METRO 2030.2

The Long-Range Transportation Plan for Central Arkansas

Adopted March 24, 2010

METROPLAN

SMART PLANNING MAKES SMART PLACES.

Section I: Preface

METRO 2030.2, a long-range transportation plan revisited.

Every five years Metroplan undertakes the task of developing a long-range transportation plan for central Arkansas. METRO 2030, the current plan, was adopted in September 2005 and scheduled to be replaced with METRO 2035 by September 2010. As the Transportation Advisory Council (TAC) began the process of developing the 2035 plan, it quickly became evident that extending the transportation plan another five years into the future would be problematic at best and a waste of time and effort at worst.

A number of uncertainties accompanied development of this update. Three questions especially lacked clarity: 1) the application and proposed timeframes for implementation of stricter air quality standards and the area's possible designation as nonattainment under those new standards; 2) draft legislation regulating carbon emissions known as "cap and trade" and, most importantly; 3) no new authorizing transportation bill. These and other issues led to the conclusion that we should take a different approach to this update. So instead of embarking on the development of a new 2035 plan, the TAC chose to revise METRO 2030, keeping the 20-year horizon, and calling it METRO 2030.2.

METRO 2030.2 represents a revisiting, updating and expanding of information and data elements for several key chapters of METRO 2030, including the plan's project-specific lists. Although METRO 2030.2 includes a few new elements, such as "Transportation and Health", all policies and guidelines in METRO 2030 as evidenced by the Vision, Goals and Objectives of that plan, along with its supporting CARTS Roadway Design Standards and Implementation Procedures, are retained by reference and remain valid in METRO 2030.2. METRO 2030.2 also demonstrates for the first time, compliance with SAFETEA-LU requirements for financial constraint including estimates for year-of-expenditures.

For tracking purposes, the Table of Contents for METRO 2030.2 is the same used in METRO 2030 with new chapter additions/revisions highlighted in red for quick identification and METRO 2030.2 as the addendum.

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METRO 2030.2
Long-Range Transportation Plan Update

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1. Introduction

Over the past 24 months, Metroplan has been preparing the second five-year update of central Arkansas' Metropolitan Transportation Plan since the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). This plan has been developed through the Transportation Advisory Council (TAC) and Technical Coordinating Committee (TCC) with extensive input from the public.

METRO 2030 builds on previous efforts that produced *METRO 2020* in 1995 and *METRO 2025* in 2000. The vision first articulated by the citizens of central Arkansas in *METRO 2020* through the Visual Preference Survey (VPS) was affirmed in *METRO 2025*, and continues to be refined and expanded in this five-year update. Smart use of new technologies in roadway design and mass transit are brought into sharper focus in this plan.

Little Rock Skyline from Park Hill

The Transportation Efficiency Act for the 21st Century (TEA-21) specifies that available revenues for implementation of transportation improvements over the life of *METRO 2030* must be developed through a cooperative effort between the MPO, state, and transit operators. The cost estimates for the projects and other transportation improvements contained in *METRO 2030* have been constrained to the forecasts of available revenues. In this manner, the Long Range Transportation Vision Plan has been condensed into a meaningful Financially Constrained Plan with specific, identifiable transportation improvements.

Why Do We Need a Plan?

As congestion increases on area roads due to growth, development, and more travel through the region, it is clear that the current roadway system will not be sufficient to accommodate future needs. In addition, citizens of the region are asking for increased travel options, consistent with recent federal legislation promoting their use.

Federal funds make up a significant portion of the region's transportation dollars, but they come with strings. The federal government requires long-range transportation planning and a plan document for regions like central Arkansas to ensure proper expenditure of transportation revenues.

Beyond any of these reasons, a long-range transportation plan makes sense. Good planning involves citizens, increases efficiency and effectiveness of the investment, and promotes transportation services and infrastructure that are consistent with the desires of the region's residents. The planning process enhances the community's character and quality of life by considering the interaction between land use and transportation and their cumulative effect on the built and natural environments.

STUDY AREA

The Central Arkansas Regional Transportation Study (CARTS) Area is presented in Map 1-1. The CARTS study area comprises almost all of Pulaski County and significant portions of Saline, Faulkner, and Lonoke Counties, encompassing 1,531 square miles. It is a subset of the six-county Little Rock-North Little Rock Metropolitan Statistical Area. *METRO 2030*, by law, addresses transportation issues and needs throughout the defined study area.

Map 1-1
Central Arkansas Regional Transportation Study (CARTS) Area

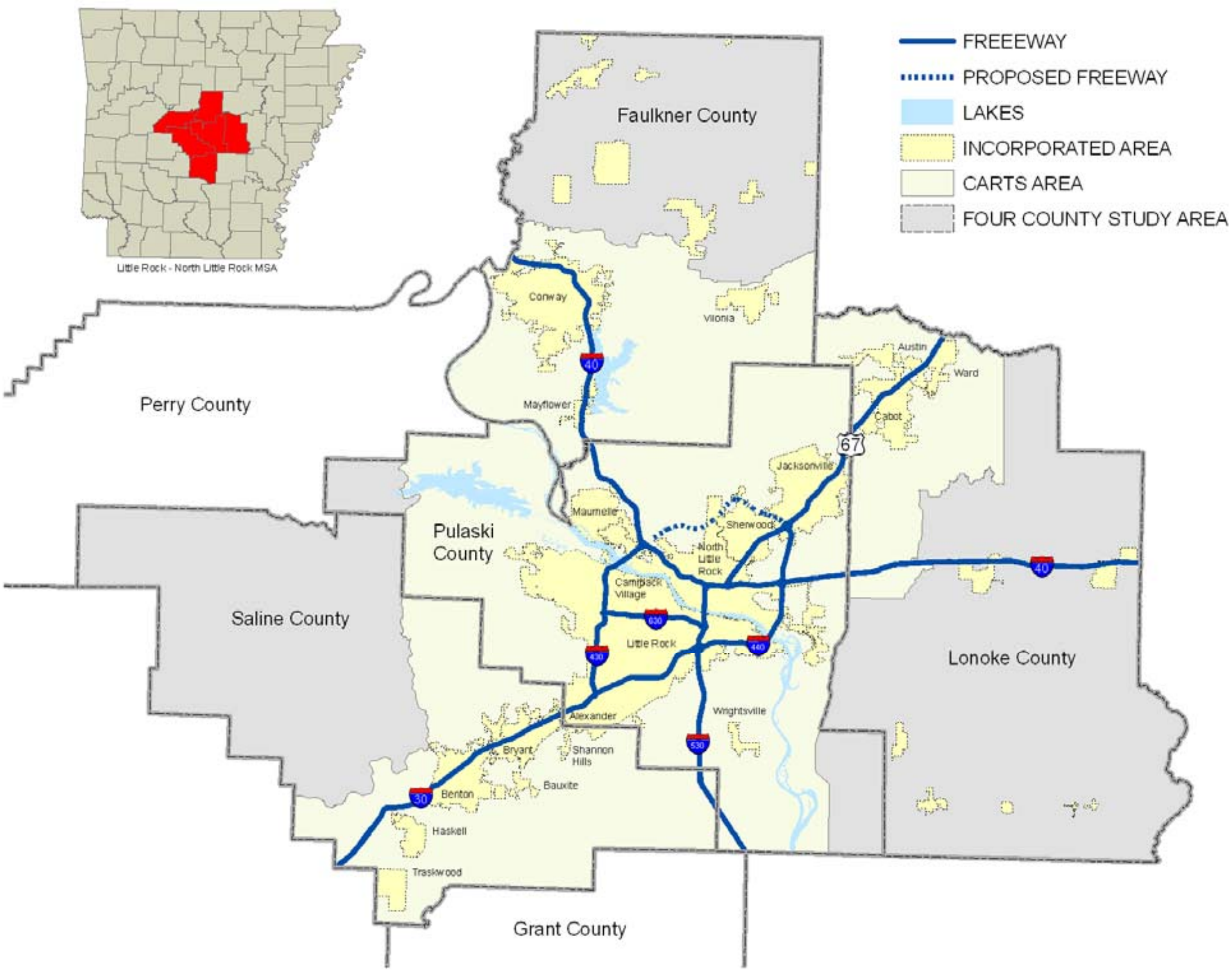

Table 1-1
Population Growth

	Pulaski	Saline	Faulkner	Lonoke	Carts
2000	361,474	83,529	86,014	52,828	534,691
2030	427,829	144,562	170,382	90,409	744,114

The Transportation Planning Process

This transportation plan is constructed within a policy framework set by the federal and state governments and using the building blocks provided by adopted city and county plans. The framework includes the Transportation Equity Act for the 21st Century (TEA-21), metropolitan planning regulations, management and monitoring system regulations, Executive Order 12898 on Environmental Justice, the Americans with Disabilities Act, and the State of Arkansas' Long-Range Transportation Plan.

Of these, TEA-21 provides the primary authoritative direction on the development of *METRO 2030*. On June 9, 1998, Congress enacted TEA-21 as Public Law 105-178. TEA-21 authorizes the federal surface transportation programs for highway and transit systems. TEA-21 continues and enhances the federal programs and priorities established in the previous Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

Among the many environmental, funding, infrastructure, modal, safety, and other transportation-related provisions of the legislation, TEA-21 specifies that MPO's develop transportation plans in cooperation with the State and public transit operators that "provide for the development and integrated management and operation of transportation systems and facilities...that will function as an intermodal transportation system for the metropolitan area." With this language, Congress has continued its priorities of intermodalism, intergovernmental and public/private partnerships, and system development and management that originated in ISTEA. Further, the process for developing transportation plans shall provide for consideration of all modes and shall be continuing, cooperative, and comprehensive to the degree appropriate.

What is the MPO?

Metropolitan Planning Organizations (MPO) carry out the transportation planning process in regions large and small across the country. They are required under federal law for urbanized areas with more than 50,000 population in order for those areas to receive federal transportation dollars.

Metroplan serves as the MPO for the Central Arkansas urbanized area. It was designated as such by Governor Dale Bumpers in 1974. The Metropolitan Area Planning Commission, the precursor agency to Metroplan, was originally formed in 1955 by local political and civic leaders acting out of necessity and inspired by the principle that the region was one community and the problems and solutions of each entity were shared by all.

Metroplan serves a six county region of Central Arkansas which is centered around the Little Rock - North Little Rock urbanized area. Currently, Metroplan has 29 members. They include five counties; 21 cities; and three special members, that include the Central Arkansas Transit Authority (CATA) and the Arkansas State Highway and Transportation Department (AHTD). The governing body of Metroplan consists of the county judge of member counties and the mayors of member cities or their designees

METRO 2030 was developed through the cooperative transportation planning process conducted by Metroplan, the metropolitan planning organization. In addition to the long-range transportation plan, Metroplan is responsible for producing the region's transportation improvement program.

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City of Bryant
City of Cabot
City of Cammack Village
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City of Jacksonville
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Italics=no longer active
* deceased

2. History and Background

History of Central Arkansas

The Arkansas River Valley of central Arkansas sits astride the highlands of north and west Arkansas and the lowlands of south Arkansas and the Mississippi Valley. At this crossroads of river, highways, and railroads are Arkansas' capital, Little Rock, and the surrounding cities and counties.

The region has been a meeting place since prehistoric times. Indeed, the four-county area served as a frontier among the Quapaw, Osage, and Caddo Native Americans. French explorer Bernard de La Harpe explored the Arkansas River valley in 1722. The original site of Little Rock had the first small rock formation visible along the river traveling west, hence its name. La Harpe reputedly named the place, but this has no basis in fact. Native Americans had for some time called it "point of rocks." American Zebulon Pike explored the middle region of the Louisiana Purchase in 1806, and, when he reached the great bend in the Arkansas River, he dispatched Lt. James B. Wilkinson and three men to descend the river to its mouth. Wilkinson found no white or black settlements along the Arkansas River until he reached Arkansas Post. Central Arkansas was still virtually unsettled.

Much of Arkansas' political history can be understood in terms of the struggle between the highlands and the lowlands, with central Arkansas serving as the countervailing power that inevitably determines which interests are dominant. What is the current metropolitan area has always been Arkansas' principal urban center, and its importance as the political capital has thus far been unchallenged. The region has also exerted great influence over the state through its state-distributed newspapers, the *Arkansas Gazette* and the *Arkansas Democrat*.

The *Arkansas Gazette*, once known as the "Old Lady" of state journalism, began publishing in 1819 in Arkansas Post. Its founder and first editor, William E. Woodruff, moved the paper to Little Rock in 1821 as the city became the capital of the Arkansas Territory. It was published as a weekly until state-hood in 1836, when it became a daily. The *Gazette* was absorbed by the *Arkansas Democrat* (founded in 1871) in 1991, and the *Democrat* became the *Arkansas Democrat-Gazette*. The *Democrat-Gazette* is the lone statewide newspaper today.

Pulaski County was created December 15, 1818, one of the five counties formed by the Missouri Territorial Legislature when the region of Arkansas was a part of that entity. Its territory was taken from Arkansas County. It was named for Count Vladimir Pulaski, Polish-born hero of the American Revolution. At first the county included a large portion of central and western Arkansas, as well as a small portion of what is now Oklahoma. The first recorded settlement in what is now Pulaski County was in the Little Rock area in 1806, where there was a river crossing. When originally laid

Boyle Park Trail, Little Rock

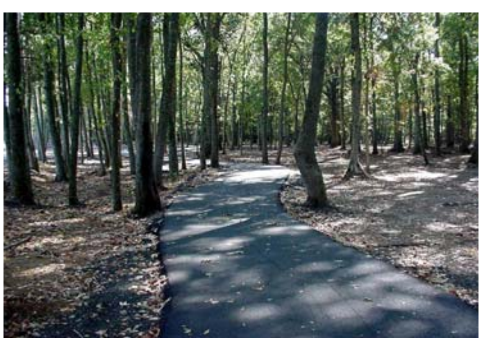
out, two groups of speculators laid claim to the Little Rock town site. The one which called their development "Akropolis" lost out after many court battles and compromises. Although it was the territorial capital, Little Rock was not incorporated until 1831. The city claimed national attention in 1840 as the largest urban complex west of the Mississippi River, but hopes of it becoming the distribution point for the western hinterland never materialized.

Saline County was formed November 2, 1835, from parts of Hempstead and Pulaski Counties. It was named Saline because of the salt works which had been established there a few years earlier. Spanish explorer Hernando De Soto in 1542 called the area Provincia de la Sal, or "Province of Salt." The earliest settlement recorded in present-day Saline County was near the current city of Benton, in 1815. Benton was chosen as the permanent county seat in 1835.

Faulkner County was formed April 12, 1873, from parts of Conway and Pulaski Counties. It was named for Col. Sanford C. (Sandy) Faulkner, who was credited with being the original Arkansas Traveler. The first settlement recorded in what is today Faulkner County was at the mouth of Cadron Creek on the Arkansas River in 1814. Cadron was the geographical center of the state and was selected as the capital of the Arkansas territory in 1820. A group of promoters from Little Rock traded out with the leaders of Cadron, Little Rock becoming the territorial capital and Cadron becoming the Pulaski County seat. Cadron was a flourishing river town until the completion of the Little Rock and Fort Smith Railroad in 1872. With the formation of the new county, Conway was chosen as the county seat and the town was laid out along the railroad.

Lonoke County was formed, April 16, 1873, from territory taken from Prairie and Pulaski counties. The name is said to come from a "Lone Oak" which stood near the present city of Lonoke. The tree was used as a surveyor's landmark. (This story may or may not be true. The name sounds very much like Native American words for geographical areas, such as Humnoke.) The first county seat was Brownsville, now a ghost town, but was moved to Lonoke with the completion of the railroad. The first settlement in present day Lonoke County was reported at Moss Prairie in 1821.

Central Arkansas was both blessed and cursed by the Arkansas River. Its frequent flooding has taken a heavy toll in both property and human life. In early Arkansas history, and after a railroad hiatus, in the late 20th and early 21st centuries, the river has served as a major means of transportation. Steamboats, modern river tugs and barges have plied the river. The completion of the Arkansas River Navigation Project in 1970 made the Arkansas River an important interior route from the Mississippi River in the east to Catoosa (near Tulsa), Oklahoma in the west. The project gradually produced economic growth in the central part of the Arkansas that some historians consider the most significant event in state's economic history.



Dupree Park Trail, Jacksonville

Perry and Grant counties were added to the metropolitan area in 2000. Economically, the six-county metropolitan area influences most of the state, though it has less influence in eastern Arkansas, which looks to Memphis or New Orleans rather than Little Rock.

During the American Civil War, Little Rock became a target for Union troops. Central Arkansas residents had expressed less interest in secession than Arkansas generally. They consistently courted Whig Party favor and feared disruption of the marketplace. Abraham Lincoln's call for troops after the firing on Fort Sumter in April, 1861, changed this position, and central Arkansas supported Arkansas' declaration of independence. On July 4, 1863, General Theophilus Hunter Holmes' Confederate troops attacked the

Union army that had occupied Helena, but was driven off by US troops under General Benjamin Prentiss. Later, Union forces under General Frederick Steele pursued Holmes--battling both regular Confederates and Southern insurgents–-and in the process seized Little Rock in September, 1863.

During Reconstruction Little Rock was the central scene of the Brooks-Baxter War. The two Republican candidates (there was no Democrat) in the 1872 election disputed the results, which led to the armed supporters of both men pouring into Little Rock. Under the circumstances, there was surprisingly little violence. The issue was finally resolved by presidential intervention, though the division amongst Arkansas Republicans placed the Democrats firmly in control of the state for the next century.

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.

Who was the first Arkansan to be nominated by a major party to a national ticket? Bill Clinton? No, it was Joe T. Robinson, vice-presidential nominee for the Democrats in 1928. Robinson, a former Arkansas governor and US senator, was born near Lonoke in 1872. Robinson and the Democratic presidential nominee Alfred E. Smith were soundly defeated by the Republican ticket headed by Herbert Hoover. Clinton, the only other Arkansan to be on a national ticket, was elected US president in 1992, and reelected four years later. An Arkansan in the White House brought international attention to central Arkansas. Clinton chose Little Rock as the site of his presidential library, which opened in November, 2004.

Earlier, Arkansas had 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. While Arkansas had less racial violence that the other former Confederate states during the 1950s and 1960s, the state has only recently shaken off the negative reputation.

The first road – if it could be called a road – was a path a few feet wide that was hacked through the dense forest between Little Rock and Cadron. As central Arkansas' population grew with the rest of the Southwest, a trail developed from St. Louis and the northern part of Mexico that is now called 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 link between Fort Smith and Little Rock. Over the next hundred years many miles of roads were constructed in Arkansas. Then, in the 1950s, central Arkansas became a major role player in the US Interstate System, with the intersection of I-30 and I-40 in North Little Rock. Additionally, the 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.

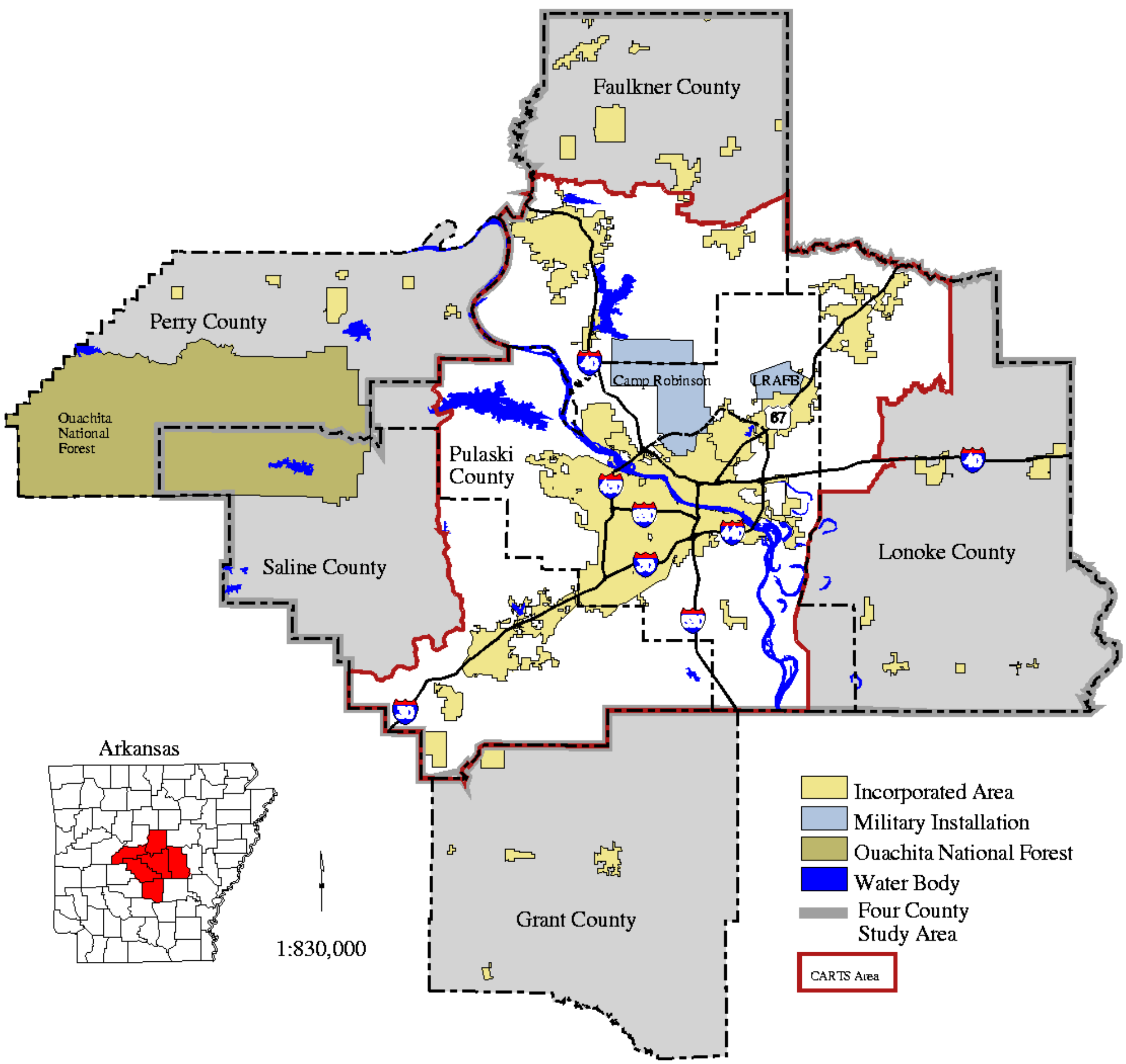
The earliest transportation system in central Arkansas was river-borne. Canoes, rafts and keelboats initially plied the Arkansas River and its tributaries. Later, as populations grew and wealth and power became centered on the capital city, steamboats began to run up the Arkansas River-–at least when conditions permitted. A United States Supreme Court Justice, John McKinley, testified to Congress in the 1840s that he had never been able to hold his circuit court of appeal in Little Rock because the Arkansas River ran too fast in the spring for the mid-19th century steamboats to overcome the currents while there was not enough water in the autumn to cover the rivers sandbars.

That all changed with the arrival of the 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 NAFTA.

GEOGRAPHY AND LAND USE

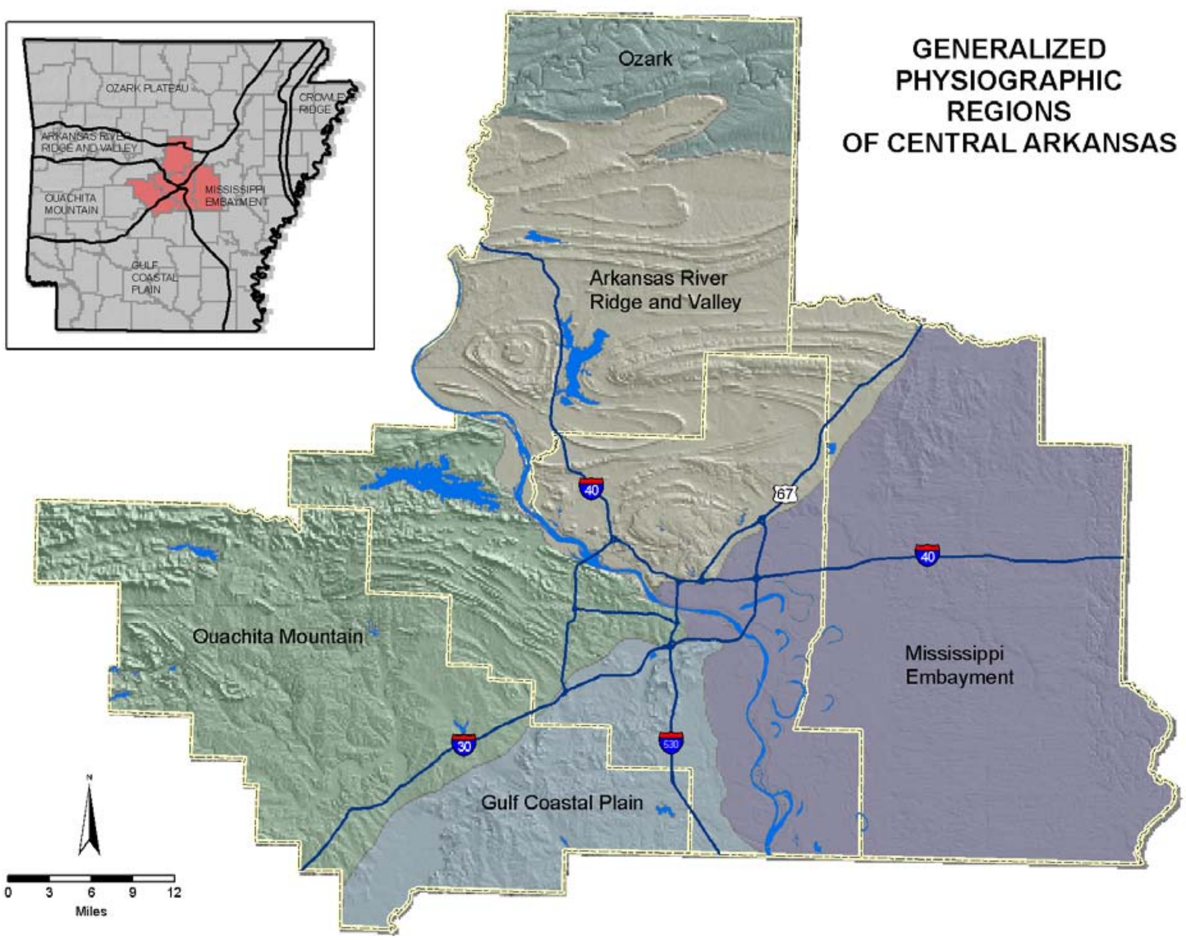
The Little Rock-North Little Rock Metropolitan Statistical Area (MSA) is the political, economic, and transportation center of the state of Arkansas. The area is the most populous part of the state with a population of 610,518 in 2000. The MSA is made up of six counties: Faulkner, Grant, Lonoke, Perry, Pulaski, and Saline (see Map 2-1). Perry and Grant counties were added to the MSA after the 2000 Census. The four counties which were in the 1990 MSA: Faulkner, Lonoke, Pulaski, and Saline make up the Central Arkansas Regional Transportation Study (CARTS), which is the focus of this report and of current planning efforts. CARTS is comprised of eastern Saline, southern Faulkner, northwest Lonoke County, and most of Pulaski County. This area is projected to be urbanized by 2020, and as of 2000 was home to 89% of the MSA population.

Map 2-1
Little Rock-North Little Rock Metropolitan Statistical Area



The Central Arkansas region has a varied geography which has impacted the transportation and growth of the area. The area lies at the convergence of several of the state's major physiographic regions and is divided by the region's most important river, the Arkansas River. The area contains five major physiographic regions, four of which converge in the vicinity of Little Rock (see Map 2-2). The Mississippi Embayment, also known as the Delta, in the east, and the Gulf Coastal plain in the south, are in general, flatter and lower than northern and western portions of the study area which lie in the Ouachita Mountain, Arkansas River Ridge and Valley, and Ozark regions. The Ouachita region is characterized by long ridges which become higher and more pronounced to the west. The Arkansas River Ridge and Valley is also characterized by long parallel ridges. In general, the ridges in this region are lower and the valleys broader than in the Ouachitas. The Interstate 30/US-67 corridor roughly approximates the transition from the lower and flatter lands in the east and south, to the higher lands dissected by parallel ridges to the west and north. The ridges of the Ouachitas and Arkansas River Ridge and Valley have historically funneled most of the transportation routes and development in those regions into the valleys, whereas development and transportation routes are constrained only by floodplains in the Mississippi Embayment and Gulf Coast Plain regions. The northernmost portion of the area lies in the Ozark region, which is the southernmost extent of the Ozark Plateau which extends across much of northern Arkansas and southern Missouri. In the study area, the plateau is at its lowest and displays significant local relief only in the vicinity of major drainages.

Map 2-2



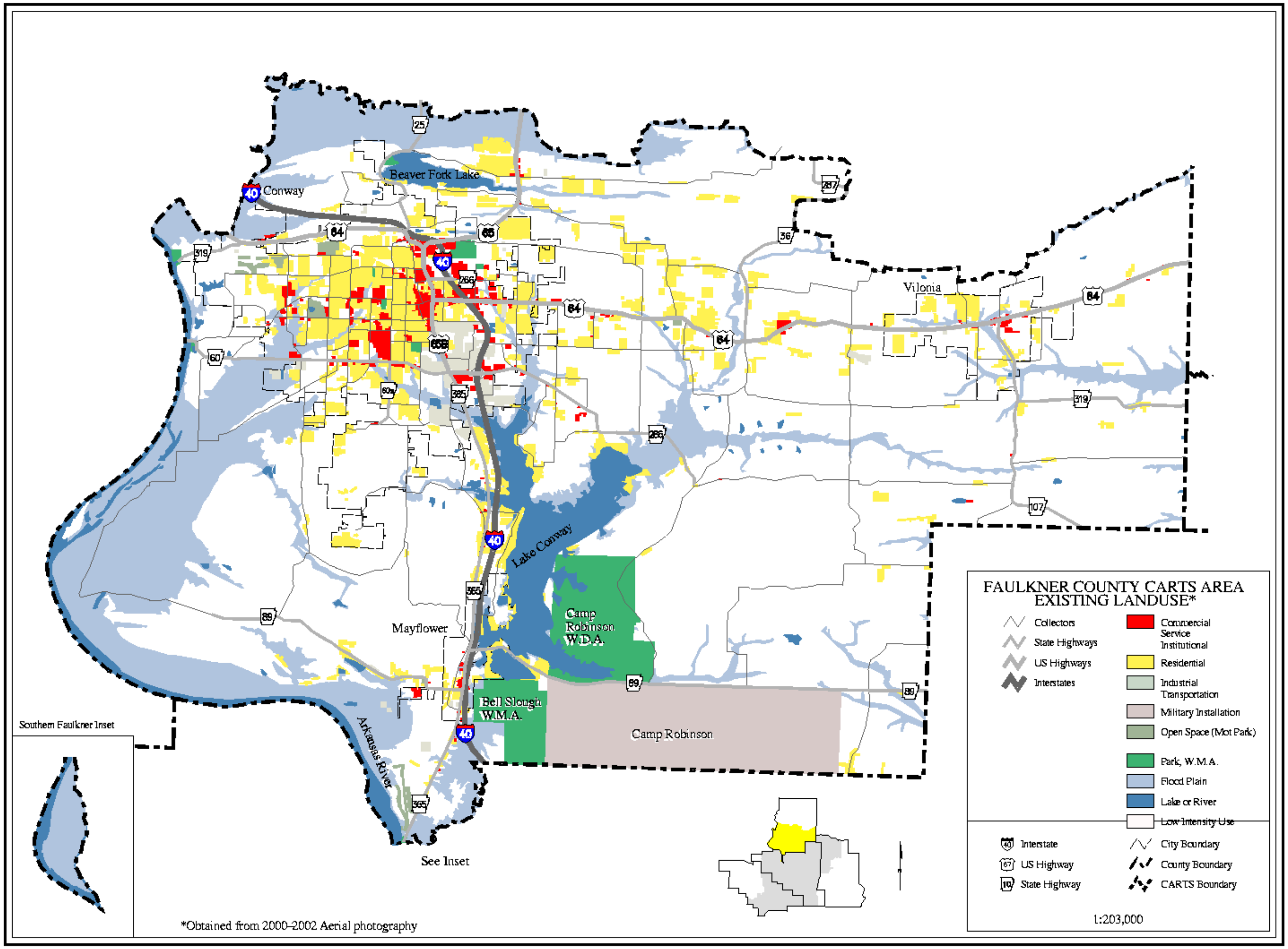
The existing land use pattern of the area is varied and is greatly influenced by soils, topography, and perhaps most importantly by access to transportation corridors. Current land uses across the region range from agricultural and aquacultural uses in Lonoke County, to extensive timbered lands in western Saline and Pulaski Counties, to denser concentrations of commercial, industrial, and residential uses in Little Rock and North Little Rock (see Maps 2-3 thru 2-6). The intensity of land use in most unincorporated areas is low, with mixed areas of large lot residential, cropland, and woodland.

Low density single family residential areas are the largest land use by area in most of the region's cities (see Table 2-1). New development is predominately in subdivisions of single family, detached, site-built homes. Often, these new developments have limited connectivity with the existing transportation grid, and most new residential developments are separated from commercial land uses and employment centers. The largest concentrations of existing residential land uses outside the core cities of Little Rock and North Little Rock are located in the cities along the I-30/US-67 corridor (Benton, Bryant, Sherwood, Jacksonville, Cabot), and also alon I-40 in Maumelle and Conway. The largest areas of new residential development are in Conway, Maumelle, Benton, Bryant, Cabot, and West Little Rock. Areas of residential development outside of the incorporated cities include Gravel Ridge, Runyon Acres, and Oak Grove in Pulaski County; East End and Salem in Saline County; South Bend in Lonoke County; and the Lake Conway area in Faulkner County.

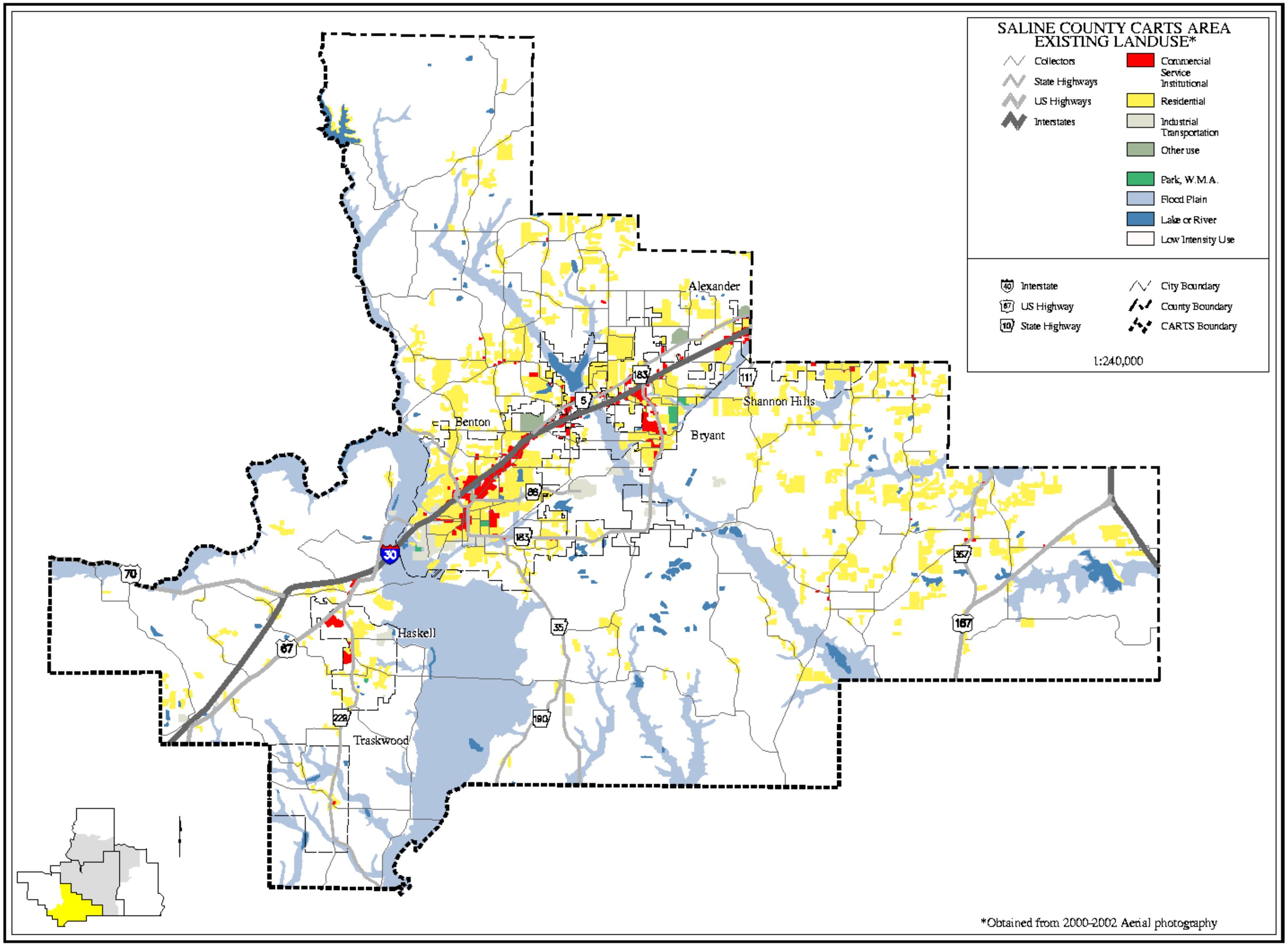
Table 2-1
CARTS Land Use in Incorporated Cities in Acres

City	Residential	Commercial	Industrial
Little Rock	21,942	6,738	7,094
North Little Rock	7,068	2,662	2,744
Conway	5,824	1,830	1,393
Benton	3,687	817	527
Jacksonville	3,363	808	546
Cabot	3,239	648	76
Sherwood	3,172	695	82
Bryant	1,617	500	38
Maumelle	1,570	85	307
Vilonia	671	87	10
Haskell	535	124	86
Ward	506	55	18
Mayflower	427	76	24
Shannon Hills	416	17	0
Wrightsville	255	11	0
Austin	161	3	2
Traskwood	137	3	0
Cammack Village	123	15	0
Bauxite	103	0	28
Alexander	66	54	0.0
TOTAL	**54,883**	**15,226**	**12,975**

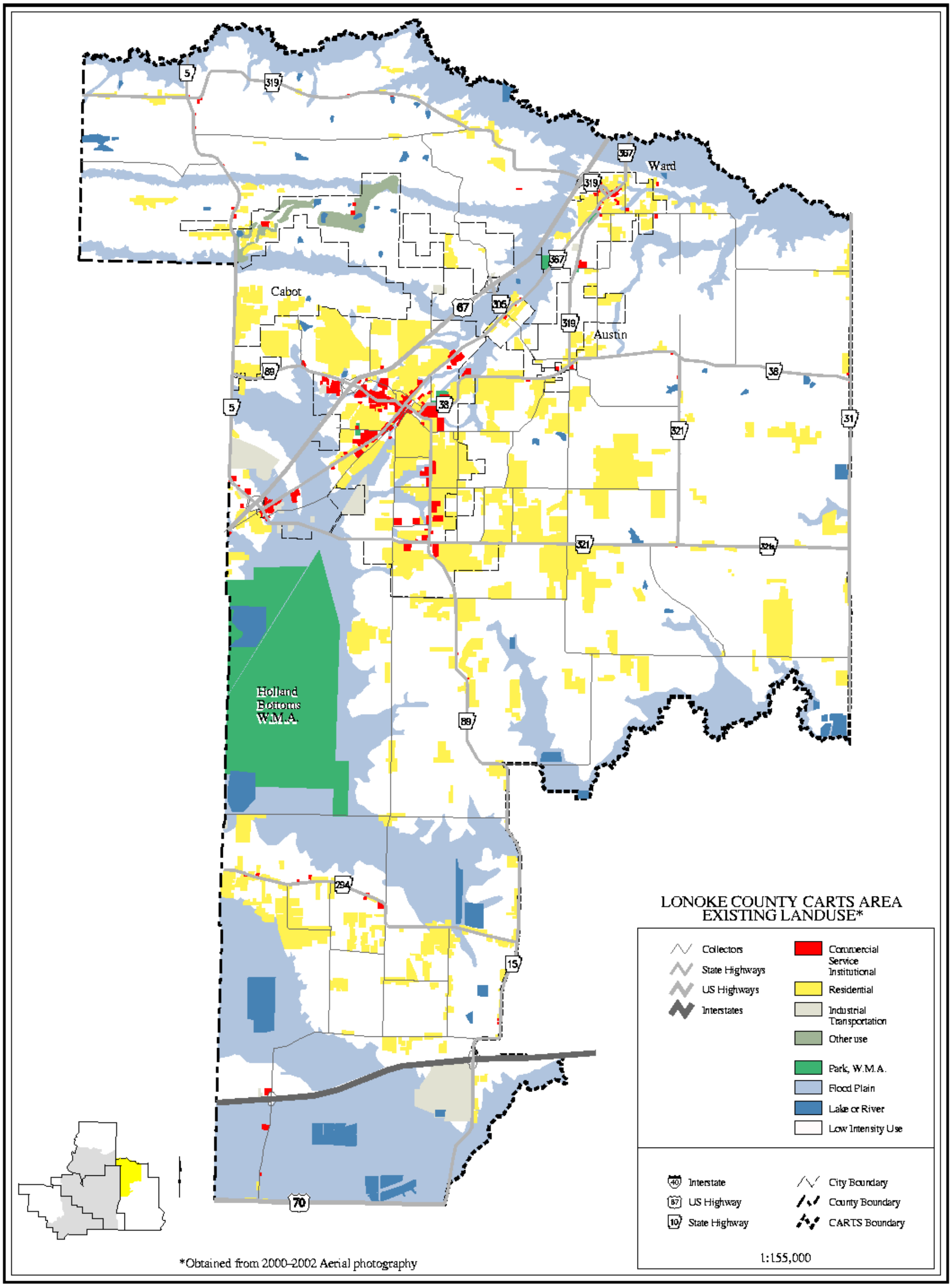
Map 2-3
Existing Land Use - Faulkner County



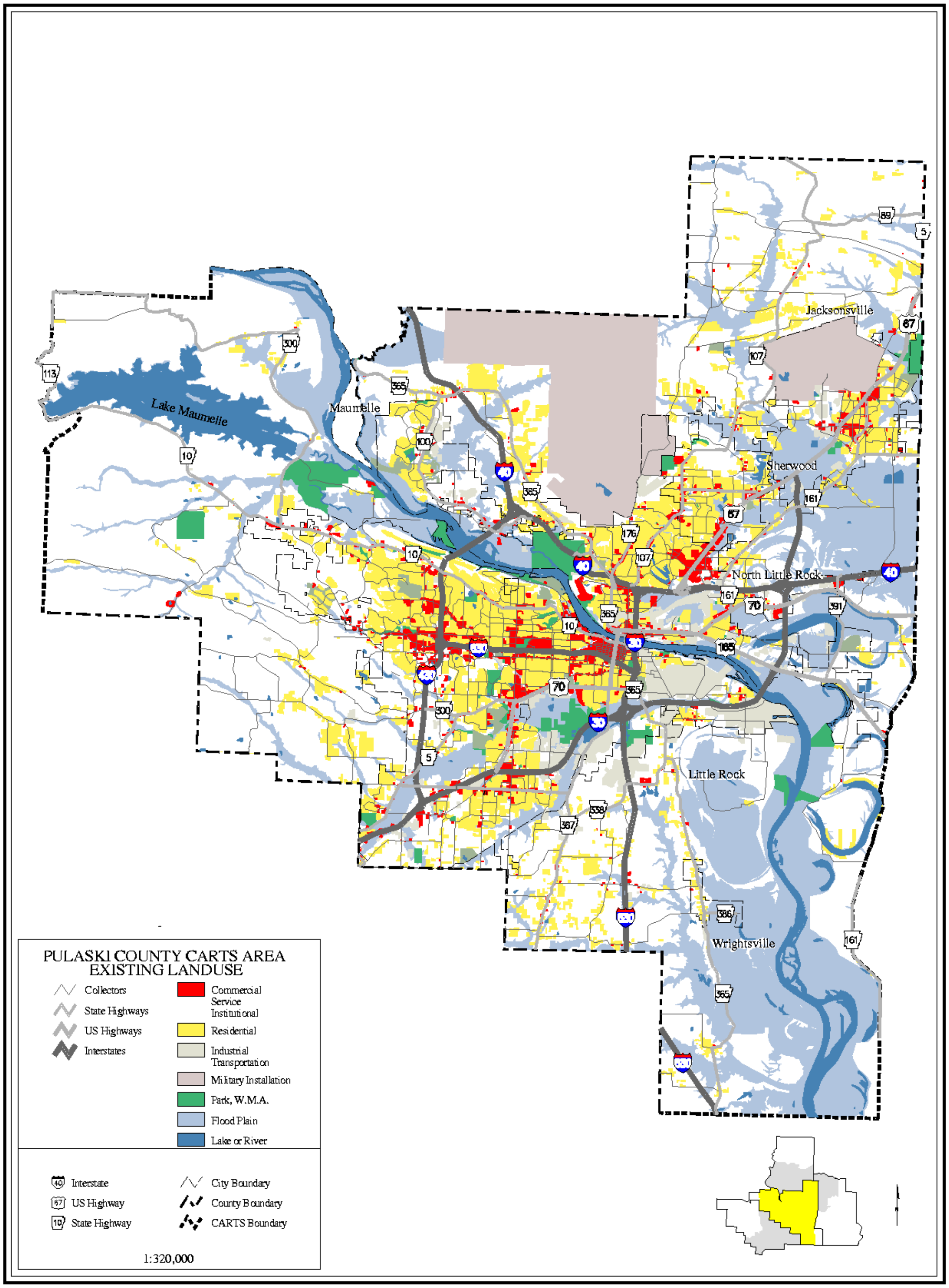
Map 2-4
Existing Land Use - Saline County



Map 2-5
Existing Land Use - Lonoke County



Map 2-6
Existing Land Use - Pulaski County



The densest areas of commercial land uses are clustered along major transportation corridors, and are generally dependent on and cater almost exclusively to auto traffic. Most recently developed commercial space is located in big box developments and/or in strip developments. The largest concentrations of commercial land use are found in Little Rock, North Little Rock, Conway, and in the cities along the I-30/US-67 corridor. The most significant concentrations of commercial, office, and institutional land use are found in Little Rock along the I-630 corridor. This corridor contains the Central Business District, the State Capitol complex, four major hospital complexes, two regional malls, and a dense concentration of commercial and office uses in West Little Rock. The largest concentrations of office space in the region are located in the Little Rock Central Business District and in West Little Rock. Additional concentrations of commercial land uses in the region are found along US 67/167 from North Little Rock to Cabot, with the largest commercial concentration in North Little Rock at McCain and US-67. Higher intensity commercial uses also stretch along Interstate 30 through Southwest Little Rock, Bryant, and Benton, and in Conway along Highway 64, Highway 65, and Highway 60.

Industrial land uses are primarily concentrated in flat areas with access to freeways, rail lines, or the Arkansas River. The majority of these industrial areas are warehousing and transportation related, with a limited number of manufacturing sites. The largest concentrations of industrial land uses are found in eastern Little Rock around the port and National Airport, in southwest Little Rock along 65th Street and I-30, and in North Little Rock along the Union Pacific rail yard. Additional concentrations in the outlying cities are found in southeastern Conway, in eastern Maumelle, and in Jacksonville along Redmond Road.

There has been significant financial investment in mixed use projects in recent years; however, the area that can currently be called mixed use is still very small. The focus of mixed use development has been Little Rock's River Market District, which has seen several large commercial, office, and residential developments constructed in recent years. There are also mixed use projects planned for downtown North Little Rock.

The region's few large protected open spaces include the Ouachita National Forest, Pinnacle Mountain State Park, North Little Rock's Burns Park, Bell Sough Wildlife Management Area, Holland Bottoms Wildlife Management Area, and the Camp Robinson Wildlife Management Area. Additionally, protected open spaces are located in city parks and in parks maintained by the Corps of Engineers along the Arkansas River.

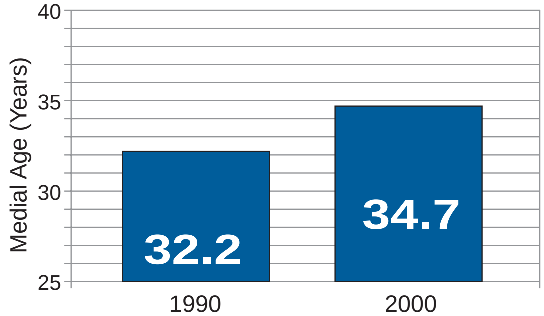
POPULATION AND HOUSING

The central Arkansas region includes the capital city of Little Rock, as well as North Little Rock, Conway, Jacksonville, Sherwood, Benton, Bryant, Cabot and Maumelle. The four-county Little Rock-North Little Rock region had a population of approximately 624,000 in 2004. Table 2-2 gives census 2000 population for the region with estimates for 2004. The region grew at a slightly faster pace than the national average from 1990 to 2000, and continues growing at somewhere between 0.9 and 1.2% annually. By comparison, the U.S. growth rate is just over 1.0% annually, while the state of Arkansas is growing about 0.6% annually.

A REGION GROWS OLDER

The population of the Little Rock-North Little Rock MSA is growing older. This trend will have enormous consequences. The trend will closely follow national trends, because the region's age structure today and in the future will closely resemble the U.S. average. Figure 2-1 shows the median age of population from 1990 to 2000 for the four-county area.

Figure 2-1
Median Age 1990 & 2000 - Little Rock-North Little Rock MSA



THE MASTER TREND

Perhaps the most important single trend is growth in population aged 45 to 64, which went from 18.1% in 1990 to 22.3% in 2000. It will continue growing to about 26% in 2010. The driving force behind this growth in older adults was the abnormally high birth rates during the Baby Boom years, 1946 to 1963. The youngest members of this group are today 41, meaning that Baby Boomers are stretched across their middle to late-middle careers.

