tremendous potential to impact central Arkansas' environment, natural resources and energy consumption. Transportation decisions must be made in the context of potential environmental impacts. Metroplan, ArDOT, and other regional transportation interests, should be an integral part of any regional dialogue that takes place where these factors are concerned.

"IT IS NOT IN THE STARS TO HOLD OUR DESTINY BUT IN OURSELVES."
—WILLIAM SHAKESPEARE

7.10 Planning to Progress

A well-functioning roadway system is dependent on supportive land use policies of local governments for success or failure. The relationship is symbiotic: thriving communities with a high quality of living rely on an interconnected transportation network that provides sustainable choices for travel. To reach our potential, our region's decision makers should consider policy and investment decisions to reflect the path blazed in the Plan.

The drive to achieve the Vison began in the last century, with the adoption of METRO 2020. Achieving the Vision in the 21st Century will require an intentional and regionally collaborative focus that prioritizes investments, protects the natural and built environment, and promotes sustainable, livable communities for everyone in central Arkansas.

METROPLAN

SMART PLANNING MAKES SMART PLACES.