THE MIRROR TREND

While older adults are becoming more numerous, the proportion of younger adults is dropping. Population in the 20 to 44 age group peaked at 40.7% in 1990, and dropped to 37.9% in 2000. Projections suggest this group will decline further to 34.2% by 2010. It will nonetheless remain the largest of the age groups shown. The smaller population of younger adults reflects the arrival of Generation X into the 20-44 age group. Gen X members were born during the Baby Bust years 1964-1978.

OTHER AGE GROUPS

The Under 20 age group dropped sharply between 1970 and 1990 as Baby Boomers grew beyond this category to become young adults (see Figure 2-2 and Table 2-3). Population under 20 then declined more slowly, to 28.5% of the population in 2000. This proportional decline will continue as long as birth rates remain comparatively low.

Figure 2-2
Population Trends by Age Group - 1970-2000 Little Rock-North Little Rock MSA

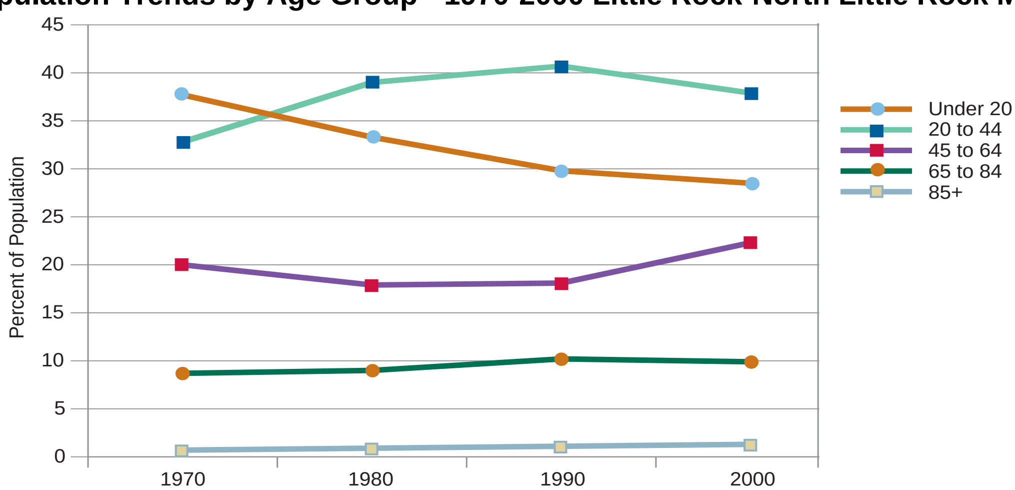


Table 2-2
Population Change 2000 to 2004 - Little Rock – North Little Rock MSA

	2000	2004	Change 2000-2004	Percent Change 2000-2004
Faulkner County				
Conway	43,167	49,983	6,816	15.8
Greenbrier	3,042	3,406	364	12.0
Mayflower	1,631	1,773	142	8.7
Vilonia	2,106	2,541	435	20.7
Wooster	516	553	37	7.2
Small communities	1,535	1,611	76	5.0
Unincorporated	34,017	36,286	2,269	6.7
Total	**86,014**	**96,153**	**10,139**	**11.8**
Lonoke County				
Cabot	15,261	18,967	3,706	24.3
Austin	605	673	68	11.2
Ward	2,580	2,900	320	12.4
Lonoke	4,287	4,414	127	3.0
England	2,972	2,833	-139	-4.7
Carlisle	2,304	2,323	19	0.8
Small communities	758	744	-14	-1.8
Unincorporated	24,061	26,808	2,747	11.4
Total	**52,828**	**59,662**	**6,834**	**12.9**
Pulaski County				
North Little Rock	60,433	61,138	705	1.2
Jacksonville	29,916	31,013	1,097	3.7
Sherwood	21,511	23,097	1,586	7.4
Maumelle	10,557	13,559	3,002	28.4
Unincorporated (N)	29,706	29,948	242	0.8
Total North of the River	152,123	158,755	6,632	4.4
Little Rock	183,133	187,397	4,264	2.3
Cammack Village	831	831	0	0.0
Alexander*	174	174	0	0.0
Wrightsville	1,368	1,309	-59	-4.3
Unincorporated (S)	23,845	24,040	195	0.8
Total South of the River	209,351	213,751	4,400	2.1
Total Unincorporated	53,551	53,988	437	0.8
Total	**361,474**	**372,506**	**11,032**	**3.1**
Saline County				
Benton	21,906	24,683	2,777	12.7
Bryant	9,764	12,256	2,492	25.5
Shannon Hills	2,005	2,072	67	3.3
Haskell	2,645	2,992	347	13.1
Alexander*	440	440	0	0.0
Traskwood	548	564	16	2.9
Bauxite	432	437	5	1.2
Unincorporated	45,789	52,380	6,591	14.4
Total	**83,529**	**95,824**	**12,295**	**14.7**
MSA Totals	**583,845**	**624,145**	**40,300**	**6.9**

**The City of Alexander has portions incorporated in both Pulaski and Saline Counties.*

Table 2-3
Population Trends by Age Group - 1970-2000 Little Rock-North Little Rock MSA

	1970 (%)	1980 (%)	1990 (%)	2000 (%)
Under 20	37.7	33.3	29.8	28.5
20 to44	32.8	39.0	40.7	37.9
45 to 64	20.0	17.9	18.1	22.3
65 to 84	8.7	9.0	10.2	9.9
85 and over	0.7	0.9	1.1	1.3

Meanwhile, the 65 to 84 age group is small today in proportion to the rest of the population (9.9%), because today's newest retirees were born during the 1930's, when birth rates were low. Growth in the 65+ group will increase when the Baby Boom enters this phase after 2010.

THE MEANING OF POPULATION CHANGE

The dramatic growth in the 45-64 age group is a key trend to watch. The average household size of the 45-64 age group will continue declining as children leave home. Parents remaining in the family home may become less interested in public schools, large lawns and large living spaces.

Changing priorities could lead some of this generation to seek smaller housing units and greater convenience, possibly in midtown and inner-city neighborhoods. Factors such as these may account for the comparative stability or growth in downtown Little Rock and several close-in neighborhoods like Hillcrest and the Heights in Little Rock, and the Park Hill and Lakewood areas of North Little Rock.

GEN X COMES OF AGE

While the 20-44 age group will decline in proportional terms, it will remain the largest single age group. This is the generation purchasing the most first homes today and in the near future. Early evidence suggests that this age group, containing Generation X, will determine tomorrow's housing trends. So far, Generation X has shown a preference for convenience over housing space. According to a March, 2001 article in *Urban Land*, "a large number of Gen Xers are choosing to buy flats and townhomes in infill locations so they can be close to work and services." The tastes of Generation X could enhance the value of centrally located real estate while dampening the sprawl trend at the edge of the region's cities.

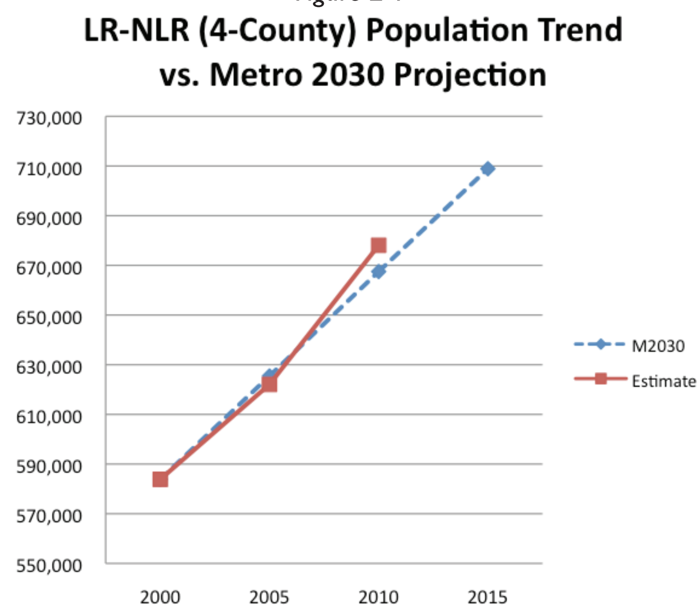
Section 2: History and Background

METRO 2030 Projections Revisited

During the years since METRO 2030 was published, in 2004, population trends have followed the forecast pattern closely. The figure below illustrates the difference between the METRO 2030 Plan projections and Metroplan's estimates.

As you can see, estimated population ran slightly lower (-0.5%) in 2005 than the METRO 2030 forecast, but then turned upward. Based on trends as they appear in 2009, it looks like the four-county region will have a population of about 678,082 in 2010, or about 1.6 percent more than was forecast under the METRO 2030 Plan. It appears that the pace of population growth in the central Arkansas region accelerated after 2005.[1] Migration data from the IRS suggest that domestic in-migration has contributed to population growth in central Arkansas, despite a slowdown in migration at the national level.

Figure 2-1



The picture with employment trends is more complicated, because it depends on differing data sets. The best comparison statistics at present appear to be the new Longitudinal Employment Dynamics (LED) data set produced by the Census Bureau from ES-202 place-of-work employment data collected by the U.S. Bureau of Labor Statistics through state employment agencies. The LED data set provides detailed employment by industry for each county, but lags by nearly a year. Thus, the most recent LED data yet released cover the last quarter of 2008. The LED data set begins with the first quarter of 2003, so that data for previous years must be derived from other sources.

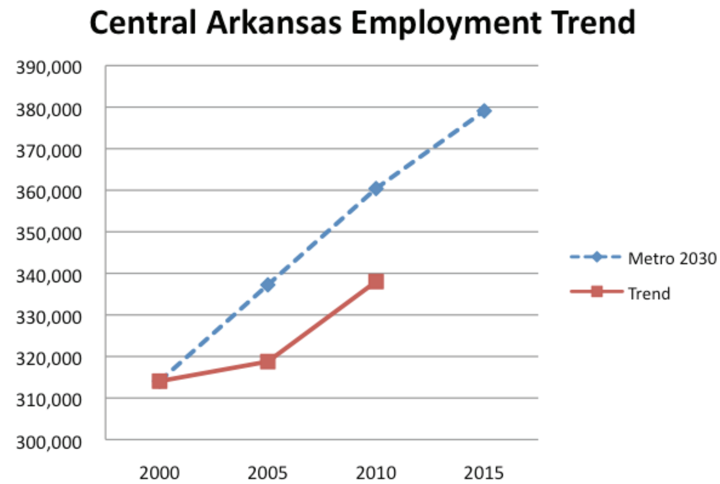
The figure on following page compares the METRO 2030 employment projections with LED data. Metroplan extrapolated the LED figures forward to 2010 to allow a comparison with METRO 2030 projections for that year.

As you can see, the projections predicted a faster pace of employment growth than actually occurred. The region's economy has done fairly well in comparison with the U.S. average from 2000 to the present. Since the trend depicted in the figure lagged behind METRO 2030, it appears that the predictions for labor force participation in the METRO 2030 plan ran too high. It is known that diminished labor force participation was a major factor during the "jobless recovery" of the

[1] It is important to remember that the most recent decennial census was conducted nearly a decade ago. This comparison depends on Metroplan's estimates. These estimates have proved accurate in the past, but are not a full enumeration like the decennial census, and have a small margin of error.

years 2002-2004, when employment grew more slowly than the rest of the economy, at national and local levels.

Figure 2-2



The error in Metroplan's employment projections was -5.5 percent for the year 2005, with a predicted error of about -6.2 percent for the year 2010. Limitations in data availability make it difficult to assess the employment projections with the same degree of accuracy we can use to assess population. This error is not large enough to affect the 2030 forecast, well inside a ten percent margin of acceptable error. The unpredictability of today's economy makes it difficult to improve on the existing employment projection as a measure of long-range prediction.

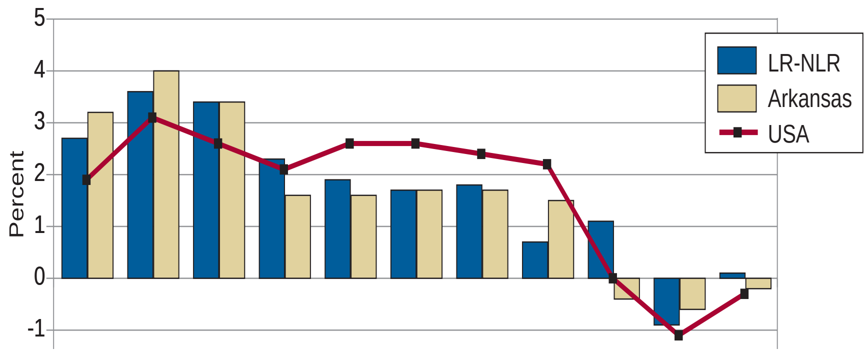
The broader assumptions of METRO 2030 have proven reasonably valid so far. For example, METRO 2030 projected housing growth in urban core areas as a response to more widespread adoption of New Urbanist principles by local governments, the development community, and individual residents. Since 2004, further residential construction has occurred in the River Market area of Little Rock. The Argenta area of downtown North Little Rock has added hundreds of new residential units in the period 2004-2009. In Conway, a start-up New Urbanist project known as Hendrix Village is now (late 2009) under construction. Metroplan predicts that these projects will be augmented by further spread of the New Urbanist trend, and mixed-use communities will develop not only in older urban core areas, but also in centrally-located nodes within suburban areas.

At the same time, Metroplan predicted continuing spreading of residential and commercial building activity, a trend which was very pronounced in the years 2004-2006. Since that time, most suburban/exurban fringe development has come to a temporary halt as part of the national housing "bust." Central Arkansas has been hit less hard than average by the housing slowdown, but suburban and exurban areas appear to have taken the worst brunt of it. At present, it appears most likely that, as housing markets recover, residential development will continue in "greenfield" areas on the region's fringes, but at a slower pace than in the past. The growing appeal of inner-city areas suggests that the development focus will continue to shift toward retrofitting existing urban nodes which offer pedestrian accessibility and the lifestyle diversity typical of mixed-use urban areas. This shift in trends was foreseen by METRO 2030, meaning that existing projections for land use, population and employment give a broadly accurate picture of the future.

THE ECONOMY OF CENTRAL ARKANSAS

Central Arkansas employs over 320,000 people. The region's economy generates over one-fourth of the total income in the state of Arkansas, representing by far the largest and wealthiest economic region in the state (see Figure 2-3).

Figure 2-3
Nonfarm Payroll Jobs - Change Over Previous Year 1993-2003

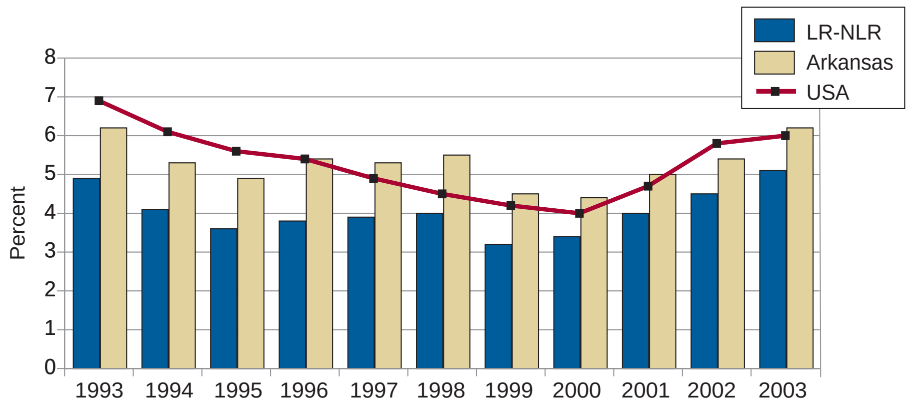


Over the past decade, the Little Rock-North Little Rock MSA has registered positive job growth in all years except 2002. Regional job growth has been slow in recent years however, in line with national trends (see Table 2-4 and Map 2-7).

What has caused the prolonged employment growth slump in recent years? Most economists believe a rapid rise in productivity, or output per job, has been the primary factor. Foreign out-sourcing of jobs is probably another contributing factor. The large-scale call-up of reservists for military duty abroad has also been a small factor, albeit a difficult one to measure. While continuing economic recovery has finally added a few jobs at the national level since the beginning of 2004, the pace of growth remains slow.

Unemployment in central Arkansas hit its highest level in over ten years during 2003, at 5.1%. Once again, though, the region did better than the state average of 6.2%, and was also well below the U.S. average of 6.0% (see Figure 2-4).

Figure 2-4
1993-2003 Unemployment - Little Rock-North Little Rock MSA versus State and National Averages



Despite the lack of significant job growth, most economic measures suggest that central Arkansas is out-performing the national average. Since the year 2000, the region's population growth has accelerated. Trends in housing and general construction suggest growth well above U.S. norms. Further, Figure 2-5 shows growth in per capita income has run above the U.S. and southeastern average since the year 2000.

Figure 2-5
Per Capita Income Growth - 2000-2002

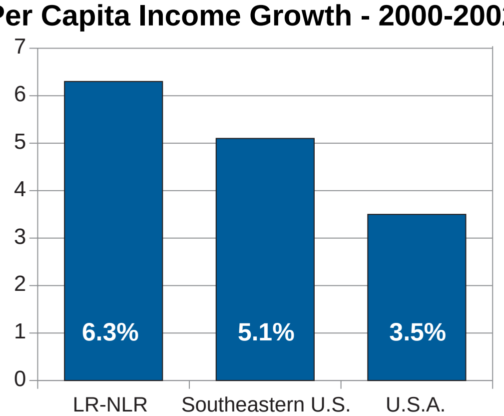
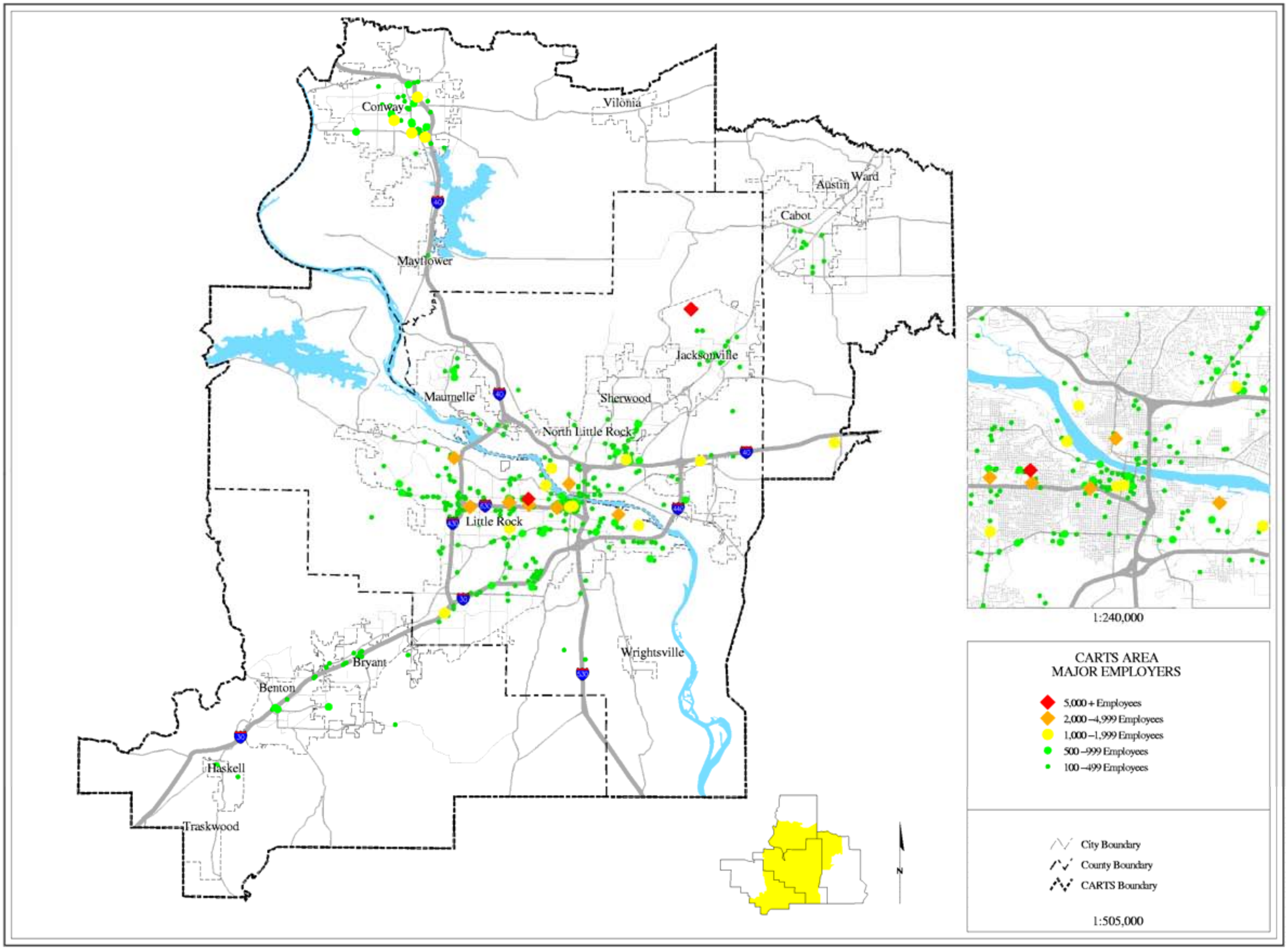


Table 2-4
Leading Employers in Little Rock-North Little Rock MSA 2004

Name	Employees	Description
State of Arkansas	28,100	Government
Federal Government	9,400	Government
University of Arkansas for Medical Sciences	7,800	Hospital/University
Pulaski County Public School Districts	7,411	Public Schools
Baptist Health	7,000	Hospital/Medical
Little Rock Air Force Base	4,500	Military
St. Vincent Infirmary Medical Center	4,200	Hospital/Medical
Entergy Arkansas	3,254	Utility
Alltel	2,734	Telecommunications
Central Arkansas Veterans Health Care System	2,700	Hospital/Medical
SBC	2,613	Utility/Telecommunications
Dillard Department Stores	2,400	Retail Headquarters & Stores
Arkansas Blue Cross & Blue Shield	2,142	Insurance
Arkansas Children's Hospital	2,071	Hospital/Medical
Union Pacific Railroad	1,727	Railroad
Dassault Falcon Jet Corp.	1,600	Aircraft Manufacturing (finishing)
University of Arkansas at Little Rock	1,350	University
Arkansas Bemocrat-Gazette	1,110	Newspaper
L'Oreal USA Products	1,000	Cosmetics Manufacturing

Source:: Little Rock Regional Chamber of Commerce, Taking Care of Business Guide, 2003-2004

Map 2-7
Major Employers



Several competitive advantages may have helped the region out-perform the national average in recent years. Economic diversity shielded central Arkansas from the worst effects of the 2001 recession. Cost-of-living advantages and strengths in local industries have worked to the region's advantage as well.

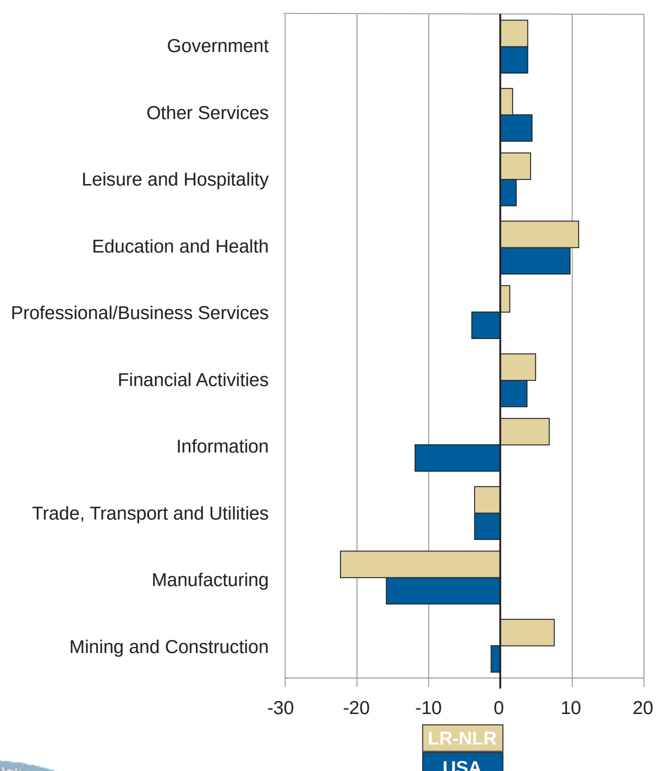
Figure 2-6 compares employment change by industry from 2000 to 2003, based on the new NAICS employment classification system. As you can see, central Arkansas has out-performed the U.S. average in information, construction, and several types of service employment. The region's competitive advantage has been especially strong in information (NAICS 51), with 6.8% employment growth since 2000 despite 11.9% decline at the national level.

As Figure 2-6 shows, manufacturing job losses have been steep. The U.S. economy has shed one in six of all its manufacturing jobs since 2000, a loss of over 2.7 million jobs. While Central Arkansas has suffered an even higher rate of job loss than the national average, manufacturing accounts for a smaller share of total jobs than it does at the national level (see Table 2-4). The U.S. manufacturing sector has been losing jobs overall for 25 years, while central Arkansas has seen steady job losses in this sector for nearly 10 years.

ONE OF THE WEALTH BUILDERS

In a recent Brookings Institution study, the Little Rock-North Little Rock MSA ranked 12th in the U.S.A. as a "Wealth Builder" region among the 100 largest metropolitan areas. Author Paul Gottlieb defines Wealth Builders as regions that can raise their incomes without fast population growth. Gottlieb points out that "growth without growth" may be desirable because it avoids problems like rapidly rising infrastructure costs and spiraling traffic congestion. Regression analysis shows no meaningful correlation between population increase and per capita income growth in metropolitan areas. "Population Magnet" regions like Seattle, Portland and El Paso have seen little income gain despite fast population growth, possibly demonstrating the problems associated with rapid in-migration rates.

Figure 2-6
Percent Employment Change by Industry - 2000-2003
Little Rock-North Little Rock versus U.S.A.



Gottlieb does not favor coercive policies to discourage population growth. He simply contends that a region's population growth rate is not a benchmark of economic progress or quality of life. Often characterized by an above-average share of high-technology jobs, Wealth Builder regions hold a subtle but important advantage in the relentless game of regional competition.

The study cited is titled "Growth Without Growth: An Alternative Economic Development Goal for Metropolitan Areas," by Paul Gottlieb, February 2002. You can find it online at: http://www.brookings.edu/

The Park at Riverdale Apartments, Little Rock

Central High School Museum Visitor Center, Little Rock

North Little Rock City Hall

3. Travel Characteristics

The Journey To Work In Central Arkansas

Central Arkansas residents commute primarily by single-occupancy vehicle. Table 3-1 shows that few local residents carpool or take public transit, and the proportion of people using these means declined from 1990 to 2000, just as it did during previous decades.

Table 3-1
Means of Transportation to Work

	USA		LR-NLR MSA	
	1990	2000	1990	2000
Drove Alone	73.2	75.7	79.8	81.6
Carpooled	13.4	12.2	14.4	13.2
Public Transportation	5.3	4.7	0.9	0.9
Other Means	5.1	4.1	2.9	2.0
Work at Home	3.0	3.3	2.0	2.3

Source: Census 1990, STF-3 and Census 2000, SF-3

Local residents also spent a bit more time commuting in 2000 than they did a decade earlier. There were more cars and trucks on the road than ever before, while homes and workplaces were often more distant from one another. Table 3-2 shows the growth in driving time from 1990 to 2000.

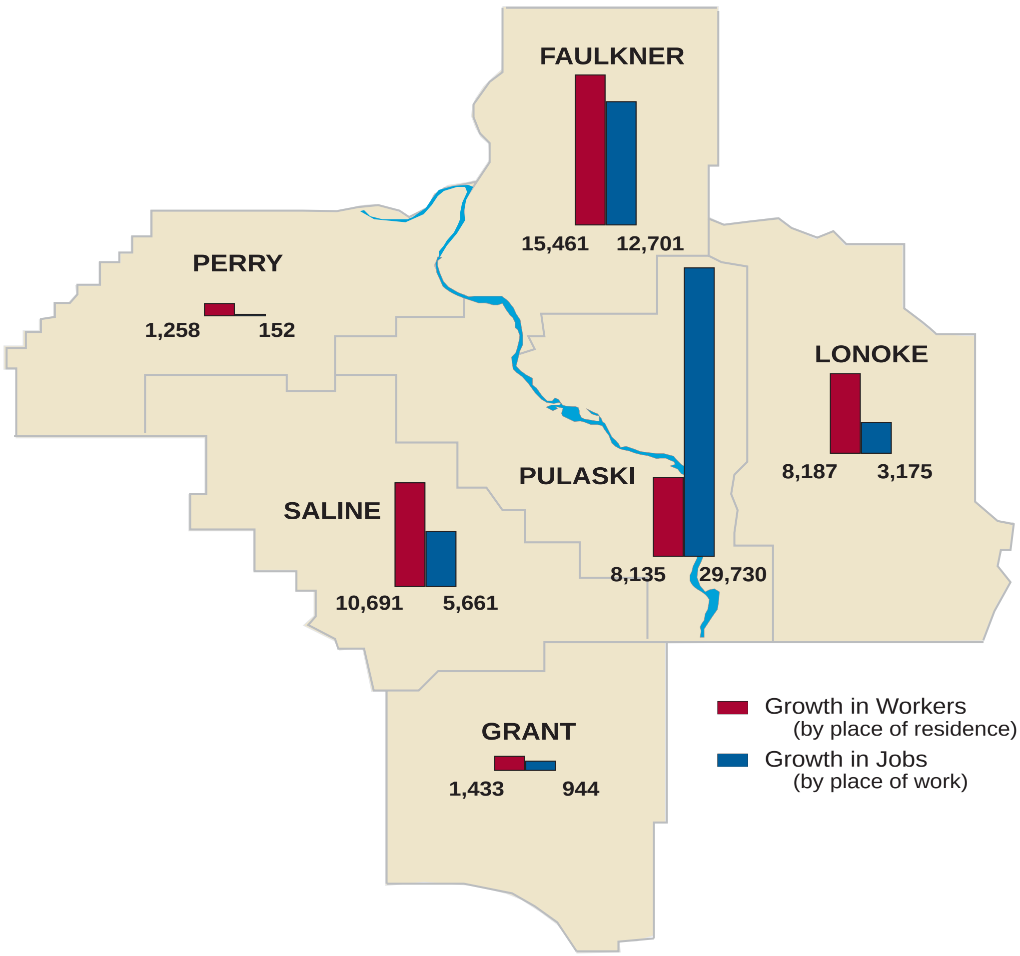
Table 3-2
Mean Travel Time to Work in Minutes - 1990 and 2000

	1990	2000	Change in Minutes	Percent Change
USA	**22.4**	**25.5**	**3.1**	**13.8**
LR-NLR MSA	**19.9**	**22.9**	**3.0**	**15.1**
Faulkner Co.	21.8	24.8	3.0	13.8
Lonoke Co.	23.5	27.5	4.0	17.0
Pulaski Co.	18.4	20.8	2.4	13.0
Saline Co.	24.2	27.0	2.8	11.6

Source: Census 1990, STF-3 and Census 2000, SF-3

It is clear that, in general, the distance between jobs and homes grew wider. For example, the total number of jobs in Pulaski County grew by over 29,730, while the number of resident workers in the county only grew by 8,135. To fill these new jobs, 21,595 more workers drove in from outlying counties. Map 3-1 shows growth in workers and jobs from 1990 to 2000 in the six-county Little Rock-North Little Rock MSA.

Map 3-1
Growth in Workers and Jobs - 1990 – 2000

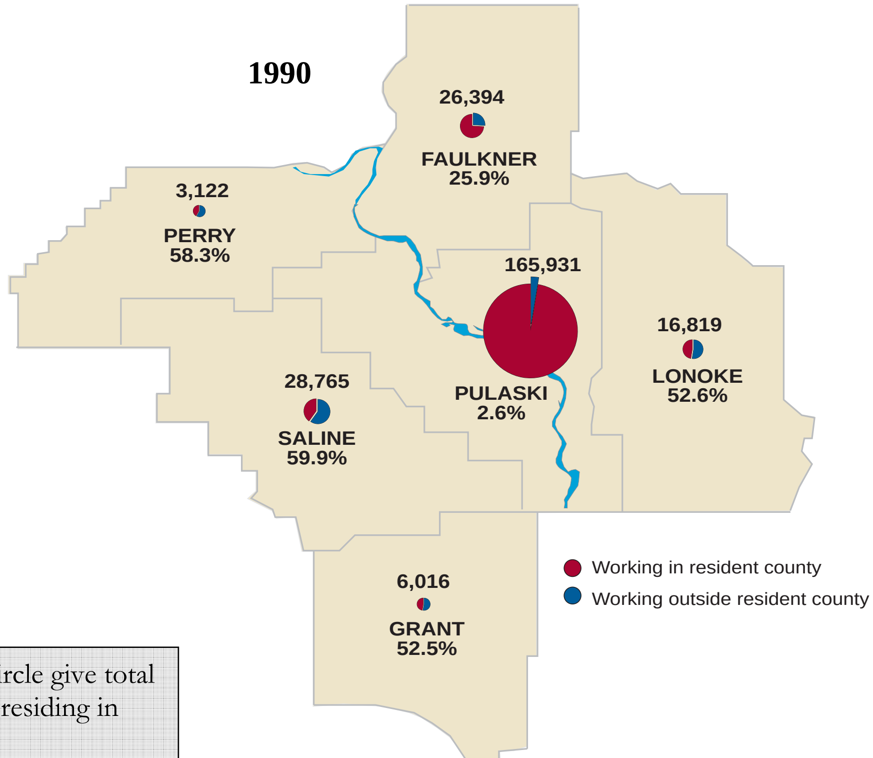


COMMUTING TRENDS

The following maps (see Maps 3-2 and 3-3) show the percentage of workers who hold jobs in the same county in which they live. The size of the circles depicts the relative size of each county's resident work force. As the figures show, most Pulaski County workers stayed in their home county to work, while between one-quarter and over one-half of workers living in the five outlying counties left their resident county to earn their pay.

The maps show the largest and most important commuting flows in 1990 and 2000. While there are other flows, the predominant flows are as shown. As you can see, Saline County provides by far the largest in-flow of commuters. This county's total of over 22,000 in-commuters was one-third greater than the next largest flow of 13,000-plus workers driving in from Lonoke County (see Table 3-3).

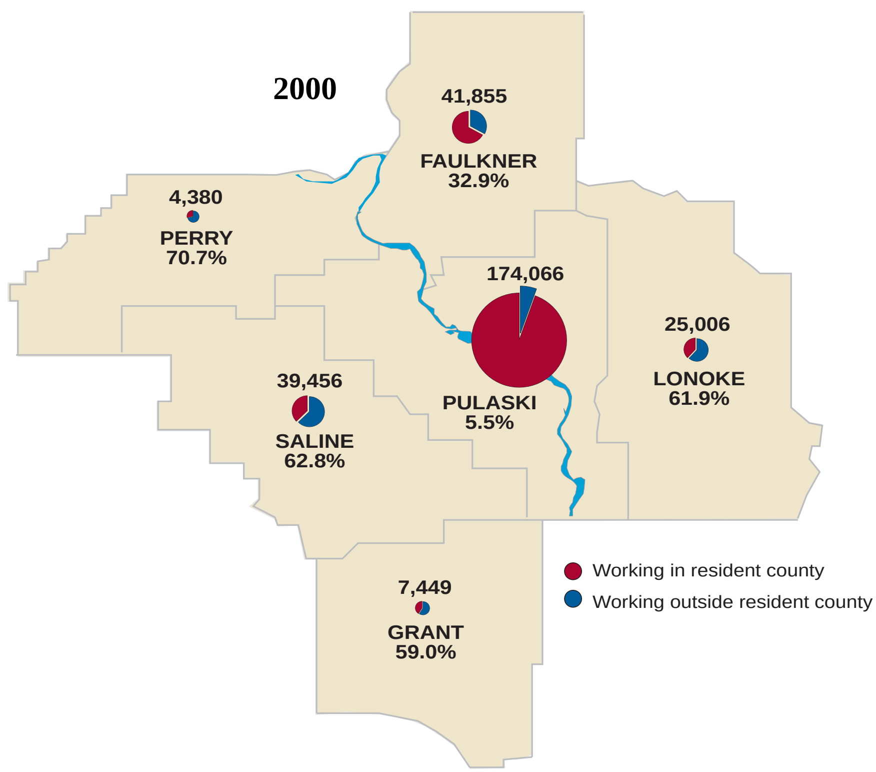
Map 3-2
Commuting Destinations of Resident Workers by County - 1990 and 2000



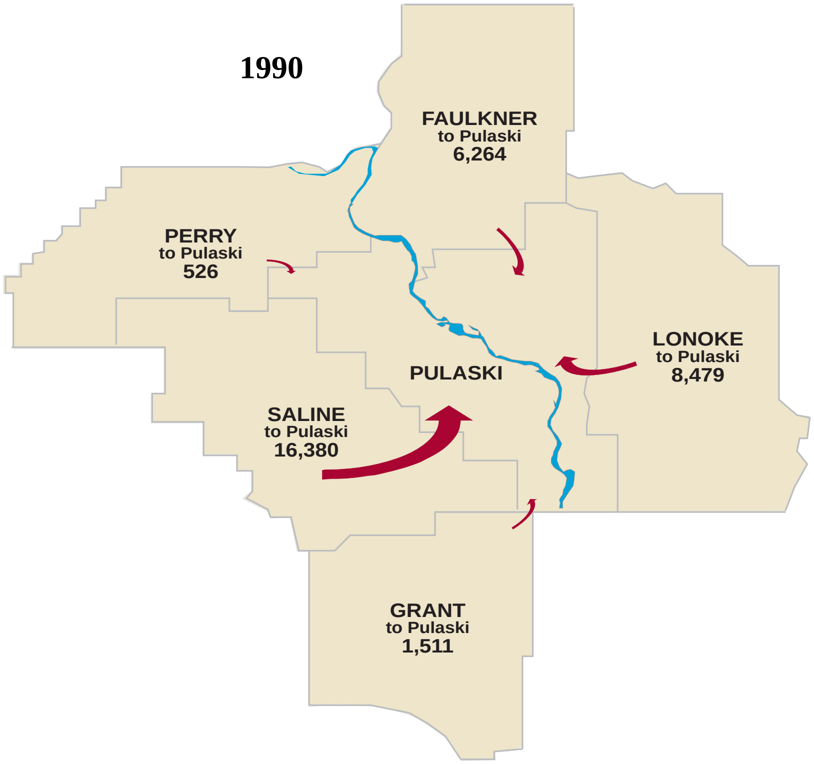
Figures above the circle give total number of workers residing in each county

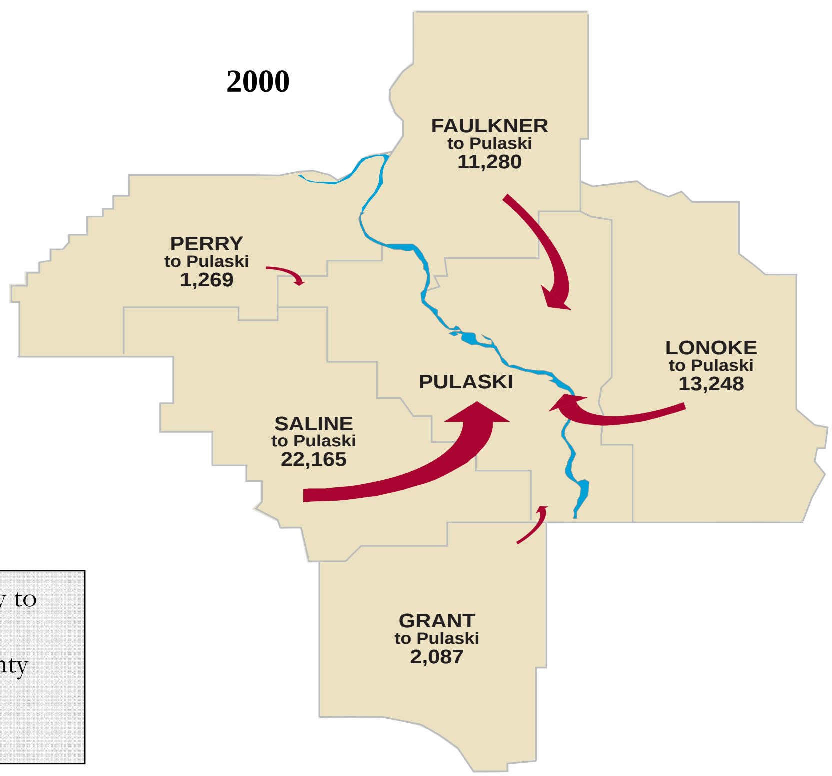
Figures below each circle depict percent of resident workers commuting out.

Source: Census 2000



Map 3-3
Commuters to Pulaski County from County of Origin - 1990 and 2000





The arrows are scaled proportionately to visually represent the number of commuters coming into Pulaski County

Source: Census 2000

Table 3-3
Commuter Flows in Little Rock-North Little Rock MSA 2000

PLACE OF RESIDENCE	PLACE OF WORK				TOTAL			
	Faulkner County	Grant County	Lonoke County	Perry County	Pulaski County	Saline County	Outside MSA	Workers by County of Work
Faulkner	**28,092**	25	254	1,015	1,600	215	4,694	35,895
Grant	3	**3,054**	6	0	84	154	901	4,202
Lonoke	196	4	**9,536**	11	1,247	100	1,720	12,814
Perry	85	2	7	**1,282**	33	4	181	1,594
Pulaski	11,280	2,087	13,248	1,269	**164,428**	22,165	17,423	231,900
Saline	214	466	97	15	1,932	**14,668**	2,339	19,731
Other in State	1,706	1,743	1,643	757	3,575	1,838		
Other out of State	279	68	215	31	1,167	312		
Total Resident Workers	**41,855**	**7,449**	**25,006**	**4,380**	**174,066**	**39,456**		

Source: Census 2000

Total MSA Resident Workers	292,212
Total MSA Workers (place of work)	306,136

Figures in **bold red** show county residents working in their county of residence.

**A total of 13,334 residents in the MSA commute to jobs outside the LR-NLR MSA, while a total of 27,258 workers living outside commute to jobs in the LR-NLR MSA.*

Faulkner County, with the largest population among outlying counties (over 92,000 according to Metroplan's latest estimates) contributed just over half as many commuters as Saline County. This is because Faulkner County has a sizeable job market of its own, with firms like Acxiom, Amtran and Virco providing local employment opportunities. The number of commuters from Grant and Perry Counties was comparatively small, although in both cases over half of resident workers commute to jobs in other counties.

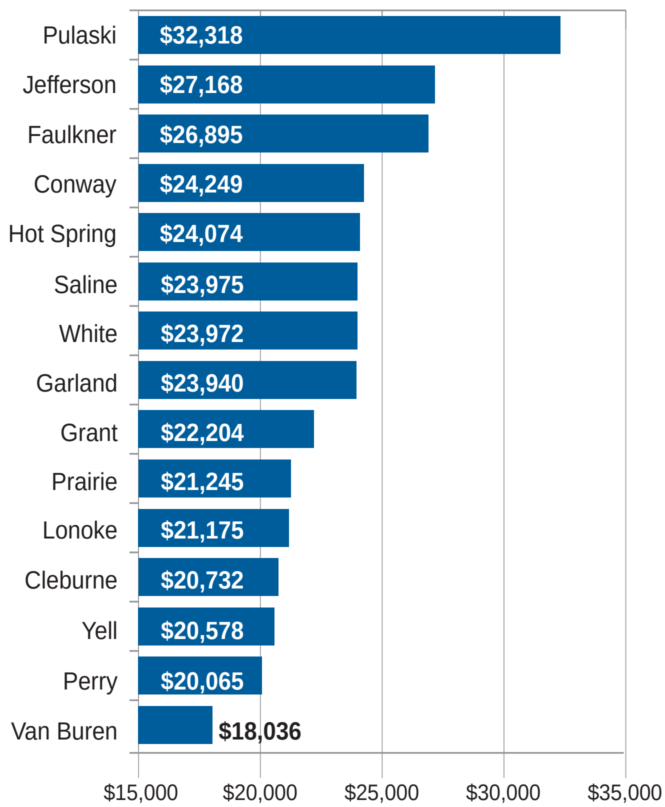
GOING WHERE THE MONEY IS

There are over 300,000 jobs located within the Little Rock-North Little Rock MSA. The commute to each job involves a combination of economic factors such as salary, location, and working conditions. Nonetheless, one observation stands out. The region's core cities of Little Rock and North Little Rock exert a pull that dominates the regional commuting picture.

Jobs in Pulaski County offer the highest incomes in the state, by far. With over 231,000 jobs, Pulaski County also offers a large market that provides a wider choice of job specialties and pay levels than are available anywhere else in Arkansas. The county's job market draws well beyond county lines.

The core's pulling force extends in gradients through the six-county region and beyond. For example, while Faulkner County sends over 11,000 resident workers to high-paying jobs in Pulaski County, over 1,000 workers each from Conway and Perry Counties drive to jobs in Faulkner County every day. A glance at wage figures in the chart (see Figure 3-1) reveals the likely reason. While jobs in Faulkner County pay less than jobs in Pulaski County, they pay better on average than jobs in Conway and Perry Counties.

Figure 3-1
Average Wage by County 2001



Source for Wage Data: US Bureau of Economic Analysis.

Similar relationships can be found elsewhere in the region. Note how the highest wage rates are found in the metropolitan core (Pulaski County) and the core of the adjacent Pine Bluff metro area (Jefferson County). The counties which are the most rural in character also tend to have lower wage rates.

TRAVEL BEHAVIOR & CHARACTERISTICS

In January 2003, the Arkansas Highway and Transportation Department (AHTD) and Metroplan undertook the task of developing a new base year travel demand model for the CARTS area. The new CARTS model covers Pulaski, Lonoke, Faulkner and Saline Counties. During the process of developing this model, extensive surveys were taken to determine the trip making characteristics of citizens in the four county area. These trip characteristics are described in the following sections.

HOUSEHOLD TRIPS

The average number of trips per day made by households in the four-county area is 9.56 trips/household. This ranged from a high of 10.82 trips per household in Saline County to 9.07 trips made per household for Pulaski County. This is an increase from the 1993 survey that indicated an average of 7.88 trips per household for the survey area. Table 3-4 indicates the number of trips made by households and per person for the four-county area.

Table 3-4
Average Number of Trips Per Day/Household and Person

	Trips per Household	Trips per Person
Four-county	9.56	3.90
Faulkner	10.65	3.86
Lonoke	9.39	3.38
Pulaski	9.07	3.38
Saline	10.82	4.02

Source: 2003 Central Arkansas Regional Household Travel Survey-+, weighted

MODE SPLIT

The primary means for trips in the CARTS area is the automobile. Of the total trips made in the 4-counties, 92.7% are made either as an auto-driver or an auto-passenger. This is reflective of the average household owning 1.73 vehicles. The average vehicle age of this fleet is 7 years.

Seven percent of households in the four-county area own no vehicles. These individuals depend on others, use transit, walk, bike, or use a taxi to travel. Table 3-5 indicates the percent of total trips that are made by each travel mode and the average duration of each of these trips.

Vehicle occupancy counts were completed on 5 arterials in the Little Rock area as part of the 1993 survey. The average daily vehicle occupancy of the arterials was 1.24 passengers/vehicle. The 2003 household survey indicated vehicle occupancy of 1.27. Statistics for other modes were not compiled from the 1993 survey.

Table 3-5
Trip Mode and Trip Duration

Mode	Average Percent	Trip Duration
Auto-Driver	67.6	18.3
Auto-Passenger	25.1	19.0
Walk	2.7	14.7
School Bus	2.7	33.2
Transit	0.7	44.6
Taxi-shuttle	0.2	63.3
Bike	0.1	7.4
Other	0.1	36.2
Total	**100.0**	**18.4**

Source: 2003 Central Arkansas Regional Household Travel Survey, weighted

TRIP PURPOSES

Trips are divided into categories by the purpose of the trip. The three most basic of these categories are home base work, home base other and non-home base. In addition to these the CARTS model includes a school trip purpose. Further more, home base other trips are divided into three categories and non-home base into two categories that are grouped according to their destination. Table 3-6 indicates the average trip length by trip purpose.

- HBO1: Quick Stop, Shopping, and Eat Meal;
- HBO2: Entertainment, Pick-Up, and Change Mode; and
- HBO3: Visit, Personal Business, Recreation or Fitness, and Civic or Religious.

Table 3-6
Average Trip Length by Purpose

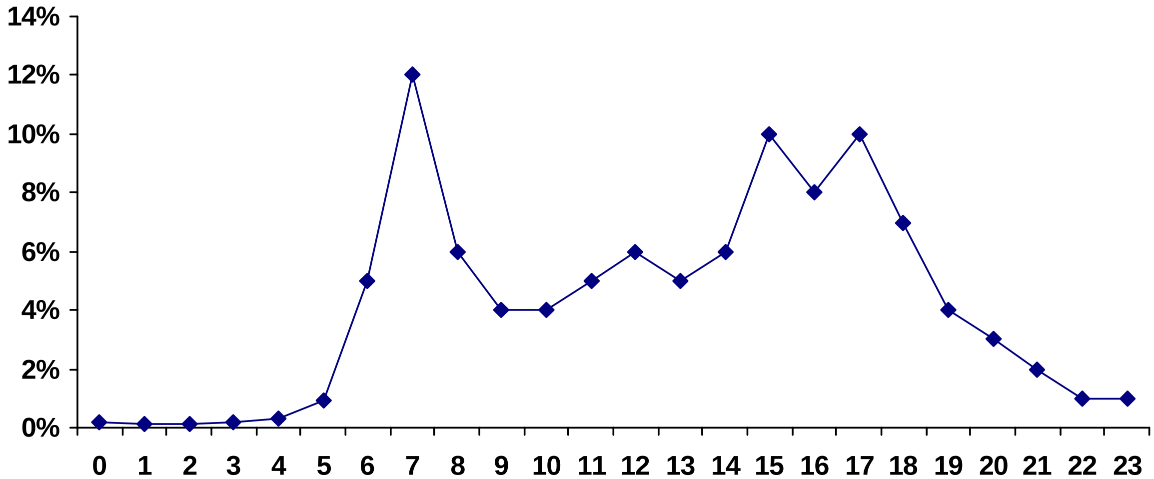
Purpose	Average Trip Length (minutes)
Home Base Work	24.32
Home Base School	20.07
Home Base Other 1	15.11
Home Base Other 2	13.82
Home Base Other 3	19.14
Non-Home Base Work	16.94
Non-Home Base Other	14.56

Source: 2003 Central Arkansas Regional Household Travel Survey weighted

PEAK TRAVEL PERIODS

Peak travel times in the United States tend to be in the morning and afternoon commutes from work. This is true in the Little Rock area with a morning commute between 7-8 AM and an afternoon commute between 3-6 PM. This afternoon peak is not as intense as the morning peak but lasts longer and ultimately has more trips. Figure 3-2 shows the percent of trips that depart during each hour of the day.

Figure 3-2
Trip Departure Time



TRANSIT RIDERS

A comprehensive <u>*On-Board Survey*</u> was conducted of the Central Arkansas Transit Authority's (CATA) passengers using fixed route weekday service. The study results were used to support the development and calibration of a mode choice component of the CARTS regional travel demand model.

Mural at Stifft Station, Little Rock

The observed weekday ridership from CATA indicates a system wide total of 7350 passengers. Individual routes range from 894 trips on the West Markham route to 4 trips on the Oak Grove Express.

The On-Board travel survey revealed the following information:

The typical passenger is:

- Black/African American,
- Male,
- Age 30 to 44, and
- Rides transit primarily to travel to and from home and work five days a week.

Additionally, he:

- Is employed full-time or part-time,
- Has an annual household income of less than $25,000,
- Is transit dependent (no operating vehicles available in his household nor access to a personal vehicle),
- Is licensed to drive,
- Rides two buses to complete his trip,
- Walks or bicycles to the bus stop, and
- Walks or bicycles to his final destination.

Finally:

- He is equally as likely to walk/bicycle or ride with a friend if bus service is not available.
- He has been a rider for more than one year.

EXTERNAL TRIPS

210,000 vehicles pass into or out of the 4-Country area each day. The majority of these vehicles, 82.5%, have at least one destination inside the four counties. The remaining 17.5% travel through the MSA without stopping. The major entry points into the CARTS area are Interstates 30 and 40, which make up slightly less than half of the vehicles entering or exiting the four counties. Interstate 530 and US 67/167 Freeway also contribute significant commuter traffic from the White County and Pine Bluff areas. Non-freeways contributing the most external trips include US Hwy 65, US Hwy 167, and US Hwy 70 at the Saline/Garland County Line. Table 3-7 indicates the number of external trips, percent passing through (EE), percent with at least one destination inside the 4-counties (EI), and percent Commercial trips for the 16 major external stations.

Table 3-7
16 External Stations

#	Location	Survey Type	2000 Estimated ADT Count	%EE	%EI	% Commercial
01	US Hwy 65 N @ Faulkner / Van Buren County Line	External Station Intercept	8,370	18.9%	81.1%	11.4%
04	State Hwy 25 N @ Faulkner / Cleburne County Line	External Station Intercept	4,100	6.0%	94.0%	4.3%
09	US Hwy 64 E @ Faulkner / White County Line	External Station Intercept	5,300	16.6%	83.4%	16.7%
10	State Hwy 5 N @ Lonoke / White County Line	External Station Intercept	4,800	4.9%	95.1%	10.6%
11	US Hwy 67 N @ Lonoke / White County Line	Video License Plate	23,000	7.3%	92.7%	11.5%
17	I-40 E @ Lonoke / Prairie County Line	Video License Plate	30,000	32.1%	67.9%	50.2%
18	US Hwy 70 E @ Lonoke / Prairie County Line	External Station Intercept	2,800	3.9%	96.1%	7.9%
19	US Hwy 165 E @ Lonoke / Prairie County Line	External Station Intercept	3,100	8.5%	91.5%	10.3%
23	I-530 S @ Pulaski / Grant County Line	Video License Plate	21,320	9.2%	90.8%	13.4%
24	US Hwy 167 S @ Saline / Grant County Line	External Station Intercept	8,000	10.4%	89.6%	12.9%
33	US Hwy 67 S @ Saline / Hot Spring County Line	External Station Intercept	4,800	6.2%	93.8%	5.0%
34	I-30 S @ Saline / Hot Spring County Line	Video License Plate	31,000	21.0%	79.0%	44.8%
36	US Hwy 70 W @ Saline / Garland County Line	External Station Intercept	8,400	10.0%	90.0%	6.0%
44	State Hwy 60 W @ Faulkner / Perry County Line	External Station Intercept	5,000	2.4%	97.6%	2.1%
45	US Hwy 64 W @ Faulkner / Conway County Line	External Station Intercept	3,800	4.6%	95.4%	6.7%
46	I-40 W @ Faulkner / Conway County Line	Video License Plate	30,000	21.0%	79.0%	30.5%

TRUCK TRIPS

The travel demand model separates truck/commercial trips from auto trips. This allows for the separate analysis of truck trips. The truck trip table was created using the procedure described in the Quick Response Freight Manual produced by the Travel Model Improvement Program (TMIP). The total number of internal truck trips is 160,000. The total number of external truck trips is 48,000.

MODEL ESTIMATES-DAILY VMT

VMT for the four counties from the CARTS travel demand model is estimated to be 19,800,000 vehicle miles daily for the year 2000.

Section 3: Transportation and Health

"With a greater recognition of the strong linkage between public health and transportation, I believe we can build a network that supports our mobility and creates access and economic strength while promoting equity, sustaining our good health and quality of life."

- Congressman James Oberstar, Chairman of the House Transportation and Infrastructure Committee, September 2009

The design of roadways, public transportation systems, and pedestrian and bicycle facilities can significantly impact personal and public health. However, the full scope of these impacts is often neglected in the creation of transportation goals and policies. Transportation infrastructure can directly influence traffic crashes, air quality, water quality, and access to physical activity. These can be associated with health conditions such as personal injury, obesity, diabetes, asthma, cancer, and mental well-being. Transportation or lack thereof can also indirectly impact access to healthy food and medical services and quality of life. METRO 2030 includes regional transportation goals and objectives that address and attempt to minimize negative health impacts, while promoting positive health behaviors, greater social and economic equity, a cleaner environment, and economic vitality. The implementation of METRO2030 will help to ensure that the central Arkansas region has a thoughtfully designed intermodal transportation system which contributes to a healthy population for generations to come.

Roadways

Transportation infrastructure and associated private automobiles can contribute to the public good by providing independence and a more time efficient and convenient way to travel. The positive health implications of these luxuries include reduced stress levels and emotional well-being. However, the public health risks associated with roads, streets, and highways are significant and contribute to crashes and vehicle emissions. Vehicle crashes in central Arkansas account for over 5,600 injuries every year and over 100 deaths annually.[1] Motor vehicle emissions are associated with increased incidences of asthma and lung disease.[2] Additionally, traffic congestion and commuting can contribute to stress that exacerbates social and mental health. Research indicates that drivers who commute longer distances tend to have higher blood pressure and report more characteristics of stress.[3] Increased dependence on automobiles has also contributed to physical inactivity and reductions in bicycling and walking trips.[4] In 2007, two out of three adults in the central Arkansas region reported not getting the recommended amount of physical activity.[5]

Public Transportation

Public transportation can contribute to several positive health outcomes including improved traffic safety, reduced exposure to vehicle emissions, increased physical activity, improved access to services, greater community cohesion, and increased transportation affordability which can reduce mental stress. Public transit indirectly contributes to health and well-being by providing access and mobility to those that are not able to drive, such as children, older adults, and people with disabilities. The health risks associated with public transportation are minimal, particularly if there are adequate facilities for pedestrians and cyclists to travel to and from transit services.

Pedestrian and Bicycle Facilities

Walking and bicycling are important forms of physical activity and transportation. Providing a connected infrastructure for walking and biking can encourage more physical activity for recreation and utilitarian purposes. The health benefits of walking and biking include the prevention of weight gain and obesity, improved heart health, and lower risk of type 2 diabetes. Walking and biking can be easily integrated into daily activities when the appropriate infrastructure is in place. In fact, a fifteen minute non-motorized commute twice a day meets the Centers for Disease Control and Prevention's (CDC) recommendations for adult physical activity.

Direct Health Effects

Traffic Crashes

The most obvious way that transportation planning can directly impact health is by reducing the number of traffic crashes. In 2008, traffic crashes in central Arkansas accounted for 115 deaths, over 5,600 injuries, $333.48 million in total economic costs and $785 million in comprehensive costs.[6] More Arkansans under the age of 45 die from traffic crashes than any other cause of death.[7] Injury prevention among seniors is becoming an issue of concern as a large segment of the central Arkansas population enters the over-65 age range, which is more susceptible to injuries and death in crashes.[8] Thoughtful transportation infrastructure, design, and operation can reduce the likelihood of crashes and associated injuries and deaths. A detailed assessment of pedestrian and bicycle safety and crashes in the region can be found in Addendum Section 11.

The following METRO 2030 goals and objectives promote a safe transportation system

1.5 System Safety & Accident Reduction	Design and operate the metropolitan transportation system to reduce the likelihood of accidents and correct dangerous situations where they exist.
4.2 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.
4.3 Design for all modes	Encourage local governments and private developers to consider all modes of access (pedestrian, transit and bicycle) in the development process. 4.3.1 Incorporate pedestrian facilities into all urban roadway designs, except freeways
5.1 High Design Standards	Encourage 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. 5.1.1. Land Development Standards Encourage local governments to require high design standards for land development on these routes.
5.3 Access Management on key corridors	Manage access to and from adjacent property on key corridors in order to (1) improve vehicular and pedestrian safety, and (2) safeguard the investment in those facilities by protecting traffic capacity.

By designing streets for all users of all abilities, overall safety is improved and potential injuries and fatalities can be avoided. Creating safe places for people to walk, bike, and use public transit promotes physical activity, reduces car travel and thus air pollutants and greenhouse gases.

Air Quality

The Centers for Disease Control and Prevention reports that transportation-related pollutants are one of the largest contributors to unhealthy air quality.[9] These pollutants have been associated with adverse health effects like intensifying asthma symptoms and diminished lung function.[10] Public health and air quality in central Arkansas can be significantly improved by:

- Facilitating modal options like carpooling, transit, walking and biking;
- Encouraging motorists to acquire low and zero emission vehicles, such as plug-in hybrids and other alternative fuel vehicles, and providing necessary facilities for their use;
- Promoting development patterns with a mix of uses and greater connectivity that will be more amenable to walking and bicycling; and
- Promoting telework, other work scheduling programs and the application of communications technology that substitutes for transportation or otherwise helps to make more efficient use of the transportation system.

Common transportation-related air pollutants include carbon monoxide (CO), oxides of nitrogen (NO_X), particulate matter (PM), and volatile organic compounds (VOCs) such as fumes from gasoline. A major component of "smog," ozone (O_3) is another transportation-related air pollutant that may form near ground-level on hot, windless days when a chemical reaction takes place between NO_X and VOC emissions in the presence of sunlight. Fine particulates, NO_X, and O_3 are all significant respiratory irritants that can aggravate asthma, emphysema, and other respiratory conditions, either by themselves or when combined with other environmental factors. Health studies also identify particulate matter as a risk factor for cardiovascular disease.[11] In accordance with the Clean Air Act of 1970, as amended, all of these mobile sources are regulated under national ambient air quality standards as "criteria pollutants" by the U.S. EPA in consultation with state and local governments. See Air Quality Section for more details on air quality in the central Arkansas region.

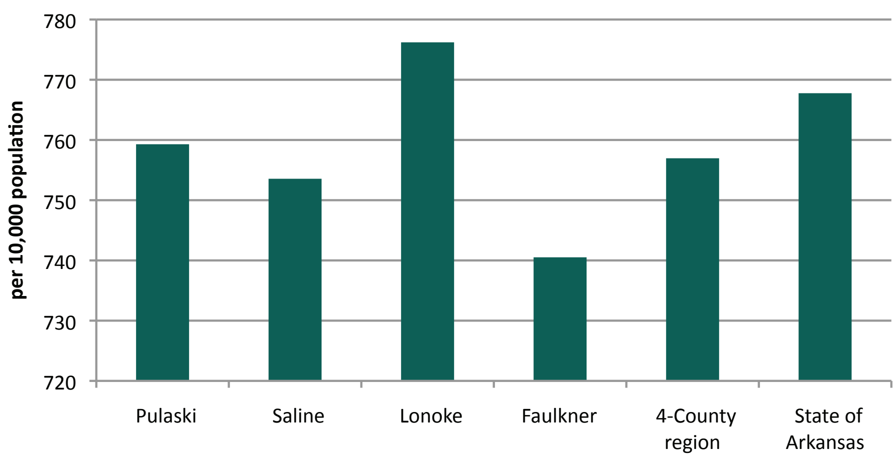
Studies indicate that transportation-related air pollutants can trigger wheezing, coughing, and gasping for breath, which signal an attack in people with asthma.[12] Asthma affects about 7.6% of adults and 9.3% of children in the central Arkansas region.[13] Asthma is one of the leading causes of school absen-

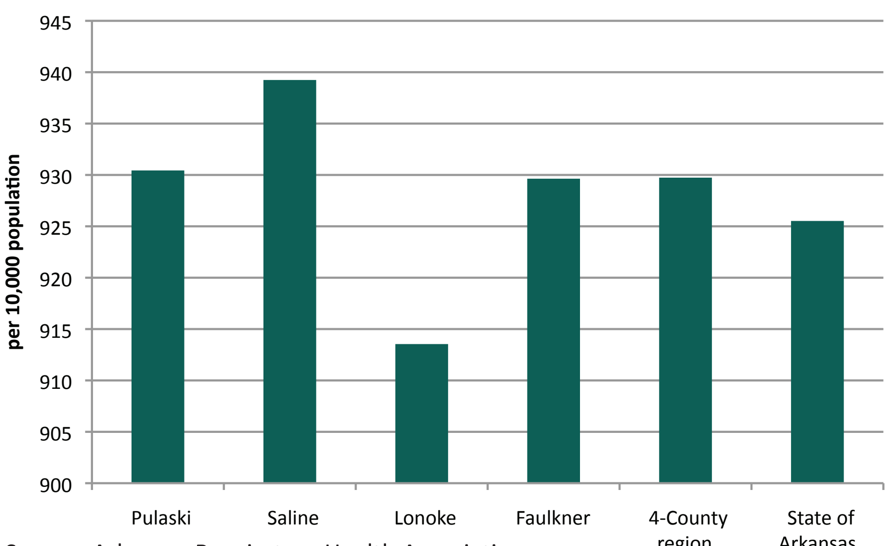
teeism and, in 2002, accounted for an estimated 12.8 million lost school days in children nationally.[14] Figure 1 illustrates that, in comparison to the statewide average, the 4-county region has a lower prevalence of adult asthma and a higher rate of child asthma. It is not clear why there is a difference between asthma rates in adults and children in the region. Lonoke County has the highest rate of adult asthma, but the lowest rate of child asthma. The relatively small population in Lonoke County could possibly account for the large difference between children and adults with asthma. Faulkner County has the lowest rate of adult asthma, but very close to the regional average rate of child asthma.

Figure 3-1: Prevalence of Asthma in Adults and Children in Central Arkansas in 2006

Chart at right shows
Adults with Asthma (2006)

Chart below shows
Children with Asthma (2006)





Source: Arkansas Respiratory Health Association

The prevalence of auto-centric development patterns is a major factor in regional air quality. Post-war suburban "sprawl" development patterns have contributed to air pollution as work commute distances have increased, and residential and commercial uses have been separated by common zoning practices and a lack of street network connectivity. The growth of low density residential development on the "urban fringe" combined with the dispersal of employment locations throughout metropolitan areas has resulted in nearly universal auto dependence for the vast majority of trips, for which conventional transit services have become wholly unsuited. Auto-centric development patterns have increased auto ownership and vehicle miles traveled such that motor vehicles have become the largest major source of NO_X and $PM_{2.5}$ emissions in many metropolitan areas, including central Arkansas.

Health and transportation experts often use the 1996 Atlanta Summer Olympic Games as an example of the significant impacts that traffic emissions have on asthma:

> Several years ago, researchers took advantage of a natural experiment to learn about the impact on pediatric asthma of decreased traffic levels and improved air quality. During the 1996 Summer Olympics Games in Atlanta, when peak morning traffic decreased 23% and peak ozone levels decreased 28%, emergency visits for asthma events in children decreased 42%. At the same time, children's emergency room visits for causes other than asthma did not change. These results suggest that efforts to reduce traffic congestion and improve air quality can also help improve the respiratory health of a community.[15]

A group of researchers and national experts recently released a toolkit on health and transportation policies and made the following observation about the socio-economic impact of traffic emissions:

> [A]s globalization and the movement of goods has grown, so has truck traffic from ports to distribution centers. Unfortunately, low-income communities and communities of color frequently bear the burden of pollution generated by the increasing goods movement infrastructure –such as heavily trafficked and expanding highways, bridges, railyards, airports and ports. Studies indicate that children living near busy roadways are more likely to have asthma and diminished lung function.[16]

Reducing automobile trips by increasing public transit use, carpooling, telecommuting, walking, and bicycling can help reduce air pollution. In turn, the reduction of vehicle emissions will improve health outcomes like asthma, the natural environment, and slow down global climate change.

The following METRO 2030 objectives under Goal 3, Environmental Quality, will have the net impact of promoting good air quality in the central Arkansas region as they are implemented.

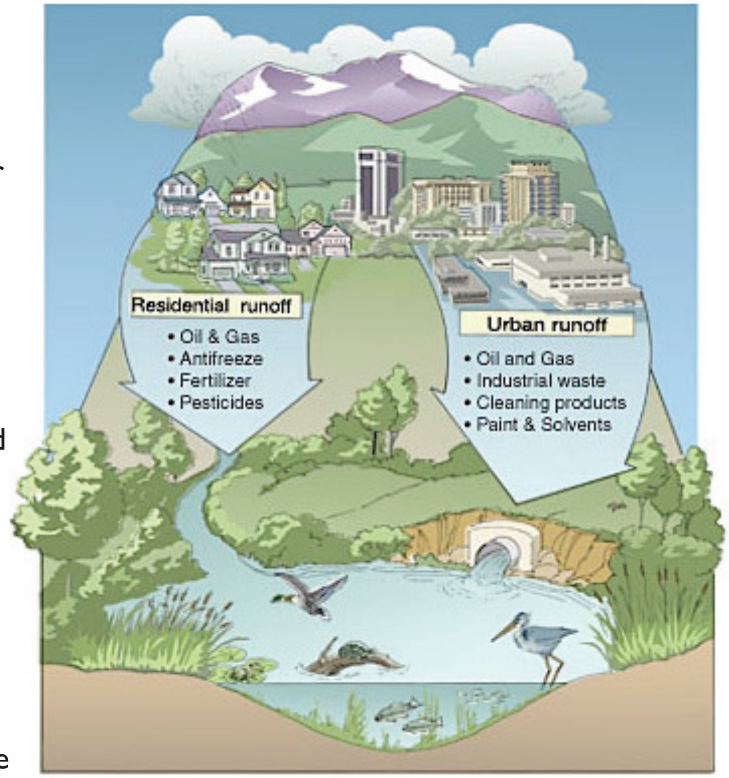
Goal 3: Environmental Quality	Protect and enhance the environmental quality of the central Arkansas region.
3.1 Air Quality	Maintain good air quality as measured by attainment with the Clean Air Act pollution standards.
3.4 **Reduce Fossil Fuel Consumption**	Reduce fossil fuel use in the transportation sector. **3.4.1. High Density/Mixed Use Land Development** Encourage local governments to adopt policies that allow mixed use/higher density clusters to meet a portion of housing demand. *Note: Such development patterns encourage walking and bicycling.* **3.4.2. Substitute Technology for Transportation** Support the substitution of communication technology for transportation (i.e., telecommuting, and e-commerce) that will reduce the number of trips at congested peak hours. **3.4.3. Fleet Fuel Efficiency** Encourage the federal government and automakers to increase fleet fuel efficiency through adoption of higher Corporate Average Fuel Economy (C.A.F.E.) standards and improved combustion and/or alternate fuel technologies. **3.4.4. Modal Options** Provide modal options such as walking, biking, and high occupancy vehicles like buses or trolleys that reduce emissions per trip and will improve transportation system efficiency by reducing roadway congestion.

These goals and objectives are supported by Metroplan through various programs. Metroplan manages the Central Arkansas Ozone Action Days program, which was created by agreement between the Arkansas Department of Environmental Quality, Arkansas Department of Health, and Metroplan. From 2000-2009 Metroplan served as the host agency for the Central Arkansas Clean Cities Program, which is part of a national program designed to reduce petroleum consumption in the transportation sector by advancing the use of alternative fuels and vehicles, idle reduction technologies, hybrid electric vehicles, fuel blends, and fuel economy measures. A detailed assessment of these and other air quality and ozone related actions taken by Metroplan can be found in Addendum Section 13.

Water Quality

Transportation byproducts and the design of streets significantly affect stormwater and water quality. Water contaminated by transportation-related pollutants can lead to serious health conditions like cancer, and street design and materials can prevent proper filtering of pollutants.

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up contaminants like oil and grease from roadways, chemicals, dirt, agricultural chemicals from farmland, sediment from erosion, and debris. These contaminants are deposited into a storm sewer system or water body. This type of pollution is called non-point source pollution and is the biggest factor affecting Arkansas' water quality.[17] Non-point source pollution is linked to adverse health conditions like cancer and chronic illnesses from exposure through drinking water, seafood, and water recreation. The expansion of urban areas creates more impervious surfaces, like roads and parking lots, which allows stormwater run-off to collect and then wash chemical pollutants untreated to local streams, wetlands, lakes, and groundwater during rain events.

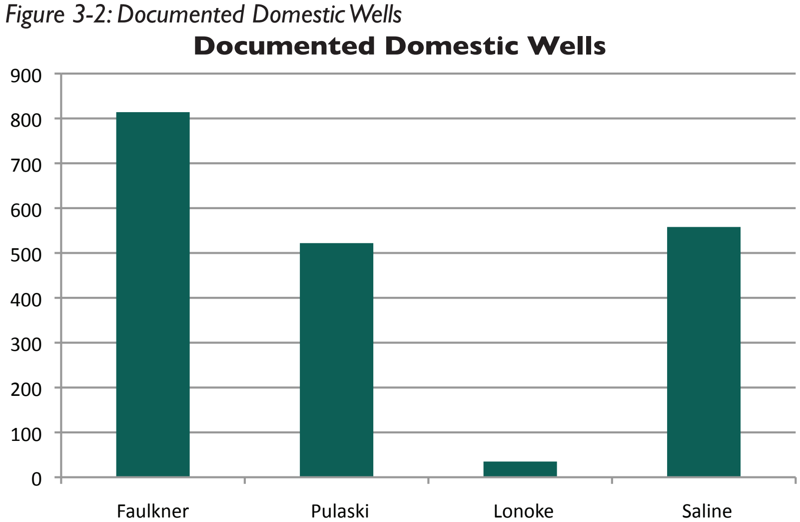


Source: RiverLink, Inc. *Human Health Impacts from Stromwater Runoff.* Issue brief.

Nearly half of the US population drinks groundwater from wells, which can be easily contaminated by polluted water runoff and septic systems.[18,19] Approximately 42 million people in rural and suburban areas use their own private water supplies, typically shallow groundwater wells that are not covered by the Safe Drinking Water Act and are rarely treated or monitored.[20] Approximately 2,000 private wells are documented in central Arkansas, shown in Figure 2. These numbers do not include wells constructed before 1970, which indicates that there are many more undocumented and unregulated water sources in the region that are affected by polluted stormwater.

Transportation infrastructure and design plays a major role in managing stormwater volume and flow. Impervious surfaces like concrete and asphalt accelerate stormwater runoff and often interfere with the natural process of stormwater management and filtration. Transportation contributes to the amount of impervious surface in the region with roads, parking lots, and land development that follows transportation infrastructure. Studies show that runoff measured from suburban developments can be 1.5 to 4 times greater than from rural areas.[21]

Figure 3-2: Documented Domestic Wells



Source: Arkansas Water Well Construction Commission

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 system through site design and features like rain gardens and bioretention. The LID approach significantly increases retention of stormwater and pollutants on site and generally does not threaten groundwater pollution. Porous pavements are extremely effective in filtering pollutants and reducing site runoff. Porous pavement has been reported to reduce runoff by up to 98%.[22] Examples of porous pavement include interlocking concrete pavers, porous concrete and porous asphalt. A commitment to better transportation facility siting, design, and increasing the use of porous pavement can reduce development impacts on stormwater and reduce negative health effects.

High-quality, abundant and affordable drinking water is critical to the quality of life in and future development of central Arkansas. Metroplan is the secretariat for the Mid-Arkansas Water Alliance (MAWA), a cooperative effort of twenty-seven water utilities in seven central Arkansas counties to jointly acquire new long-term drinking water sources.

In 2009 Metroplan was asked to coordinate the efforts of five local jurisdictions (Conway, Mayflower, Vilonia, Pulaski County, and Faulkner County) to improve the quality of water in Lake Conway. In addition to flooding problems and sedimentation exacerbated by urban run-off, Lake Conway has been subject to damage from sources such as malfunctioning septic systems as well as non-point source pollution. Efforts are underway to obtain funding for a study of the Lake Conway watershed, the results of which will be used to develop a comprehensive watershed development plan. In addition, Metroplan has been involved first with Little Rock Waterworks and now with Central Arkansas Water, to protect the Lake Maumelle watershed in the face of increased development pressures.

The following METRO 2030 goals and objectives promote transportation systems that reduce the impact on regional water systems and associated health hazards:

Goal 3: Environmental Quality	Protect and enhance the environmental quality of the central Arkansas region.
3.2 Water Quality	Reduce the growth in non-point source urban runoff by minimizing the amount of paved surfaces (i.e., roads and surface parking lots).
3.3 Sensitive Lands	Reduce development impacts on sensitive environmental areas (wetlands, aquifer recharge areas, surface stream buffers, etc.) that can be attributed to transportation facilities through better transportation facility siting and design.

Physical Activity

Transportation infrastructure can encourage or discourage physical activity, which can have severe health impacts. Transportation infrastructure that supports physical activity includes sidewalks, bike facilities, connections to transit, and mixed use land development. These features help create a safe and supportive atmosphere for active transportation and an active lifestyle. Transportation infrastructure that only addresses the needs of automobiles discourages healthy behavior like walking and biking and encourages driving to all destinations. Less than half of the adults in central Arkansas get the amount of physical activity that the CDC recommends, which can be met with just a 15-minute non-motorized commute twice a day.[23, 24] The health implications are serious. Regular physical activity can cut the risk for developing a number of health conditions such as depression, diabetes, heart disease, high blood pressure, obesity, stroke, and certain kinds of cancer.

In 2009, the CDC published recommended strategies for obesity prevention. Several strategies support increasing opportunities for physical activity through the built environment:

- Enhance infrastructure supporting bicycling.
- Enhance infrastructure supporting walking.
- Support locating schools within easy walking distance of residential areas.
- Zone for mixed-use development.
- Enhance personal safety in areas where persons are or could be physically active.
- Enhance traffic safety in areas where persons are or could be physically active.
- Improve access to public transportation.[25]

METRO 2030.2 places a strong emphasis on planning for all modes of transportation and users and directly addresses the relationship between transportation and health for the first time. The plan acknowledges a connection of "auto-centric urban design, including the absence of sidewalks, with the growing obesity epidemic among American young people." The plan also emphasizes the importance of sidewalks and pedestrian paths to the growing aging population. As in previous plans, these concerns are addressed in the plan with the inclusion of established design standards for sidewalks and the requirement of sidewalks on newly constructed or reconstructed roadways in the metro area. Increasing the prevalence of well-designed sidewalks will allow more people to walk as a form of transportation and recreation and increase opportunities for physical activity.

Transportation is one of the largest drivers of land development and use patterns. Studies show that community characteristics such as proximity of recreation facilities; street design; hous-

ing density; and accommodation for safe pedestrian, bicycle, and wheelchair use play a significant role in promoting or discouraging physical activity.[26] When a community has well-designed and safe pedestrian and bicycle facilities that connect a variety of destinations, walking and biking is more prevalent.[27] Research has also shown that residents of dense neighborhoods with a variety of available services have higher rates of walking, biking, and transit use.[28] They also have lower rates of obesity.[29] Land use can also reduce per capita vehicle miles traveled, travel demand, and the reliance on a personal automobile by reducing the distance between destinations.

Public transportation also helps promote a more physically active lifestyle and healthier communities. However, transit is only a viable option if the pedestrian and bike infrastructure is in place to connect to transit. If sidewalks do not lead to a bus stop, people are less likely to use transit and in the case of people with physical disabilities, may physically be unable to reach the stop safely. A recent report detailing transportation and health made the following observation about the implications of physical activity and transit:

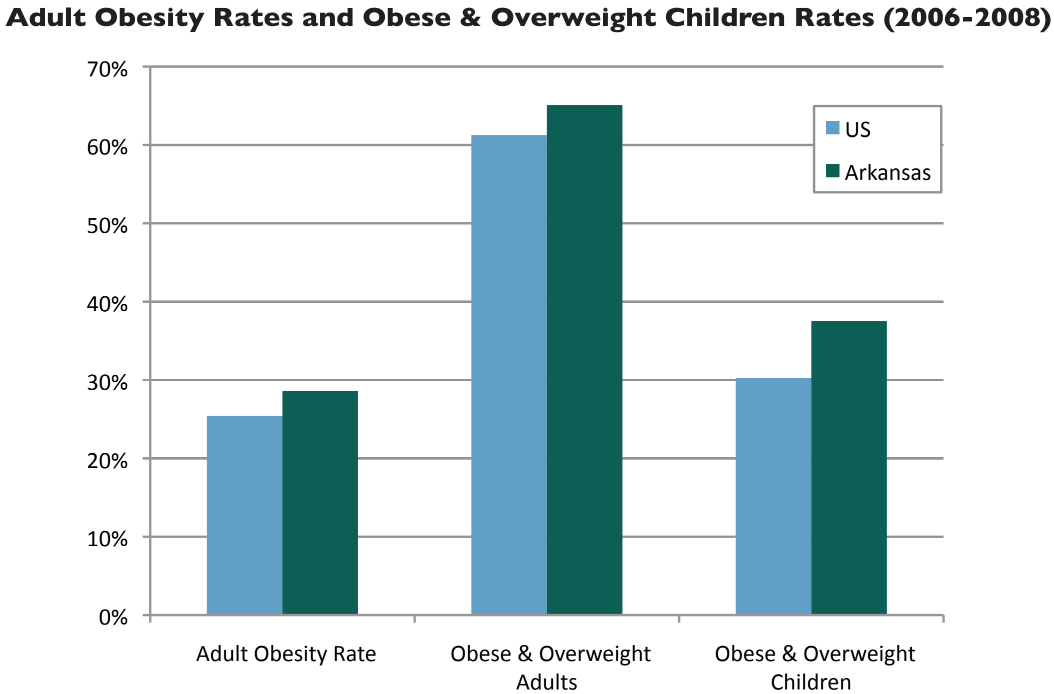
> A study in Atlanta found that for every additional hour spent in a car, the risk of obesity rose 6%. The very opposite is true for public transportation riders. Nearly 30% of transit riders get the recommended daily dose of physical activity by walking to and from transit. Overall transit riders spend an average of 19 minutes of physical activity through their daily routine.[30]

Being physically active helps combat problems that can result from a sedentary lifestyle, such as overweight and obesity. Overweight and obesity are risk factors in a number of other poor health outcomes, including type II diabetes –the fifth most common cause of death for Americans, hypertension—also known as high blood pressure, cancer and arthritis. By managing these health conditions with physical activity, healthy foods, and sometimes medication, people can reduce their risk of premature death and health expenses, and become more productive citizens.

The CDC declared obesity an epidemic because the number of people in the nation that are overweight or obese has reached the highest numbers in history, with African American, Latino, and low-income persons disproportionately impacted. A 2009 national report shows that Arkansas has the 10th highest rate of adult obesity in the nation, at 28.6 percent, and the second highest of overweight youths (ages 10-

17) at 37.5 percent.[31] Figure 4 demonstrates that in 2007, Arkansas reported a higher rate than the nation, and all counties in central Arkansas had an even higher percentage of overweight and obese residents. It is interesting to note that the counties of Pulaski and Faulkner, which have the most pedestrian and bicycle facilities and more compact urban development, have lower rates of overweight and obesity.

Figure 3-3: Adult Obesity Rates and Obese and Overweight Children Rates (2006-2008)



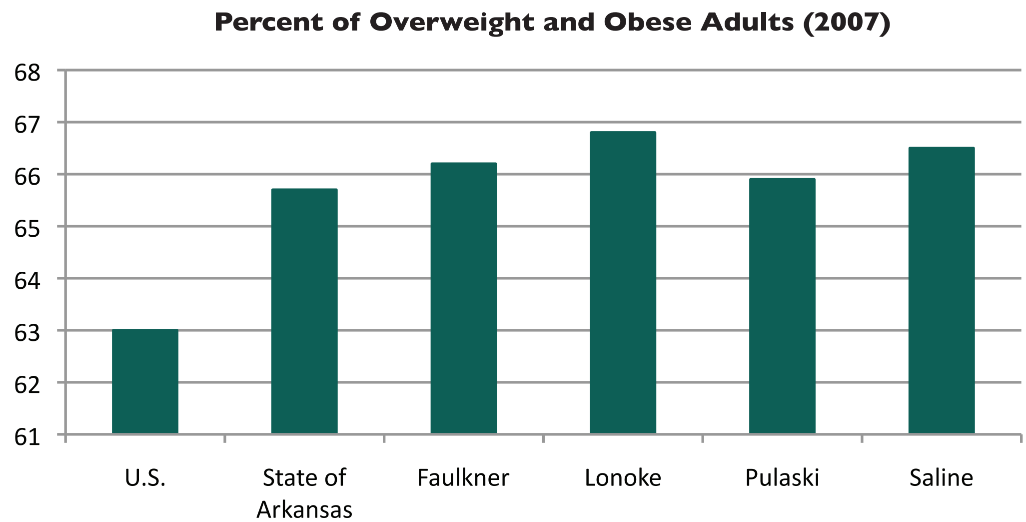
States with the Highest Obesity Rates (2006-2008)

States with the Highest Obesity Rates (2006-2008)		
Rank	State	% of Adult Obesity
1	Mississippi	32.5%
2	Alabama	31.2%
3	West Virginia	31.1%
4	Tennessee	30.2%
5	South Carolina	29.7%
6	Oklahoma	29.5%
7	Kentucky	29.0%
8	Louisiana	28.9%
9	Michigan	28.8%
10	**(tie) Arkansas**	**28.6%**
10	(tie) Ohio	28.6%

Source: (figure and table) F as in Fat: How Obesity Policies Are Failing in America 2009

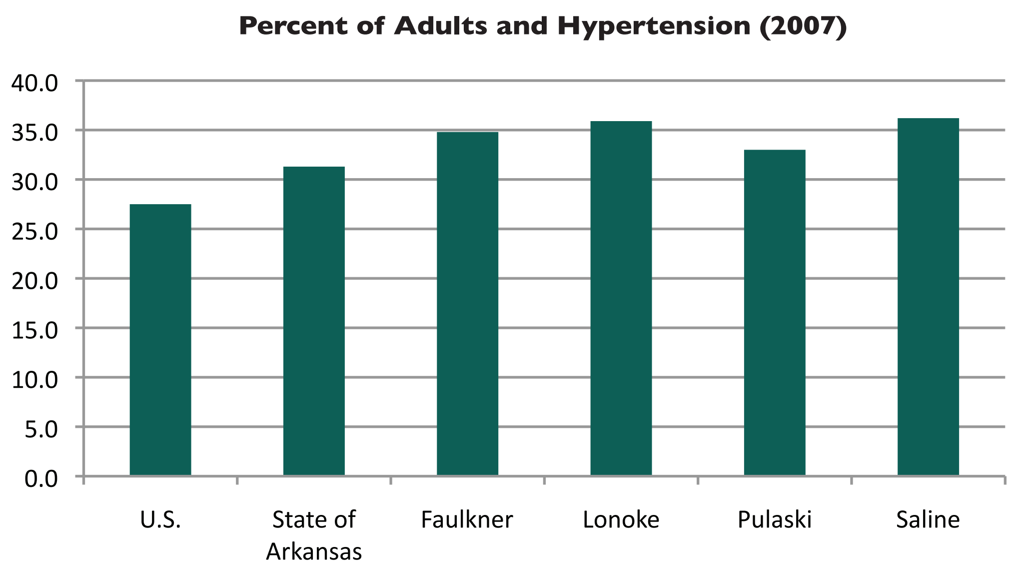
About half of obese individuals have hypertension, which is the most common chronic disease. Uncontrolled high blood pressure can lead to serious health conditions like stroke, heart attack, heart failure or kidney failure. Prescription drug treatment for hypertension can make up a third of medical expenditures, which may be why people with less disposable income tend to have higher levels of blood pressure. Figure 5 illustrates that central Arkansas residents report hypertension at a rate of just over 35 percent in 2007, which is slightly higher than the state and nation. Almost a third of people with high blood pressure are unaware that they have it, which indicates that there are many more undiagnosed and untreated cases in our region.

Figure 3-4: Percent of Overweight & Obese Adults (2007)



Source: BRFSS 2007

Figure 3-5: Percent of Adults with Hypertension (2007)



Source: BRFSS 2007

According to the American Diabetes Association, the majority of people with diabetes "have other health problems such as high blood pressure and cholesterol that increase one's risk for heart disease and stroke…[which] occur earlier in life and often result in death[32]." In addition to social and health complications, people with diagnosed diabetes spend about 2.3 times more of their income on medical expenditures than those without diabetes, which places an additional financial burden on the diagnosed population and reduces the amount of potential capital for the local economy.

The following METRO 2030 goals and objectives promote an environment supportive of active transportation and lifestyles:

Goal 2: Equality of Access & Transportation Choice	Provide a metropolitan transportation 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.
2.1 Public Transportation System	Provide adequate and stable funding to operate existing public transit systems in the near term. In the longer term, develop a more robust public transit system that can serve as a primary transportation mode for the general public.
2.2 Pedestrian Facilities	Provide sidewalks to every development that provides goods, services, or jobs and provide safe pedestrian crossings of busy roadways at appropriate locations.
2.3 Bikeways	Develop a regional bikeway system that will provide safe routes of travel between home, work and services as an alternative means of transportation.
2.4 Mixed Use/ High Density Clusters	Encourage local governments to provide for clusters of mixed use (jobs, services, and residences in close proximity) and high-density development along major transportation arteries in their land use and zoning plans.
Goal 3: Environmental Quality	Protect and enhance the environmental quality of the central Arkansas region.
3.4 Reduce Fossil Fuel Consumption	Reduce fossil fuel use in the transportation sector. 3.4.1. High Density/Mixed Use Land Development Encourage local governments to adopt policies that allow mixed use/higher density clusters to meet a portion of housing demand. *Note: Such development patterns encourage walking and bicycling.* 3.4.4. Modal Options Provide modal options such as walking, biking, and high occupancy vehicles like buses or trolleys that reduce emissions per trip and will improve transportation system efficiency by reducing roadway congestion.
Goal 4: Land Use	Protect and enhance the efficiency of the metropolitan transportation system by linking land development and the provision of transportation facilities.
4.3 Design for all modes **4.3.1 Incorporate pedestrian facilities into all urban roadway designs, except freeways**	Encourage local governments and private developers to consider all modes of access (pedestrian, transit and bicycle) in the development process.

Indirect Health Effects

Access to Services

Transportation affects health indirectly by providing connections –or failing to provide connections– to medical care and healthy food.

Medical Care

Medical care and transportation and were two of the top issues facing legislators in 2009 and 2010, but are not always perceived as related. However, transportation is a necessity to access non-emergency health services and is often a barrier for people with disabilities or those without private automobiles. Research has shown that patients that have difficulty getting transportation to the doctor have an increased number of emergency room visits.[33] Designing a transportation system that provides access to medical services requires designing roads for all users and providing transit connections to medical facilities. A reliable public transit system can play an important role in increasing the level of access to medical facilities.

The Americans with Disabilities Act (ADA) of 1990 significantly expanded transportation options for people with disabilities. ADA requires public transit stops to provide a connection to sidewalks or pedestrian paths, and provide accommodations on the bus, such as lifts and ramps, to enable people in wheelchairs to ride.[34] Paratransit systems like Central Arkansas Transit Authority's Links service and Medicaid's Non-Emergency Transportation, which use vans or shared taxis to transport people door-to-door, are helpful, but many systems are stretched thin and require appointments well in advance. These services are also limited to people with documented disabilities and those enrolled in the Medicaid program, both of which require documentation. In addition, many communities do not have the proper sidewalk connections to bus stops, which makes traveling to and from bus stops challenging and often unsafe for people with disabilities.

The implementation of METRO 2030's *Goal 2: Provide a metropolitan transportation 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*, will help decrease one of the challenges of access to medical care in the region.

Healthy Food

Transportation is related to access to healthy food in two ways. First, we rely on transportation to get most of the food that we eat, especially healthy foods like fruits and vegetables. Secondly, transportation systems and economic investment influence land use and development, which can shape neighborhood food access and the food retail environment.

From 2005-2007, Americans imported almost 50% of their fresh produce, an increase of almost 10% from 1995-97.[35] Our reliance on other regions and countries to supply our food is consequently increasing transportation distances and costs. We are increasing our dependence on cheap energy that is used to fuel the planes, boats, trains, and trucks that bring food from other countries to our local grocery. Increasing transportation costs

are one factor in the rising cost of food and may influence people to choose cheap, high calorie, and low nutrition value foods instead of healthy foods like fruits and vegetables.[36] This is especially pertinent to low-income households, which are disproportionately affected by high food costs. The implementation of METRO 2030, Goal 1 will increase the efficiency of transportation of goods like food, which will lessen the impact of transportation on rising food cost.

Transportation, land use, and economic development decisions influence access to food and the food retail environment. As grocery stores have relocated in the suburban and auto-centric communities, fewer people live within walking distance of a food store.[37] Residents who can't drive or do not have access to a personal vehicle have the choice of public transit or taxi to get the nearest grocery store. A taxi is often expensive, and both of these options can be time-consuming and inconvenient. Instead, people without cars tend to rely on "fringe" food outlets such as gas stations, liquor stores, and fast food outlets that carry limited, if any, healthy foods like fruit or vegetables.[38] Research has shown that, when all other factors are constant, as grocery store access decreases, obesity increases.[39] Communities where fast food and corner stores are more convenient and prevalent than grocery stores also have more dietary health problems and higher mortality than communities with a higher proportion of grocery stores.[40,41] This suggests that increased access through mixed land use and providing high quality, multi-modal transportation connections can influence the types of food choices available. A recent report on food systems and transportation policies describes the challenges associated with transportation mobility and access to grocery stores:

> Grocery shoppers tend to prefer to travel to supermarkets by car, in part because of the one-stop design of supermarkets and their proximity to large-scale shopping districts with abundant, available parking, all of which discourage walking or biking. Vehicles save time and can help shoppers reach more stores, combine trips, and transport heavy packages easily, including in inclement weather. One Austin, TX, study found that few people substitute walking for driving to the grocery store, even if pedestrian or cycling access is good. Even the poor who do not own cars often borrow them, ask for rides from friends, or take taxis to do grocery shopping; however, transportation and walking remain critical in providing the mobility needed to access grocery outlets for these families.[42]

Ultimately, increasing multi-modal transportation access, connectivity, and mixed use land development can contribute to improving access to basic needs and services like medical care and food.

The following METRO 2030 goals and objectives promote transportation systems and land use that support access to services in the central Arkansas region:

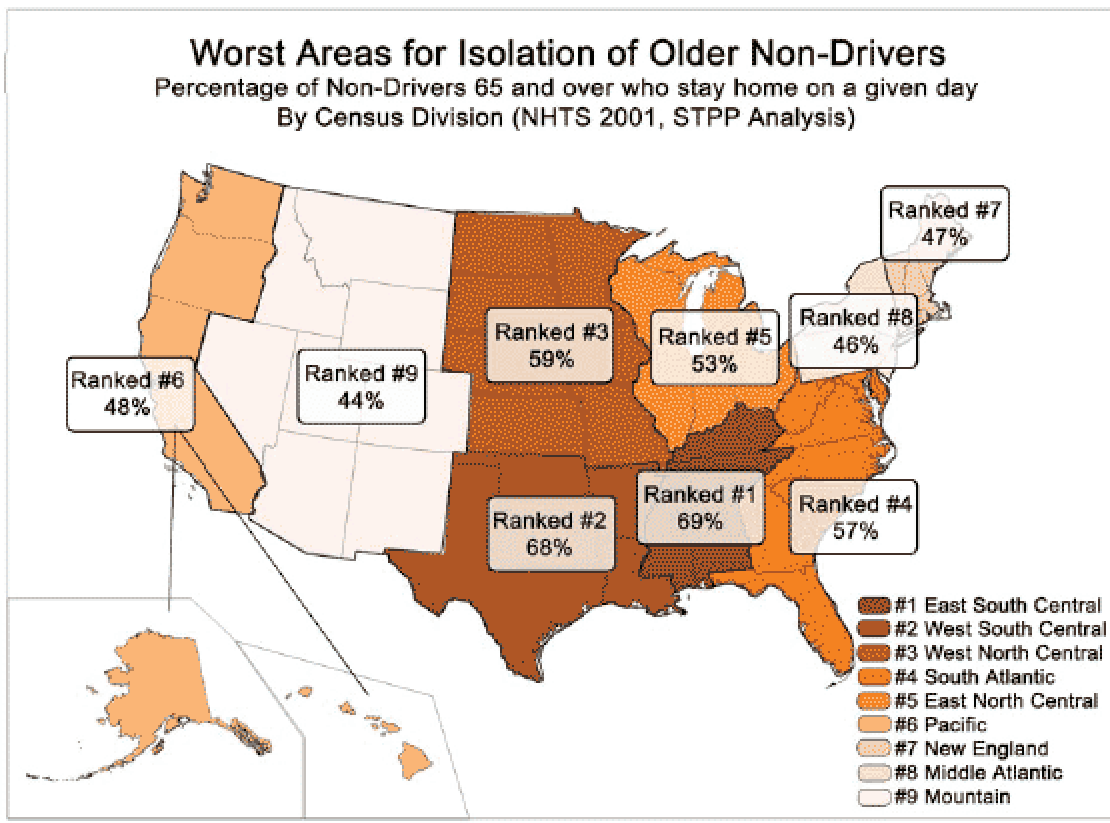
Goal 1: Economic Growth	Develop an intermodal metropolitan transportation system that supports the economic growth of central Arkansas through the safe and efficient movement of people and goods.
1.1 Freight	Build a multi-modal transportation system that provides for critical intermodal freight connections in order to improve competition and service and to lower transportation costs to businesses and consumers in the metropolitan area.
Goal 2: Equality of Access & Transportation Choice	Provide a metropolitan transportation 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.
2.1 Public Transportation System	Provide adequate and stable funding to operate existing public transit systems in the near term. In the longer term, develop a more robust public transit system that can serve as a primary transportation mode for the general public.
2.2 Pedestrian Facilities	Provide sidewalks to every development that provides goods, services, or jobs and provide safe pedestrian crossings of busy roadways at appropriate locations.
2.3 Bikeways	Develop a regional bikeway system that will provide safe routes of travel between home, work and services as an alternative means of transportation.
2.4 Mixed Use/ High Density Clusters	Encourage local governments to provide for clusters of mixed use (jobs, services, and residences in close proximity) and high-density development along major transportation arteries in their land use and zoning plans.
Goal 4: Land Use	Protect and enhance the efficiency of the metropolitan transportation system by linking land development and the provision of transportation facilities.

Quality of Life

Planning a high-quality transportation system that supports modal choice and the economic growth of central Arkansas through the safe and efficient movement of people and goods can allow individuals and families in central Arkansas to make healthy choices. The American Journal of Public Health documented that residents in communities that promote healthy behaviors such as walking and preservation of the natural environment have a better quality of life than those who live in communities without those characteristics.[43]

The built environment and transportation options are especially important to those with disabilities and can influence the degree to which they are able to be socially integrated in a community. Designing transportation systems for all users allows people with and without disabilities to participate more fully in the community by working, living, and accessing services.[44] Complete streets is the concept that a system of streets, roads, highways should be designed for use by pedestrians, bicyclists, motorists, and transit riders as well as users of all ages and abilities. Complete streets create multiple transportation options which enables and encourages healthier lifestyles.

When transportation options are limited, less people are able to contribute to the economic development of the region. For example, more than one in five (21%) Arkansans age 65 and older do not drive because of declining physical or mental health, safety concerns, or limited access to a vehicle.[45] Arkansas is part of one of the most isolated regions in the nation for older non-drivers, with more than two in three non-drivers staying home each day.[46] Older adults in auto-centric suburbs and rural communities are 50 percent more likely to stay home than those living in denser neighborhoods because they lack transportation options.[47] Limited transportation options reduce the ability of non-drivers to participate in the community and contribute to the local economy.[48] Older non-drivers take 65 percent fewer social, family, and religious trips than older people who still drive.[49] However, when walking, biking or public transit are safe options, older adults take advantage. About 30% of older non-drivers walk in dense areas, compared to 7% in more spread out areas.[50] The difference is even more evident with public transit. Over 50% of older non-drivers use public transit in dense areas, compared to less than 5% in suburban and rural areas.[51]



Source: Bailey, Linda. *Aging Americans: Stranded Without Options*. Rep. The Surface Transportation Policy Project, Apr. 2004.

Transportation systems can support economic development that reduces poverty, inequality, and economic and racial segregation by improving transportation access for all users and encouraging mixed-use development. A high-quality transportation system will allow central Arkansans to make healthier choices, while promoting economic development. In addition to the health and environmental benefits of walking and biking, there are multiple economic benefits. If the infrastructure and land use is in place to support walking in a community, it can be the most affordable transportation option because walking does not require special equipment or fuel. When someone walks to a place of business, they are automatically supporting the local economy. While there is a slight financial cost to bicycle, it can dramatically increase the distance a person can travel compared to walking. If a community has a transportation system that is supportive of walking and bicycling, the local economy can greatly benefit from the business it generates.

The following METRO 2030 goals and objectives promote health and general well-being of central Arkansas through transportation:

Goal 1: Economic Growth	Develop an intermodal metropolitan transportation system that supports the economic growth of central Arkansas through the safe and efficient movement of people and goods.
1.2 Quality of Life	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.
Goal 5: Quality Transportation Corridors	Develop and/or 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.
5.1 High Design Standards 5.1.1 Land Development Standards	Encourage 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. 5.1.1. Land Development Standards Encourage local governments to require high design standards for land development on these routes.
5.2 Urban Character/ Rural Character	Design the transportation facilities to reflect and reinforce the character of the areas through which it passes. In urban areas, encourage local governments to plan for high density, 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.

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Planning within this policy framework is conducted cooperatively in accordance with the Central Arkansas Regional Transportation Study (CARTS) Agreement and federal regulations.

At the federal level, transportation policy was established through the passage of ISTEA, and reaffirmed by the Transportation Equity Act for the 21st Century (TEA-21), under which this plan was developed through Congressional Continuing Resolutions. Federal policy also extends to Title VI of the Civil Rights Act, the Americans with Disabilities Act, and the President's Executive Order 12898 on Environmental Justice. The State of Arkansas policy is taken from the Arkansas State Long-Range Intermodal Transportation Plan, adopted by the Arkansas Highway Commission.

TEA-21 Planning Factors

Pursuant to the Transportation Equity Act for the 21st Century (TEA-21), 23 USC 134(f), an MPO is required to consider seven specific factors within the metropolitan planning process in the development of their Long-Range Transportation Plans. These seven strategies are as follows:

- **Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;**
- **Increase the safety and security of the transportation system for motorized and non-motorized users;**
- **Increase the accessibility and mobility options available to people and for freight;**
- **Protect and enhance the environment, promote energy conservation, and improve the quality of life;**
- **Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;**
- **Promote efficient system management and operation; and**
- **Emphasize the preservation of the existing transportation system.**

The TEA-21 Seven Planning Factors were considered throughout the *METRO 2030* planning process. These factors were integrated with the Metropolitan Planning Organization's goals, objectives and evaluation criteria.

The Metroplan Vision and Goals were first articulated in the 2020 Plan, and continue to resonate with the public. Specific Objectives were added in the 2025 Plan to reinforce the Goals. With only minor refinements, the Vision, Goals and Objectives have remained unchanged for *METRO 2030*.

Regional policy is carried out through member governments' adoption of jurisdictional land use and master street plans, zoning and subdivision regulations.

METRO 2030 - Vision, Goals, and Objectives

Vision

The Metropolitan Transportation Plan will contribute to a more livable and efficient environment in central Arkansas. This plan should significantly change how we are presently allowing 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 the provision of transportation facilities and how we use our land.

Goals and Objectives

Goal 1. Economic Growth

Develop an intermodal metropolitan transportation system that supports the economic growth of central Arkansas through the safe and efficient movement of people and goods.

METRO 2030 GOALS

1. **Economic Growth**. Develop an intermodal metropolitan transportation system that supports the economic growth of central Arkansas through the safe and efficient movement of people and goods.
2. **Equality of Access and Transportation Choice**. Provide a metropolitan transportation 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.
3. **Environmental Quality**. Protect and enhance the environmental quality of the central Arkansas region.
4. **Land Use**. Protect and enhance the efficiency of the metropolitan transportation system by linking land development and the provision of transportation facilities.
5. **Quality Transportation Corridors**. Develop and/or 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.
6. **Funding Adequacy**. Identify and develop funding sources adequate to build and operate the metropolitan transportation system.

Objectives

1.1.1 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: A strategic objective for the Little Rock-North Little Rock 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.

1.1.1. Intermodal Hubs

Fully develop the intermodal hubs in the region to support economic growth. Develop the Port of Little Rock/Little Rock 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. Improve connectors to other intermodal freight facilities in the region from the National Highway System.

1.1.2. River

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.

1.1.3. Airport

Improve ground access to airport facilities consistent with airports' master plans.

1.1.4. Trucking

Improve interstate truck movement by widening the interstate highways in the metropolitan area to six main travel lanes and providing driver information on urban congestion to allow truckers to take alternative routes.

1.1.5. Railroads

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.

1.2. Quality of Life

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.

Note: A high quality of life is important to attract individuals and companies to the region and will contribute positively to the area's economic growth.

1.3. System Efficiency

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 the overall system performance by utilizing public transit and informing the public of their transportation choices.

1.4. System Preservation

Preserve the public's capital assets by adequately maintaining the transportation system.

1.5. System Safety and Accident Reduction

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

Goal 2. Equality of Access and Transportation Choice

Provide a metropolitan transportation 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.

Persons with Disabilities

According to the US Census Bureau, in 2000 over 115,000 people who use wheelchairs or have some other mobility limitation lived and worked in central Arkansas.

Confronting transportation or mobility obstacles for people with disabilities often begins in their own front yards and in the parking lot. Sensitive roadway design should include well-maintained sidewalks and accessible parking lots with appropriate ramps and curb cuts. Designing for people with mobility limitations is really not such a big leap from designing quality, pedestrian-friendly environments for everybody. For example, intersections should routinely include signal timing with features such as voice activation to permit safe crossing for everyone. Pedestrian refuges should also be provided in high-traffic areas. When designing for people with disabilities, the entire trip should be taken into account and include consideration for accessibility at all points of travel.

Title III of the Americans with Disabilities Act, Public Accommodations, provides a minimum standard of design. Compliance with those standards foster ease of movement for people with mobility problems. However, METRO 2030 goes beyond ADA "minimums" and urges an aggressive pursuit of design that also expresses the highest and best aspirations of central Arkansas citizens.

As the region continues to grow, issues of population, aging, health, and infrastructure must be aggressively confronted and addressed. Sixty percent of the population growth between 2005 and 2030 will occur in population groups over 55, that fact alone will dictate a change in travel behavior. Providing for the mobility of people can positively affect the region's health, economy and vibrancy and is but one of the ways that the fabric of society is maintained. Consistency and quality of design throughout the metro area will ensure access and inspire confidence in people regardless of age, gender or ability.

Objectives

2.1. Public Transit System

Provide adequate and stable funding to operate existing public transit systems in the near term. In the longer term, develop a more robust public transit system that can serve as a primary transportation mode for the general public.

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

2.2. Pedestrian Facilities

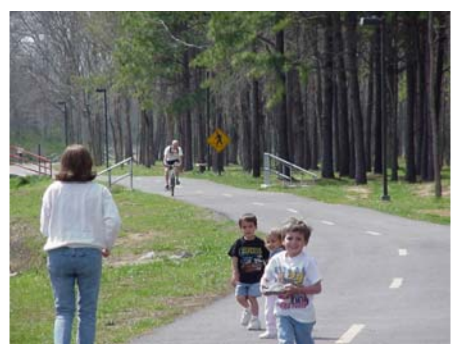
Provide sidewalks to every development that provides goods, services, or jobs and provide safe pedestrian crossings of busy roadways at appropriate locations.

Note: This objective should be reflected in local master street plans, adopted regional roadway cross-sections and AHTD design manuals.

2.3. Bikeways

Develop a regional bikeway system that will provide safe routes of travel between home, work and services as an alternative means of transportation.

Note: This objective should be reflected in local master street plans, adopted regional roadway cross-sections and AHTD design manuals.



Tucker Creek Trail, Conway

2.4. Mixed Use/High Density Clusters

Encourage local governments to provide for clusters of mixed use (jobs, services, and residences in close proximity) and high-density development along major transportation arteries in their land use and zoning plans.

Note: Higher density residential developments should provide a mixture of housing prices accessible to a wide range of incomes. Mixed use reduces the need for private autos and facilitates walking and bicycling; higher densities are supportive of public transit use.

Goal 3. Environmental Quality

Protect and enhance the environmental quality of the central Arkansas region.

Objectives

3.1. Air Quality

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

Ozone Action Day Program

Note: The transportation sector can minimize air pollution by reducing roadway congestion 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 increasing the overall vehicle fleet fuel efficiency and converting large public and private fleets to alternative fuels.

3.2. Water Quality

Reduce the growth in non-point source urban runoff by minimizing the amount of paved surfaces (i.e., roads and surface parking lots).

Note: Local governments should be encouraged to adopt land development regulations that reduce pavement requirements, encourage more structured parking, and provide natural areas to filter paved surface run-off.

3.3. Sensitive Lands

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

Note: Local governments should be encouraged to adopt land use regulations that are responsive to this issue.

3.4. Reduce Fossil Fuel Consumption

Reduce fossil fuel use in the transportation sector.

3.4.1. High Density/Mixed Use Land Development

Encourage local governments to adopt policies that allow mixed use/higher density clusters to meet a portion of housing demand.

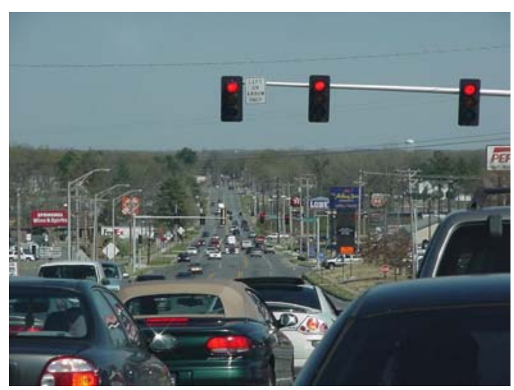
Note: Such development patterns encourage walking and bicycling.

3.4.2. Substitute Technology for Transportation

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

3.4.3. Fleet Fuel Efficiency

Encourage the federal government and automakers to increase fleet fuel efficiency through adoption of higher Corporate Average Fuel Economy (C.A.F.E.) standards and improved combustion and/or alternate fuel technologies.



McCain Blvd at Hwy. 67/167, NLR

3.4.4. Modal Options

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

Goal 4. Land Use

Protect and enhance the efficiency of the metropolitan transportation system by linking land development and the provision of transportation facilities.

Objectives

4.1. Land Use Plans, Master Street Plans, and Capital Improvement Plans

Encourage 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.

4.2. 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: 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.

4.3. Design for All Modes

Encourage local governments and private developers to consider all modes of access (pedestrian, transit and bicycle) in the development process.

Financial Ctr. Pkwy. at Autumn, LR

4.3.1. Incorporate Pedestrian Facilities into All Urban Roadway Designs, Except Freeways

Note: The design of pedestrian facilities and property development together should make walking safe and inviting. Planners and developers should consider such things 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.

4.4. Regional Development Pattern

Encourage the local governments in the metropolitan area to jointly develop a framework for regional growth that minimizes its negative aspects.

Note: Low density sprawl increases the cost of providing needed public infrastructure (including transportation systems), reduces open space, generates congestion, threatens ecologically sensitive areas, intrudes on rural and small town communities and, over time, lowers the region's quality of life.

Goal 5. Quality Transportation Corridors

Develop and/or 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.

Objectives

5.1. High Design Standards

Encourage 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.

5.1.1. Land Development Standards

Encourage local governments to require high design standards for land development on these routes.

5.2. Urban Character/Rural Character

Design the transportation facilities to reflect and reinforce the character of the areas through which it passes. In urban areas, encourage local governments to plan for high density, 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.

Little Rock Neighborhood

5.3. Access Management on Key Corridors

Manage access to and from adjacent property on key corridors in order to (1) improve vehicular and pedestrian safety, and (2) safeguard the investment in those facilities by protecting traffic capacity.

Goal 6. Funding Adequacy

Identify and develop funding sources adequate to build and operate the metropolitan transportation system.

Objectives

6.1. System Preservation

Maintain and preserve the existing capital assets of the transportation system as a high priority for funding.

6.2. New Funding

Identify sources of new funding that can be used to complete the metropolitan transportation system as needed to support economic growth.

6.2.1. Innovative Financing

Identify projects where it is appropriate to use the innovative financing methods provided for federal funds on the federal-aid roadway system.

Little Rock Skyline, Chester at I-630

6.2.2. State Urban Arterial Program

Develop a new partnership with the Arkansas Highway Commission to propose a statewide urban arterial program.

6.2.3. New Sources for Local Revenue

Identify new sources of local revenue for transportation systems, such as a local option fuel tax, and seek authority for them from the General Assembly.

6.2.4. Existing Local Revenue

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

5. Metropolitan Transportation Plan Strategies

The *METRO 2030* Long-Range Transportation Plan is an update that evolved from previous metropolitan transportation plans. This plan both retains past policies and plan actions adopted in the previous plans and sets forth new direction and policies that have evolved through planning efforts undertaken since 2000. These new policies can best be described as a series of strategies that frame the region's planning and transportation direction, not just for the plan horizon of 2030, but beyond.

The transportation system's goal is to support the economic development of the central Arkansas region, and to do so in a way that meets the broad societal goals of high environmental standards, equality of access and transportation choice.

This Plan contains two parts: the first, a Financially Constrained Plan based on what we can afford with our currently known revenue through the year 2030; and the second, a broad vision plan of our transportation system in 2050 when the metropolitan area is expected to reach 1 million people. This Plan is goal driven and is consistent with the transportation plan vision - a balanced transportation system that supports our economy and the way we use our urban land.

STRATEGIES

- Build the freeway system to six through lanes region-wide and meet demand above that with a robust regional arterial network and with public transit.

- Double the size and service of the bus transit system in the short-term and add fixed guideway service (commuter rail, light rail, and/or bus rapid transit) in the long-term.

- Squeeze as much capacity out of the existing Regional Arterial Network (RAN) as possible through intersection improvements, signal coordination, and access management; then invest in substantial capacity improvements in the longer term.

- Improve freight movement with intermodal connections, freeway widenings, rail-grade separations, and by providing a non-freeway alternative to local traffic with the Regional Arterial Network. A special focus will be to ensure access to identified super project sites in the region.

- Integrate pedestrian and bicycle facilities into new roads and roadway improvements.

Building this transportation system for our future will take a significant investment. The ability of our citizens to continue to enjoy freedom of movement and of our economy to grow will depend on our willingness to invest in our future.

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6. Public Involvement

Public input has played a significant role in the development of the *Metro 2030 Long Range Transportation Plan*. A significant effort was made to involve residents from all parts of Central Arkansas and to provide as many opportunities for input as possible. After all, the transportation system identified in the *Metro 2030 Long Range Transportation Plan* will be implemented primarily with public funds. Since transportation is a formative system that affects our surroundings, travel, economy, and quality of life, it is vitally important to have a Plan that represents the desires of the community.

Public participation in the transportation planning process involves two basic elements: (1) ensuring that groups with interest in development of the transportation plan have a reasonable opportunity to sit at the table and have their interests represented, and, (2) keeping the general public informed of the planning efforts in a timely and readily understood manner.

The Transportation Advisory Council (TAC) and Technical Coordinating Committee (TCC) are the primary means by which Metroplan meets these objectives.

The TAC is a body limited to a total of 45 persons confirmed and appointed by the Metroplan Board. Twenty-eight (28) positions are nominated individually by member jurisdictions based on a proportional population formula, plus nominees from AHTD, CATA and the Technical Coordinating Committee, with the remaining positions filled by nominations of the Metroplan Board to ensure a broad range of interest groups.

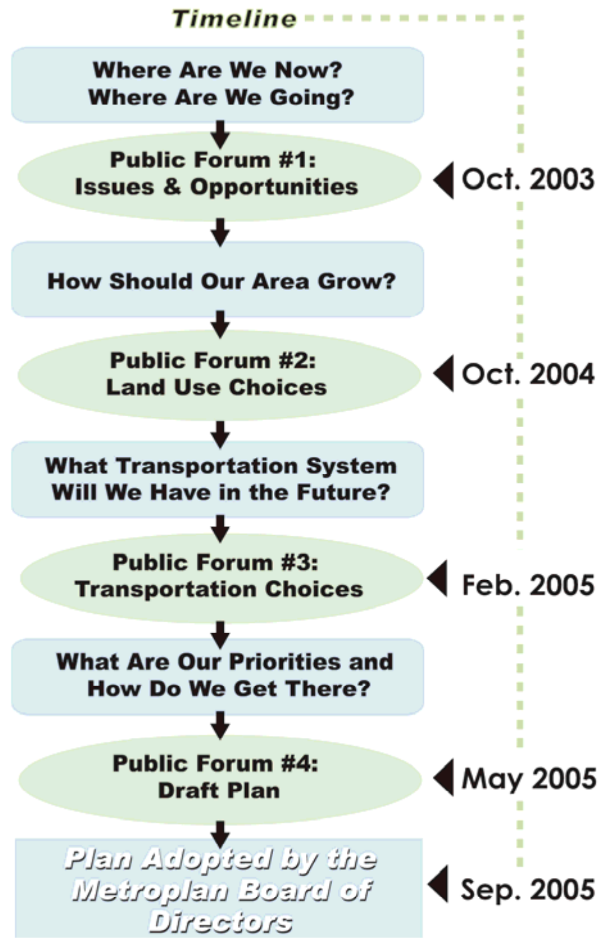
Neighborhood organizations; environmental, business, bikeway and pedestrian advocates, health-related professionals; people with disabilities, and/or freight and trucking communities are represented at this regional forum.

During development of METRO 2030, the TAC met a total of 28 times. In terms of man hours, those meetings alone represent over 2100 hours—and this figure does not include the numerous subcommittee meetings, evening and all-day Saturday public workshops in which many of the members participated—of volunteer time devoted to the creation of a long-range transportation plan for central Arkansas. The TAC was instrumental in developing criteria for the consultant services request-for-proposal and ultimate selection of the winning consultant team. Additionally, TAC members put in untold hours reading through reams of data and technical documents; editing, debating and considering any number of planning permutations before recommendation of the draft METRO 2030 Plan for central Arkansas to the MPO Board for consideration and adoption.

HOW DID THE PUBLIC INFLUENCE THE PLAN'S DEVELOPMENT?

The first step in developing the Citizen Participation Program was to ask the Transportation Advisory Council their thoughts about the characteristics of successful public involvement. The Citizen Participation Program was designed based on several goals that define a credible and effective process for updating the plan:

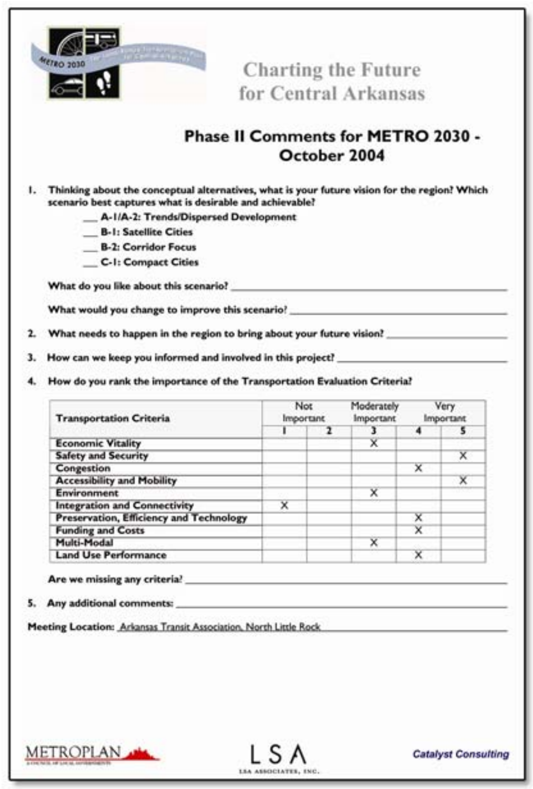
- Be fair to all perspectives.
- Produce effective education materials.
- Provide for early public involvement.
- Provide multiple avenues for information dissemination, involving the public, and receiving input beyond the traditional public meeting.
- Engage the general public, not just organized interest groups.
- Reach out to different groups throughout the region.
- Document public comments and track their influence on the planning process.
- Coordinate with related planning efforts so that METRO 2030 is consistent with other plans in the region.
- Provide for follow-through in implementation.



In accordance with these goals, the Citizen Participation Program provided multiple ways to access information on the Plan, different types of public forums at various locations within the region, and ways to reach new voices from the community. At each step in the process, relevant information was presented in newsletters, information packets, presentations, displays and on the website.

Citizen Participation Activities Included:

- Several public forums at each Decision Point throughout the region.
- Presentations and discussions with different organizations.
- Displays at public gathering places, special events, and employment centers.



Charting the Future
for Central Arkansas

Phase II Comments for METRO 2030 - October 2004

1. Thinking about the conceptual alternatives, what is your future vision for the region? Which scenario best captures what is desirable and achievable?
   - ___ A-1/A-2: Trends/Dispersed Development
   - ___ B-1: Satellite Cities
   - ___ B-2: Corridor Focus
   - ___ C-1: Compact Cities

   What do you like about this scenario? ___

   What would you change to improve this scenario? ___
2. What needs to happen in the region to bring about your future vision? ___
3. How can we keep you informed and involved in this project? ___
4. How do you rank the importance of the Transportation Evaluation Criteria?

Transportation Criteria	Not Important		Moderately Important	Very Important	
	1	2	3	4	5
Economic Vitality			X		
Safety and Security					X
Congestion				X	
Accessibility and Mobility					X
Environment			X		
Integration and Connectivity	X				
Preservation, Efficiency and Technology				X	
Funding and Costs				X	
Multi-Modal			X		
Land Use Performance				X	

Are we missing any criteria? ___

5. Any additional comments: ___

Meeting Location: Arkansas Transit Association, North Little Rock

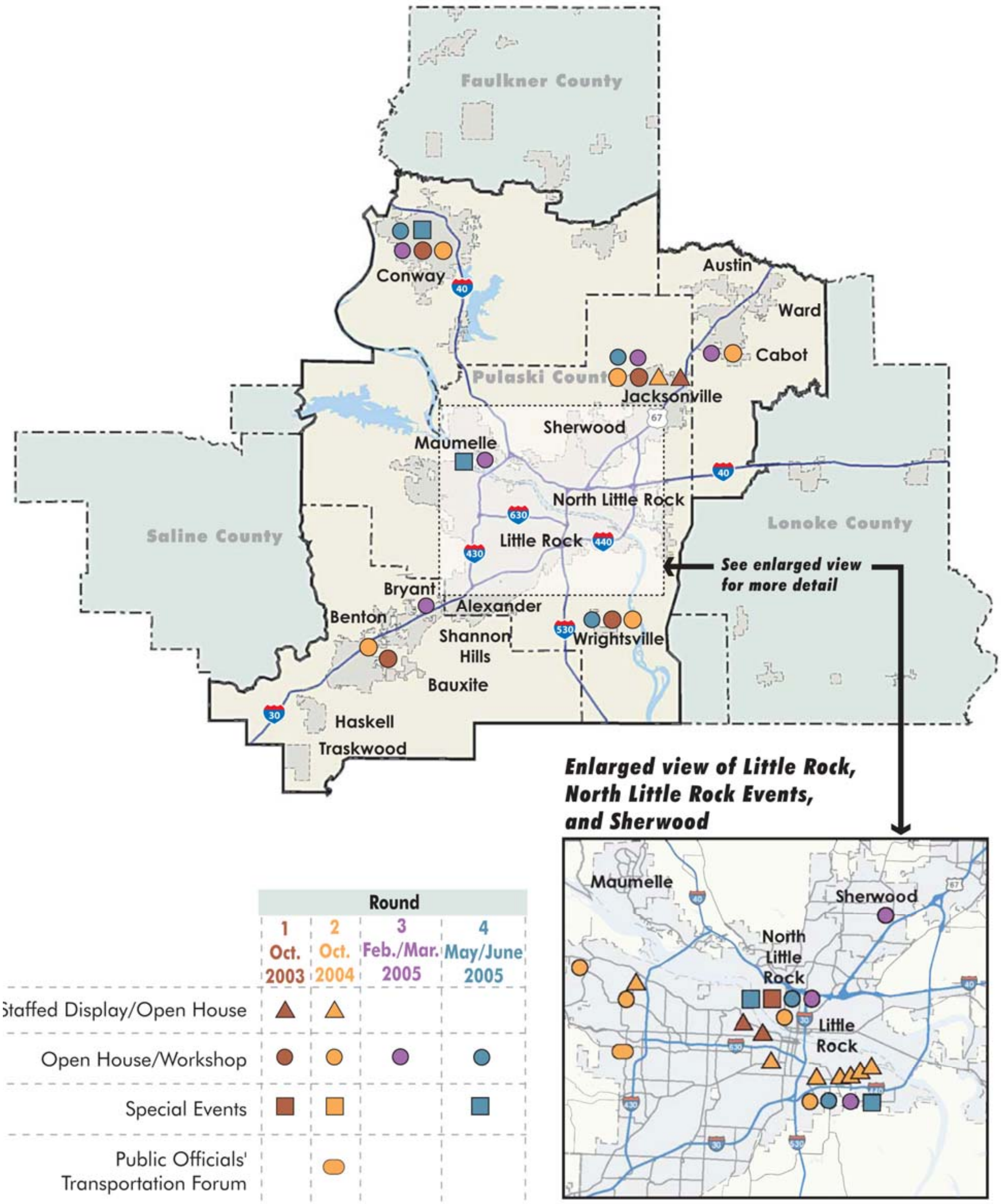
METROPLAN LSA Catalyst Consulting

- Transit Design Charrette and Transit User Workshop
- Public Officials Transportation Forum
- Bicycle and Pedestrian Workshops
- Website updates

Typical Workshop

To facilitate region-wide participation, events were helped at various times in various locations. The following map charts the many locations for the various public forums and special events.

Map 6-1
Citizen Participation Program – Public Event Locations



PUBLIC FORUMS

Citizen participation focused on four major decision points in the Plan's development – 1) Issues and Opportunities, 2) Land Use Choices, 3) Transportation Choices, and 4) the Draft Plan. At each decision point, different events were held at multiple locations in Central Arkansas. The following lists the purpose of the public outreach, what people were asked to comment on, and what events were held at each decision point.

DECISION POINT 1 - *ISSUES AND CONCERNS*, October 2003

Purpose

To understand the range of public issues and concerns and confirm the Plan goals and objectives.

Key Citizen Participation Questions

- What do you like and dislike about traveling in the central Arkansas region today?
- What are your favorite streets and places to walk or bike and why?
- What changes would you like to see? What changes would you not like to see?
- What are your visual preferences for urban, suburban and rural areas?

<table>
<tr><th>DECISION POINT 1 | SCHEDULE OF EVENTS</th></tr>
<tr><td>MCCAIN MALL – STAFFED DISPLAY SUNDAY OCTOBER 26, 2003</td></tr>
<tr><td>CATA RIVER CITIES TRAVEL CENTER – STAFFED DISPLAY OCTOBER 27, 2003</td></tr>
<tr><td>PULASKI COUNTY TECHNICAL COLLEGE – CLASSROOM EXERCISE OCTOBER 27, 2003</td></tr>
<tr><td>HISTORIC ARKANSAS MUSEUM – OPEN HOUSE FORUM OCTOBER 27, 2003</td></tr>
<tr><td>CONWAY CHAMBER OF COMMERCE – OPEN HOUSE AND WORKSHOP OCTOBER 27, 2003</td></tr>
<tr><td>JACKSONVILLE COMMUNITY CENTER – OPEN HOUSE AND WORKSHOP OCTOBER 27, 2003</td></tr>
<tr><td>BREAKFAST MEETING WITH LATINO NEWSPAPERS – OCTOBER 28, 2004</td></tr>
<tr><td>BENTON MUNICIPAL COMPLEX – OPEN HOUSE AND WORKSHOP OCTOBER 28, 2003</td></tr>
<tr><td>WRIGHTSVILLE COMMUNITY CENTER – OPEN HOUSE AND WORKSHOP – OCTOBER 29, 2003</td></tr>
</table>

WHAT DID THE PUBLIC SAY?

DECISION POINT 1: *ISSUES AND CONCERNS*

Participants commented on what they liked and disliked about transportation in the region and on changes they would like to see. When asked about favorite streets and places to walk or bicycle, people from different parts of the region had positive thoughts about transportation facilities in their local areas and could easily provide examples of quality areas and transportation facilities. Some highlights for issues and concerns raised include:

Roadways

Participants expressed a general sense of satisfaction with the relatively low congestion levels, quality roadways and good signage coupled with concerns that congestion is increasing and construction causes significant delays especially during rush hours. Concerns with safety, road rage, law enforcement, trucks, lighting and signalization were likewise voiced. Suggested improvements included interchanges, frontage roads, design standards, maintenance, high occupancy vehicle lanes, toll lanes, designated truck lanes and ramp metering.

Transit

Transit riders expressed concerns about bus schedules and routes, noting that transit service equals employment opportunity for many people. Specific suggestions for improvement addressed the need for more park n' ride lots, regional bus route coverage, local bus service, and types of transit. Suggestions included rail to Conway, Jacksonville and Benton. Positive comments on the transit system today related to general cleanliness of facilities and friendly drivers.

Non-Motorized Transportation Modes

The need for more progress in developing bicycle and pedestrian facilities was a central theme. People desire a system of completed trails, on-street bike lanes, connections, grade separations, and loops so that barriers to bicycle use are removed. The Millenium Trail/River Trail System is viewed as critical to the establishment of a regional bicycle network. The public is also interested in pedestrian access to schools, churches, and other activity areas, as well as walkable neighborhoods.

How did public comments influence the planning process? The public's issues, concerns, and comments on citizen participation helped the TAC refine the scope for the plan update and develop the range of future land use scenarios to be taken forward to the public.

DECISION POINT 2 - *LAND USE CHOICES*, October 2004

Purpose

To review future scenarios that address both how the region might grow and what transportation system would support that growth.

Key Citizen Participation Questions

- Which future land use/transportation scenario do you prefer and why? What would you change to improve this scenario?
- What needs to happen in the region to bring about your future vision?
- How would you rank the criteria that will be used to evaluate transportation solutions?
- How can we keep you informed and involved in *Metro 2030*?

DECISION POINT 2 | SCHEDULE OF EVENTS
JACKSONVILLE WING DING FESTIVAL AT DUPREE PARK – STAFFED DISPLAY OCTOBER 2, 2004
LITTLE ROCK NATIONAL AIRPORT – STAFFED DISPLAY OCTOBER 3 AND 4, 2004
PUBLIC OFFICIALS TRANSPORTATION FORUM – LITTLE ROCK EMBASSY SUITES OCTOBER 5, 2004
BENTON TYNDALL PARK – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 5, 2004
PHILANDER SMITH COLLEGE – OPEN HOUSE AND CLASSROOM ACTIVITY OCTOBER 6, 2004
WILD OATS, THE VILLAGE SHOPPING CENTER – STAFFED DISPLAY OCTOBER 6, 2004
CABOT JUNIOR HIGH NORTH – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 7, 2004
RAYTHEON – STAFFED DISPLAY OCTOBER 8, 2004
FALCON JET – STAFFED DISPLAY OCTOBER 8, 2004
ARKANSAS TRANSIT ASSOCIATION – OPEN HOUSE AND PUBLIC WORKSHOPS OCTOBER 8, 2004
WRIGHTSVILLE CITY HALL – PUBLIC WORKSHOP OCTOBER 11, 2004
FIRST BAPTIST CHURCH IN LITTLE ROCK – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 12, 2004
CONWAY CHAMBER OF COMMERCE – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 14, 2004
ST. MARGARET'S EPISCOPAL CHURCH – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 19, 2004
JACKSONVILLE COMMUNITY CENTER – OPEN HOUSE AND PUBLIC WORKSHOP OCTOBER 27, 2004
WRIGHTSVILLE COMMUNITY CENTER – OPEN HOUSE AND WORKSHOP – OCTOBER 29, 2003

WHAT DID THE PUBLIC SAY?

DECISION POINT 2: *LAND USE CHOICES*

The basic question in the second Decision Point of citizen participation was - which future land use scenario do you think is best for the region and why? The range of options included an expansion/sprawl alternative on the one end, a concentrated Compact Cities scenario on the other end, and two scenarios with moderate expansion, Satellite Cities and Corridor Focus. As shown in the chart below, the future scenario that received the most support was B-2: Corridor Focus.

What were some of the reasons people supported this scenario?

- Can still maintain city identity, but cities can benefit from overall development.
- Can support a regional approach by allowing regional cooperation with local control.
- Efficient use of land; focuses on infill development but permits options.
- Allows for mass transit using existing and improved infrastructure and multiple transportation options.
- Supports local communities and community-focused development.
- Most realistic compromise.
- Ties all areas, not just major cities.
- Encourages economic vitality.
- Allows for land preservation.
- Potential for transit to benefit young professionals, older people, and students.
- Connects labor force to employment; caters to workforce.
- Allows for efficient placement of utilities and transportation.
- Gives people choices of urban or rural location.
- Easier to serve with rail transit such as light rail and commuter rail.
- Growth in corridors can lead to compact cities growth, which is viewed as a positive.
- Employment growth along corridors supports transit.

Public officials from throughout the region were also asked which future land use scenario they supported. As shown below, most local officials supported B-1: Satellite Cities.

What were some of the reasons for supporting this scenario?

Many of the reasons are the same as those listed for Corridor Focus – connectivity, local control, integrated approach, regional cooperation, etc. In addition, some additional benefits noted include:

- More pedestrian friendly;
- Promotes sense of community;
- Green space between cities; open land stays open; and
- Reflects the "type of community" people want to live in.

How did public comments influence the planning process?

Based on public comments and technical analysis, the TAC selected a combined B-1/B-2 scenario. These scenarios are similar since the satellite cities are mostly located along major transportation corridors. They also both represent a reasonable compromise between uncontrolled sprawl and full growth management.

DECISION POINT 3 - *TRANSPORTATION CHOICES*, February - March 2005

Purpose

To present the preferred land use scenario and learn which transportation projects are consistent with this scenario. To understand priorities for transportation projects to assist in developing a refined, financially-constrained plan.

Key Citizen Participation Questions

- Are there any critical projects missing from the map for your area? Why?
- Are there any projects shown that you would like to see dropped from further consideration? Why?
- In order of preference, what are the top 3 projects in your area? Why?
- What do you see as the most important steps both locally and regionally to make this plan a reality? What might prevent the plan from being implemented?

DECISION POINT 3 | SCHEDULE OF EVENTS
CONWAY CHAMBER OF COMMERCE – PUBLIC WORKSHOP FEBRUARY 29, 2005
BRYANT FAMILY CHURCH – PUBLIC WORKSHOP MARCH 1, 2005
SHERWOOD BILL HARMON RECREATIONAL CENTER – PUBLIC WORKSHOP MARCH 1, 2005
JACKSONVILLE COMMUNITY CENTER – PUBLIC WORKSHOP MARCH 2, 2005
PULASKI TECHNICAL COLLEGE – PUBLIC WORKSHOP MARCH 2, 2005
CABOT JR. HIGH SCHOOL – PUBLIC WORKSHOP MARCH 3, 2005
SOUTHWEST LITTLE ROCK NEIGHBORHOOD ASSOCIATION – PRESENTATION MARCH 7, 2005
MAUMELLE JESS ODOM COMMUNITY CENTER – PUBLIC WORKSHOP MARCH 8, 2005
LITTLE ROCK FAITH LUTHERAN CHURCH – PUBLIC WORKSHOP MARCH 10, 2005

WHAT DID THE PUBLIC SAY?

DECISION POINT 3: *TRANSPORTATION CHOICES*

In this round of citizen participation, the public studied maps of roadway and transit projects that would support the recommended regional land use scenario. Comments focused on what projects are missing, what projects don't belong on the map, and what is most important. As a result of forums held throughout the region, 32 new roadway projects were identified and 15 new transit concepts were explored.

How did public comments influence the planning process?

Suggestions from the public were evaluated based on forecasted traffic volumes and the transportation project evaluation criteria. As a result, the TAC added 13 of the 32 projects to the Roadway Vision Plan. The majority of projects that were not added did not have forecast volumes to justify inclusion. Of the 15 new transit improvements, 10 were added to the Transit Vision Plan. Five of the suggested projects were screened from further consideration due to physical constraints and weak ridership projections.

DECISION POINT 4 - *DRAFT PLAN*, Summer 2005

Purpose

To present the draft Vision Plan and proposed financially Constrained Plan and solicit public input on whether the selected improvements provided the best solutions to address the region's long term transportation needs.
.

Key Citizen Participation Questions

- To what degree do you support the plan's key strategies?
    1. Build freeway system to 6 lanes supported by robust arterial system.
    2. Double bus transit system in short term (Constrained Plan); add fixed guideway in long term (Vision Plan).
    3. Optimize the efficiency of the existing Regional Arterial Network before investing in substantial capacity improvements.
    4. Improve freight movement through intermodal connections, freeway widenings, rail grade separations and local traffic alternatives.
    5. Incorporate pedestrian and bicycle facilities in new roadways.
    6. Implement access management standards.
- What are the key strengths of the Vision Plan?
- What are the key strengths of the financially Constrained Plan?
- What would you like to see changed?
- What are your suggestions for sources of additional funding?
- What will be most important to ensure that the plan is effectively implemented throughout the region?

Decision Point 4 | Schedule of Events

Cabot City Hall Annex – Public Meeting – May 31, 2005

Conway Chamber of Commerce – Public Meeting – May 31, 2005

Jacksonville Community Center – Public Meeting – June 1, 2005

Benton Municipal Building – Public Meeting – June 2, 2005

Little Rock Darragh Center, Main Library – Public Meeting – June 2, 2005

Sherwood, Bill Harmon Recreation Center – Public Meeting – June 7, 2005

North Little Rock, Laman Library – Public Meeting – June 9, 2005

Little Rock, Willie Hinton Neighborhood Resource Center – Public Meeting – July 16, 2005

WHAT DID THE PUBLIC SAY?

DECISION POINT 4: *RECOMMENDED METRO 2030 PLAN*

In this round of citizen participation the level of support for the recommended plan, implementing strategies and the willingness to pay for proposed transportation improvements was sought. Consensus among respondents was generally supportive of the five strategies, including the transit recommendation. There was also a general willingness to pay for the proposed improvements via a number of different funding mechanisms, albeit with a pronounced resistance to toll roads.

How did public comments influence the planning process?

- The growth concept map depicting the preferred land use alternative (Satellite Cities/Corridor Development) was retouched.

- In response to FHWA concerns regarding financial constraint for the transit element, the strategy of doubling bus service in the short-term via a proposed sales tax increase was removed from the recommended constrained plan and placed, instead, as an element in the Vision Plan.

- Design standards were excised from the METRO 2030 plan; to be published at a later date as a stand-alone Metroplan Board policy; And language added to clarify the Board's position in regards to limiting the areawide freeway system to six-through travel lanes at build out.

SUPPLEMENTAL PUBLIC OUTREACH EFFORTS

METRO 2030 WEBSITE (WWW.METROPLAN-METRO2030.ORG)

A special website was prepared specifically for the *Metro 2030 Long Range Transportation Plan's* development. It was regularly updated and provided project updates, technical information, citizen participation opportunities, public comments, and general information related to the Plan's development. Numerous public comments were received via the website's contact page.

METRO 2030 SPEAKERS BUREAU

The study team responsible for conducting the activities that led to the Plan's development provided several tailored presentations to various groups throughout the region to provide yet another means to reach out into the community for input.

CABOT CHAMBER OF COMMERCE – SPECIAL PRESENTATION – MAY 19, 2005

SALINE COUNTY ROTARY – SPECIAL PRESENTATION – JUNE 7, 2005

KABF (ACORN) - RADIO INTERVIEW – JUNE 20, 2005

LITTLE ROCK PLANNING COMMISSION – SPECIAL PRESENTATION – JUNE 23, 2005

MAUMELLE PLANNING COMMISSION – SPECIAL PRESENTATION – JUNE 23, 2005

LITTLE ROCK REGIONAL CHAMBER OF COMMERCE – SPECIAL PRESENTATION – JUNE 29, 2005

METRO ALLIANCE – SPECIAL PRESENTATION – JULY 1, 2005

LITTLE ROCK REGIONAL CHAMBER OF COMMERCE – SPECIAL PRESENTATION – JULY 8, 2005

JACKSONVILLE PLANNING COMMISSION – SPECIAL PRESENTATION – JULY 11, 2005

LITTLE ROCK ROTARY – SPECIAL PRESENTATION – JULY 12, 2005

NORTH LITTLE ROCK ROTARY – SPECIAL PRESENTATION – JULY 14, 2005

LITTLE ROCK BOARD OF DIRECTORS – SPECIAL PRESENTATION – JULY 26, 2005

TRANSIT USER WORKSHOP

On January 8, 2004, a Transit User Workshop was hosted by Metroplan, the Central Arkansas Transit Authority (CATA), and LSA Associates, Inc. as part of the development of the *Metro 2030* transportation plan. The workshop was part of a focused effort to develop a long-range transit vision for the region. The workshop was supported by a focus group of participants who were recruited due to their use of the bus system and their familiarity with the transportation needs of those who rely on public transportation for their personal mobility.

River Cities Travel Center, Downtown LR

Transit Charrette at Pulaski Tech, NLR

TRANSIT DESIGN CHARRETTE

On January 10, 2004, almost 80 individuals from across Central Arkansas participated in a Transit Design Charrette to develop a Regional Transit Vision that was used to assist with the *Metro 2030 Plan's* development (see Map 16-6 and Appendix A, Regional Transit Vision Plan for Central Arkansas). The Vision is a long-range conceptual plan that identifies a network of rail and bus corridors that together form the backbone of a region-wide mass transit system. In developing the Vision, participants discussed the markets that transit should serve, where it should go, what technology is appropriate, and the overall role of transit Central Arkansas' future. From this outreach and planning effort came the basis for discussions on future Land Use and Transportation Choices.

PUBLIC OFFICIALS TRANSPORTATION FORUM

Throughout the Plan's development, a significant effort was made to involve residents from all parts of the region. Equally important was the need to coordinate the Plan's development with the region's decision makers, including mayors, city council members, county judges, quorum court members, and others. On Tuesday, October 5, 2004 a focused effort to educate the elected officials and gain the benefit of their insight into how the region should grow in the future, what transportation system is desired, and how to achieve that vision was held.

BIKEWAY ON-SITE SURVEYS

Metroplan staff took the participation process directly to the people in May 2005, when they set up shop along popular shared paths in Faulkner and Pulaski counties. Weekend cyclists, walkers, runners and skaters were offered Gatorade, ice water and trail mix in return for taking a few moments to fill out a survey. Trail patrons enthusiastically shared their vision and concerns for future growth in central Arkansas. (See Pedestrian and Bicycle chapter for summary of survey results)

Millennium River Trail, NLR

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7. Land Use Vision Plan

One of the major issues addressed in METRO 2030 was the relationship between growth and transportation. With the regional population projected to increase from 625,000 in 2005 to 834,000 in 2030, how and where the growth occurs will have a significant impact on how the region's transportation system is planned to accommodate that growth. Conversely, investments in the transportation system will affect the direction and magnitude of growth.

Therefore, the Metro 2030 planning effort analyzed various growth and land use alternatives for the Metroplan region to determine a vision of how the land use patterns might affect transportation needs as well as how various transportation improvements might influence how development occurs. The selection of a land use vision was a major decision point in the plan process, as this land use vision was used to test various transportation alternatives from which the Transportation Vision and Financially Constrained Plan were selected.

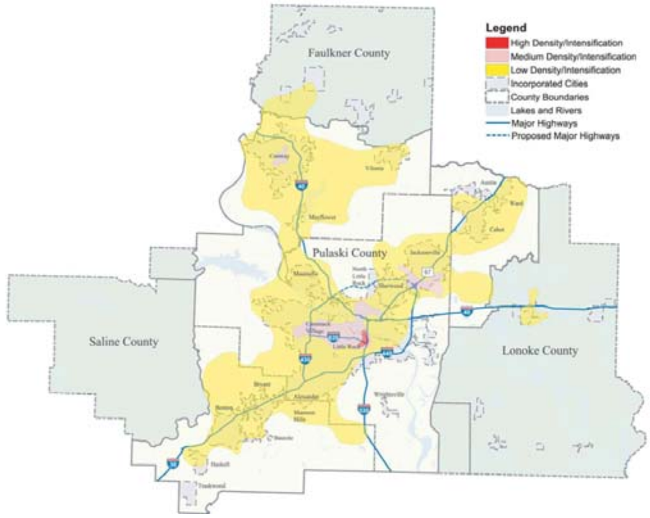
The land use alternatives analysis started with a long list of land use and growth alternatives. Through input from the TAC and public the list was reduced to four (4) primary alternatives; A-1: Trends, B-1: Satellite Cities, B-2: Corridors, and C-1: Compact Cities. These alternatives are presented conceptually in Figure 7-1.

Figure 7-2, Land Use Alternatives Characteristics presents the relationship between these land use alternatives and potential land use policy, land consumption, the residential density anticipated, how and where development would occur, and the transportation focus.

Phase II Conceptual Land Use Alternative Public Involvement Process

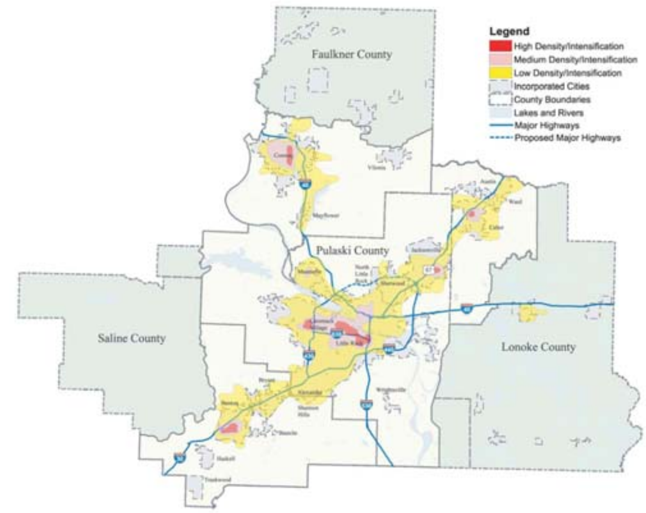
In October 2004, Metroplan conducted a round of 18 different public events to solicit public comments on future scenarios that address both how the region might grow and what kind of transportation system would support that growth. The public involvement was designed to respond to the TAC's directives for how to provide open access to the planning process throughout the region. Public involvement activities and ideas that were not incorporated in this round were considered in the design of the third and fourth rounds of public involvement for METRO 2030. Public comments from Round 2 were used to refine the comparison of the conceptual scenarios, select a preferred scenario, and help identify transportation improvements associated with the preferred scenario.

Figure 7-1
Conceptual Land Use Alternatives



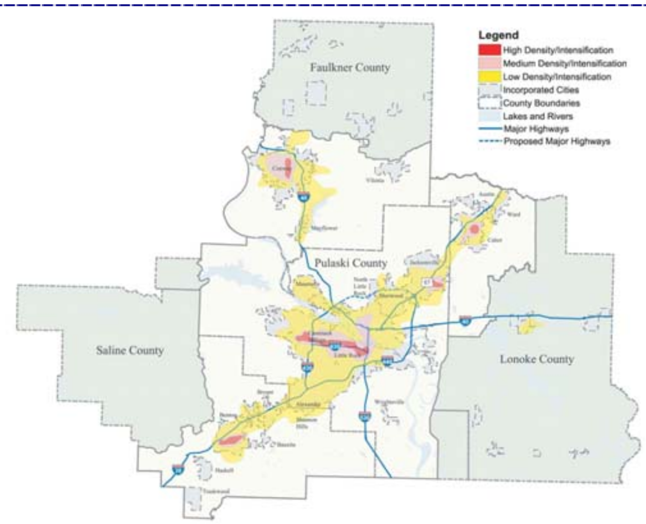
Concept A-1/A-2: Trends/Dispersed Development

A developer-driven approach with limited regional policy influence in which past land development practices continue in the future. This alternative would result in lower residential densities, some intensifications of downtown, growth of the fringe into rural or agricultural lands and a focus on highway system development.



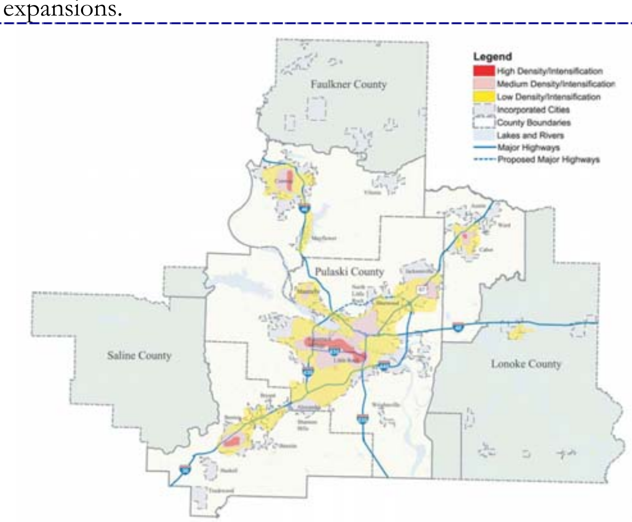
Concept B-1: Satellite Cities

Focuses development in and around established urban and suburban cities. Communities are separated by open space and natural areas. This concept represents more compact development but still allows some lower density development in the urban fringe. Development is oriented to the suburbs and the urban core. The transportation system is a mixture of basic regional transit system along with some freeway expansions.



Concept B-2: Corridor Focused

Growth corridors along existing freeways will receive the most growth. This concept represents more compact development but still allows some lower density development in the urban fringe. Primary development is oriented to the urban centers and along transit corridors.



Concept C-1: Compact Cities

Growth is directed to the center cities with less growth in suburban areas. This concept represents the highest degree of redevelopment and intensification. Very little land is consumed beyond the area already considered developed today. The transportation system has a distinct rail bias with strategic freeway expansion possible.

Figure 7-2
Land Use Alternatives Characteristics

	A-1: Trends/ Dispersed Development (6-Lane Freeways) A-2: Trends/ Dispersed Development (8-Lane Freeways)	B-1: Satellite Cities B-2: Corridor Focused	C-1: Compact Cities
Land Use Policy	Limited regional/ local control (developer-driven)	Regional policy/ local control (flexible)	Regional policy/ local control (rigid)
Land Consumption	No limit	Efficient	Minimal
New Residential Density	Low-Medium (3 - 7 units per acre)	Medium-High (7 - 20 units per acre)	High (20+ units per acre)
Intensification	Developer-driven	Priority development areas	Focused infill and redevelopment in urban services area
Transportation Focus	Highway	Mixed	Transit
Regional Rail Transit	No	Possible/Yes	Yes

PUBLIC OFFICIALS WORKSHOP - TUESDAY, OCTOBER 5, 2004

More than 80 public officials from throughout the region participated in a two-hour workshop at which they answered specific questions about preferences for the future. The workshop included a series of presentations and questions for discussion on:

- Community Perspectives of the Region;
- The METRO 2030 Plan Vision, Goals, and Conceptual Alternatives; and
- Transportation System Analysis.

PUBLIC WORKSHOPS

Approximately 200 people attended nine (9) workshops held during a three-week period. The schedule for the workshops was as follows:

- Tuesday, October 5th 6:30 p.m. – Benton Tyndall Park
- Wednesday, October 6th – Philander Smith College
- Thursday, October 7th – Cabot Jr. High North
- Friday, October 8th – Arkansas Transit Association, North Little Rock
- Monday, October 11th – Wrightsville City Hall
- Tuesday, October 12th – First Baptist Church, Little Rock
- Thursday, October 14th – Conway Chamber of Commerce
- Tuesday, October 19th – St. Margaret's Episcopal Church, Little Rock
- Wednesday, October 27th – Jacksonville Community Center

The workshops began with a presentation on METRO 2030 and the Conceptual Alternatives. Participants then completed comment forms about their scenario preferences and the importance of evaluation criteria for comparing scenarios. People shared their responses in workgroups where they discussed the reasons for their preferences. Participants also provided comments on what worked well in the workshops and suggestions for what they would do differently in the future.

STAFFED DISPLAYS

Metroplan also staffed displays at eight (8) locations around the region:

- Jacksonville Wing Ding Festival
- Little Rock National Airport
- Central Flying Service
- Philander Smith College
- Wild Oats Market
- Dassault Falcon Jet

The displays presented information on METRO 2030 and the scenarios. Public comments were recorded on notepads, flipcharts, and comment sheets.

PHASE II FINDINGS - PUBLIC OFFICIALS WORKSHOP AND PUBLIC FORUM RESULTS

All forms from the Phase II Forums and the Public Officials Workshop were entered into an Access database, which allows for various queries of preferences, locations, and reasons for selecting a preferred alternative. In total, we received 66 completed forms from the Public Officials Workshop and 92 completed forms from the Public.

The following provides a summary of these findings. It should be noted that in aggregating the data, we selected some general groupings by geographic area within the Metroplan region to see if there were significant differences between one area and another. These groupings include:

- Central: Little Rock, North Little Rock
- Northwest: Conway, Mayflower, Faulkner County
- Northeast: Jacksonville, Cabot, Ward, Northeast Pulaski County
- Southwest: Bryant, Benton, Saline County
- Not Specific: Forms where participant did not identify where they were from (Public Officials Workshop only)

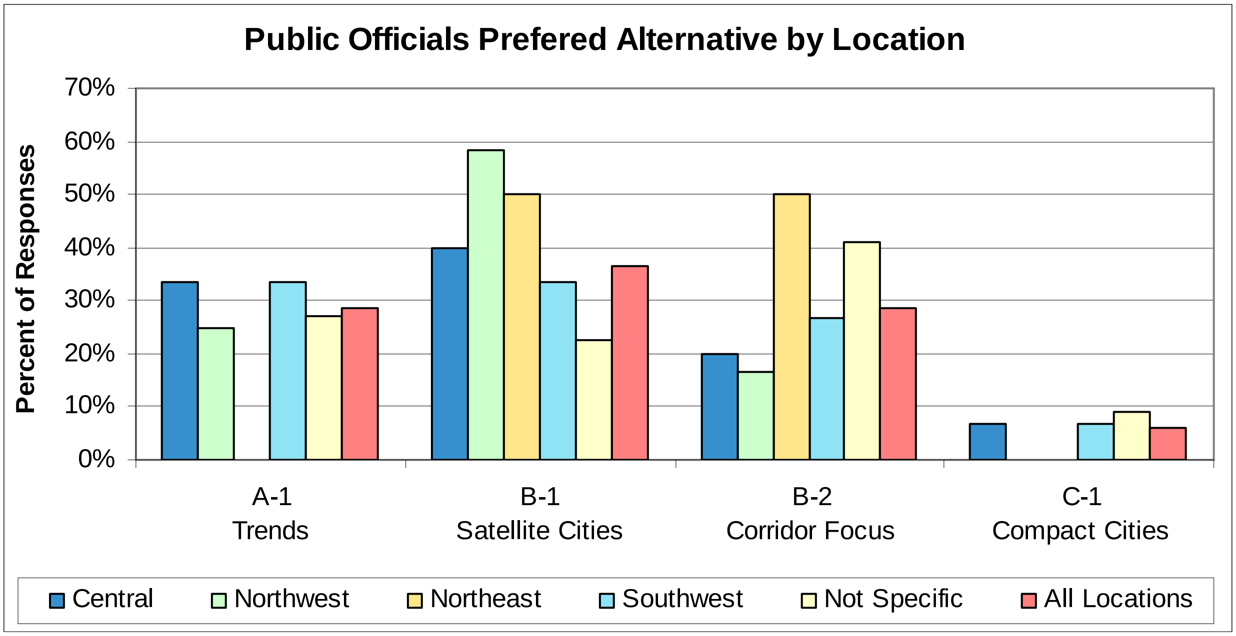
PREFERRED CONCEPTUAL ALTERNATIVE

The results from the Public Officials Workshop and the Public Forum to the question, *"Thinking about the conceptual alternatives, what is your future vision for the region? Which scenario best captures what is desirable and achievable?"* are as follows:

Table 7-1
Public Officials Workshop Land Use Alternatives Preference

Location	Number of Responses	A-1 Trends		B-1 Satellite Cities		B-2 Corridor Focus		C-1 Compact Cities	
Central	15	5	33.3%	6	40.0%	3	20.0%	1	6.7%
Northwest	12	3	25.0%	7	58.3%	2	16.7%	0	0.0%
Northeast	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%
Southwest	15	5	33.3%	5	33.3%	4	26.7%	1	6.7%
Not Specific	22	6	27.3%	5	22.7%	9	40.9%	2	9.1%
TOTAL	**66**	**19**	**28.8%**	**24**	**36.4%**	**19**	**28.8%**	**4**	**6.1%**

Figure 7-3
Public Officials Workshop Land Use Alternatives Preference



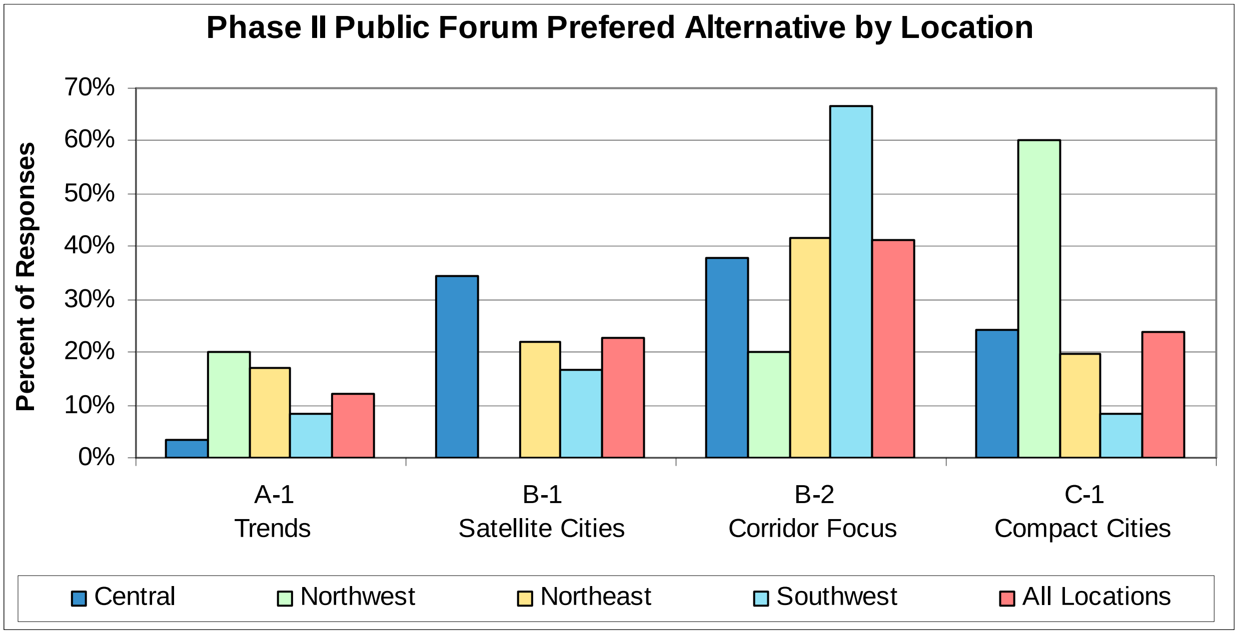
As can be seen in the above table and chart, the Public Officials preferred alternative was B-1: Satellite Cities followed by a tie between A-1: Trends and B-2: Corridor with C-4: Compact Cities.

Metroplan citizens that participated in the Public Forums had a slightly different set of preferences. They preferred the B-2: Corridor Focus alternative, followed by C-1: Compact Cities, B-1: Satellite Cities with a distant last, A-1: Trends.

Table 7-2
Public Forum Workshop Land Use Alternatives Preference

Location	Number of Responses	A-1 Trends		B-1 Satellite Cities		B-2 Corridor Focus		C-1 Compact Cities	
Central	29	1	3.4%	10	34.5%	11	37.9%	7	24.1%
Northwest	10	2	20.0%	0	0.0%	2	20.0%	6	60.0%
Northeast	41	7	17.1%	9	22.0%	17	41.5%	8	19.5%
Southwest	12	1	8.3%	2	16.7%	8	66.7%	1	8.3%
TOTAL	**92**	**11**	**12.0%**	**21**	**22.8%**	**38**	**41.3%**	**22**	**23.9%**

Figure 7-4
Public Forum Workshop Land Use Alternatives Preference



As depicted in the above tables and figures, 81% of respondents want something different from what we currently have. When looking at the graphs above, all geographic locations preferred a scenario other than the A-1/A-2 Trends. It is also interesting to note that citizens who attended the Public Forums expressed greater support for change (88%) as compared to the public officials (72%). A higher percentage of the citizen participants also preferred the higher density C-1: Compact Cities alternative.

The following presents what people said about why they liked or disliked about each scenario, as well as what steps they thought would be needed to implement the different scenario.

A-1/A-2 TRENDS/DISPERSED DEVELOPMENT SCENARIO

Likes

- Protects individual rights
- Freedom of people
- Less government involvement
- Like automobile mobility
- Maximizes independence
- Maximizes opportunity
- Maximizes property rights
- People have chosen this region for its low density, "small city" character; let's keep it the way it is

Dislikes

- Offers limited services
- Spread out too much
- Existing infrastructure is abandoned
- Frustrated with sprawl
- Reflects lack of planning
- Maintenance of existing infrastructure is difficult, costly
- Cannot continue indefinitely
- Auto-oriented development causes excessive water runoff/flooding, and starves aquifers
- Sprawl precludes mass transit
- Sprawl is inefficient and wasteful of resources
- Sprawl results in fear of the unknown
- No transit
- Cannot meet transportation needs
- Sprawl
- No sense of community
- Negative impact on agriculture
- Increases likelihood of urban-rural conflict

General Observations & How to Achieve this Scenario

- More development driven
- Would require western loop west of Little Rock
- Trends are difficult to change
- Should still coordinate regionally
- Arkansas will always have recreational opportunities, regardless of development patterns
- Would like to see a combination of A-1/A-2 and B-1 (Satellite Cities)
- Need alternative routes to freeways

B-1 SATELLITE CITIES SCENARIO

Likes

- Permits regional cooperation with local control. (Local control quicker to react to change.)
- Efficient use of land
- Concentrates on whole city, not just corridor area
- Corridors allow rail options as needed
- Not as much congestion
- More pedestrian-friendly than other scenarios – lots of kids walking & biking
- Can control growth, [but] can move outside if wished
- Better use of land consumption
- Density of development – can implement infill development
- Better bus opportunities
- Encourages economic vitality
- Multi-modal
- More regional focus/cooperation
- More environmentally [sensitive]
- Promotes sense of community
- Supports existing cities
- Connectivity
- Integrated approach
- Like green space between cities
- Reflects the type of "community' people want to live in
- Allows for efficient placement of utilities and transportation
- Promotes sense of community
- Addresses need for jobs-housing balance
- Open land stays open
- Possible green belt separating cities
- Aging people would be more likely to stay under this scenario (as opposed to moving to Florida)
- Local control
- Different cities provide choices
- Median divided arterials

Dislikes

- Should include option of 8-lane freeways
- Not a regional plan (focuses on individual cities)

General Comments & How to Achieve Scenario

- Get together on land use
- Identify serious funds for rail (Homeland Security, Trails, Hwy, etc.)
- Offer incentives to developers
- Develop & adopt uniform development codes
- Flexible technology
- Need alternative routes to freeways

B-2 CORRIDOR DEVELOPMENT

Likes

- Can still maintain city identity, but cities can benefit from overall development
- Can support regional approach
- Permits regional cooperation with local control. Local control quicker to react to change.
- Efficient use of land
- Allows for mass transit using existing/improved infrastructure
- Better connections
- Better land use
- Community-focused development
- Most realistic compromise
- Offers multiple transportation options
- Ties all areas, not just major cities
- Encourages economic vitality
- Multi-modal
- More regional focus/cooperation
- More environmentally [sensitive]
- Preservation of land
- Mixed uses
- Provides connectivity
- Integrated uses
- Supports existing communities
- [Transit potential] benefits young professionals, older people, students
- Connects labor force to employment
- Rail is feasible in this scenario
- Focuses on in-fill development but still permits options
- Allows for efficient placement of utilities and transportation
- More efficient use of streets; safer
- More environmentally friendly
- More regional cooperation
- Gives people choices of urban or rural location
- Easier to serve with rail (light, heavy, whatever)
- Caters to workforce
- Transit is possible (high Cabot/Benton)
- Accessibility
- More regional approach
- Staged approach
- Growth in corridors can lead to compact cities growth (a good thing)
- Employment growth along corridors supports transit
- Corridors support regional cooperation
- Commuter rail a real possibility under this scenario
- Median divided arterials

Dislikes

- [No "dislikes" were recorded.]

General Comments & How to Achieve Scenario

- Growth gravitates toward freeways.
- May be most realistic scenario, other than A-1/A-2
- Get together on land use
- Identify serious funds for rail (Homeland Security, Trails, Hwy, etc.)
- Offer incentives to developers
- Develop & adopt uniform development codes
- Need alternative routes to freeways

C-1 COMPACT CITIES

Likes

- Useful for when land is not available or is too expensive
- A better quality of life
- Discourages sprawl
- Encourages neighborhoods
- Encourages densities suitable for mass transit
- Transit
- Reinvesting in existing area
- Environmentally friendly
- Reduces sprawl
- More opportunities for minorities
- Economic development
- Sense of community
- Access
- Neighborhood identity is supported by higher density/mixed uses
- Lower utility costs
- Increased opportunities for transportation options

Dislikes

- Too ideological [utopian?]
- Not realistic
- High density is income-driven
- Won't be able to force people to live high-density lifestyle
- Will not work in Arkansas
- Difficult to implement
- Seems forced
- Not possible in Arkansas
- 1 million + population is needed to make this scenario work
- not a regional approach
- Infill and redevelopment will result in more land use conflicts.

General Observations & How to Achieve Scenario

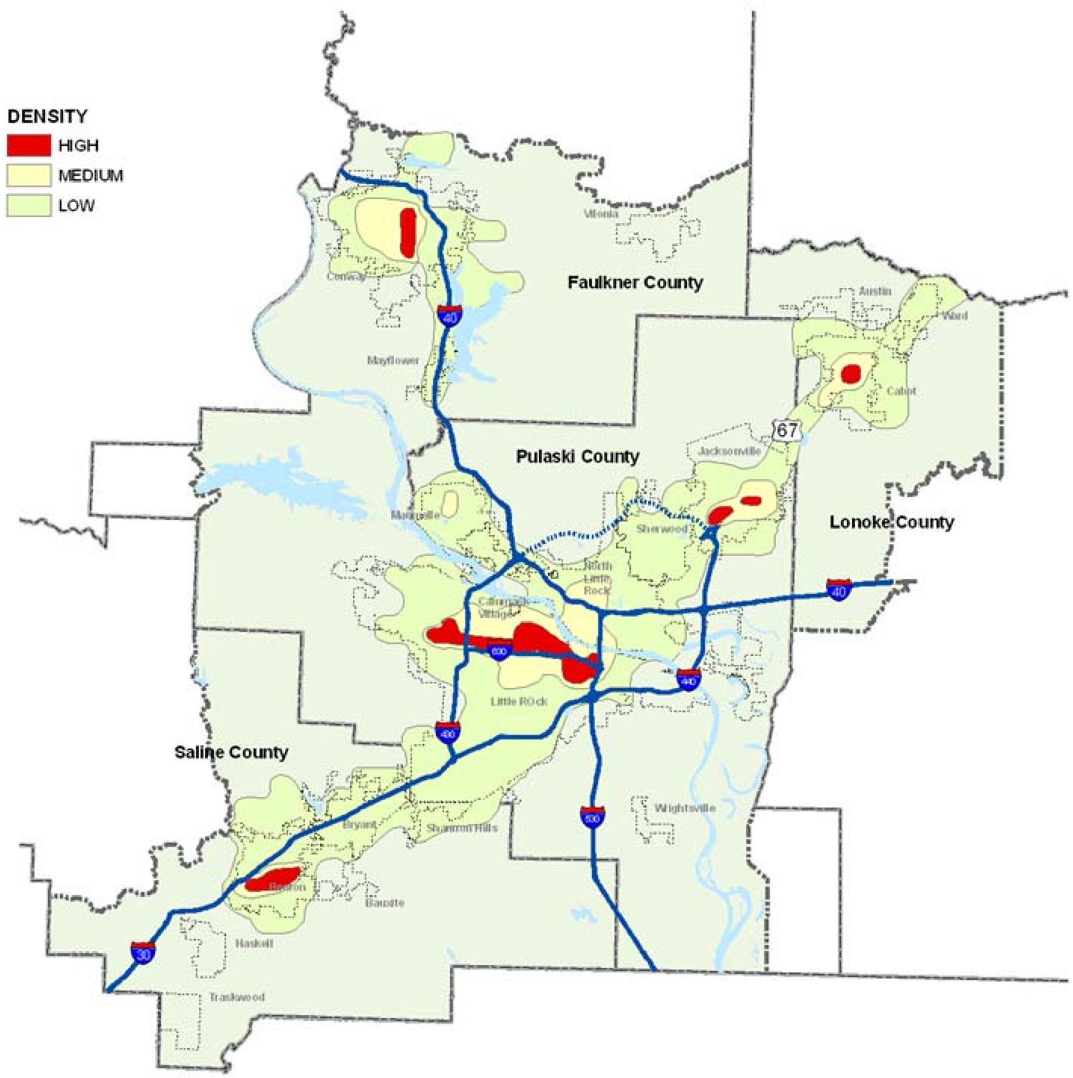
- Unrealistic, but should be the goal
- Conflicts with existing attitudes
- Possible only if policies are enacted
- Could take a staged approach: first B, then move toward C
- Develop & adopt uniform development codes

PREFERRED LAND USE ALTERNATIVE

In review of the analysis of the various land use and development scenarios conducted over the Phase 2 work effort, coupled with support from the Public Officials Workshop and Public Forums, a hybrid alternative between the B-1: Satellite Cities and B-2: Corridors alternatives was selected as the preferred land use alternative concept for the Metro region. This concept included:

- Development in and around established urban and suburban cities, and also along existing freeway corridors;
- Communities separated by open space and natural areas; and
- Enhanced basic bus system, with strategic light rail or bus rapid transit (brt) expansions along regional corridors.

Figure 7-5
Preferred Development Plan



The A-1: Trends alternative was not recommended for a long list of reasons including low public support, ability to fund, construct, and maintain adequate transportation infrastructure, and lack of community and open space separators to name a few.

Although there was support for the C-1: Compact Cities alternatives from input received at the Public Forums, there was not similar support received from the Public Officials. It was also deemed too big a change from current trends to expect this solution to gain strong support in the short-term. If substantive changes in development patterns and land use were to occur over the next five to ten years, then the region might want to reexamine this C-1: Compact Cities alternative at that time.

The reason that the blending or a hybrid of the B-1: Satellite Cities and B-2: Corridors alternatives are recommended is as follows:

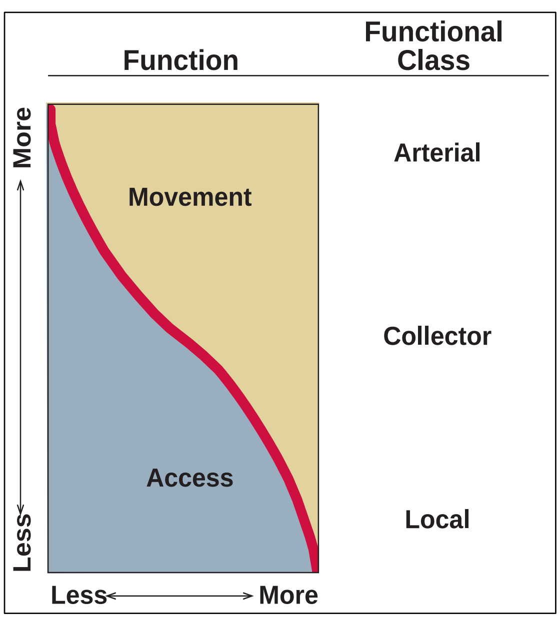
- Both meet the general direction that is necessary to accommodate demographic changes within the region
- Both provide for community identity and separators and encourage community-focused and mixed-use development
- Both provide increased opportunities for multi-modal transportation solutions
- Both allow for preservation of open space
- Both are designed to connect labor force to employment
- Both focusing on in-fill development but still permits opportunities for lower density development
- Both address the public's desire for choices of urban or rural locations.

ROADWAY FUNCTIONAL CLASSIFICATION

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. In other words, classification determines a roadway's desired function of access and movement. In a functionally classified network, the dual requirements of mobility and access to land are assigned in differing proportions to each roadway classification.

Functional class forms a hierarchy of roadway systems in terms of the relative distances served, the mobility provided for through movements, and the degree to which direct land access is facilitated. Figure 8-1 outlines this general hierarchy of the functional classification system. Arterials serve long distance trips and higher volumes of traffic and, therefore, should allow less access. Ideally, principal arterials should connect only to other arterials and collectors. Freeways are a type of principal arterial that exclusively serves the movement of traffic and provides no direct land access. Unclassified local streets and roads provide the highest degree of access to land and therefore, best serve shorter local-trips. Each class combines the functions of access and movement and distributes or collects traffic for the adjacent class. Collector streets serve the dual functions of movement and land access in roughly equal proportions. In most areas, there are more miles of local roadways serving land access than classified roadway mileage.

Figure 8-1
Functional Class Hierarchy



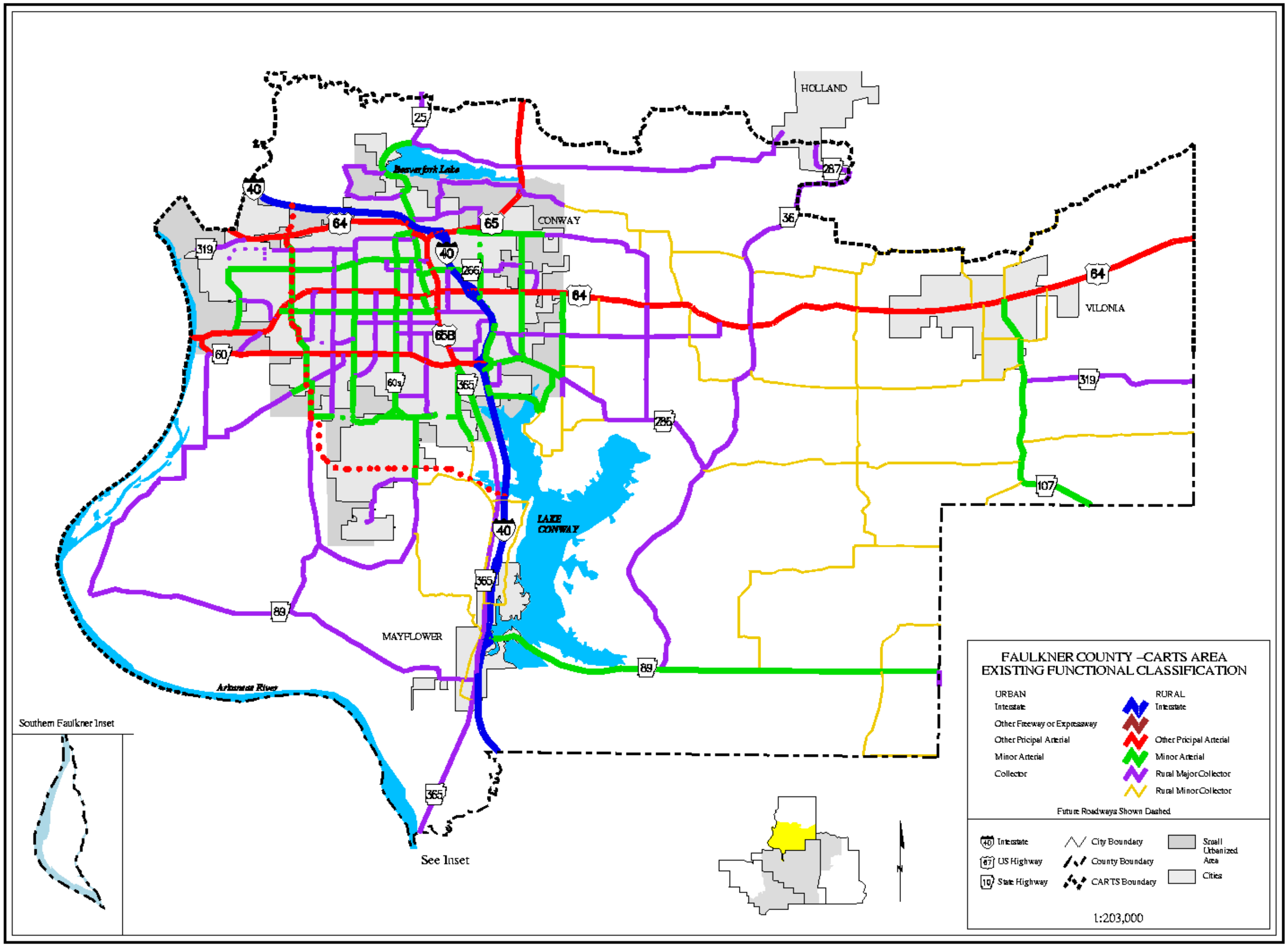
Roadway projects brought forth for funding must be on the existing functionally classified system in order to receive federal financial assistance. Federal regulations require that separate functional classification systems be used in urban and rural areas in order to recognize the different characteristics in such areas with respect to population density, land use, street networks, travel patterns, and the inter-relationships of these characteristics. For the purposes of functional classification, urban areas are defined as census-designated urban places of 5,000 persons or more, and are further classified as urbanized areas or small urban areas. The boundaries of these urban areas are fixed by state and local officials in cooperation with each other, and must include the entire urban place as designated by the Bureau of Census. Rural functional classifications are employed in communities with fewer than 5,000 persons. The existing functional classes assigned to roadways in the four counties that make up the CARTS area are shown on Maps 8-1 through 8-4.

Since METRO 2025 was adopted, there has been some reclassification of roadways due mainly to expansion of the Little Rock-North Little Rock urbanized area boundary. Total existing functional class mileage by county is summarized in Table 8-1. This data is from Metroplan's geographic information system (GIS), which is updated as data is made available but may not include all roadway mileage. The data indicate that CARTS area mileage grew by at least 159 miles or 2.7% between 1999 and 2004.

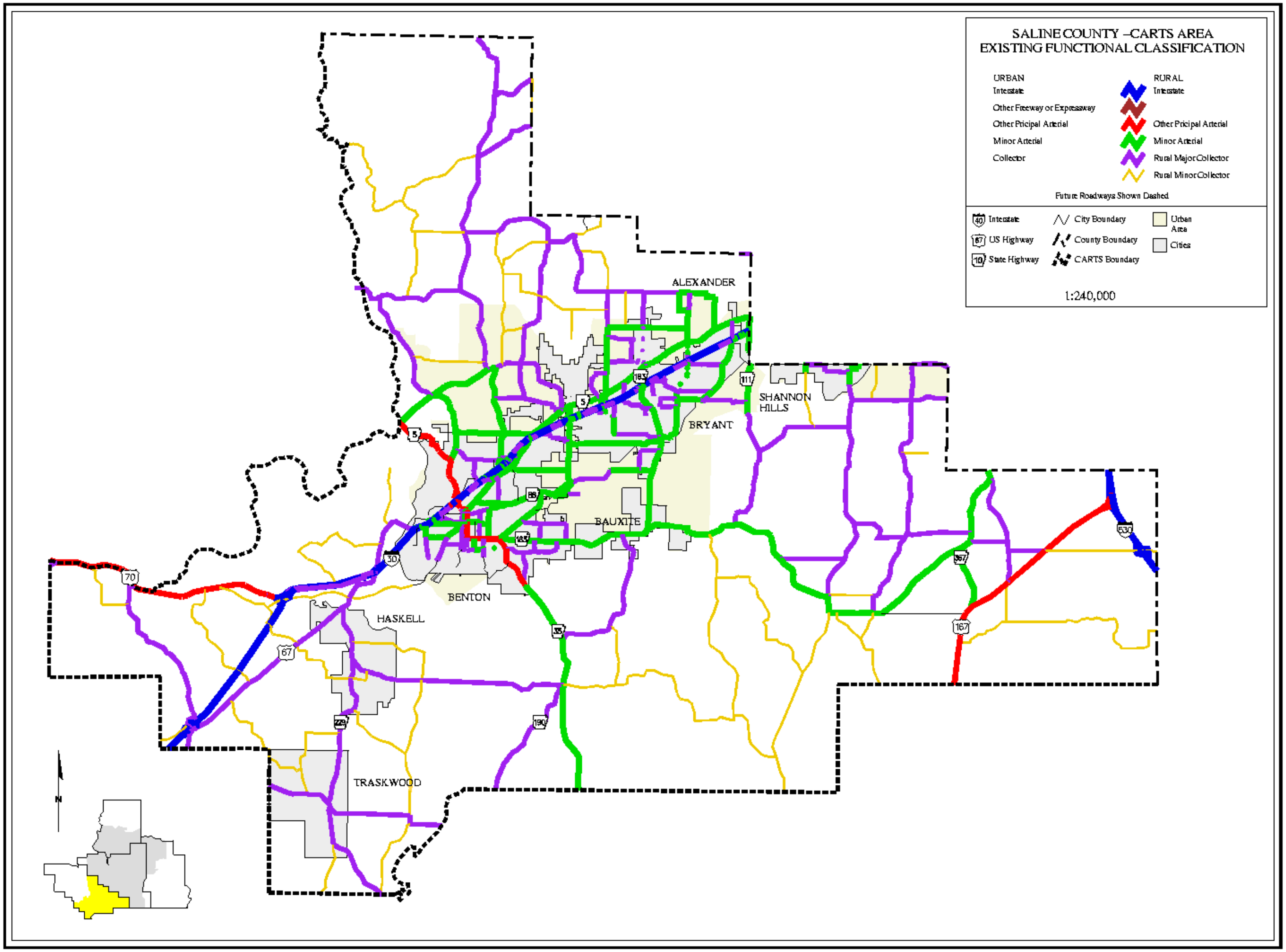
Table 8-1
Functional Class Roadway Mileage

Functional Classification	Faulkner		Lonoke		Pulaski		Saline		Total	
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%
Interstate Highways	18	2	7	1	96	3	25	2	147	2
Other Freeways/Expressways	0	0	6	1	28	1	0	0	34	1
Other Principal Arterials	45	4	15	3	106	3	24	2	190	3
Minor Arterials	70	7	62	11	285	9	95	8	512	9
Subtotal – Arterials	**133**	**13**	**90**	**16**	**515**	**16**	**144**	**12**	**883**	**15**
Rural Major Collectors	85	8	71	13	124	4	108	9	387	6
Rural Minor Collectors/ Collectors	137	13	63	11	425	13	186	16	811	14
Subtotal – Collectors	**222**	**21**	**134**	**24**	**549**	**17**	**293**	**25**	**1,198**	**20**
Subtotal – Functionally Classified	**355**	**34**	**224**	**40**	**1,064**	**34**	**438**	**37**	**2,080**	**35**
Local Streets/Roads	**700**	**66**	**338**	**60**	**2,087**	**66**	**757**	**63**	**3,882**	**65**
Total CARTS Area Mileage	**1,055**	**100**	**562**	**100**	**3,152**	**100**	**1,194**	**100**	**5,962**	**100**
CARTS Area Percentage		18		9		53		20		100
Percent of County in CARTS		60		30		97		64		68
County Outside of CARTS	693	40	1,316	70	94	3	680	36	2,784	32
Total County Mileage	**1,748**		**1,878**		**3,246**		**1,874**		**8,746**	

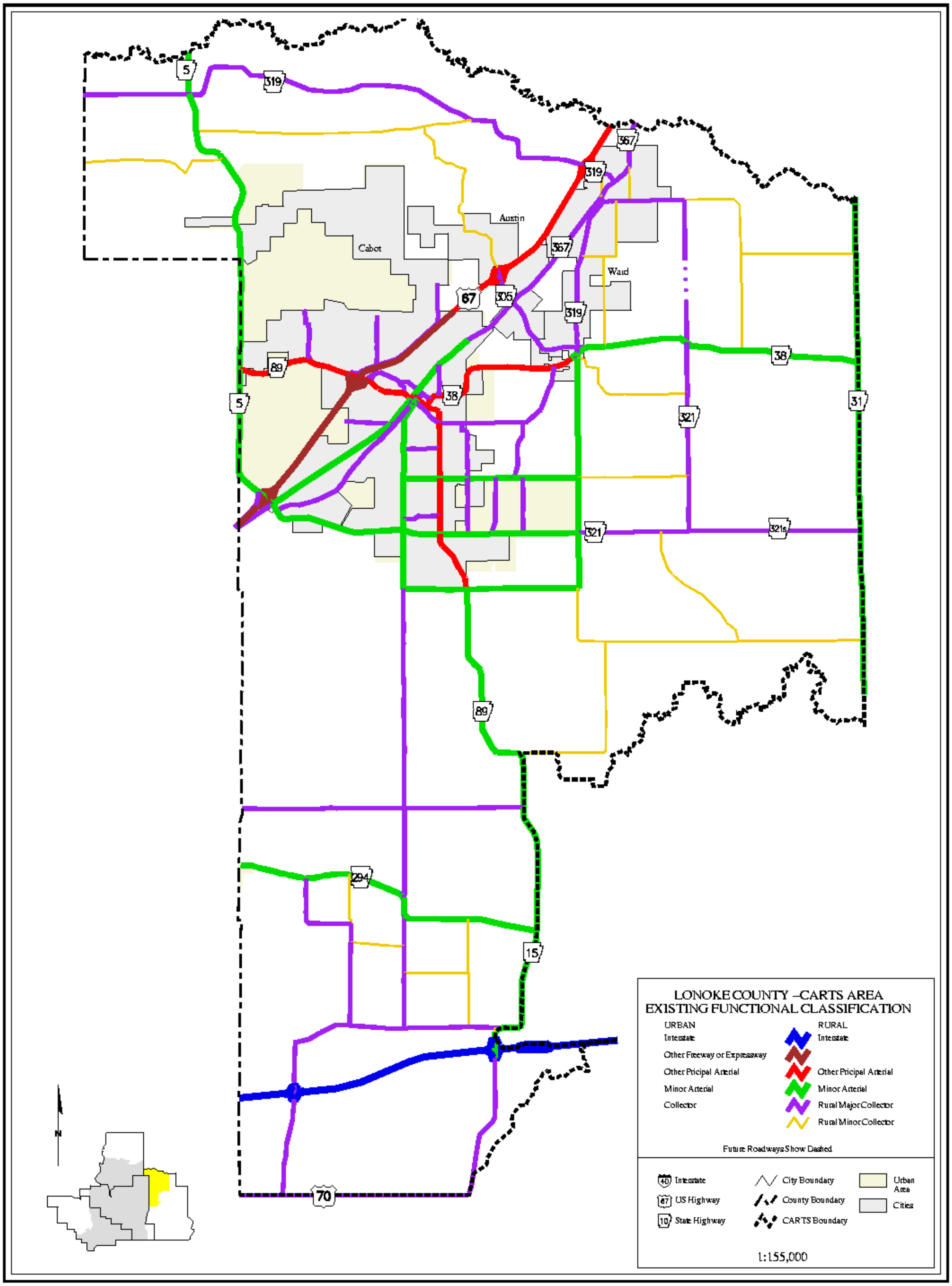
Map 8-1
Existing Functional Class - Faulkner County



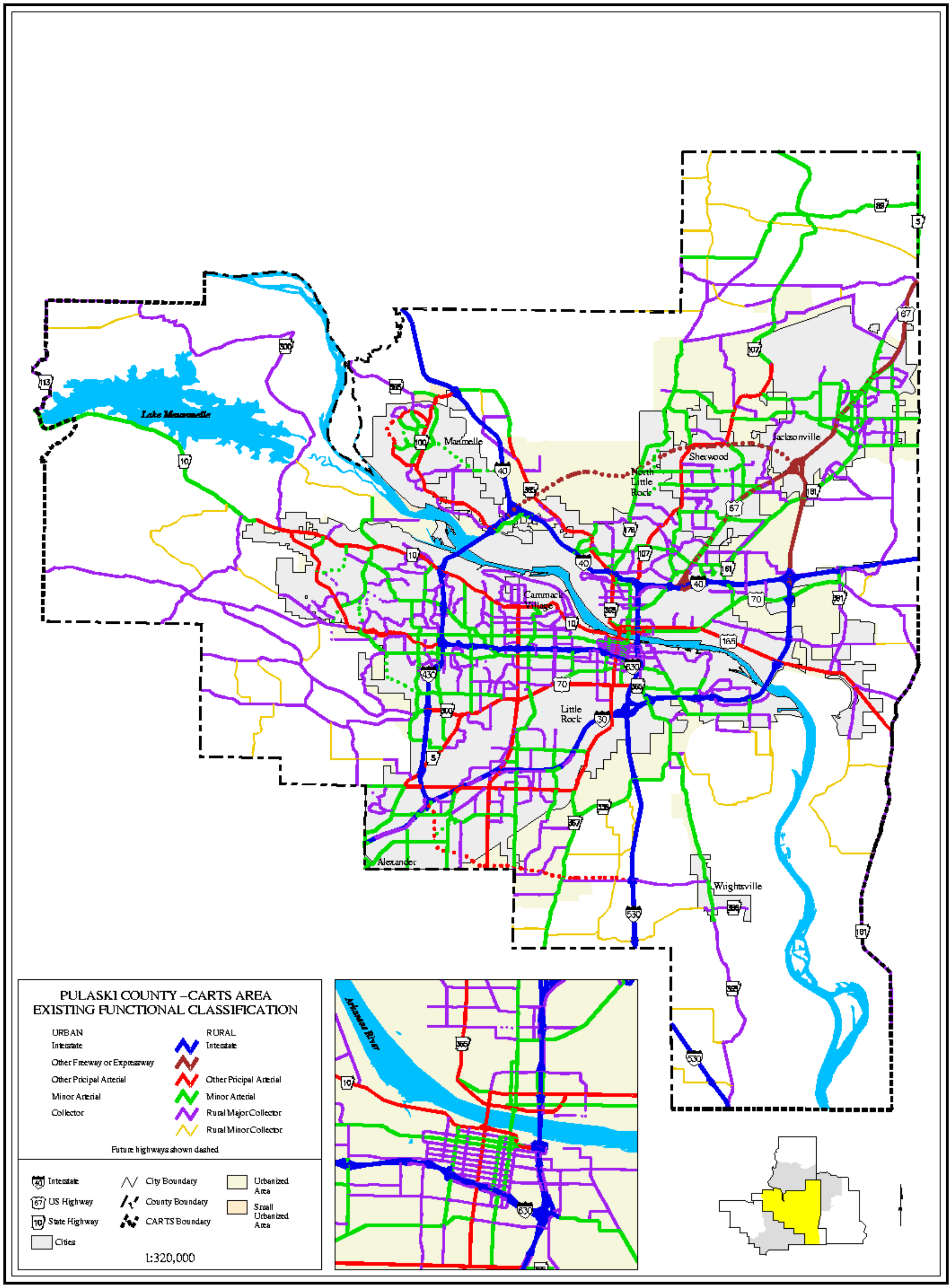
Map 8-2
Existing Functional Class - Saline County



Map 8-3
Existing Functional Class - Lonoke County



Map 8-4
Existing Functional Class - Pulaski County



CRASH DATA

Beginning in 2000, Metroplan began collecting annual crash data as reported from the Arkansas State Police for the four-county area. This data is used to determine the total number of crashes for the four-county area and individual counties. These results are included in the CARTS Annual Report. Crashes are also analyzed for selected roadway segments before safety improvements are programmed on the Transportation Improvement Program (TIP). Furthermore, the data is used to develop crash rates for different roadway cross-sections and access densities.

TOTAL CRASHES

Statistics show that between 2000 and 2002, the four-county area experienced an average of 19,152 crashes a year. Table 8-2 shows the number of crashes by severity for the four-county area. Between the years 2000-2002, fatal crashes in the four-county area fell by 23% (96 Fatal Crashes 2000, 73 Fatal Crashes in 2002). For more information on the number of crashes in the four-county area, see CARTS 2004 Annual Report.

Table 8-2
Total Crash for Four Counties 2000-2002

Crash Severity	# of Crashes	# Fatalities	# Involving Alcohol/Drugs
Fatal	252	297	98
Incapacitating Injury	2,300		333
Non-Incapacitating Injury	5,509		713
Possible Injury	11,910		611
Property Damage Only	37,486		1,679
Total	**57,457**	**297**	**3,434**

RAIL GRADE SEPARATIONS

During development of METRO 2020, citizens in all parts of the region raised significant concerns regarding at-grade railroad crossings. Their concerns included safety risks, noise impacts and delay for school buses, emergency vehicles and motorists due to the number of trains per day. METRO 2020 targeted $26 million of future federal funds for up to eight highway/railway grade separations.

In July 1996, the Metroplan Board of Directors (MPO) made several decisions leading to the selection and prioritization of rail grade separation projects in the CARTS area. Locations were selected by the TCC for study using quantifiable evaluation factors. The factors used were delay, accessibility, connectivity, geographic distribution, and safety. CARTS consultants conducted preliminary engineering and prepared cost estimates for new rail-way/highway grade separations along the main lines of the Union Pacific Railroad at or near eight sites. In addition, the consultant prepared revised cost estimates for four proposed rail grade separations previously studied.

Following completion of the consultant study, the TCC ranked the 12 sites, using the evaluation factors previous noted plus bonus points for project leverage and congestion mitigation. Afterwards, the TCC began the process of selecting and programming rail grade separation projects through the year 2020, during which the readiness of a project to proceed rapidly to construction was also considered. The TCC recommended that initial phases of several projects be programmed in the FY 1998-2000 TIP. The projects included East Main Street in Jacksonville, 15th Street (vicinity) in North Little Rock, Salem Road in Conway, Polk Street (vicinity) in Cabot, and South Loop in Little Rock. Subsequently, the TCC recommended the inclusion of all 12 rail grade separation projects in METRO 2020.

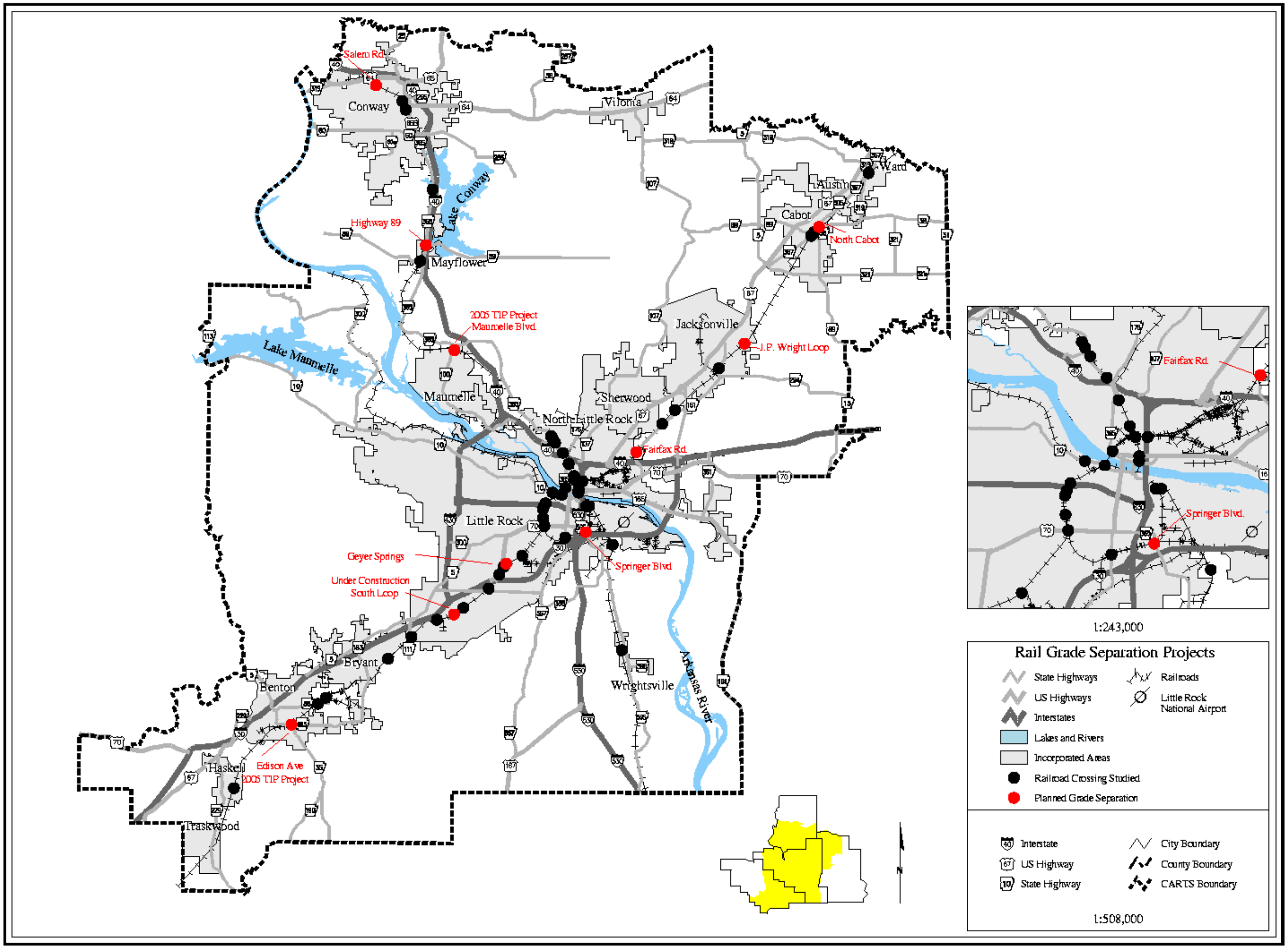
On July 30, 1997, the Metroplan Board approved the CARTS Rail Grade Separation Funding Priorities, amended METRO 2020 accordingly, and adopted Resolution 97-10 requesting commitment from the Arkansas Highway Commission to fund and program the four rail grade separations on State highways.

During development of METRO 2025, previously adopted rail grade separation funding priorities were reviewed by the TCC during March and April 2000. In the end, the TCC recommended dropping 15th Street in North Little Rock, at the request of North Little Rock, and adding the Highway 89 Extension in Mayflower to the list of priority grade separations. Table 8-3 reflects the resulting list of rail grade separation projects included in METRO 2025 and their current status. The location of each rail grade separation project is illustrated on Map 8-5.

Table 8-3
Rail Grade Separation Projects

Rail Grade	Location	Current Status
East Main Street	Jacksonville	completed
Baseline Road (SH 338)	Little Rock	completed
South Loop	Little Rock	in design, ROW and construction programmed
SH 89 Extension	Mayflower	no progress
North Cabot Railroad Overpass	Cabot	designed, ROW acquired
Salem Road	Conway	designed, ROW acquired
Edison Avenue (SH 35/183)	Benton	in design, ROW and construction programmed
Fairfax Avenue (McCain Blvd.)	North Little Rock	no progress
Maumelle Boulevard (SH 100)	Maumelle	designed, ROW and construction programmed
Geyer Springs Road	Little Rock	in design, no ROW or construction programmed
Confederate Boulevard (SH 365)	Little Rock	no progress
J. P. Wright Loop Road	Jacksonville	no progress

Map 8-5
Rail Grade Separation



The current status of each rail grade separation project is summarized as follows:

1. **East Main Street, Jacksonville** – In addition to the bridge, this project involved closure of an at-grade crossing, roadway improvements, intersection signalization, and conversion to one-way streets between the Main Street and Graham Road. All work has been completed and the grade separation is open to traffic. Both the Main Street overpass and SH 161 underpass are on the Regional Arterial Network (RAN).

Main Street Overpass, Jacksonville

2. **Baseline Road (SH 338), Little Rock** – A realignment of Mann Road to intersect Chicot Road south of Baseline was completed first. Subsequently, the grade separation was constructed. The overpass is on the RAN and is open to traffic.

3. **South Loop, Little Rock** – The first section of South Loop extending from Mablevale West to Alexander Road is currently in design. For this section, right of way acquisition for what will eventually be a divided four-lane bypass and construction of a two-lane facility (phase one) are both included in the TIP. South Loop is on the RAN.

4. **SH 89 Extension, Mayflower** – In 1997, the AHTD conducted a study which examined the feasibility of alternatives for a realignment of SH 89 that included a grade separation at the UP railroad. The city's master street plan is consistent with Alternative 1, which would connect SH 365 and I-40 with Highway 89 approximately one mile west of the railroad. The project also includes a connection to Main Street which runs parallel to the railroad. No project phases are currently programmed. Both the SH 89 overpass and SH 365 underpass are on the RAN.

5. **North Cabot Railroad Overpass, Cabot** – Following a consultant study an alignment was selected to connect SH 38 and SH 367. From SH 367 an extension to US 67/167 is planned that will complete a bypass route midway between Austin and Cabot. The overpass and connection between Highways 38 and 367 have been designed and right of way acquired. The bypass route including the overpass is on the RAN.

6. **Salem Road, Conway** – The design and right of way acquisition phases have been completed. No construction funding is currently programmed. The overpass is not on the RAN.

7. **Edison Avenue (SH 35/183), Benton** – This project is currently in design, and includes a realignment of SH 35 south of Edison Avenue. Both right of way acquisition and construction are listed in the TIP, but design alternatives under review may increase project costs beyond amounts currently programmed. Both the overpass and underpass routes are on the RAN and part of the planned the Benton bypass.

8. **Fairfax Avenue (McCain Blvd.), North Little Rock** – A feasibility study was completed in 1996 that examined alignments at Fairfax Avenue and Rosemary. Since then, no work on the project has occurred. The overpass is not on the RAN.

9. **Maumelle Boulevard (SH 100), Maumelle** - The design of two adjacent two-lane overpasses has been completed. Both right of way acquisition and construction is programmed in the TIP. Maumelle Blvd. is on the RAN.

10. **Geyer Springs Road, Little Rock** – TEA-21 included $750,000 in High Priority Project funding for this project, which is being used for design and environmental review. No other project phases are programmed. The overpass is not on the RAN.

11. **Confederate Boulevard (SH 365), Little Rock** – This project was included in the 1997 Grade Separation Study. Since then, there has been no funding commitment and no work has occurred. The overpass is on the RAN.

12. **J.P. Wright Loop Road, Jacksonville** – This project was included in the 1997 Grade Separation Study. Since then, no work on the project has occurred. The overpass is not on the RAN.

AREA BRIDGES

As summarized in Table 8-4, there are 994 bridges within the CARTS area[1]. Of that number, 124 bridges (12.5 %) have a sufficiency rating less than 50 which means the bridge may be eligible for bridge replacement funding. Only 23 bridges have a sufficiency rating less than 25, which suggests that at present only a couple dozen bridges may be in very poor condition and in need of major work. With respect to federal bridge funding eligibility, 45 bridges are currently rated as structurally deficient and 240 are classified as functionally obsolete. The remaining 709 bridges, or 71%, are not qualified for federal bridge funding at this time. Of the 994 CARTS area bridges, 564 (57 %) are owned by the state, while 430 (43 %) are owned by local governments.

Table 8-4
CARTS Area Bridge Trends

Item	1999	2004	Change	% Change
Total Bridges	927	994	67	7.2
Sufficiency Rating < 50	155	124	-31	-20.0
Sufficiency Rating >= 50	772	870	98	12.7
Structurally Deficient	63	45	-18	-28.6
Functionally Obsolete	248	240	-8	-3.2
Not Qualified for Federal Funding	616	709	93	15.1
State Owned	545	564	19	3.5
City or County Owned	382	430	48	12.6

Over the past five years, the number of CARTS area bridges in poor or substandard condition has declined while the total number of bridges has grown by 67 (or 7.2%). This is reflected in the sufficiency ratings below 50 (-31) and the number of bridges that are either structurally deficient (-18) or functionally obsolete (-8). The growth of locally owned bridges has outpaced increases in state owned bridges (48 and 19 respectively) (see Table 8-5).

[1] This is based on national bridge inventory data through 2004 provided by the AHTD. While all publicly owned bridges not owned by the federal government are included, structures less than 20 feet long are excluded from the National Bridge Inventory.

Table 8-5
Bridge Funding Eligibility Scale

Funding Category	Sufficiency Rating
Not eligible for federal bridge funding	80-100
Eligible for bridge rehabilitation funding*	50-79
Eligible for bridge replacement funding*	0-49

*Must be functionally obsolete or structurally deficient.

9. Roadway System Management

CARTS Congestion Management System

Since 1996, Metroplan has been tracking and evaluating roadway congestion for the Central Arkansas Regional Transportation Study (CARTS) area. In the fall of each year, Metroplan performs travel time surveys on selected facilities. All surveys are done at perceived congested times (i.e. AM, Noon, and/or PM peaks) on a typical commuting day. The purpose is to quickly identify where delays occur within a corridor and evaluate congestion trends for roadway segments. The analysis focuses on the freeway system and the Regional Arterial Network (RAN).

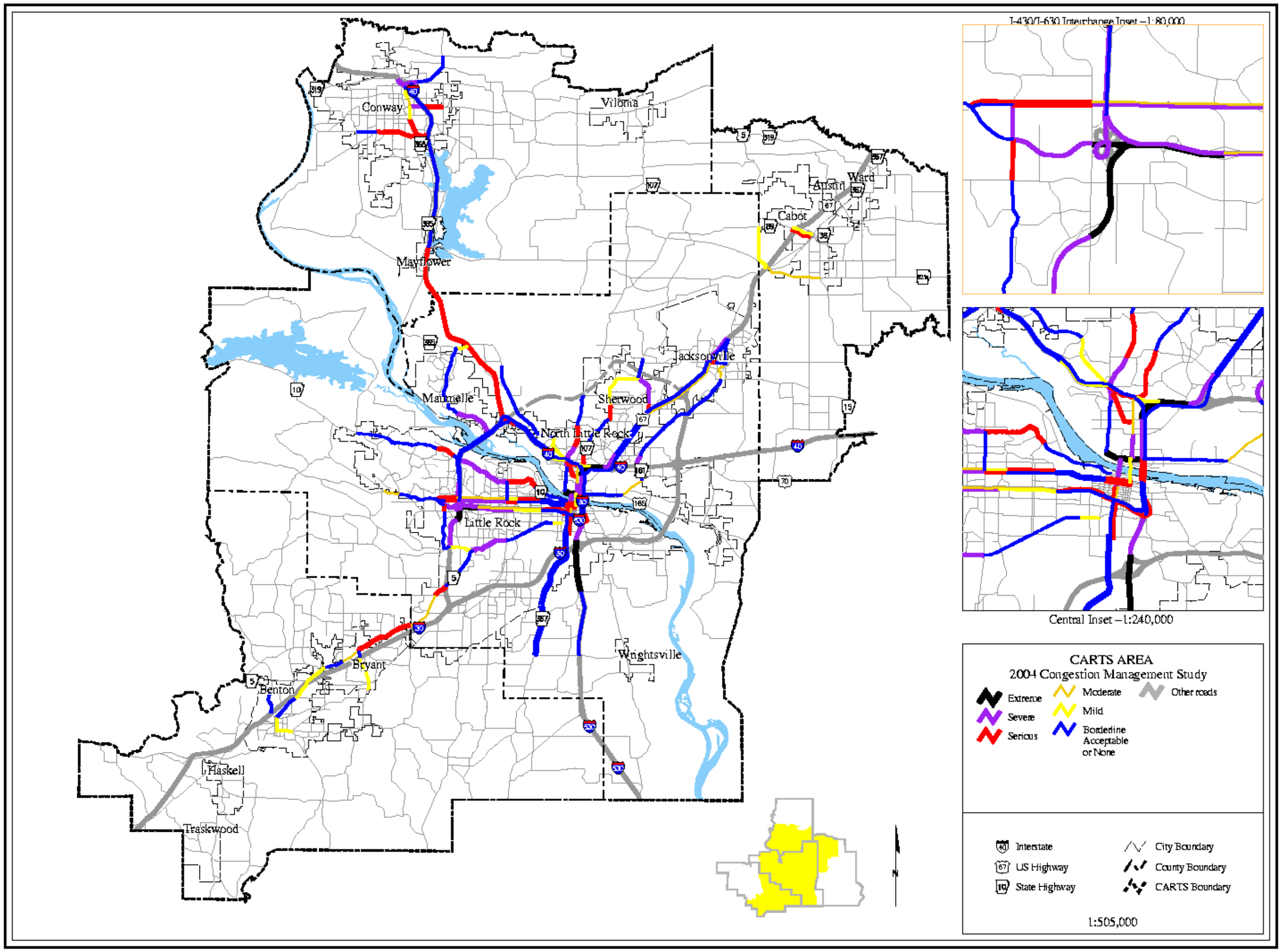

I-40 at Burns Park

The CARTS Congestion Management System (CMS) uses the delay rate as the evaluation tool. The delay rate is calculated from the travel time, with the travel time being the time required to travel the length of roadway in question. The delay rate is defined as the difference in time it takes to travel the length at the posted speed limit without stopping and the actual travel time. This figure is then divided by the length of the roadway segment.

The delay threshold for arterials, 0.41 min/mi, was derived from the difference in traveling at 40 mph for a posted speed of 55 mph. The delay threshold for freeways, 0.20 min/mi, was derived from the difference in traveling at 50 mph for a posted speed of 60 mph. The differences in the threshold for freeways and arterials translate into different expectations/perceptions of congestion by the traveling public on different facility types. In other words, motorists have a lower tolerance for slower speeds on freeways than on non-freeways. Before 2004, arterials and freeways were not separate and a delay threshold of .41 min/mi was used for all roadways.

In addition to determining if a facility is congested, congested segments are classified as mild, moderate, serious, severe, or extreme congestion. Each category is determined by the extent to which delay exceeds the threshold. Non-congested facilities are classified as borderline, acceptable, or none. Metroplan focuses on those facilities that are experiencing, serious, severe or extreme congestion. Likely sources of congestion and possible congestion mitigation programs (CMPs) are identified for these segments. CMP programs may include implementing already programmed transportation improvement program (TIP) projects, applying access management (AM) techniques, or using intelligent transportation systems (ITS) technologies. Finally, reference is made to a number of studies that have developed specific recommendations for some of these segments (e.g. the Areawide Freeway Study (AWFS), Regional Arterial Network Study (RANS), and the Little Rock's Traffic Safety Study (TSS) sponsored by State Farm Insurance. However, not all recommendations from these studies are endorsed by Metroplan and are referenced for informational purposes only. Map 9-1 shows the level of congestion for facilities in the CARTS area using CMS results from the year 2004. Additional information can be found in the 2004 CMS report.

Map 9-1
Congestion Management System 2004



INTELLIGENT TRANSPORTATION SYSTEMS

INTRODUCTION

As travel within and through the study area continues to grow, demands placed on the existing infrastructure will also increase. Intelligent Transportation Systems (ITS) can play a significant role in ensuring that the transportation investments continue to pay dividends by enhancing mobility and economic vitality, improving safety, reducing environmental impacts, and providing new services to travelers. Intelligent Transportation Systems is the application of computer, electronics, and communication technologies and management strategies, in an integrated manner, to acquire and utilize information to increase the safety and efficiency of the surface transportation system.

Main Street, North Little Rock

Under section 5206(e) of the National ITS Architecture, all ITS projects using funds from the Highway Trust Funds, including the Mass Transit Account, must conform to the National ITS Architecture Standards. This National Architecture is the framework for ensuring proper connections within and between the various projects. The CARTS ITS Conceptual Plan is designed to address specific local needs, and includes potential subsystems, agencies, and information flows relevant to our area. Primary consideration was given to the development of a flexible and open architecture that accommodates future improvements and systems expansion.

VISION AND NEEDS

One of METRO 2030's visions is to maximize the mobility of people and goods. This vision is further defined in Objective 1.3, "Maximize the capacity of existing facilities on regionally significant routes through the use of Intelligent Transportation System (ITS) technology, access management, and land use practices that protect roadway capacity."

As stated, ITS technology is just one component of this overall vision. The identified needs that can be addressed by ITS technologies are: safety, mobility, accessibility, economic efficiency, and educating/informing the public. Any region-wide ITS system should offer technological solutions aimed at addressing these needs and improving overall efficiency of the transportation system.

EXISTING AND PLANNED ITS ELEMENTS

Metroplan adopted the CARTS ITS Plan in June of 2002. This plan focuses on five primary components.

1. **REGIONAL TRAVEL INFORMATION SYSTEMS**
   Regional Traveler Information Systems provide trip planning, route guidance, advisory function for travelers, and driers of all types. It should be multi-modal and designed to support many categories of drivers and travelers. This will be done through roadway-based data gathered by surveillance equipment and processed by computers for further dissemination via traveler information systems. Table 9-1 contains the proposed roadway-based traveler information technologies for the CARTS Area.

Table 9-1
CARTS Traveler Information System Plan

Traveler Info.	Pre-Trip	En-Route
Existing	Internet Website	Mobile Dynamic Message Signs (DMS)
	Broadcast Media (Radio)	Highway Advisory Radio (HAR)
	Personal Digital Assistants (PDA's)	Personal Digital Assistants (PDA's)
	Pagers	Pagers
Planned	Traveler Advisory Telephone (511)	Route Guidance Systems
	Cable Television (Public Access)	Fixed DMS

2. Freeway and Incident Management

A Freeway Management System (FMS) is a critical component of the CARTS ITS Plan. The objective of FMS is to improve traffic flow by optimizing available freeway capacity. A FMS consist of several components that are used to provide freeway management functions. The typical components of freeway management systems are field equipment, communications equipment, and a Traffic Management Center (TMC). AHTD, with the help of FHWA and Metroplan, is in the initial phase of developing a Freeway Management Deployment Plan for central Arkansas. Table 9-2 contains TMC functions included in the CARTS ITS Plan.

Table 9-2
CARTS Traveler Management Center Functions

Status	Surveillance & Incident Detection	Information Dissemination
Existing	Cellular phone, CB Radios, other two way radios, and scanners	Mobile Dynamic Message Signs (DMS)
	Automatic Traffic Recorders (ATRs)	Highway Advisory Radio (HAR)
	Reserve capacity for communications infrastructure (e.g. franchised fiber optics)	AHTD Pave the Way website
Planned	Additional ATRs as freeways are reconstructed or widened	CARTS TMC
	Closed Circuit Television (CCTV)	Provide live video link on website and cable television
	CARTS TMC	

3. Transit Management Systems

Advance Public Transportation Systems (APTS) benefits include customer convenience, safety, operational improvements, cost savings, revenue increases, and complaint resolution. Table 9-3 contains Transit Management functions included in the CARTS ITS Plan.

Table 9-3
CARTS Traveler Information System Plan

Status	Surveillance & Incident Detection
Existing	Wireless Communications (i.e. for shuttle service)
	CATA Website
Planned	Fare Collection (e.g. smart cards)
	Automated Vehicle Location (AVL)
	CATA Kiosks
	In-Vehicle Annunciators

4. **ADVANCED TRAFFIC CONTROL SYSTEMS**
CARTS area traffic signal control systems should provide traffic management strategies that are responsive to changing demand. These systems can benefit the public with improved traffic flow and public safety, by monitoring the flow of traffic and making appropriate traffic control decisions in a timely manner. Additional benefits include less fuel consumption and reduced environmental impact. The CARTS ITS Plan identifies specific advanced traffic control systems for Little Rock, North Little Rock/Sherwood, Conway, and AHTD with additional upgrades for other jurisdictions.

5. **HIGHWAY-RAIL INTERSECTIONS**
At-grade railroad crossing were a significant concern for citizens in all parts of the region during the development of METRO 2020. Their concerns included safety risk, noise impacts, and delay for school buses, emergency vehicles and motorists due to the increasing train traffic within the central Arkansas region. ITS systems for Highway-Rail Intersection is part of the ITS plan to improve safety and operation for at-grade rail crossing and adjacent intersections.

PHYSICAL ARCHITECTURE

The physical architecture provides a physical representation of how these components are integrated. The architecture is divided into three layers: transportation, communications, and an institutional layer. The transportation layer consists of subsystems that perform transportation functions such as traffic management and traveler information. It is intended to link four major surface transportation subsystems; centers, travelers, vehicles, and roadsides. The center subsystem deals with those functions normally assigned to public/private administrative, management, or planning agencies. The roadside subsystems include functions that require convenient access to a roadside location for the deployment of sensors, signals, programmable signs, or other interfaces with travelers and vehicles of all types. The vehicle subsystems are systems of technologies that are installed in passenger, transit, commercial, and emergency vehicles.

Traveler subsystems represent platforms for ITS functions of interest to travelers or carriers (e.g. commercial vehicle operators) in support of multi-modal traveling. They may be fixed or portable, and may be accessed by the public via kiosks, cellular phones, or personal computers. The communications layer represents the technology that supports the information to be shared between all layers.

The institutional layer identifies the governmental and private agencies involved. Further development of this physical architecture will identify all of the desired communications and interactions between different transportation management organizations.

These identified technologies were matched with related market packages that are established within the National ITS Architecture. Following is a list of recommended market packages:

1. Network Surveillance
2. Surface Street Control
3. Traffic Information Dissemination
4. Broadcast Traveler Information
5. Incident Management System
6. Transit Vehicle Tracking
7. Emergency Response

IMPLEMENTATION STRATEGY

A common goal of the Federal Highway Administration (FHWA) and CARTS is to integrate ITS projects into the regional transportation planning process. One of the critical components of METRO 2025 was the creation of the Regional Arterial Network (RAN). This is a network of arterial roadways designed to provide a feasible alternative to the freeway network for intra-regional travel. Consequently, a new project development process was established for the RAN (see RAN study for list of projects). It is envisioned that all projects will be considered for funding in accordance with the plan development process. The Transportation Improvement Program (TIP) is the tool by which the goals and objectives identified in metropolitan transportation plan are implemented. The TIP document is a financially constrained listing of federally and non-federal funded transportation projects to be initiated within a three to five year period. However, projects in the TIP must all be in the long-range plan.

ITS projects that have been completed in recent years include: LR Downtown Signal Upgrade, JFK/107 (Park Hill)-Main Street Signal Upgrade, and projects associated with the Arkansas Highway Rehabilitation Program (including Pave the Way website, and DMS). Two projects expected to be completed soon include Amber Alert and Chemical Stockpile Emergency Prepared Program (CSEPP), which is in conjunction with Arkansas Office of Emergency Services.

Section 9: Roadway System Management

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) is a focus area of FHWA which strives to improve traffic flow, enhance mobility and economic vitality, improve safety, reduce environmental impacts, and provide new services to travelers through the use of technology. The implementation of ITS is often a more cost efficient, faster, and a less intrusive way of improving roadways than traditional widening projects. As the cost of construction continues to grow and revenues continue to shrink, ITS applications are anticipated to increase as a method for maximizing the existing transportation system, with limited cost. The importance of ITS to the METRO2030 Plan is best described through Objective 1.3 of the visions:

> *"Maximize the capacity of existing facilities on regional significant routes through the use of Intelligent Transportation Systems, (ITS) technologies, access management, and land use practices that protect roadway capacity".*

The CARTS ITS Plan was developed in the early 2000's and adopted in June of 2002. This plan was developed through the National ITS Architecture which ensures uniformity across multiple metropolitan areas. Within the central Arkansas area, it was determined that ITS should focus on:

1. Regional Travel Information Systems,
2. Freeway and Incident Management Systems,
3. Transit Management Systems,
4. Advanced Traffic Control Systems, and
5. Highway Rail Intersections.

As part of the long-range plan update to Metro 2030.2, the CARTS ITS plan and architecture is being updated. The following describes recent advances in ITS applications within central Arkansas.

Existing and Planned ITS Elements

1. Regional Travel Information Systems

Regional Travel Information Systems provide trip planning, route guidance, and advisory functions for travelers and drivers of all types. Central Arkansas currently utilizes a variety of Regional Travel Information Systems which are owned and operated by AHTD. These include 20 permanent variable message signs, 3 permanent highway advisory radio stations, and 8 traffic cameras for the observation of traffic operations. Information on lane closures, construction, and weather are also available on the websites of AHTD and area cities. In addition to the systems currently in place by AHTD, several private websites provide

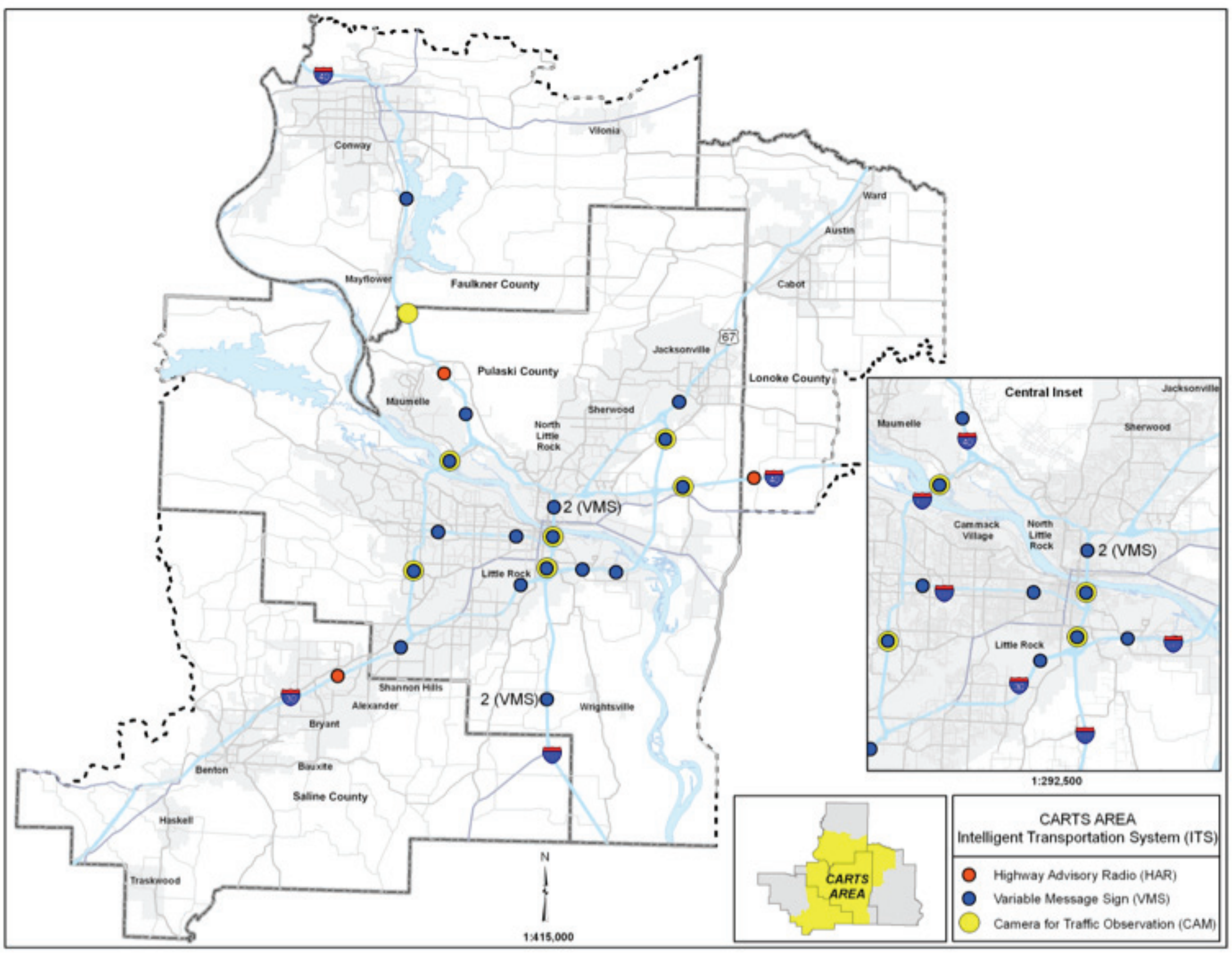
Figure 9.1 – Variable Message Sign Deployment along I-630

traffic flow information (speed) on major roadways within Central Arkansas, both free and for a charge. For example, Google® Maps and Yahoo!® Maps provide free real-time traffic conditions for high traffic areas. These tools can assist travelers in making better trip choices and reduce congestion. Planned elements of the Regional Travel Information Systems that are not yet in place include Traveler Advisor Telephone (511) and Cable Television. Map 9.1 shows the location of major ITS applications on the freeway network.

2. Freeway and Incident Management System

The Freeway Management and Incident System (FMS) is described as a critical component of the CARTS ITS Plan and strives to improve traffic flow by maximizing the available freeway capacity. During 2006, AHTD, with the assistance of a consultant, developed the Central Arkansas Freeway Management System (FMS) Conceptual Design Report. This report describes what would constitute full ITS applications on the I-630, and I-30/I-40 corridors in downtown Little Rock and North Little Rock. In addition, the plan includes ITS implementation at major decision points, communication requirements, a Traffic Control Center, staffing requirements, and maintenance require-

Map 9-1: **ITS Applications on the Freeway Network within Central Arkansas**



ments along with cost estimates. Existing ITS Elements shown on map 9.1 are expected to be part of a FMS. Originally, the motorist assistance patrol was part of the FMS but it has since been eliminated by AHTD.

3. Transit Management Systems

CATA is the primarily provider of public transit within Central Arkansas. ITS applications that have been added by CATA include adding magnetic strips to CAT passes, tickets, transfers and monthly bus passes; as well as Automated Vehicle Location (AVL) on paratransit buses. CATA is also in the early planning stages of updating their website, new applications are not known at this time.

4. Advance Traffic Control Systems

Advanced Traffic Control Systems (ATCS) are primarily under the control of cities, and are used to coordinate and communicate with traffic signals to minimize delay. In addition, these systems may have safety benefits, increased vehicle throughput, less fuel consumption, and reduced environmental impacts. Currently, the only operational Traffic Operations Centers are located in Little Rock and Conway. Operations at the Conway location are limited due to communication capabilities, however Conway is using part of an American Resource Recovery Act (ARRA) energy grant to increase the operational capability of their system. The City of Little Rock is also experimenting with an adaptive traffic control system along the Shackleford Corridor near I-430.

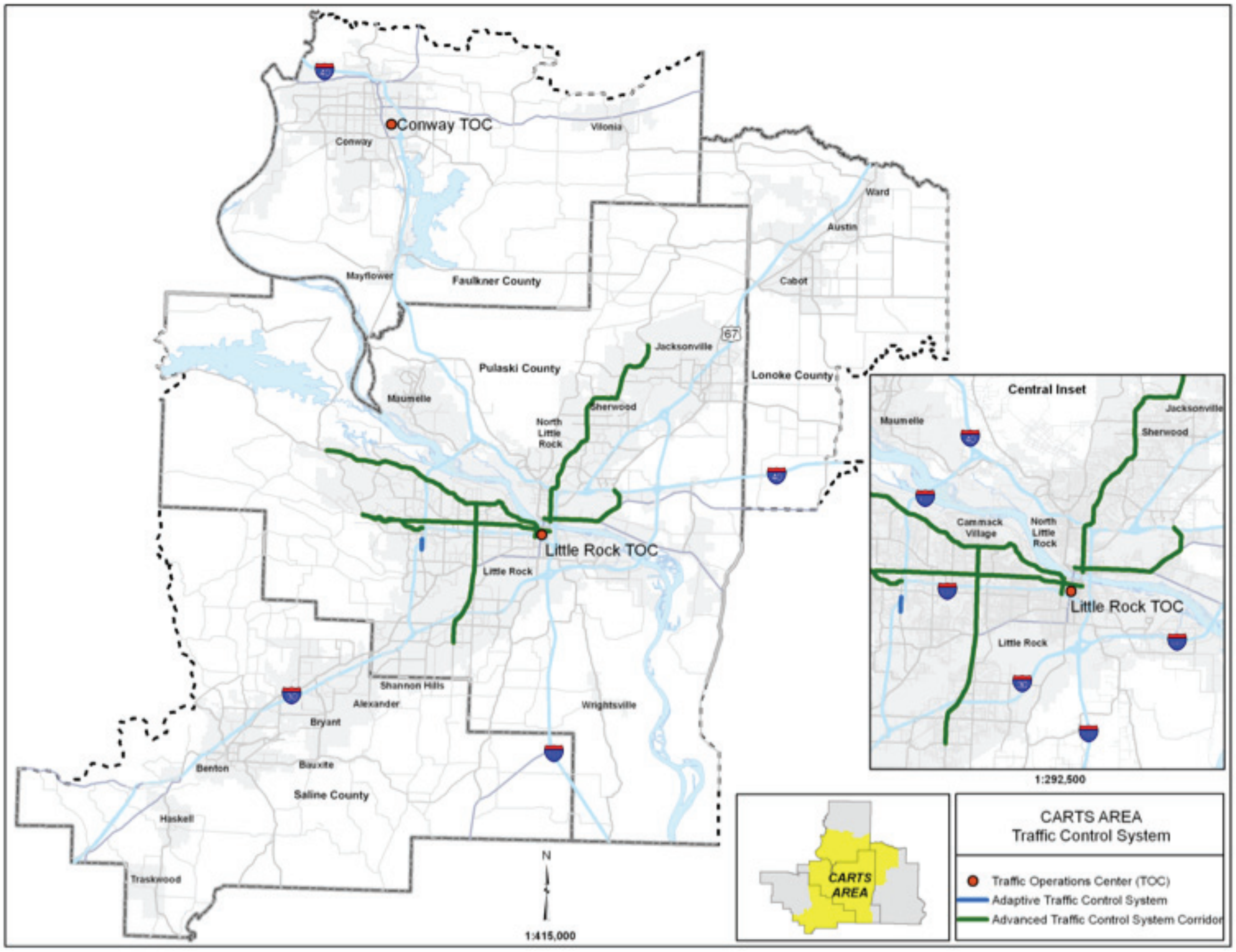
The Regional Arterial Network Study defined several Advanced Traffic Control Systems (ATCS) corridors. Strategies for these corridors include:

- Corridor-wide signal coordination and interconnection with the CARTS (city) TMC;
- Consideration of signal pre-emption for emergency vehicles and transit;
- Installation of closed circuit televisions (CCTV) at key locations for traffic monitoring and incident management, and
- Reserved capacity for telecommunications (fiber optic cable via franchise agreement).

Improvements within these corridors will ultimately depend on the available technology at the time of implementation. Corridors defined as ATCS are shown in map 9-2 on the following page.

Figure 9-2 – Downtown LR Signal Upgrade

Map 9-2: **Advanced Traffic Control Systems**



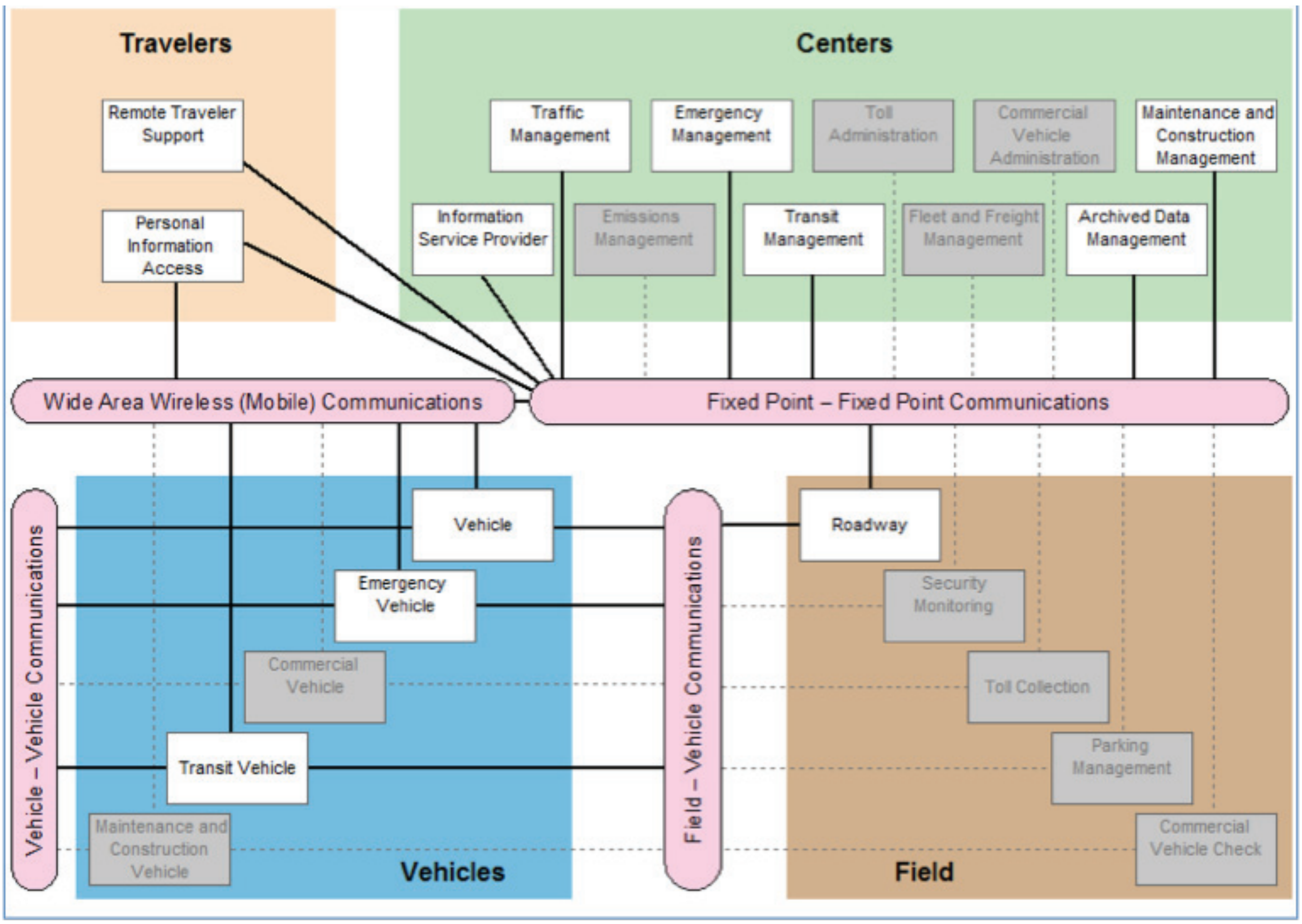
5. Highway-Rail Intersections

Part of the ITS application includes ITS improvements at highway-rail intersections.

Physical Architecture

The ITS Physical Architecture is shown in the figure 9-3 below.

Figure 9-3: **CARTS ITS Physical Architecture**



Implementation Strategy

While updating the CARTS ITS plan, one comment that was continually received was the need for ITS funding. In many cases funding could be found for the initial ITS development, but the funds for the maintenance of that system were not available.

Funding for ITS identified within the CARTS Long Range Plan include projects identified along the Advance Traffic Control Corridors. Maintenance funds could also be used to implement some ITS applications.

ACCESS MANAGEMENT

As defined by the Transportation Research Board (TRB) Access Management Manual, "Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway." The purpose of access management is to provide all modes of transportation access to land development in a manner that preserves the safety and efficiency of the transportation system.

Access management provides tools to deal with land uses abutting or otherwise served by a roadway, while still preserving the roadway's capacity to operate safely and efficiently. It applies basic traffic engineering principles to the location, design and operation of driveways serving activities along the roadway. It also evaluates the suitability and type of access needed to a given road, or site for development. It is a way of determining when and where access should be located, how it should be designed, and the procedures needed to administer the program. In other words, it properly manages the competing needs of traffic movements and the demands for access to different land uses.

Access management includes classifying roadways based upon functional criteria, defining allowable levels of access for each roadway class, including spacing requirements for driveway and signal spacing, applying appropriate geometric design and traffic engineering analysis criteria, and adopting implementing regulations and administrative procedures.

Some symptoms, benefits, and techniques of access management are highlighted below:

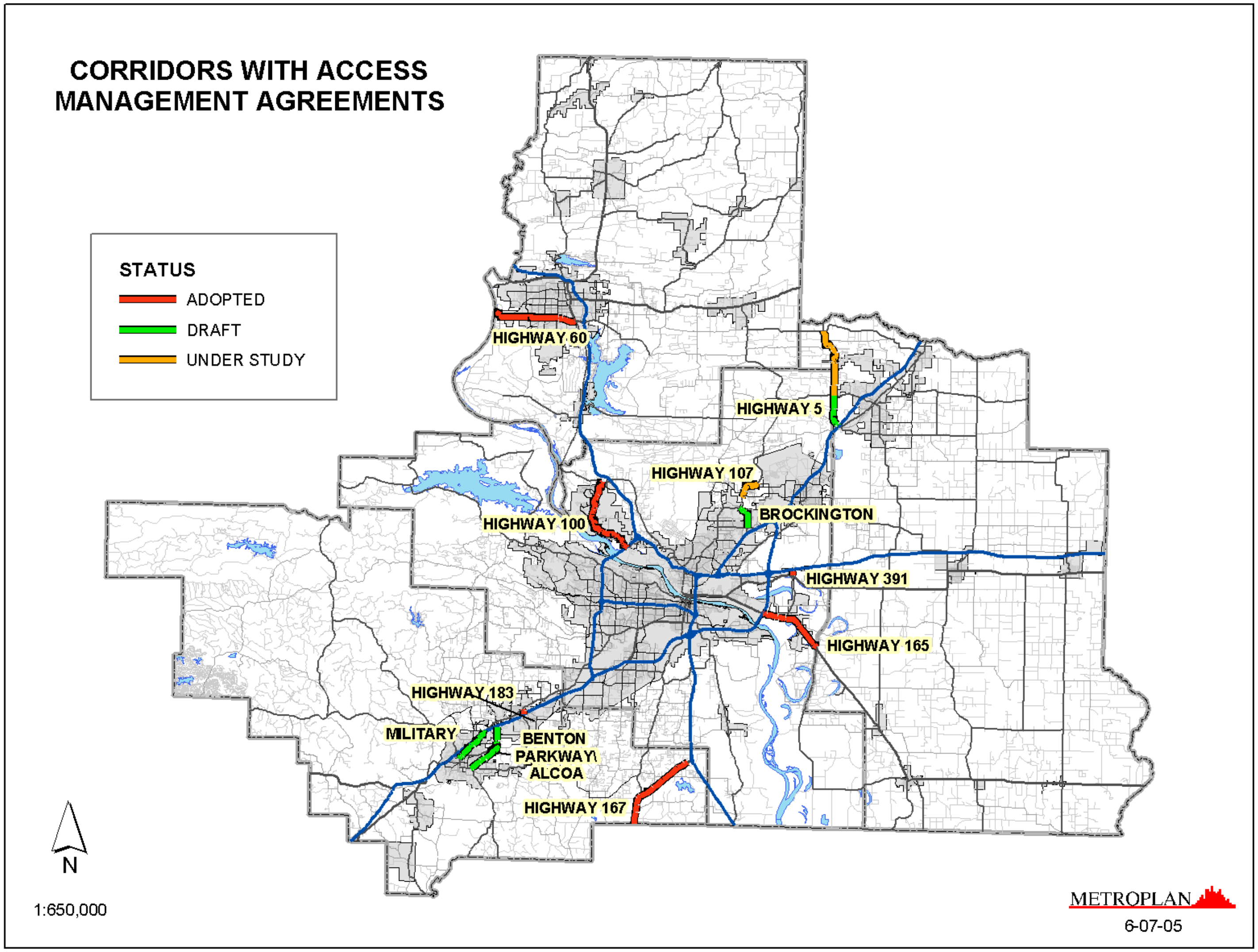
Symptoms of Poor Access Management	Benefits of Access Management Safety
• High Crash Rates • Poor Traffic Flow and Congestion • Numerous Brake Light Activation by Drivers in the Through Lanes • Strip Development • Neighborhoods Disrupted by Cut-Through Traffic • Using a Local Street Parallel to the Overburdened Arterial to make a One-Way Pair • Pressures to Widen an Existing Street or Build a Bypass • Bypass Routes as Congested as the Roadways they were Built to Relieve • A Decrease in Property Values	• Fewer and Less Severe Crashes • Less Auto-Pedestrian Conflict • Efficiency • Less Stop and Go Traffic • Reduced delay • Increased and preserved capacity • Reduced fuel consumption • Preservation of investment in the roadway system • Aesthetics/More attractive corridor • Improved community appearance • Livable Communities • Enhances community character • Preserves neighborhood integrity • Preservation of private investment in abutting properties • Lower vehicular emissions
Access Management Techniques	
• Installation of Non-Traversable Medians • Auxilary Lanes • Signal Spacing • Driveway Location and Design • Driveway Spacing • Corner Clearance • Joint and Cross Access Agreements • Reverse Frontage Roadways	

Source: An Introduction to Access Management, Vergil G. Stover and Center for Urban Transportation Research

CURRENT PROJECTS

In 1999, Metroplan, in cooperation with the City of Conway and AHTD employed access management techniques on Dave Ward Drive (SH 60). This was the first major attempt to institute access management techniques in the CARTS area. The access management plan developed for this section of road serves as the prototype from which new access management plans are developed. Access management plans have also been adopted for Highway 167 (Saline County), Highway 165 (North Little Rock), and Highway 391 in (North Little Rock). Map 9-2 shows locations of adopted Access Management Planes and additional locations currently under consideration.

Map 9-2
Access Management Plans



IMPLEMENTATION

By effectively managing roadway access, agencies can extend the life of roadways, increase public safety, reduce traffic congestion, and improve the appearance and quality of the built environment.

As part of an implementation strategy, Metroplan has developed Access Management Standards for the CARTS area. These standards are intended for use on all arterials in the CARTS area, but are geared towards and required only for the RAN. These standards are to be used to direct the development of corridor specific access management plans for each RAN Corridor.

Implementation of these standards can be initiated in one of three ways:

1. Project Level – Projects that are in the Transportation Improvement Program;
2. Member Jurisdiction can initiate, or request Metroplan to initiate in coordination with AHTD, where appropriate; and
3. Systematic development of corridor-specific Access Management Plans for:
    a) Critical Segments
    b) Priority Corridors
    c) Remaining Portions of RAN

FIXED ROUTE SERVICE

Public transit in central Arkansas is chiefly served by the Central Arkansas Transit Authority (CATA). CATA provides both fixed route and specialized (paratransit) transportation in Pulaski County. CATA has a total of 73 buses, all of which are lift-equipped. Table 10-1 describes the type and model year for all CATA's fleet, including maintenance and support vehicles.

CATA is governed by a thirteen member Board of Directors appointed by the local governments of Cammack Village, Little Rock, Maumelle, North Little Rock, Pulaski County and Sherwood. Personnel include 155 full-time and 8 part-time employees. The 2004 operating budget is $10 million which includes $903,956 for paratransit operations. Funding for the operating comes from farebox revenues ($1.2 million), local government dues ($6.3 million) and federal/miscellaneous ($2.5 million).

Table 10-1
CATA Fleet 2004

Vehicle	Capacity	#	Vehicle	Capacity	#
Buses			Job Access Van		
1996 Neoplan Bus	35	18	2000 Dodge Van	15	**3**
1990 Orion Bus	28	1			
1981 RTS Bus	43	11	Other & Support Vehicles		
2001 Gillig Bus	32	8	1995 Buick Car	4	1
2003 Gillig Bus	32	9	1994 Cutlass Car	4	1
2004 Gillig Bus	28	7	1997 Ford Car	4	1
1996 El Dorado Van	18	1	2000 Malibu Car	4	1
2001 El Dorado Van	18	3	2001 Malibu Car	4	1
			2002 Durango SUV	4	3
Links Vehicles			1987 Dodge Truck	2	1
2000 Ford Van	2 W/C* or 8	1	2001 Dodge Truck	2	2
2001 Ford Van	2 W/C* or 8	7	2000 Ford Van	8	2
2002 El Dorado Van	7 W/C* or 14	2			
2003 El Dorado Van	7 W/C* or 14	6	Contingency Fleet	24	2
2004 El Dorado Van	7 W/C* or 14	2	1997 Trolley		
TOTAL CATA Fleet 94					

**Wheel Chair*

CATA operates 47 buses in peak-hour service, on 21 regular fixed routes, eight express routes and a demand-responsive service (Links paratransit). Monday through Friday CATA services 7,805 miles, 5,638 on Saturdays and 1,576 on Sundays. Fixed route ridership averages between 7,000 and 8,000 daily passenger trips and paratransit ridership averages between 4,500 and 5,000 monthly passenger trips.

CATA bus on McCain Blvd.
North Little Rock

CATA provides 31-day passes and 10-ride cards in addition to one-way daily cash fares. One-way cash fares are $1.10 adults, free for children four and under, 50 cents children 5-11, 55 cents for people over 65 or disables and transfers are 10 cents. 31 day-passes for adults are $30.00, 65 and over or disabled $15.00 and student (age 18 or under) $16.00. 10-day ride cards are $9.00 for adults and $4.50 for 65 and over or disabled.

CATA is currently updating the express route network by increasing frequencies to five daily round trips, bus stop at all major express route stops, a new 30 foot low-floor bus and simplified route alignments.

South Central Arkansas Transit (SCAT) is located in Malvern Arkansas and serves Clark, Saline, Pike, Montgomery, Garland, Hot Spring, Dallas, Ouachita, Union and Columbia Counties. SCAT provides primarily demand response (service when needed by rider) service, but includes an intercity fixed route connection to Greyhound Lines from Magnolia, El Dorado and Camden. SCAT operates approximately 107 small buses, station wagons, vans and ADA accessible vans. SCAT's annual ridership is 245,500.

Information obtained from SCAT indicates that the program uses a mixture of 21 buses, vans and cars to transport elderly patients residing in the Benton area to medical appointments in Benton and the surrounding area, including Pulaski County. There are two routes running daily between Benton and Little Rock, which in combination provide service to/from UCP, Easter Seals, Integrity Day Care, a dialysis clinic and UALR. Paratransit services are provided from 8:00 AM to 4:30 PM, with the cost being $2.00-4.00 one-way, depending on distance. For $30 per month, SCAT also transports students to/from certain schools in Benton or to after-school activities at the Boys & Girls Club.

As a rural transit provider, SCAT is not authorized to provide general public transportation services in the Little Rock-North Little Rock urbanized area (which includes Benton). That function is reserved for CATA, which does not currently provide service to Saline County. By consent, SCAT provides limited medical and commuter service for non-residents of Pulaski County, but it operates "closed door" to specific destinations.

Section 10: Transit Plan

In his first post-election interview on November 16, 2008, President Barack Obama observed that:

> *"... this has been our pattern. We go from shock to trance. You know, oil prices go up, gas prices at the pump go up, everybody goes into a flurry of activity. And then the prices go back down and suddenly we act like it's not important, and we start, you know, filling up our SUVs again. And, as a consequence, we never make any progress. It's part of the addiction, all right. That has to be broken. Now is the time to break it."*

Central Arkansas saw the President's characterization acted out in the years between the adoption of METRO 2030, as fuel prices climbed to nearly $4.00 per gallon and global politics threatened to limit availability. Ridership on Central Arkansas Transit buses sharply increased and public transit received serious treatment by local media. Studies were initiated to explore the feasibility of extending rail service to the Little Rock airport, and to determine the proper rail alignment along the I-630 corridor.

As of this writing, fuel prices hover around $2.50, and Arkansans seem to have made their peace with that number. Bus ridership has decreased slightly but has stabilized at a higher count than before the price hikes of 2007-8.

Current Public Transit Services in Central Arkansas

Public transportation resources in Pulaski County are primarily confined to Central Arkansas Transit Authority (CATA) and various human service agencies. Outside of Pulaski County, transit services are provided by the South Central Arkansas Transit (SCAT) and human service agencies. The financially constrained long-range plan in Section 15 of this document discusses the financial resources expected to be available over the life of the plan to maintain current transit services.

Central Arkansas Transit Authority

CATA provides fixed-route, ADA-compliant paratransit and streetcar transportation in Pulaski County. The Authority is governed by a 12-member Board of Directors appointed by the local governments of Little Rock, Maumelle, North Little Rock, Pulaski County and Sherwood. CATA employs 165 people and in 2009 had an operating budget of $14.5 million. Of that amount, $12 million went to operating the fixed-route bus service, $1.5 million to paratransit, and $1 million to the River Rail streetcar network.

CATA operated 47 buses in peak-hour service, on 20 local routes and four express routes. All of CATA's vehicles are lift-equipped. Table 10-1 describes the type and model year for all of CATA's fleet, including maintenance and support vehicles.

The fixed route bus service averages between 7,000 and 8,000 passengers on weekdays; paratransit service averages approximately 5,500 ADA passengers per month. CATA provides 31-day passes and 10-ride cards in addition to one-way cash fares. One-way cash fares are $1.35 for adults, free for children four and under, 60 cents for children five to 11, and 65 cents for seniors 65 and older and people with disabilities. Transfers are five cents. The 31-day passes are $36, $18 for seniors and people with disabilities, and $19.50 for students 18 and younger. Ten-ride cards are $11.50 for adults and $5.75 for seniors and disabled persons.

Table 10-1

2009 CATA Bus Fleet

Buses	Capacity	Number
1981 RTS	38	3
1996 Neoplan	35	14
2001 Gillig	32	8
2003 Gillig	32	9
2004 Gillig	25	7
2007 Gillig	32	6
2008 Gillig	32/44	10
Links Paratransit Vehicles	**Capacity**	**Number**
2001 Ford	8	1
2002 El Dorado	14	2
2003 El Dorado	14	6
2005 El Dorado	14	2
2008 El Dorado	14	7
2009 El Dorado	14	3
Support Vehicles	**Capacity**	**Number**
2000 Malibu	5	1
2002 Dodge SUV	5	1
2005 Ford	5	2
2006 Ford	5	1
2006 Toyota SUV Hybrid	5	1
2008 Ford Escape Hybrid	4	4
1997 Dodge Truck	2	1
2001 Dodge Truck	2	2
Streetcars	**Capacity**	**Number**
2001 GOMACO	40	3
2006 GOMACO	40	2

South Central Arkansas Transit

South Central Arkansas Transit (SCAT) is a program of the Central Arkansas Development Council (CADC) headquartered in Malvern, Arkansas. SCAT serves Clark, Saline, Pike, Montgomery, Garland, Hot Spring, Dallas, Ouachita, Union and Columbia counties. CADC also serves as a ticket agent for Greyhound.

Service is primarily demand-response. According to its website, "through SCAT, public transportation is available at a reduced rate to any person, regardless of income. The service supports a person's efforts to better their lives." SCAT also provides non-emergency medical transportation.

As a rural transit provider, SCAT is not authorized to offer general public transportation services in the Little Rock-North Little Rock-Conway urbanized area, which includes Benton. That function is reserved for CATA, which does not currently operate in Saline County. By consent, SCAT provides limited medical and commuter service to non-residents of Pulaski County.

Human Service Providers

In addition to both CATA and SCAT, a number of human service agencies operate transit 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, individuals must meet criteria specific to the provider program.

The federal directive described in the SAFETEA-LU requires that projects selected for funding under the Elderly Individuals and Individual with Disabilities Capital program 5310, Job Access and Reverse Commute program 5316, and New Freedom program 5317, come from a locally developed, coordinated public transit-human services transportation plan. The purpose of the Arkansas Coordinated Public Transit Human Services Transportation Plan is to: promote interagency cooperation, minimize duplication and overlap of services, determine the most efficient and cost-effective transportation services, and improve access to transportation for those in need. For the central Arkansas region, CATA was the lead agency in preparing the plan. The plan has been in effect since 2007.

The Transit Vision for Central Arkansas

Beginning with the development of METRO 2020 in the early 1990s, central Arkansas residents have expressed a desire to see the region grow in such a way as to accommodate rail travel. The initial preference was demonstrated in the Visual Preference Survey (VPS) conducted in 1992-93, and in the Vision and Goals that were developed by the citizen-based Transportation Advisory Council (TAC). In subsequent plan updates, the Vision and Goals have been reaffirmed, and measurable objectives were added.

METRO 2030 was a major plan update that entailed significant public involvement. Again, when given a variety of land use and development scenarios, the public chose a modestly more compact region that features development within and around established urban and suburban cities, and also along existing freeway corridors. The concept includes an enhanced basic bus system, with strategic light rail or bus rapid transit (BRT) expansions along regional corridors.

Also coming out of the 2030 update was *A Regional Transit Vision for Central Arkansas,* a financially unconstrained long-range transportation concept plan that identifies a network of rail and bus corridors that together form the backbone of a region-wide public transit plan. It was developed by a group of elected officials, business leaders, developers and members of the public in a day-long charrette held at Pulaski Technical College on January 10, 2004. Participants were led through a series of presentations and workshops to identify the role of transit in the future of central Arkansas.

The vision included recommendations for development of specific corridors. They include:

- Northeast Corridor, US 67 from Little Rock to Jacksonville
- Northwest Corridor, I-40/UPRR, Conway to Downtown

- West Corridor, I-630/Chenal/Kanis from Downtown to Ferndale Cutoff
- Southwest Corridor (short-term), I-30 from Downtown to Benton
- Southwest Corridor (long-term), Rock Island from Downtown to Benton

Because METRO 2030.2 is not a major 10-year update, discussion is limited to general observations and recommendations.

Planning and Implementation since METRO 2030

A number of transit-related planning activities have been undertaken in the years following adoption of METRO 2030.

A bus system for Conway?

The Conway Transit Feasibility study was initiated in 2009 at the request of the city, in order to (a) determine the feasibility of a bus service within the city and if service is deemed desirable, (b) to obtain a solid plan for implementing such service. Phase 2, the implementation plan was, presented to the Conway City Council for its consideration in February 2010.

Other metropolitan area studies

Studies were undertaken during the years following adoption of METRO 2030 to advance the transit vision of stepping into rail corridor service supported by an enhanced bus system. They include:

- **I-630 Fixed Guideway Alignment**. Metroplan, in cooperation with the City of Little Rock, is overseeing this consultant-led study, the purpose of which is to determine the most feasible alignment for development of a fixed guideway transit system along the I-630 corridor for long-term corridor preservation efforts.
- **River Rail Airport**. The purpose of this consultant-led study is to explore the feasibility of extending current streetcar service to the Little Rock National Airport. A second phase, if pursued, would entail looking at other modal options.
- **Short Range Transit Improvement Plan** ("the McDonald Study"). Completed in 2007, this plan focuses on the bus and paratransit (Links) system only and projects a five year time horizon.

High-speed rail in central Arkansas' future?

Central Arkansas is on one of ten corridors identified for rapid rail development. Availability of ARRA ("Stimulus") and planning money combined with renewed enthusiasm for energy efficiency and good environmental stewardship, have stimulated interest in the state for pursuing investment in this transportation alternative.

The Arkansas State Highway and Transportation Department (AHTD) is seeking $500,000 in federal Stimulus money to study a high-speed rail route from Little Rock to Texarkana. The track is part of the South Central High-Speed Passenger Rail Corridor in USDOT's High-speed Rail Strategic Plan. The State of Texas has applied for money to study a route that would go from Texarkana to Dallas.

The Obama administration budget allocated $5 billion to execute the strategic high-speed rail plan. That amount, which comes on top of the preliminary $8 billion, is to be paid out in portions of $1 billion per year. It is likely that states and regions that have already done advance planning for high-speed rail (California, Florida, parts of the mid-west) will get preference on the available money.

Central Arkansas Transit Authority: Twenty Year Bus Service Plan

Two clear transit recommendations emerged from the METRO 2030 planning process:

1. In order to maintain the existing network and to expand the system to meet the growth vision for central Arkansas, CATA should seek a dedicated source of revenue.
2. Prior to proposing a dedicated funding source, a comprehensive bus transit plan should be developed.

The first recommendation has not been pursued; however, as of this writing CATA's Board of Directors has authorized a committee to investigate possible alternative funding sources.

The second recommendation was partially addressed in a short-range plan prepared for CATA by McDonald Transit Associates, Inc. ("the McDonald Plan"). Some of the recommendations arising from that study are incorporated in this plan update.

The focus of this transit plan update is to provide a plan for bus service, with a twenty-year implementation horizon, and with a level of detail sufficient to be

- Easily implemented, and
- Provide the general public with knowledge of exactly what services are being offered and at what cost.

It is the intent of this service plan to provide detailed information to policy makers and the general public with the specificity that will allow them to understand exactly what services are suggested and what results are anticipated. It is prepared in partial fulfillment of the METRO 2030 recommendation to develop a comprehensive bus transit plan prior to proposing a dedicated transit tax.

Summary

The 20-year plan is designed to focus on growth trends and unserved markets to institute service where appropriate to meet ridership demand. Other goals of the analysis include:

- Increase system wide productivity, efficiency and effectiveness.
- Maintain and increase ridership.
- Respond to area population and traffic growth.
- Identify areas not presently served that warrant service.
- Enhance the quality of service through operational improvements.

Unserved areas and unmet needs in the metropolitan area include:

- Connection to Little Rock from Benton, Bryant, Cabot, and portions of west Little Rock west of I-430.
- Service to meet non-traditional work hours (i.e. swing shifts & graveyard shifts).
- Evening service to meet social, educational, and recreational needs (i.e. evening classes, movies, clubs, social activities).
- Weekend service hours to meet the needs of commuting workers.

- Travel times more competitive with auto travel (greater use of expressways, limited stops, etc.).
- Local bus service in the smaller communities such as Jacksonville, Sherwood, and Maumelle.
- Enhanced frequencies on major routes to be more competitive with auto travel and to encourage more spontaneous travel when wait times average less than a few minutes (currently average waiting time at CAT run from 15 to 30 minutes).
- Provide service on major holidays.

Service Criteria

General criteria were used to guide the development of recommendations:

- The recommendations should be an improvement in the use of CATA resources resulting in a more efficient system.
- Current alignments and practices must be respected unless a compelling reason is found to recommend a change.
- Coverage and service for potential riders should be provided on a cost-effective basis.
- The attraction of new riders to the system must not come at the expense of current riders.

Operating Environment

- Until the housing crisis of 2008, suburban growth in the Little Rock area has been relatively rapid. Despite this growth, no plans have been developed or implemented to extend CATA's operating area beyond its current service area.
- The type of suburban growth occurring in west Little Rock, Benton, Bryant, Cabot, and further outlying communities is not conducive to a corresponding increase in transit service. New subdivisions are often isolated at the end of long dead-end streets that are not compatible with efficient bus routings. There is currently a lack of major travel generators or focal points in these more recently developed areas such as educational institutions, civic centers, and regional shopping centers. Connectivity in these areas is centered almost exclusively on auto travel with a corresponding absence of pedestrian and bicycle facilities both of which are critical for efficient bus travel. Therefore bus routes in suburban locations have less chance for success.

Routes

- Route coverage within the core service area is good, particularly along the older more established travel corridors. Nearly all residents within this core area are within a reasonable walking distance of a bus stop.
- Alignments for the most part are simple, direct, and easy to remember. Most routes provide good bi-directional service even in suburban areas. Exceptions include Route #17/17A which has evolved into a complex, multi-leg, and customer

unfriendly service. Two of the system's Express Routes #26 and #36 provide less than ideal levels of directness and simplicity as they were designed to minimize block hours (that is, the time a vehicle leaves the garage until the time it returns) in order to keep within budget on staffing costs.

- There is only a limited amount of service duplication primarily in the older neighborhoods immediately adjacent to the center city.
- There are some difficult turns and unprotected street crossings, but this is not a major issue throughout the system.

Schedules

- Average headway is approximately 35 minutes. Ideally headways should be at a minimum of 30 minutes with 15 or 20 minute frequencies provided on main routes during peak travel times.
- Little schedule recovery time is provided at the downtown River Cities Travel Center which sometimes results in delayed or missed transfers.

Super Routes

One of the recommendations stemming from the Short-Range Improvement Plan study was to invest resources in a few routes that are already productive and make them high-performing "Super Routes". A Super Route is defined as high frequency (10-15 minutes) throughout daytime hours on weekdays, with good frequencies on both weekends and evenings. Super Route service hours should be from 5:00 a.m. until 12:00 midnight, Monday through Friday in order to allow all work shift schedules, including graveyard shifts, to be met.

Regional Bus Plan Recommendations

The general considerations in designing route, schedule, and operational recommendations are:

- Route redesign must be approached conservatively to avoid disruption of well-established travel habits and patterns. Major alignment changes should be made only in response to poor productivity, strong demand in currently unserved areas, a significant savings in resources while meeting demand, or an improved and simplified alignment.
- Running time is a major consideration in route redesign to allow for better on-time performance and improved transfer connections. Allowances must be made for the fact that traffic volumes will continue to increase and will negatively impact schedule adherence in the future.
- Improved identity and operation of routes can be achieved by reallocating route segments and branches within the system.
- Headways closer to national standards should be achieved. A minimum of 30 minute frequencies during peak commute travel times, and at least 60 minute frequencies during off-peak travel times.
- High demand routes should be enhanced through designation as "Super Routes". Super Routes would operate at least every 10 minutes throughout the day on

weekdays with enhanced frequencies during evening and weekend travel periods. Bus stops should include amenities such as shelters, special Super Route graphics and identifiers, posted schedule times, and provide real-time schedule departure information at high activity stops.

- Until major trip generators, transit oriented development, improved densities, enhanced pedestrian environments, and additional community focal points are created, substantial new suburban services should not be implemented.
- Service to industrial parks traditionally does not generate substantial ridership levels and should not be emphasized.

The major local bus route recommendations are summarized as follows. Proposed Super Routes are denoted in **red**. Each route is discussed in detail under the Route Descriptions and Analysis section, beginning on page 11.

Route #3 - Baptist Hospital: Convert to 10-minute Super Route status. Extend route to Shackleford Crossing.

Route #5 - Markham Street: Convert route to 10-minute Super Route status. Operate route bi-directionally via Markham Street to Chenal Parkway, to terminate at Sam's Club on Chenal Parkway and Bowman. Chenal Parkway & Financial Center Parkway will be served by new Route # 23 Chenal Parkway.

Route #8 - Rodney Parham: Extend route to Pleasant Ridge area via North Rodney Parham.

Route #10 - McCain Mall: Convert route to 10-minute Super Route status. This route would be upgraded to streetcar service during Phase II rail enhancements. The streetcar service must be designed to operate at average travel speeds that are equal or better to those provided by the current bus operation.

Route #14 - Rosedale: Convert route to 10-minute Super Route status. Branch route at 36th and Colonel Glenn with one leg operating via 36th Street to Shackleford Crossing, the other leg would operate via Colonel Glenn to the I-430 /Colonel Glenn commercial area. A 10-minute service is proposed for the trunk portion of the route and 20-minute service on the 36th Street and Colonel Glen Road branches. Weekend and evening frequencies are proposed to operate every 20 to 30 minutes.

Route #21 - University/Mabelvale: Extend route from UALR south to the Mabelvale area via the current Route # 17A alignment. Enhance frequencies to 30 minutes peak, 45 minutes off-peak and Saturdays, 60 minutes on Sunday and evenings.

Route #22 - Jacksonville/Sherwood: New local route is proposed to connect downtown Little Rock with North Little Rock, Sherwood, Jacksonville, and Little Rock Air Force base via current Route # 36 alignment. Recommended frequencies are 30 minutes peak, and 60 minutes off-peak and Saturday.

Route #23 - Chenal Parkway: New route is proposed to connect downtown Little Rock and the State Capitol area with Financial Center Parkway and Chenal Parkway, terminating at the Wal-Mart located on Chenal Parkway and Hwy. 10. Recommended frequencies are 30-minutes peak, 60-minutes off-peak and Saturday.

Route #24 - Stagecoach/John Barrow: New local route would connect UAMS with Park Plaza, St. Vincent Infirmary, the John Barrow Road, corridor, the Stagecoach Rd. corridor, Otter Creek, and Pulaski Tech South. Suggested frequencies are 30-minutes peak, 60-minutes off-peak and Saturday.

Recommendations for Express Bus Routes

Route #26 - Maumelle: Reroute to/from downtown Little Rock via I-40 and Crystal Hill Road (discontinue I-630 and I-430 routing). Increase service from five daily roundtrips to 13 daily roundtrips on weekdays, and institute four daily roundtrips on Saturdays.

Route #27 - Benton/Bryant: New express route would link Benton and Bryant with downtown Little Rock and the State Capitol area. Twelve (12) weekday peak period roundtrips are proposed.

Route #28 - Jacksonville/Cabot: New express route would link Cabot and Jacksonville with downtown Little Rock and the State Capitol area. Eight (8) weekday peak period roundtrips are proposed,

Route #29 - Sherwood: New express route would link Sherwood with downtown Little Rock and the State Capitol area. Six (6) weekday peak period roundtrips are proposed.

Route #30 - UAMS/UALR/Saline County: New express route would link UAMS Park Plaza, St. Vincent, & UALR with Benton and Bryant.

Route #31 - Conway/Mayflower: New express route would link Conway and Mayflower to downtown Little Rock.

Recommendations for Regional Rail

Four regional rail corridors should be established to connect downtown Little Rock with outlying communities. These corridors should include:

- Downtown Little Rock to Chenal via I-630/Markham. St. corridor
- Downtown Little Rock to Conway via Maumelle and Mayflower
- Downtown Little Rock to Cabot via North Little Rock, Sherwood, and Jacksonville
- Downtown Little Rock to Benton via Southwest Little Rock and Bryant

Additionally, any rail or bus rapid transit service requires robust bus support. Following are recommendations to address coordinated transit planning.

- Ensure funding adequate to support bus network to complement any rail line that is contemplated.
- Regional connectivity is also needed to transport people at the end of rail lines and in areas outside rail coverage.
- Plans for rail should be done in conjunction with plans for the bus network. The goal should be to ensure a seamless interaction of services and travel modes.

Recommendations for Streetcar Improvements

CATA's River Rail Streetcar network should be expanded to cover additional neighborhoods. River Rail should focus more on frequency, directness, and more competitive travel times. Expansion of service should focus on linear routes, double tracking (to eliminate conflicts between vehicles traveling in opposite directions), and should be engineered to allow streetcars to safely operate at speeds comparable to adjacent automobile traffic. Suggested River Rail improvements call for a north-south route connecting the McCain Mall area in North Little Rock via the JFK corridor with the downtown areas of both North Little Rock and Little Rock, then south along the Main Street Corridor to 17th Street in the SOMA section of Little Rock. A second east-west alignment is proposed to operate from the Clinton Presidential Library via the existing alignment to Spring St., then via Capitol Ave. to the State Capitol/Children's Hospital area, and onto Park Plaza via UAMS, Veterans Hospital, and St. Vincent Infirmary. To make these streetcar improvements cost-effective, community zoning policies must be altered to permit and encourage higher density, mixed-use development along these corridors.

CATA, in conjunction with local governments and law enforcement officials, needs to develop and implement a more aggressive, effective, and time sensitive response to obstructions within the rail right-of-way prior to construction of additional tracks. Currently, illegally parked vehicles can block the line for upwards of 30 minutes before law enforcement arrives. Such a scenario will be unacceptable on a rush hour commute service operating with 10-minute frequencies which must achieve a 97 percent or better on-time performance, with significant delays occurring on less than five percent of trips. Rail services that perform below this level of reliability cannot compete successfully with alternative transportation modes.

Route Descriptions and Analysis

Route #1 – Pulaski Heights

Route Description: The Pulaski Heights Route connects downtown Little Rock with Mississippi Ave. and Cantrell in the Tanglewood area operating via Kavanaugh Ave. through Hillcrest and the Heights. The route is characterized by older single-family homes. The commercial areas of Hillcrest and the Heights were built before the automobile's domination of travel modes, which has resulted in a higher density and more pedestrian friendly characteristics than are found in areas with a more contemporary suburban design.

	Weekday	Saturday
Service Hours	25.9	18.1
Passengers/Hour	9.3	6.7

Analysis: This route serves relatively affluent neighborhoods characterized by high levels of auto ownership. The route, however, is more productive than would be expected due to positive attitudes concerning public transportation, good densities and pedestrian friendly design of neighborhoods along the route, and travel times to downtown Little Rock that are highly competitive with auto travel.

	Existing			Proposed		
	Peak	Mid	Sat	Peak	Mid	Sat
Headways	35	35	45	30	60	60
Vehicle Requirements	2	2	1.5	2.2	1.1	1.1
Round Trip Running Time	65	65	65	65	65	65

Route #2 – South Main Street

Route Description: The South Main Street route operates in a loop configuration serving the Southside of Little Rock via the Main St. corridor. This route serves the commercial area along Main St., Quapaw Quarter historic district, and residential neighborhoods adjacent to Roosevelt Rd.

	Weekday	Saturday	Sunday
Service Hours	16.0	8.4	7.9
Passengers/Hour	16.2	12.3	5.9

Analysis: Route # 2 is a relatively short route that serves the Main St. commercial corridor and economically disadvantaged neighborhoods adjacent to Roosevelt Rd. The existing alignment contains an uncontrolled crossing of Roosevelt Rd. at Ringo St. This intersection is not protected by a traffic signal and sight distances are limited due to hilly terrain. The route is currently interlined with Route # 1, – served by the same vehicles – which results in odd service frequencies of 35 minutes during morning and afternoon commute times.

Multiple routes, with some service overlap, characterize South Little Rock's transit service. The population of the area has declined and travel patterns have evolved away from the focus on downtown travel when these routes were first operated. With some service consolidations in the area, some resources could be reallocated to provide links to new destinations.

Recommendations:

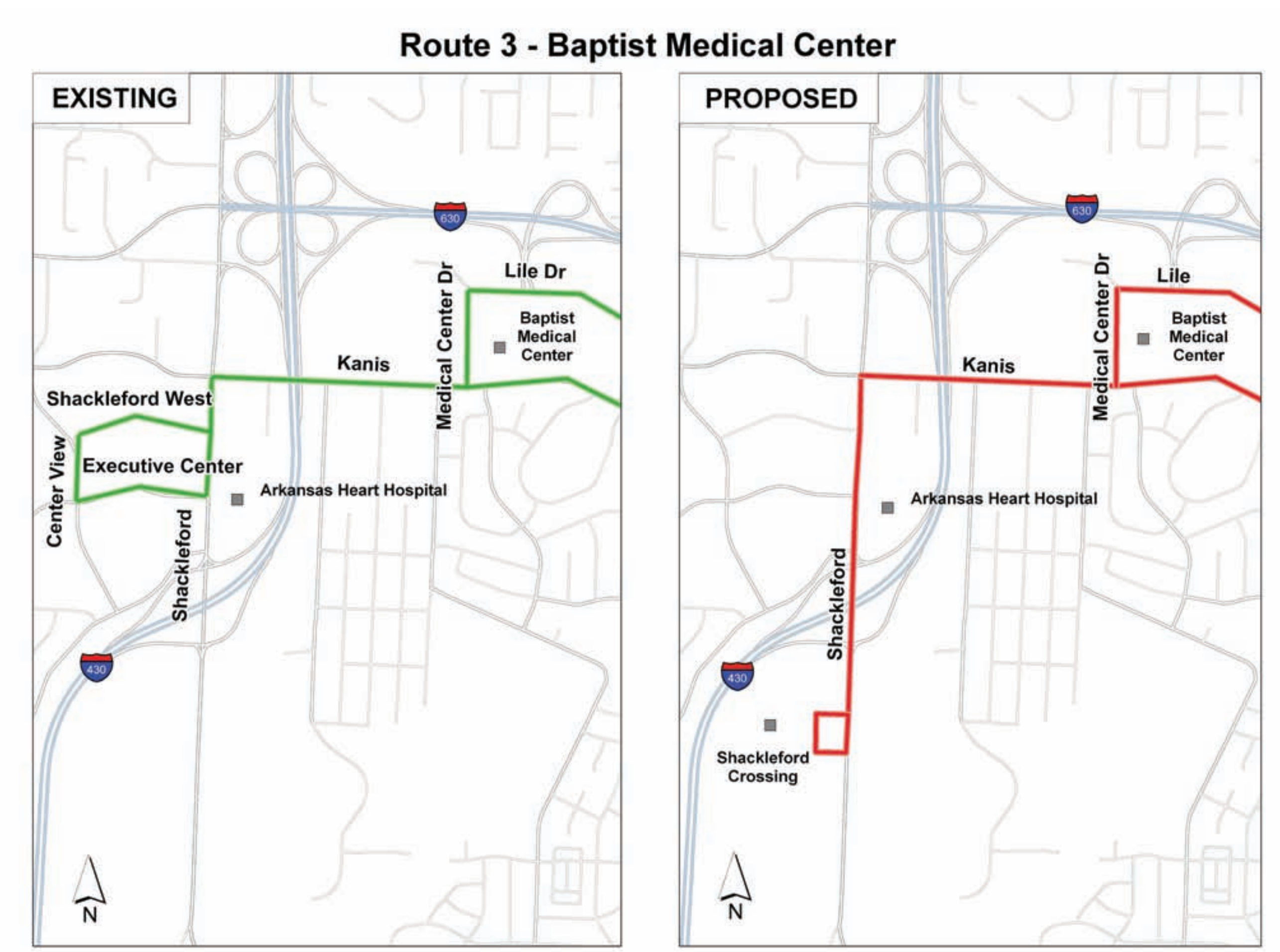
- Eliminate the hazardous crossing of Roosevelt Rd. at Ringo Street by traveling southbound on Ringo, right on Roosevelt, then left on Ringo Street.
- Increase service frequencies to every 30 minutes on weekdays.

Route #3 – Baptist Medical Center Super Route

Route Description: Route #3 connects downtown Little Rock with Baptist Medical Center via Children's Hospital, the 12th Street corridor, Doctors Hospital, the Park Plaza/St. Vincent area, the Kanis Rd. corridor, and Arkansas Heart Hospital. Land use along this corridor is characterized by low to moderate income areas along the 12th Street corridor and middle income residential and low density commercial development along Kanis Road.

	Weekday	Saturday	Sunday
Service Hours	44.6	40.0	15.8
Passengers/Hour	17.8	9.1	9.6

Analysis: At 17.8 passengers per hour, this route exceeds the system average for weekday productivity. Route # 3 Baptist carries an average of 800 passengers daily and is among CATA's top four performers. The route serves a good mix of government offices, hospitals, residential areas, and commercial areas. This route warrants increased frequencies and expanded service hours.



Recommendations:

- Extend route to Shackleford Crossing when a bus duck out is completed for the line terminal.
- Increase peak period frequencies to Super Route status operating every 15 minutes on weekdays. Operate service until midnight Mondays through Saturdays.
- Expand Sunday service hours from the current 9 a.m. – 5 p.m. to 6 a.m. – 8 p.m.

	Existing				Proposed: Super Route			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	35	35	30	45	10	10	15	30
Vehicle Requirements	3	3	3	2	11	11	6	3
Roundtrip Running time	105	105	90	90	105	105	90	90

Route #4 – Levy

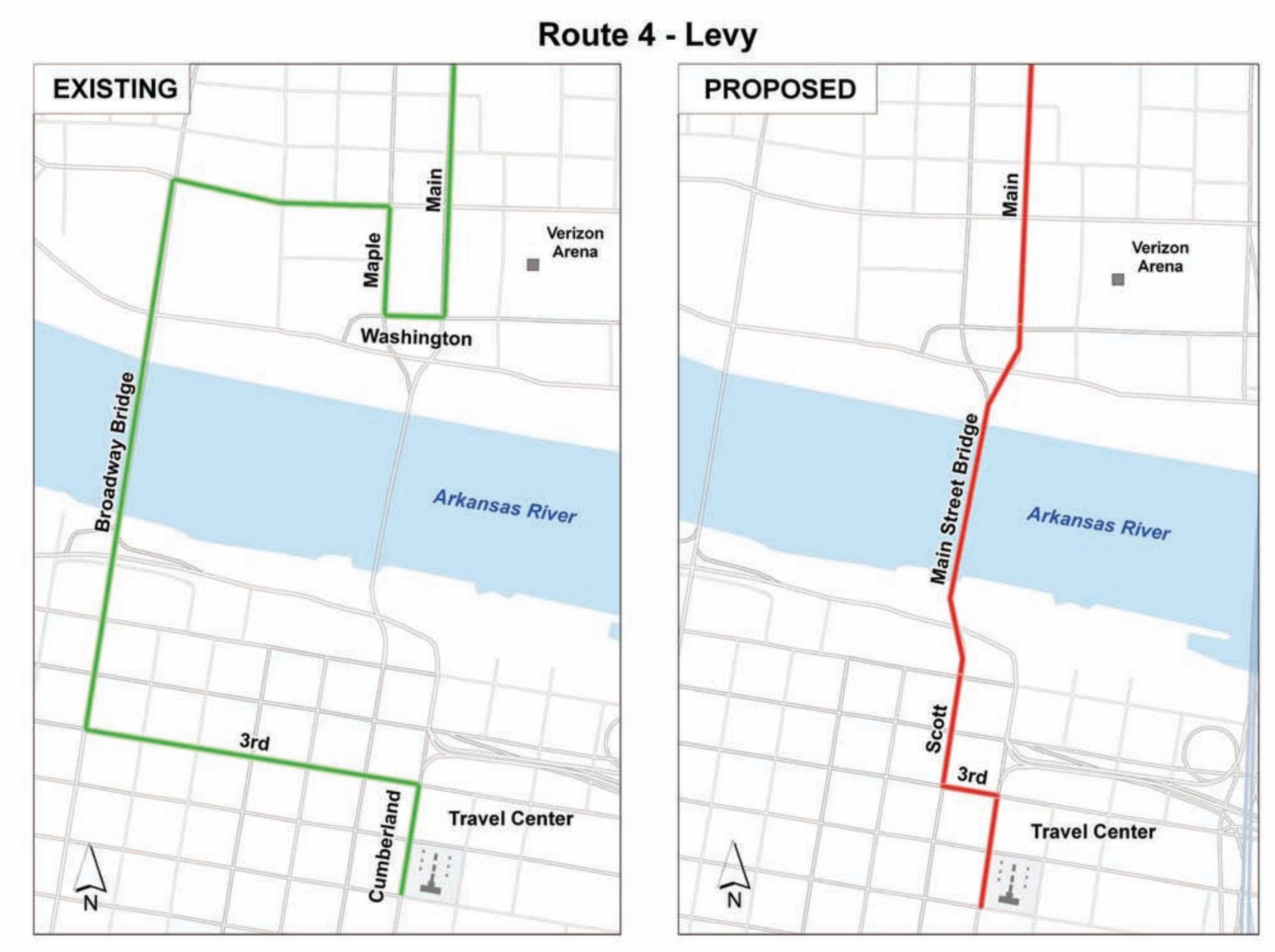
Route Description: Route #4 Levy connects the North Heights and Levy sections of North Little Rock with the downtown areas of both North Little Rock and Little Rock via Allen St., Camp Robinson Rd., Percy Machin Drive, Pershing Rd., Willow St. and Main Street. Traffic generators include hotels, recreational facilities, and residences in the Pershing Rd. area, and the commercial area along Camp Robinson Rd.

	Weekday	Saturday
Service Hours	22.1	13.0
Passengers/Hour	19.0	14.0

Analysis: At 19.0 passengers per hour, this route exceeds the system average. This performance is impressive considering that until very recently, buses operated 60 minutes apart. A 60-minute headway will generate little "choice" ridership, because it is nearly impossible to meet work shifts with only hourly service. Effective March 30, 2009, service frequencies were increased to every 30-minutes during weekday commute travel times. This service improvement should generate a significant increase in travel on this route as the schedule has significantly improved access to work shifts, medical appointments, class times, and connections to other routes.

Recommendations:

- Increase frequencies to every 30 minutes throughout the day and on Saturday.
- Initiate hourly Sunday service from 7 a.m. - 7 p.m.
- Improve route directness and travel times by traveling both inbound and outbound via the Main St. bridge between Little Rock and North Little Rock.



	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	60	60	-	30	30	30	60
Vehicle Requirements	2	1	1	0	2	2	2	1
Round Trip Running Time	65	60	60	-	60	55	55	55

Route #5 Markham Street Super Route

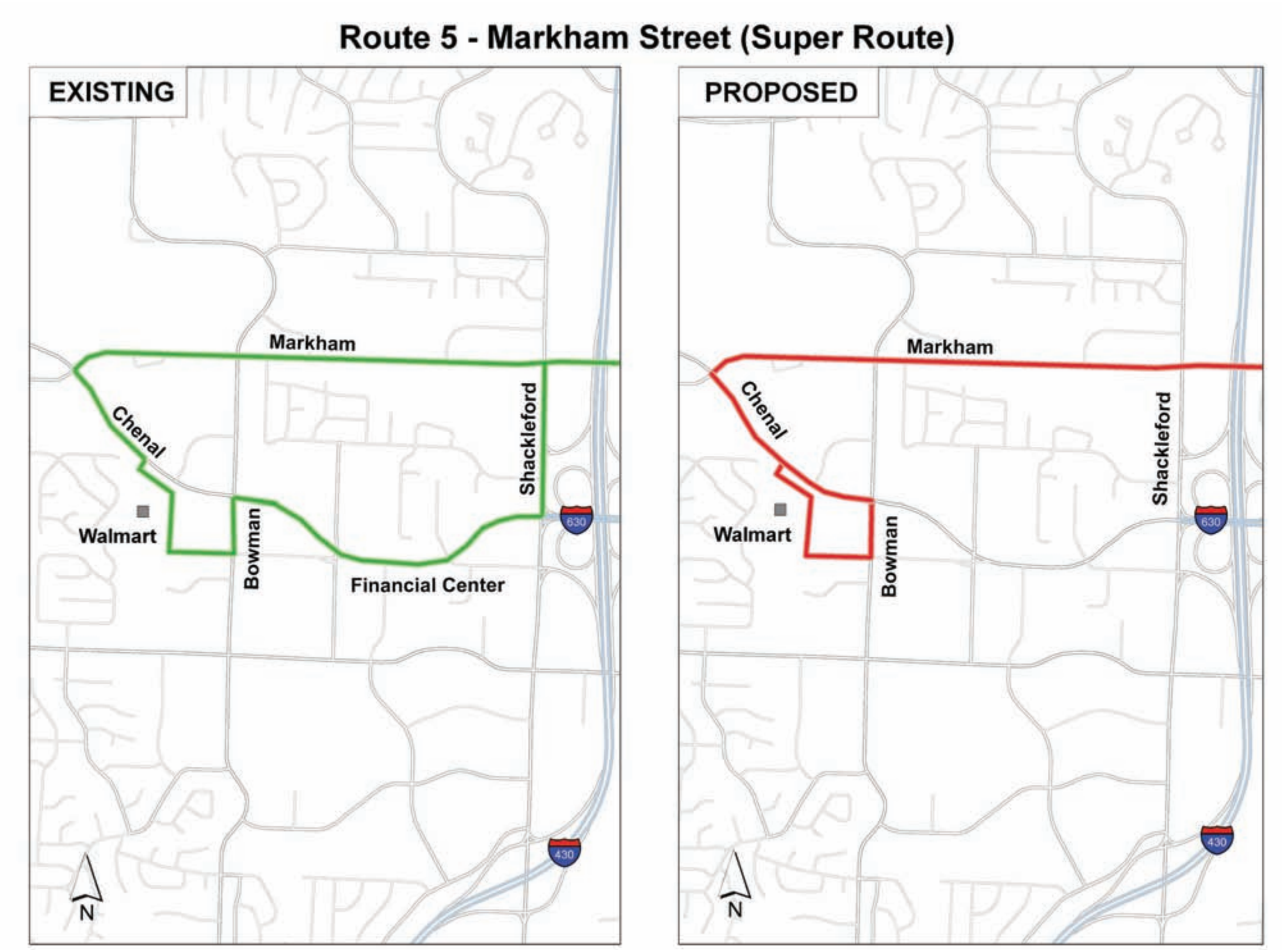
Route Description: Route 5 serves the Markham Street corridor between downtown Little Rock and the Wal-Mart / Home Depot / Target commercial area near Chenal Parkway and Markham. This route serves the downtown financial district, the Federal Court House, offices in the State Capitol area, Capitol View, UAMS, the VA Hospital, St. Vincent Hospital, Park Plaza and Doctors Hospital. The route operates every 35 minutes on weekdays, 30 minutes on Saturday, and 45 minutes on Sunday.

	Weekday	Saturday	Sunday
Service Hours	44.2	39.6	15.6
Passengers/Hour	21.4	14.2	15.3

Analysis: Route # 5 is the second most productive route in the system. It connects three of the area's largest hospitals with two of the largest shopping areas in the city of Little Rock, Midtown/Park Plaza and the Bowman/Chenal Parkway/Markham area. Peak period trips are often near capacity. With limited low cost parking availability at both UAMS and downtown, there are opportunities to improve service levels on this route to provide additional capacity and attract new riders. Increased frequencies may provide an opportunity to partner with UAMS to assist them with enhanced employee and patient access.

Recommendations:

- Increase daytime service frequencies to Super Route status, buses every 10 –minutes on weekdays.
- Extend evening service Monday through Friday until 12:00 Midnight, and until 10:00 p.m. on Saturday.



- Improve service at the western end of the route by providing bi-directional service along Markham to Chenal Parkway, then via Chenal Parkway to Wal-Mart/ Sams Club on Bowman Rd. Service along Chenal Parkway and Financial Center Parkway would be replaced with a new Route # 23 Chenal Parkway.

	Existing				Proposed: Super Route			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	35	35	30	45	10	10	15	30
Vehicle Requirements	3	3	3	2	11	11	6	3
Roundtrip Running Time	105	105	90	90	105	105	90	90

Route #6 – Granite Mountain

Route description: Route #6 operates between downtown and the Granite Mountain section of southeast Little Rock via Springer Blvd. (Hwy. 365). Trip generators along this route include MacArthur Park, the Arkansas Art Center, the University of Arkansas Law School, Parkview Towers, and the Granite Mountain residential area. This route carries 13.7 passengers per hour on weekdays that is below the system average of 17.5 passengers per hour. The route is served by one vehicle that operates on a 40-minute frequency during the day and 45-minute frequency evenings and Sundays.

	Weekday	Saturday	Sunday
Service Hours	15.1	13.4	8.0
Passengers Per Hour	13.7	12.1	6.6

Analysis: At 13.7 passengers per hour on weekdays, Route # 6 performs below the system average. Low population densities characterize the Granite Mountain area. Route # 19 Hensley operates along a similar alignment that results in lower productivity for both routes as they compete for the same customers. Combining this route with Route # 19 in theory would result in savings, but draft schedules that were produced show little cost savings or significant service improvements.

Route # 6 provides more turning movements than is required to serve the travel corridor. For example, the route turns onto Rock Street between 14th and 21st Streets, when remaining on Commerce Street would eliminate two turns and two additional blocks of travel while maintaining essentially the same service coverage.

Recommendations:

- Reduce midday frequencies to hourly by interlining with other routes.
- Replace the first two morning trips with existing Route #19 service.
- Consider reversing the direction of the outbound terminal loop at Baltimore and Detroit to match the Route #19 alignment in the area.

Route 6 - Granite Mountain

- Modify the Route #19 alignment to match that of Route #6.
- Operate the route on Commerce St. in lieu of Rock St. between 14th St. and 21st St. to improve route directness and to eliminate unnecessary turning movements.

	Existing				Proposed: Super Route			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	40	40	40	45	40	60	60	45
Vehicle Requirements	1	1	1	1	1	.7	.7	1
Round Trip Running Time	40	40	40	40	40	40	40	40

Route #7 – East 9th Street

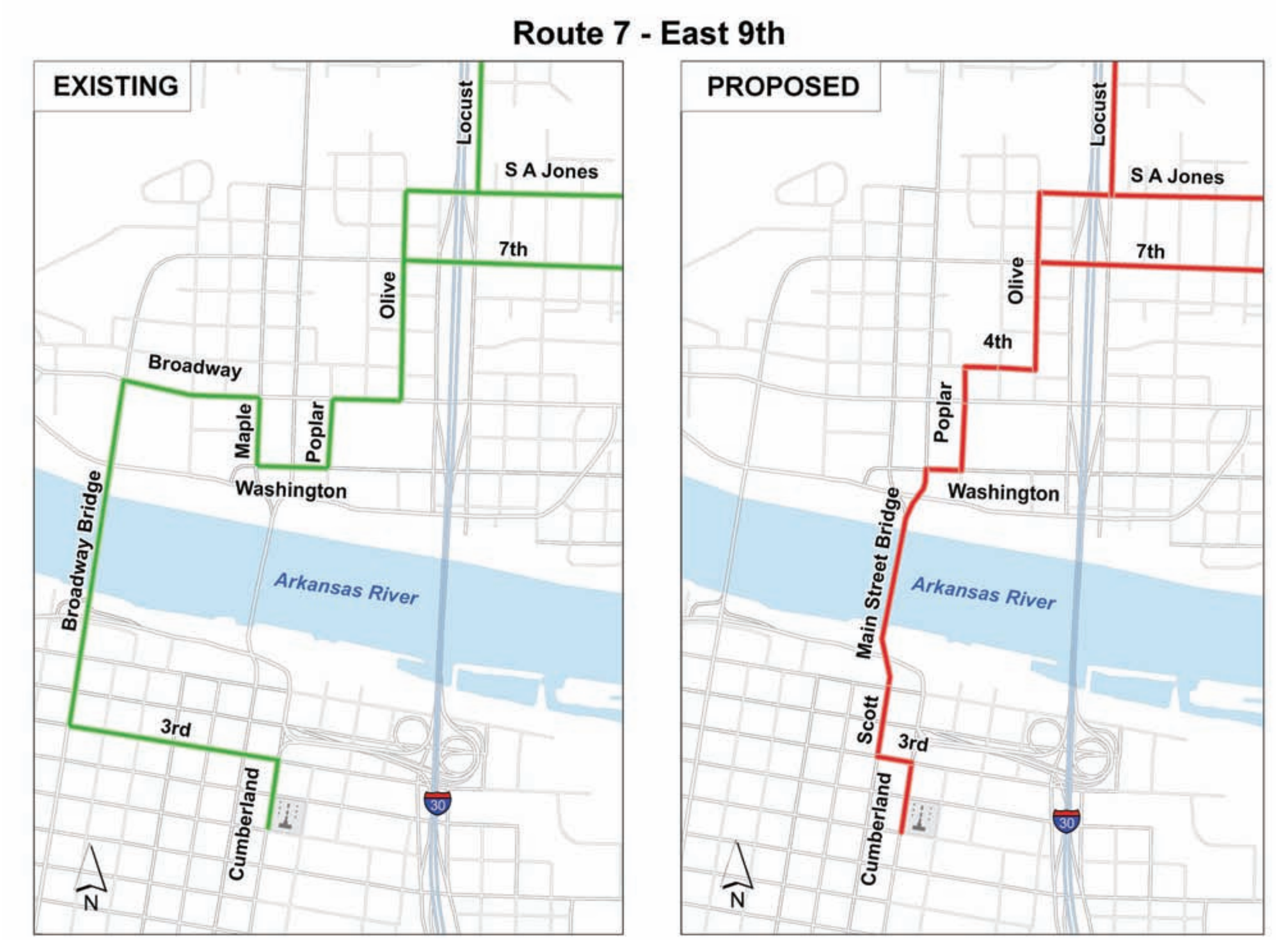
Route Description: Route 7 is a relatively short route that connects downtown Little Rock with residential neighborhoods just north and east of Verizon Arena. Potential traffic generators include Shorter College, the Intercity Bus Depot, Verizon Arena, and Shorter Gardens.

	Weekday	Saturday
Service Hours	14.8	13.2
Passengers/Hour	14.0	7.2

Analysis: The area served by this route is relatively compact. The neighborhoods served by the route have matured and are not experiencing significant development or growth. With neighborhoods blocked by an interstate highway and railroad tracks, opportunities to expand this route to attract new ridership are extremely limited. Weekday passengers per hour at 14.0 are below the system average of 17.5. The Broadway/Capitol Ave. loop in the outbound direction through Little Rock adds significant mileage and generates only two boardings per day.

Recommendations:

- Reduce midday and Saturday frequencies to hourly by revising route interlines.



- Increase peak period frequencies to every 30 minutes
- The closure of the UP railroad tracks at Broadway will allow the route to avoid congestion along the Broadway Street corridor by utilizing Olive to 4th to Poplar in the Verizon Arena area.
- Route should utilize the Main Street Bridge in both directions between Little Rock and North Little Rock.

	Existing			Proposed: Super Route		
	Peak	Mid	Sat	Peak	Mid	Sat
Headways	40	40	40	30	60	60
Vehicle Requirements	1	1	1	1.2	.7	.7
Roundtrip Running Time	40	40	40	35	35	35

Route #8 – Rodney Parham

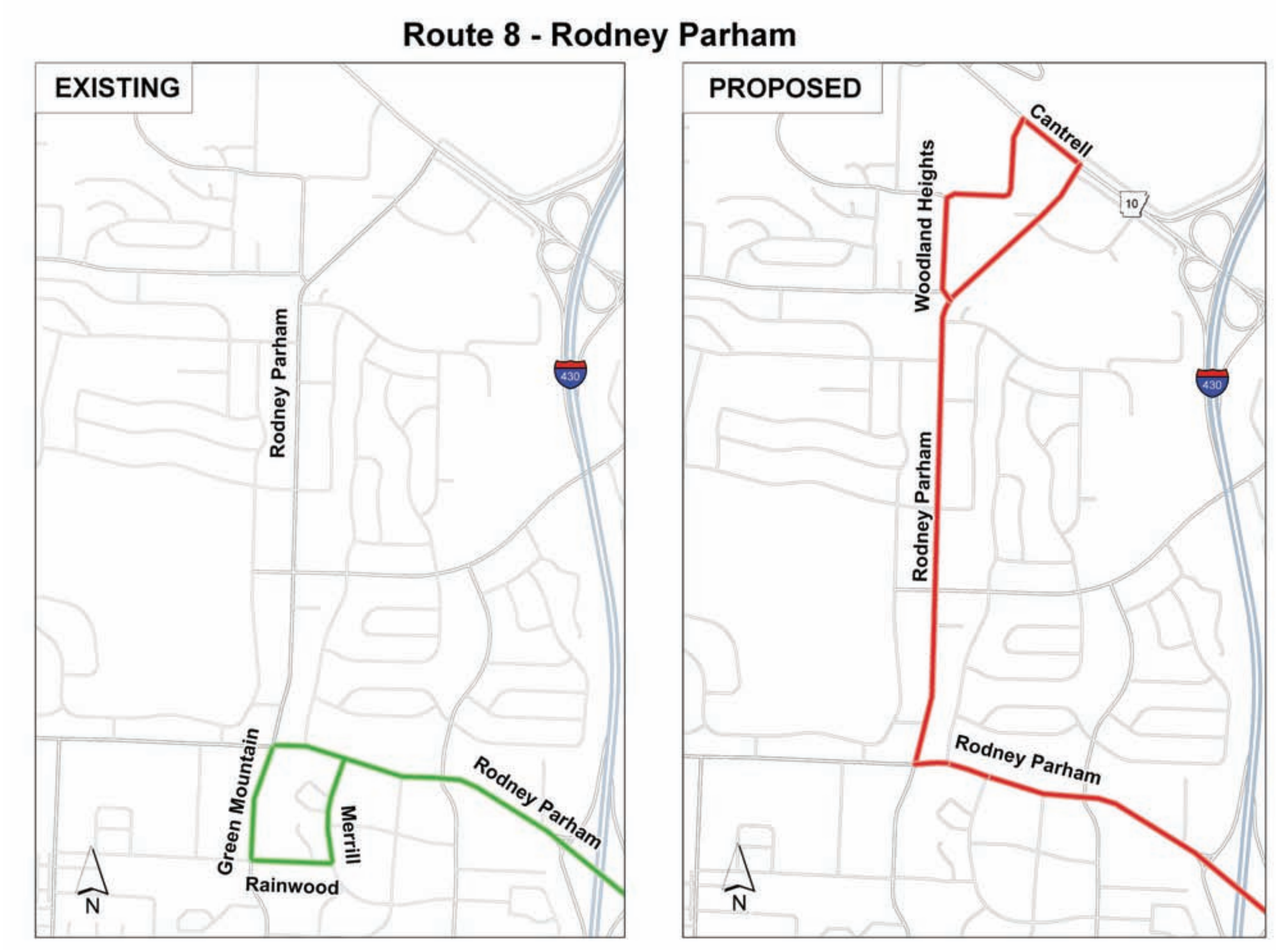
Route Description: This route connects downtown Little Rock with Rodney Parham Rd. in west Little Rock via portions of Markham Street, Lee Ave., & H Street. Intermediate stops include the State Capitol area, the Arkansas School for the Deaf and Blind, Hall High School and several small shopping centers along Rodney Parham Rd. The route travels within walking distance of both U.A.M.S and Park Plaza Mall.

	Weekday	Saturday	Sunday
Service Hours	26.8	24.0	8.1
Passengers Per Hour	11.8	5.5	5.7

Analysis: Traditionally one of CATA's least productive routes due to the suburban character of the neighborhoods served by this route, Route 8 in recent years has seen significant improvement in terms of productivity. The route now transports 11.8 passengers per hour compared with the system average of 17.5 passengers per hour on weekdays. A new traffic signal at H Street and Mississippi has improved both safety and the reliability of this route.

Recommendations:

- Increase weekday peak frequencies to every 30-minutes.
- Extend route via Rodney Parham. to Pleasant Ridge Shopping Center on Cantrell Rd. (Hwy. 10),



	Current				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	40	40	40	45	25	35	35	60
Vehicle Requirements	2	2	2	1	4	3	3	1
Round Trip Running Time	80	80	80	45	100	100	100	60

Route #10 - McCain Mall Super Route

Route Description: Route #10 connects downtown Little Rock with McCain Mall and North Little Rock's Baptist Medical Center via the Main Street, JFK Blvd., and McCain Blvd corridors. Intermediate stops include downtown North Little Rock, City offices in the Willow Rd. area, the Patrick Hays Senior Center, the Laman Library, the I-40 Hotel corridor, North Park Mall, Lakewood Village, McCain Mall, the Other Center, and Wal-Mart. The route serves low to middle income residential and low-density commercial areas along Main Street. The JFK Blvd. portion of the route is characterized by strip style commercial development with adjoining middle-income residential areas. The route offers 30-minute frequencies on weekdays and 45-minute frequencies on weekends.

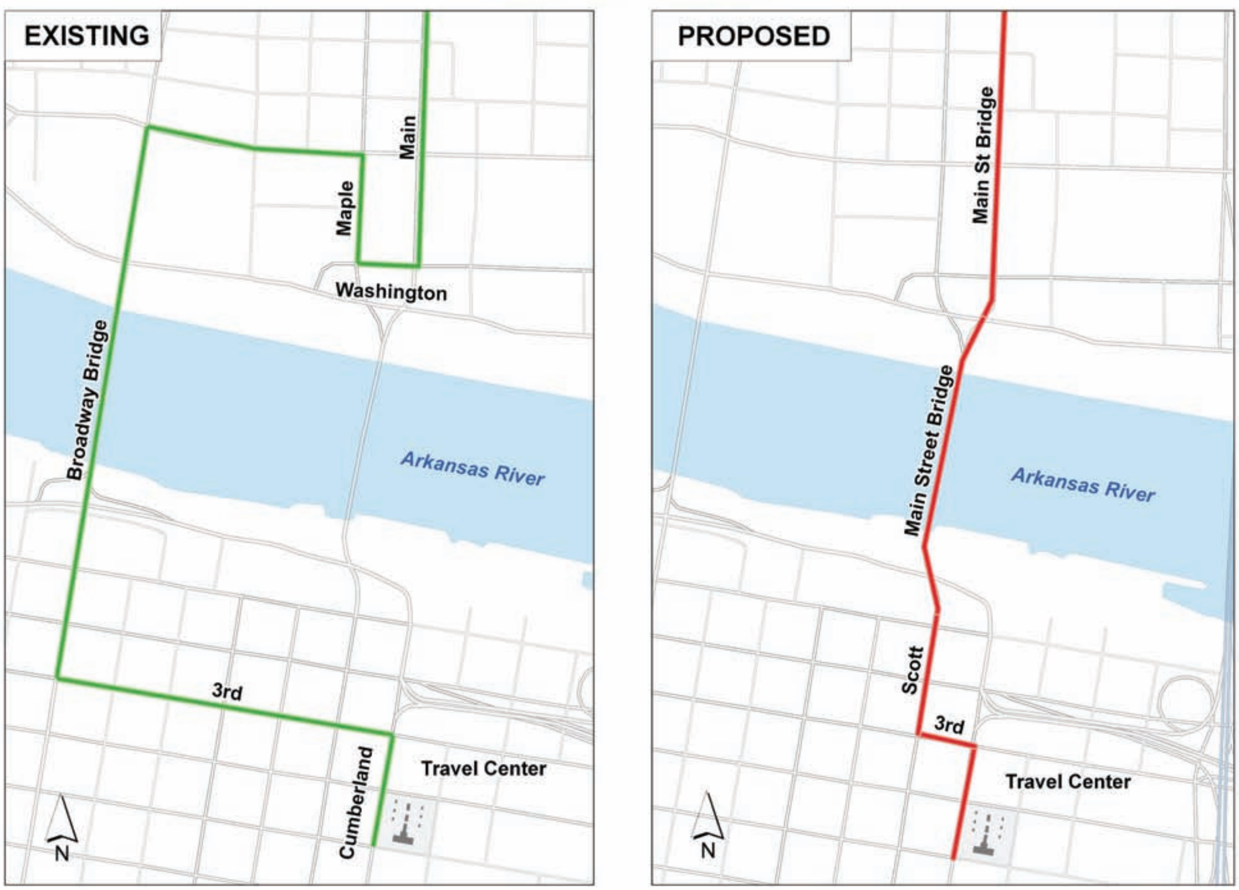
	Weekday	Saturday	Sunday
Service Hours	42.7	27.1	15.6
Passengers/Hour	19.9	22.1	11.2

Analysis: Route #10 is among CATA's three most heavily traveled and most productive routes. With the exception of the outbound departure from downtown Little Rock to North Little Rock, the route is relatively direct, and serves a good mix of residential, shopping, medical and recreational facilities, which contributes to its high performance. McCain Mall is served directly in the westbound direction only but is listed in the timetable as the route terminal. The timetable is a bit confusing as passengers boarding at Wal-Mart must view the outbound schedule for what is essentially an inbound trip.

Recommendations:

- Upgrade route to Super Route status, providing 10-minute frequencies on weekdays, 30-minute frequencies on Saturdays and Sundays.

Route 10 - McCain



- Increase service hours with service ending at midnight Monday through Friday, 10 P.m. on Saturdays, and ending at 8:00 P.m. on Sundays.
- Operate the route both inbound and outbound over the Main Street Bridge to offer significantly improved travel times.
- Move the route terminal from McCain Mall to either Wal-Mart or Baptist Hospital to more accurately reflect a logical end-of-line location.
- Reverse the terminal loop at Baptist Hospital/Wal-Mart to eliminate the uncontrolled left turn from Stockton onto Smoky Lane and to reduce mileage slightly at Baptist Hospital.

	Current				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	30	45	45	10	10	30	30
Vehicle Requirements	3	3	2	2	9	9	3	3
Round Trip Running Time	90	90	90	90	90	90	90	90

Route #11 – Martin Luther King

Route Description: Route #11 Martin Luther King connects downtown Little Rock with south Little Rock and the State Fairgrounds area via the Martin Luther King Dr. corridor. The route also provides service to the State Capitol area, Children's Hospital, and Arkansas Baptist College.

	Weekday	Saturday	Sunday
Service Hours	16.8	11.5	8.0
Passengers Per Hour	13.7	6.0	3.4

Analysis: Route #11 Martin Luther King performs below the system average in terms of productivity. Population densities along the Martin Luther King Dr. corridor have declined resulting in less demand. Several other routes also operate within a couple of blocks of Route #11, therefore, the route must compete with other routes for customers.

South Little Rock is served by multiple routes with significant service overlap. Through a restructuring of services in the area, service overlap could be reduced, productivity could improve and resources could be freed to provide additional service frequencies and/or service coverage in the south Little Rock area.

Recommendations:

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	35	45	45	45	30	40	45	45
Vehicle Requirements	1.1	.8	.8	1	1.3	1	1	1
Round Trip Running Time	35	35	35	35	35	35	35	35

Route #12 Airport/Presidential Library

Route Description: This route connects downtown Little Rock with Little Rock National Airport. Traffic generators along this route include the Presidential Library, Heifer International, East Little Rock Recreational Center, and the UPS distribution center at the eastside of the Airport.

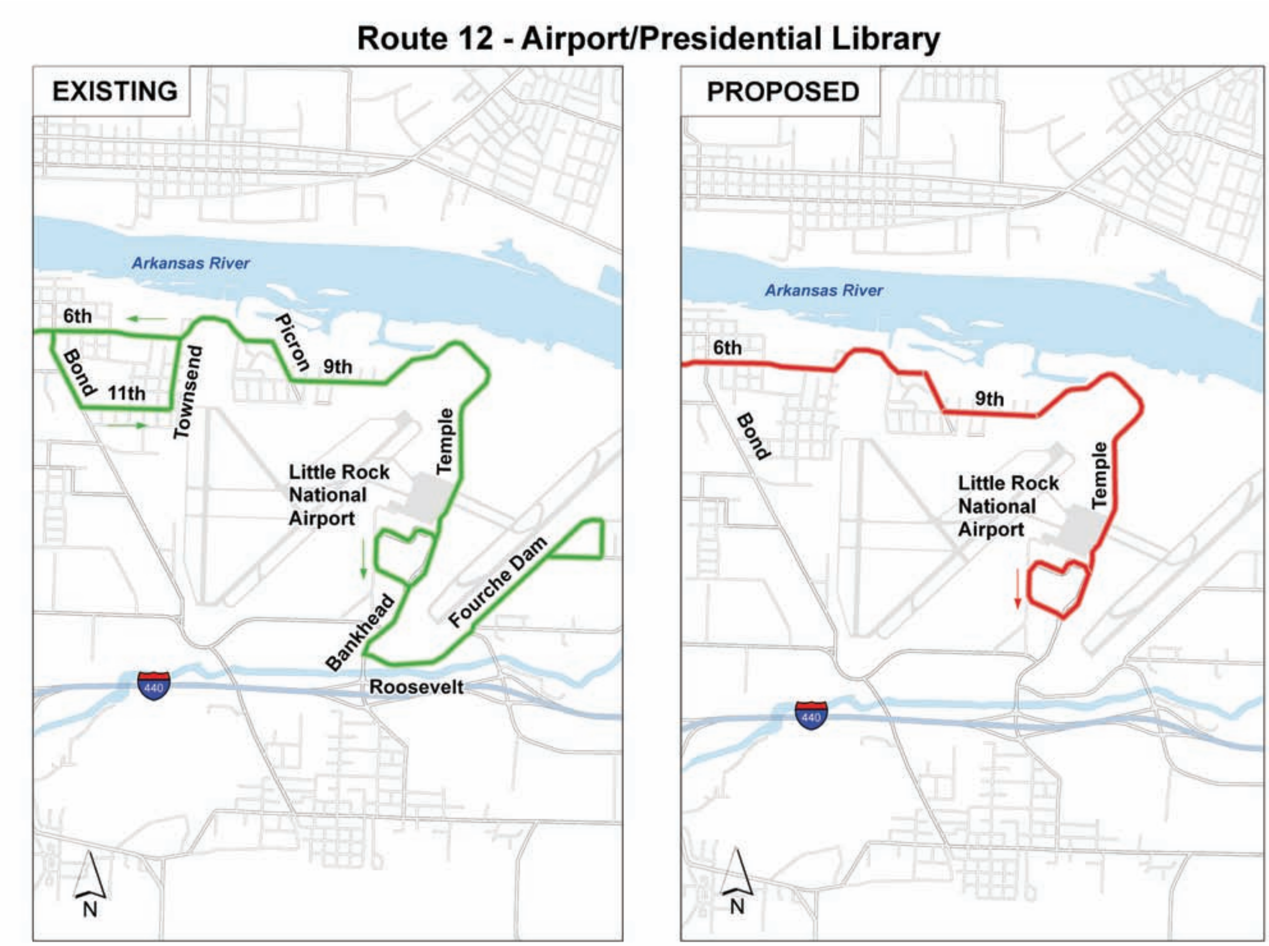
	Weekday	Saturday	Sunday
Service Hours	21.7	15.5	8.0
Passengers/Hour	5.4	3.0	2.3

Analysis: Route #12 is among the least productive in the CATA system. It is the least productive route on weekdays, and among the bottom three routes on weekends. The low productivity on this route is a result of several factors. Service frequencies of 30 minutes during peak hours and 45 minutes during off-peak hours exceed demand. The prime residential area served by this route, east Little Rock, has had a significant reduction in population during the past few years. Hollingsworth Courts, a large public housing complex has closed. The Airport is in the process of purchasing most homes in east Little Rock that are located east of Harrington. Many remaining houses in the area have been abandoned or torn down. Many businesses in the industrial park west of the Airport have closed or significantly reduced operations. Lastly, the route underwent a significant service expansion a few years ago when the Southwest Airlines reservation center opened. That center is now closed, but the expanded bus service that it generated is still operating.

Recommendations:

- Operate route between downtown Little Rock and the Airport only.
- Eliminate the Bond Ave./11th Street/ Townsend loop. This loop generates only two boardings and 6 disembarkings out of 26 daily trips.
- Discontinue service to the east airport industrial area (site of the old Southwest Airlines reservation center). The east airport area generates only five boardings out of 26 daily trips.
- Operate the route with 40-minute frequencies on weekdays, and 45-minute headways on weekends.

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	45	45	45	40	40	45	45
Vehicle Requirements	1.9	1.2	1.2	1.2	1	1	1	1
Round Trip Running Time	55	55	55	55	40	40	40	40

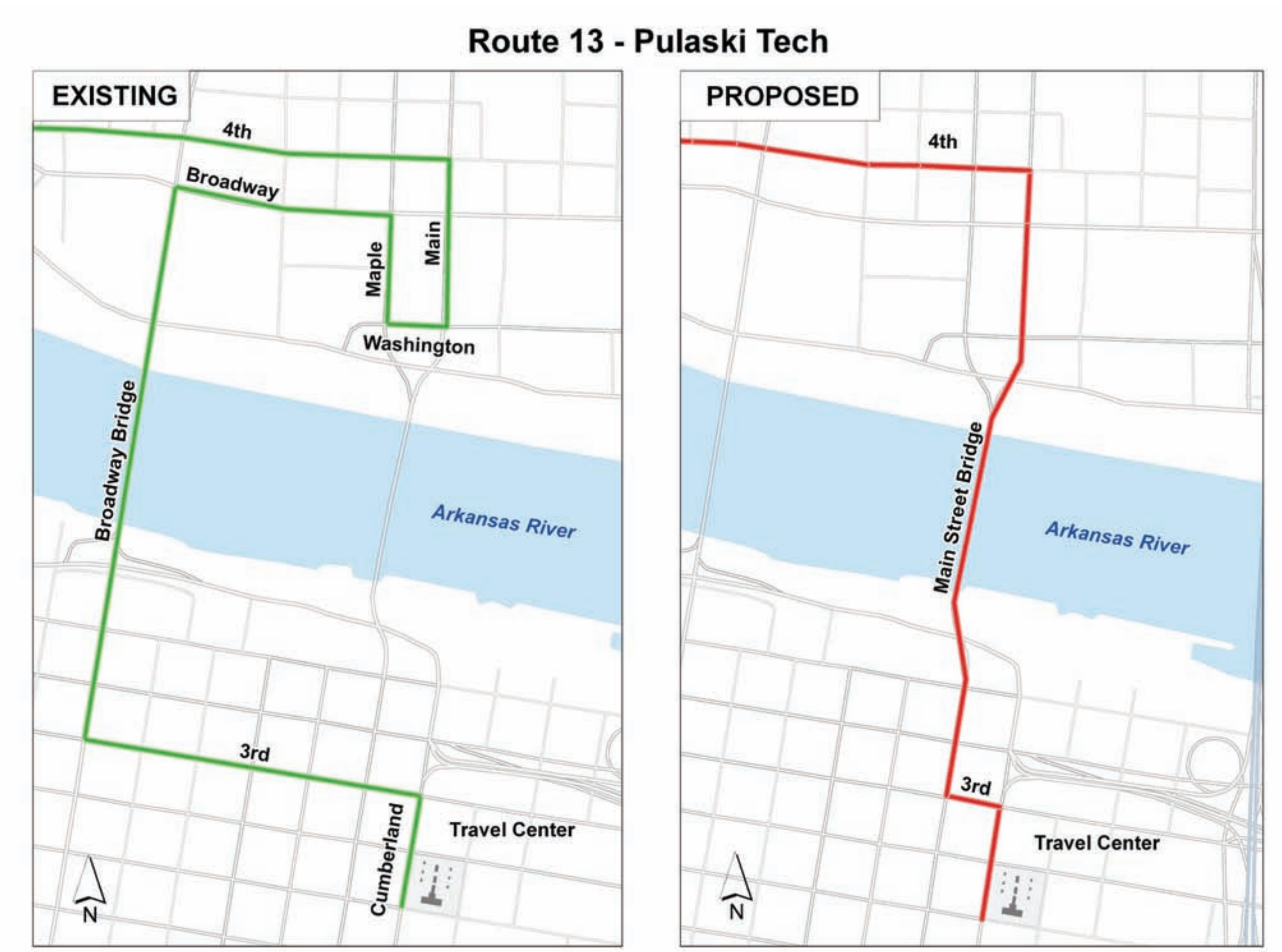


Route #13 – Pulaski Tech

Route Description: Route #13 connects downtown Little Rock with Pulaski Tech, Fort Roots and the North Little Rock Veterans Administration Hospital via Pike Ave. Traffic generators include downtown North Little Rock, the Union Pacific Railroad offices and shops, and Theresa James Manor. The route operates every 30 minutes on weekdays and every 60 minutes on weekends.

	Weekday	Saturday	Sunday
Service Hours	28.0	13.9	8.4
Passengers/Hour	23.5	15.4	9.2

Analysis: Route #13 is the most productive route in the CATA system, carrying 23.5 passengers per hour on weekdays compared with the system average of 17.5 passengers per hour. On Saturday, the route carries 15.4 passengers per hour, compared with the system average of 13.2 passengers per hour. Sunday service on this route began in late March of 2009, but this service has not had time to mature.



Two operational issues were identified with respect to Route #13. First, the outbound route operates via a circuitous alignment departing the Travel Center via west on 3rd St., then over the Broadway Bridge, then east on Broadway to downtown North Little Rock, then west again on 4th Street returning to the Broadway Bridge area. Fourth (4th) Street is only one block away from Broadway. Travelers ride for several minutes, only to return to within a block of where they were before.

The second operational issue is the crossing of the Broadway – 7th Street connector at 4th Street. This intersection is unsignalized and heavily traveled during peak commute travel times.

Recommendations:

- Operate the route directly over the Main Street Bridge in both directions to reduce out-of-direction travel and to reduce travel times for the vast majority of the route's customers.
- Extend the span of service on this route later in to the evening during all service periods.
- Modify the route slightly to cross Broadway – 7th Street connector at Broadway instead of 4th Street.

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	30	60	60	30	30	60	60
Vehicle Requirements	2	2	1	1	2	2	1	1
Round-trip Running Time	60	60	60	60	60	60	60	60

Route #14 - Rosedale Super Route

Route Description: Route #14 connects the Roosevelt Rd./Asher Ave./Colonel Glen corridor with downtown Little Rock. Intermediate stops include residential neighborhoods in south Little Rock, the Juvenile Justice Center, State Fairgrounds, UALR, and The Cottages residential complex. Route #14 is among the most productive routes in the system. At 19.6 passengers per hour, it is the 5th most productive route in the CATA system. The route is the second most productive route on both Saturday and Sunday.

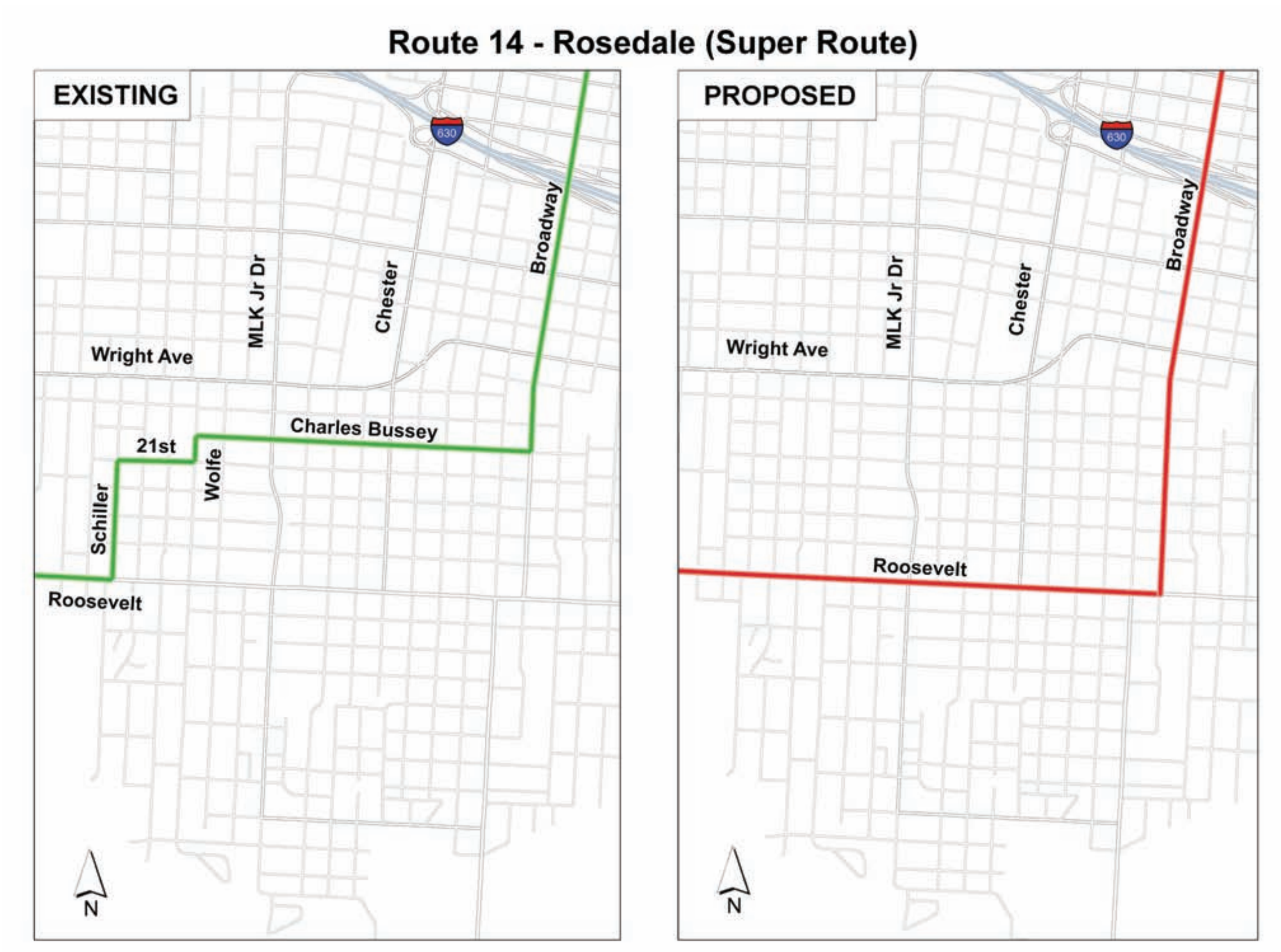
	Weekday	Saturday	Sunday
Service Hours	44.5	27.7	16.1
Passengers/Hour	19.6	18.8	12.2

Analysis: The high productivity and relatively direct alignment make Route #14 an ideal candidate for an upgrade to Super Route status. A portion of Route 14 currently operates through a residential neighborhood along Charles Bussey Ave., 21st Street, and Schiller. These neighborhoods are not appropriate for a high frequency, direct route.

The inbound turn from southbound Potter onto eastbound Colonel Glenn requires an uncontrolled left turn across four lanes of traffic. This turning movement should be eliminated for both safety and service reliability reasons.

Recommendations:

- Upgrade Route #14 to Super Route status, providing 10-minute headways along Roosevelt, Asher, and Colonel Glenn to 36th Street. At 36th St. the route would branch with 20-minute frequencies along 36th Street to Shackleford Crossing, and 20-minute frequencies along Colonel Glenn to the I-430/Colonel Glenn commercial area.
- Modify the alignment in the south Little Rock area to operate from downtown Little Rock via south on Broadway, to west on Roosevelt, onto Asher, onto Colonel Glenn to 36th Street where the route would split into two branches. Service along Charles Bussey would be discontinued. However, Route #16 offers a good level of service two blocks north on parallel Wright Ave.



	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	30	45	45	10	10	30	30
Vehicle Requirements	3	3	2	2	10	10	3	3
Round Trip Running Time	90	90	90	90	100	100	90	90

Route #15 – 65th Street

Route Description: Route #15 connects downtown Little Rock with the eastern portion of Southwest Little Rock with service focused on Arch St. 65th Street and Scott Hamilton. Traffic generators along this route include Philander Smith College, Parris Towers, the West 65th Street industrial park area, Metropolitan Vo-tech, and residential neighborhoods adjacent to Portsmouth Dr, Lancaster Rd., and Baseline Rd. At 14.0 passengers per hour, this route performs below the system average of 17.5 passengers per hour. Saturday productivity is fair with the route performing at 9.0 passengers per hour.

	Weekday	Saturday
Service Hours	20.5	14.3
Passengers/Hour	14.0	9.0

Analysis: Considering the low population densities and pedestrian unfriendly environments served by this route, it performs reasonably well on weekdays. Impediments to good ridership levels along this route's alignment include a lack of development along Arch Street Pike, competition with more frequent CATA routes in south Little Rock along Broadway and Arch Street, significant out-of-direction travel required on the large loop configuration in southwest Little Rock, a lack of major shopping facilities along the route, little traffic generated by Philander Smith College, and lack of convenient connection opportunities to points other than downtown Little Rock.

The random nature of development patterns in southwest Little Rock, coupled with low densities and a lack of linked pedestrian facilities make it extremely difficult to design a route that is productive, effective, convenient, or direct. The current route configuration is probably the best balance possible given the limitations of the operating environment. Some minor route modifications may be appropriate such as utilizing Chester in lieu of Broadway in south Little Rock as Broadway is proposed to receive Super Route status via Route #14 with 10-minute frequencies.

To make transit more effective in southwest Little Rock, community design practices will have to change to encourage clustered development that has easy, safe, and pleasant bicycle and pedestrian access to local shops, schools, and services. Were such development practices in place, it would be possible to achieve adequate route productivity that would warrant the inclusion of additional east – west cross-town service in southwest Little Rock.

Recommendations:

- Use Chester Street in lieu of Broadway between 7th Street and Roosevelt Rd.
- Increase weekday frequencies to 25 minutes during peak periods and 40 minutes during off- peak periods.

	Existing			Proposed		
	Peak	Mid	Sat	Peak	Mid	Sat
Headways	40	75	75	25	40	40
Vehicle Requirements	2	1	1	3	2	2
Round Trip Running Time	75	75	75	75	75	75

Route #16 UALR

Route Description: Route #16 connects downtown Little Rock with the University of Arkansas at Little Rock campus via Wright Ave. and W. 20th Street. Lions World Services for the Blind, Dunbar Jr. High School, and the Main St. business district are intermediate stops.

	Weekday	Saturday	Sunday
Service Hours	28.6	26.8	8.6
Passengers/Hour	20.2	13.3	10.0

Analysis: Route #16 at 20.2 passengers per hour is among the most productive routes in the CATA system. Performance on weekends is good. Route # 16 offers a good level of frequency with 30-minute frequencies on weekdays and Saturdays and 60 minutes on Sundays.

West of Lewis Street, the route operates outbound via 29th Street and inbound via 22nd Street. Ideally, services should operate in both directions via the same alignment, for example splitting the difference and operating along 25th Street. As ridership is relatively high along both segments and travel times are short as a result of close proximity of the line terminal at UALR, changes to the alignment are not currently warranted.

Recommendations:

- Extend service hours on weekdays until 10 p.m., Saturday until 8:00 p.m., and operate on Sundays from 7 a.m. to 7 p.m.

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	30	30	30	60	30	30	30	60
Vehicle Requirements	2	2	2	1	2	2	2	1
Round Trip Running Time	60	60	60	60	60	60	60	60

Route #17/17A Mabelvale/Mabelvale Express

Route Description: Route #17 and #17A provide a link to southwest Little Rock locations including Geyer Springs Rd., UALR, Wal-Mart on Baseline Rd., Mabelvale, and Southwest Hospital. Route #17 provides service during peak commute hours on weekdays operating from Southwest Little Rock to downtown Little Rock via University Ave. to I-630, then direct to the Travel Center in downtown Little Rock. Route #17A operates during off-peak hours (mid-day, evenings, and weekends). Route 17A connects southwest Little Rock with UALR during the midday on weekdays and all day on Saturday. On weekday evenings and Sundays the route is extended beyond UALR to University Mall.

	Weekday	Saturday	Sunday
Service Hours	35.4	9.2	16.8
Passengers/Hour	12.7	18.7	6.8

Analysis: Route #17/17A is among CATA's most complex routes. The service operates in a different configuration during each service period. During weekday peak periods the route operates via Forbing Rd. and Sheraton Dr. The peak period routing serves UALR via University Ave, and travels via I-30 to downtown Little Rock. Doctors Hospital and St. Vincent Hospitals are served by this route only on weekday evenings and on Sunday. During the midday period on weekdays, the route bypasses Forbing Rd. and terminates at UALR. On weekday evenings and on Sundays, the route is extended north beyond UALR to serve Doctors Hospital. Except for weekday rush hours, customers traveling to or from downtown Little Rock must connect with other routes.

The three separate operating configurations lead to customer confusion and uncertainty as to the exact alignment. Customers have to remember which alignment is used during each operating period to properly plan where they will board and where they will make their connections. The multiple routings are especially confusing for first time customers. The complicated service pattern causes some stops to be unserved during certain time periods.

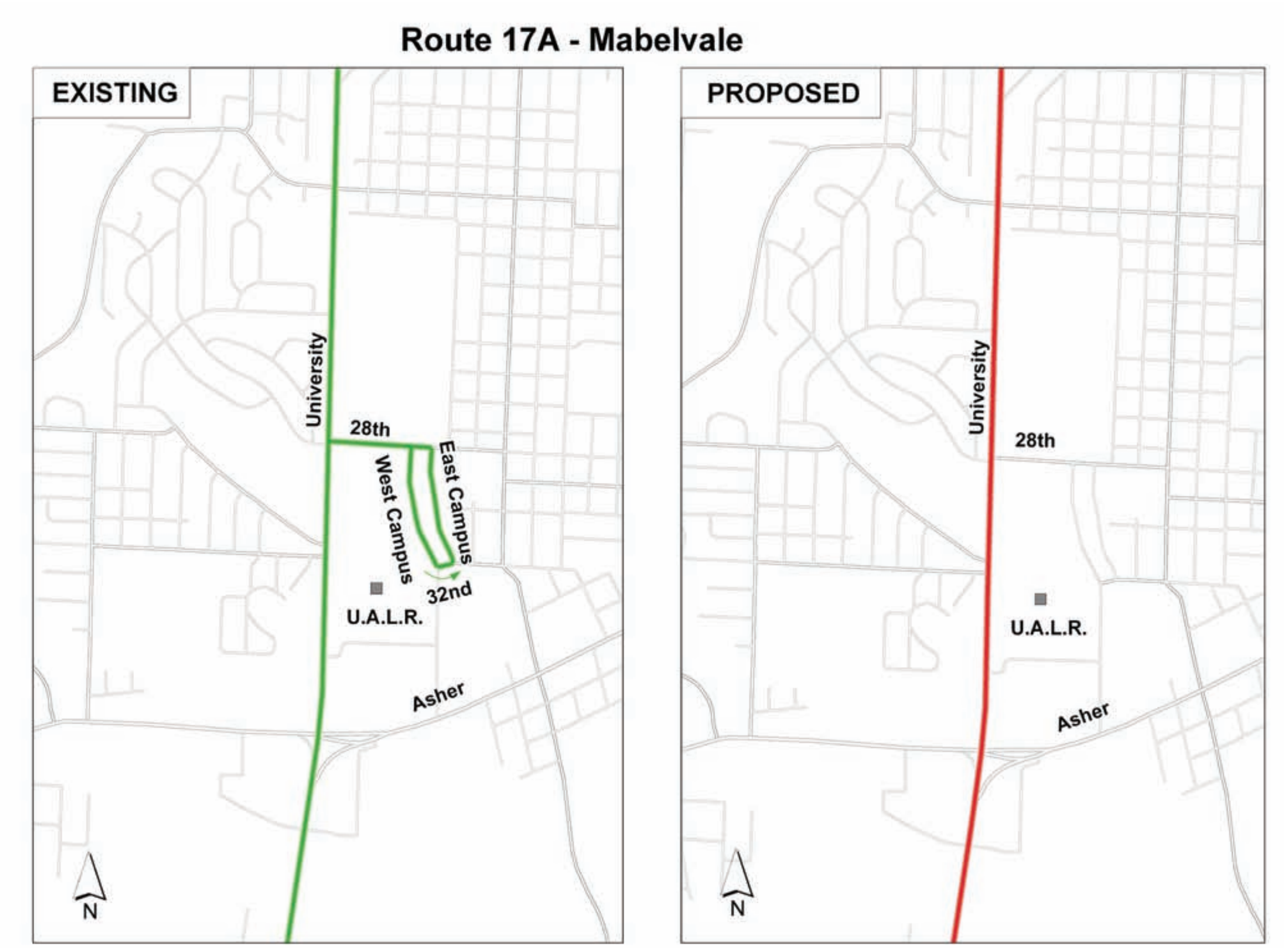
Recommendations:

- Simplify the route to operate via the same alignment during all time periods.
- Improve service frequencies to provide 30-minute service on weekdays and 45-minute service on Saturdays and Sundays.

- Combine with CATA Route #21 University Ave. to provide a University Ave. cross-town link. Southwest Little Rock will have direct service seven days a week to UALR, St.Vincent Infirmary, Park Plaza, Catholic High School, the Heights, Riverdale, and downtown Little Rock.
- Operate the current peak hour express service as a separate express route.
- Serve UALR via stops along University Ave., as the campus cannot be efficiently accessed to due to campus street closures in recent years.

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	35	45	45	45	30	30	40	60
Vehicle Requirements	3	2	1	2	3	*	*	*
Round Trip Running Time	105	70	65	90	105	*	*	*

* - see Route # 21 for combined Rt. 17A & Rt. 21 service.



Route #18 McAlmont

Route Description: Route #18 connects downtown Little Rock with neighborhoods located in the eastern portions of North Little Rock. This route serves Washington Ave., West Broadway, Rose City, Glenview, Pecan Grove, Prothro Junction, and McAlmont.

	Weekday	Saturday	Sunday
Service Hours	29.9	26.8	8.7
Passengers/Hour	16.8	9.9	6.6

Analysis: Route #18 McAlmont serves mid- to low- density and low- to moderate-income neighborhoods in eastern North Little Rock. Street and neighborhood configurations limit opportunities for a more direct alignment of this route.

As with all other North Little Rock routes, this route operates via the Broadway Bridge over the Arkansas River outbound, and via the Main St. Bridge inbound. To simplify the route and to provide bi-directional service along West Broadway, this route would be a good candidate to operate via the Broadway Bridge in both directions.

Recommendations:

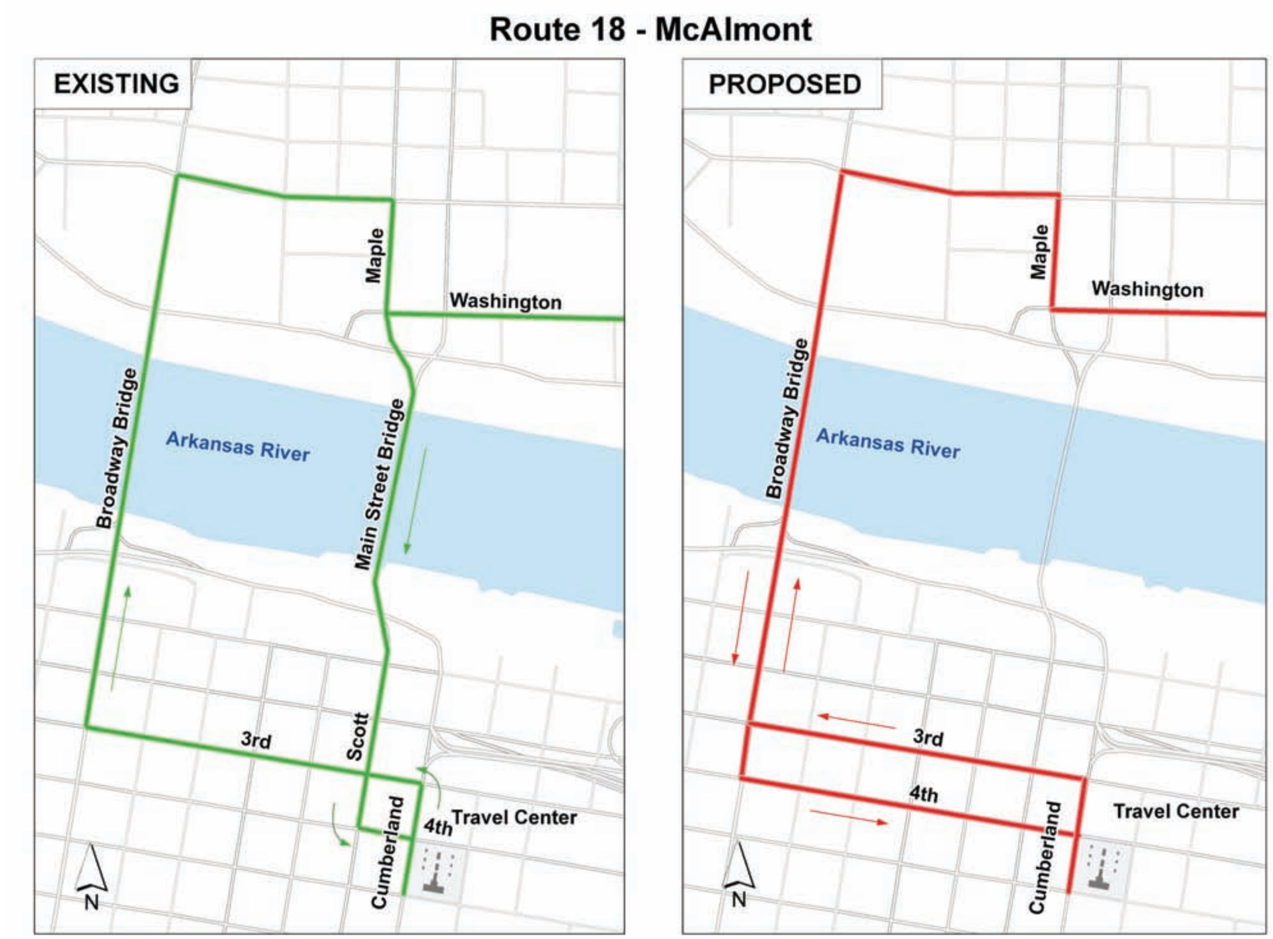
- Operate via the Broadway Bridge in both directions. Inbound the route should travel via west on Washington St., north on Maple, then west on West Broadway to the Broadway Bridge, then via 4th St. to the Travel Center.

	Existing				Proposed			
	Peak	Mid	Sat	Sun	Peak	Mid	Sat	Sun
Headways	40	40	40	60	30	40	40	60
Vehicle Requirements	2	2	2	1	3	2	2	1
Round Trip Running Time	80	80	80	60	90	90	90	60

Route #20 College Station

Route Description: Route #20 connects downtown Little Rock with portions of eastern Little Rock including the Little Rock Port Industrial Park, College Station, Hanger Hill, and Aerospace Education Center. Traffic generators served by this route include College Station, University of Arkansas Law School, MacArthur Park, the Arkansas Arts Center, and the IMAX Theater.

This route operates in a large loop configuration. Generally, large loops are best avoided as they result in lengthy travel times, make it difficult to efficiently travel in both directions, are confusing to the uninitiated rider, and cannot accommodate any needed recovery time in the schedule ex-



cept at the downtown travel hub. This route, however, serves one of CATA's least populated areas. Providing bidirectional service in eastern Little Rock would result in unacceptably high costs or require large portions of the route to be eliminated.

	Weekday	Saturday
Service Hours	13.4	13.4
Passengers Per Hour	9.9	5.5

Analysis: On weekdays, it is the third least productive route at 9.9 passengers per hour. Given the low densities in the area, however, there are no alternative alignments that would significantly improve productivity. Route #20 is the only link to the College Station and Hanger Hill neighborhoods. It is also the only route serving the Little Rock Port Industrial Park.

The route operates only once an hour during peak commute times. This infrequent service makes it difficult to meet work shifts, class times, or connections to other routes. At a minimum, local service routes should provide at least 30-minute frequencies during commute times to facilitate relatively efficient and timely travel unless exceptional circumstances exist.

Recommendation:

- Increase weekday peak travel frequencies to 30 minutes.

	Existing			Proposed		
	Peak	Mid	Sat	Peak	Mid	Sat
Headways	60	60	60	30	60	60
Vehicle Requirements	1	1	1	2	1	1
Round Trip Running Time	60	60	60	60	60	60

Route #21 – University Avenue

Route Description: Route #21 links UALR with downtown Little Rock via Doctors Hospital, Park Plaza Mall, The Heights, and Riverdale. This route provides 45-minute frequencies Monday through Saturday. With north-south service offered along University Ave. between the Heights and UALR, Route #21 offers one of the few cross-town travel opportunities on the CATA system.

	Weekday	Saturday
Service Hours	26.1	26.1
Passengers/Hour	10.9	7.4

Analysis: Route #21 serves a low-density corridor along Cantrell Rd. and the relatively affluent Heights section of Little Rock. Although the route serves major generators such as the Park Plaza Mall / Midtown area and UALR, other routes provide a more direct link to downtown Little Rock and to neighborhoods with lower rates of automobile ownership.

Three alignment issues were identified with respect to this route. First, there is some confusion regarding service along the University Ave. corridor between UALR and Doctors Hospital. During the day on weekdays and Saturdays, Route #21 provides service along this segment. On weekday evenings and on Sundays, this segment is served by Route #17A. Ideally, the same route should provide this link during all service periods.

The second alignment issue is the routing through the UALR campus. Due to campus street closings, the routing through the campus is indirect, follows narrow roads lined with "back out" parking, and is subject to signal delays as the bus attempts to reenter University Ave.

The third alignment concern is the terminal loop at Bryant Street and 32nd Street, only six boardings were recorded out of 17 daily trips.

Recommendations:

- Combine this route with Route #17A to provide a consistent and convenient cross-town link along University Ave. with enhanced service to Southwest Little Rock.
- Relocate UALR stops on this route to University Ave. to eliminate delays for through customers and to reduce operating costs.
- Eliminate the Bryant Street and W. 32nd Street loop due to low passenger counts, and to improve customer travel times. Route #14 provides service to this neighborhood via Asher Ave., and Route #21 will continute to provide service along University Ave. at the eastern edge of this neighborhood.
- Enhance weekday frequencies to every 30 minutes.

	Existing			Proposed			
	Peak	Mid	Sat	Peak	Mid	Sat	Sun
Headways	45	45	45	30	30	40	60
Vehicle Requirements	2	2	2	4	4	3	2
Round Trip Running Time*	90	90	90	120	120	120	120

*Combined routes #21/17A running time

Description and Analysis of Express Routes

Route #19 Hensley

Route Description: Route #19 connects downtown Little Rock with small rural communities in southern Pulaski County along the Hwy. 365 corridor. These communities include Granite Mountain, Sweet Home, Higgins, Wrightsville, Woodson, and Hensley.

	Weekday	Saturday
Service Hours	12.3	10.3
Vehicle Requirements	1	1
Passengers/Hour	12.0	6.0

Analysis: These communities have low density, moderate to low income, rural populations. Because this route provides the only link to these communities, the current service levels are appropriate. As this route provides duplicative coverage with Route #6 Granite Mountain, consolidating the alignment of these two routes would allow some modest cost savings by replacing the first two morning trips on Route #6 with Route #19 service.

Recommendations:

- Modify route slightly to operate via the Route #6 alignment between Springer and Baltimore and downtown Little Rock.

Route #25 Pinnacle Mountain

Route description: Route #25 provides a peak period express service connecting downtown Little Rock with the Hwy. 10 corridor in west Little Rock. This route serves Pleasant Ridge, The Ranch, Pinnacle, Natural Steps, and Roland. This route provides two morning and three afternoon trips on weekdays.

	Weekday
Service Hours	8.5
Vehicle Requirements	2
Passenger/Hour	4.1

Analysis: Although this route is CATA's only service in the growing west Little Rock area, including Chenal, this route is the least productive of CATA's four express routes. A significant factor in this route's poor performance is the transit unfriendly nature of the Hwy. 10 corridor served by the route. For the most part, Hwy. 10 is a five-lane road with poor to non-existent pedestrian facilities. Because all transit users must cross Hwy. 10 on foot either in morning or afternoon rush period, the highway provides a significant barrier to safe and convenient transit use. The highway was not constructed with a pedestrian safety median. As a result, pedestrians attempting to cross Hwy. 10 must clear all five lanes in one pass. This task is nearly impossible during peak commute times, except at the relatively few signalized intersections.

Recommendations:

- Work with the Arkansas Highway and Transportation Department to develop an access plan for transit users that would include pedestrian safety islands, bus pullouts, and pedestrian crossing signal phases. Once a plan is place to make the corridor more accessible to pedestrians and buses, efforts should be made to increase frequencies and to consider additional destinations that can be reached from the corridor such as UAMS, Midtown, St. Vincent Infirmary, etc.

	Existing	Proposed
Daily trips	5	5
Vehicle Requirements	2	2
Roundtrip Running Time	95	95

Route #26 – Maumelle Express

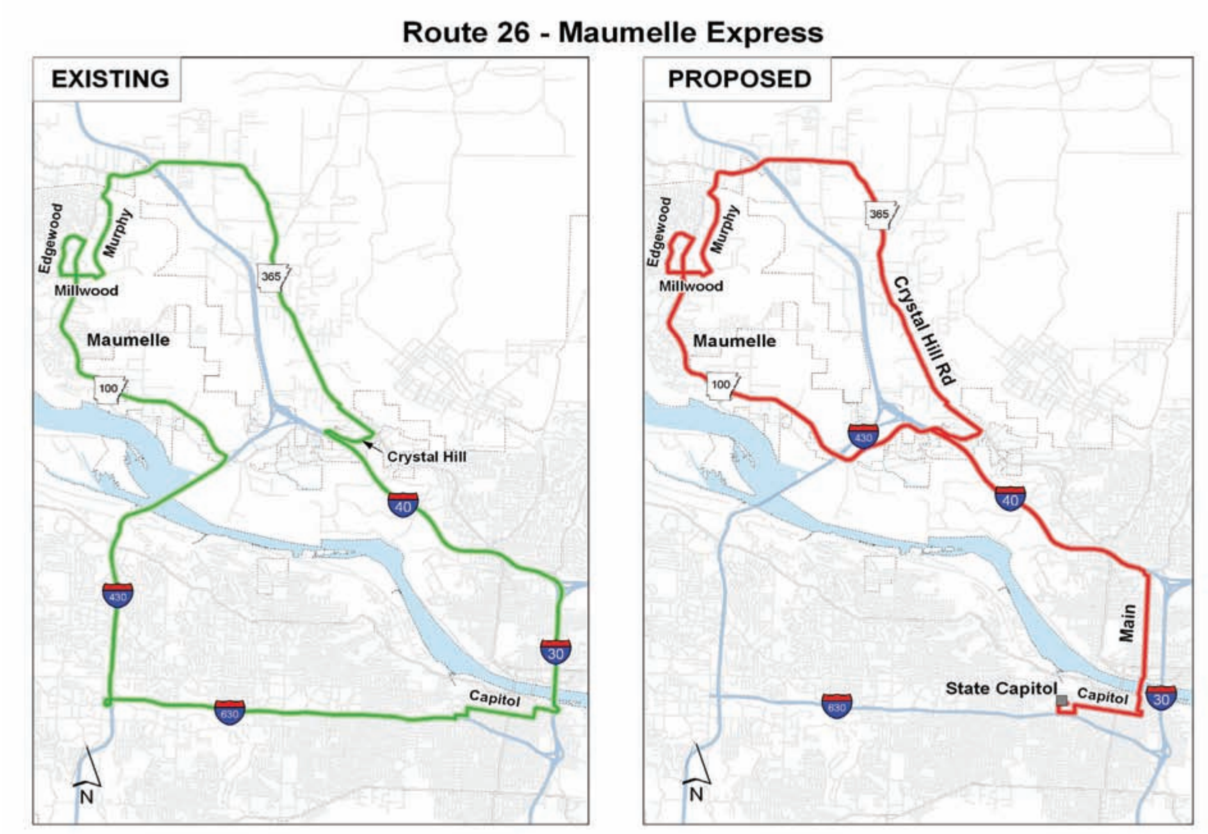
Route Description: The Maumelle Express links downtown Little Rock with the City of Maumelle. In the morning the route operates outbound from Little Rock via Oak Grove and Morgan, serves the Maumelle Industrial Park and the City Government area, then travels via Maumelle Blvd., Hwy. 430, and Hwy. I-630 to the State Capitol area and downtown Little Rock.

	Weekday
Service Hours	7.5
Passengers/Hour	5.5

Analysis: Following the significant increases in fuel costs last year, ridership has increased on this route. This route provides good coverage to the central retail, industrial, government and residential core of Maumelle. The route also provides service along Hwy. 365 in the unincorporated areas of Oak Grove and Morgan. The Hwy. 365 corridor is served in the off-peak direction that minimizes inconvenience to those traveling to or from points within the City of Maumelle.

When this route was designed, it operated between Maumelle and Little Rock via the new Interstates I-430 and I-630, avoiding the more congested I-40. With significant population increases in west Little Rock and recent improvements to I-40, the congestion issues have reversed, with I-40 operating at a higher average travel speed than I-630.

The Maumelle Express does not provide a departure time from Little Rock that coincides with 4:30 p.m. work shift end times. In the morning, Maumelle area residents cannot start an 8:00 a.m. work shift unless they work in the downtown Little Rock area. It is also not possible for Maumelle residents to travel to Little Rock without spending the entire day in the City.



Recommendations:

- Reroute the service to operate inbound in the morning from Maumelle to Little Rock via I-40 to Main Street in North Little Rock, then via Main Street to the Travel Center and the State Capitol area similar to the Route #36 alignment. Reverse the routing in the afternoon.
- Add an additional p.m. trip leaving Little Rock at 4:40 p.m. This will result in more convenient 30-minute frequencies from 4:10 p.m. until 5:40 p.m. Add an additional morning inbound trip from Maumelle at 6:35 a.m. This additional morning trip will connect with other routes to allow for 8:00 a.m. work shift start times at locations beyond the downtown Little Rock area. Add an additional midday roundtrip between Little Rock and Maumelle that will permit travelers to spend half a day as opposed to the current requirement for a full day to meet appointments or running errands in either Little Rock or Maumelle. This additional midday trip should be tied in with other services to allow for efficient driver and vehicle scheduling.

	Existing	Proposed
Daily trips	5	8
Vehicle Requirements	2	3
Round Trip Running Time	80	80

Route #36 Jacksonville – Sherwood Express

Route Description: This route provides express service between downtown Little Rock and the communities of North Little Rock, Sherwood, and Jacksonville. This route operates via JFK Blvd., Kiehl Blvd., Brockington Drive, Gravel Ridge, downtown Jacksonville, and the Little Rock Air Force Base gate.

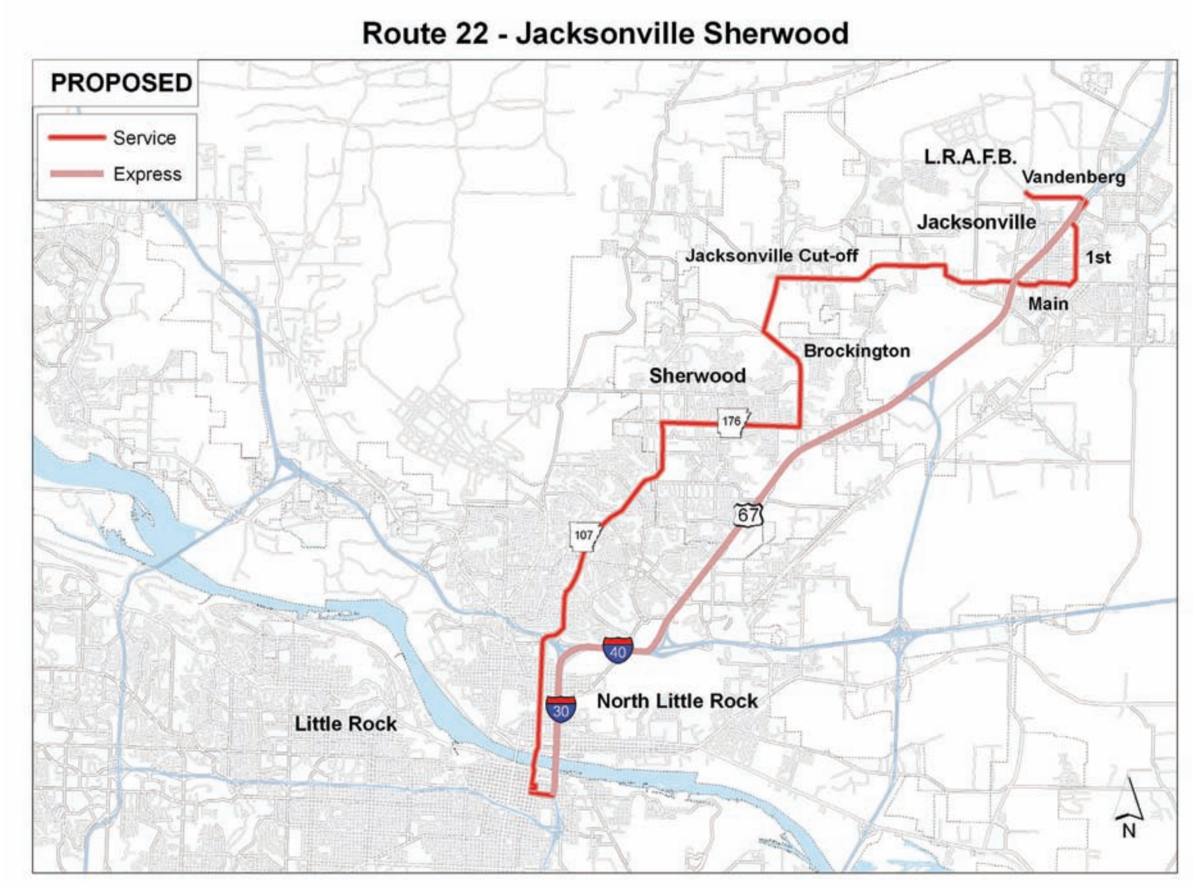
	Weekday
Service Hours	10.2
Passengers/Hour	11.4

Analysis: This route is CATA's most successful express route. It provides the only transit service to the cities of Sherwood and Jacksonville. Recently, an additional morning trip was added to allow for an earlier arrival in downtown Little Rock.

Although successful from a ridership and productivity standpoint, this route does not provide competitive travel times from the Jacksonville area to downtown Little Rock. Due to limited resources, CAT has not been able to provide nonstop expressway service from Jacksonville to Little Rock.

New Routes

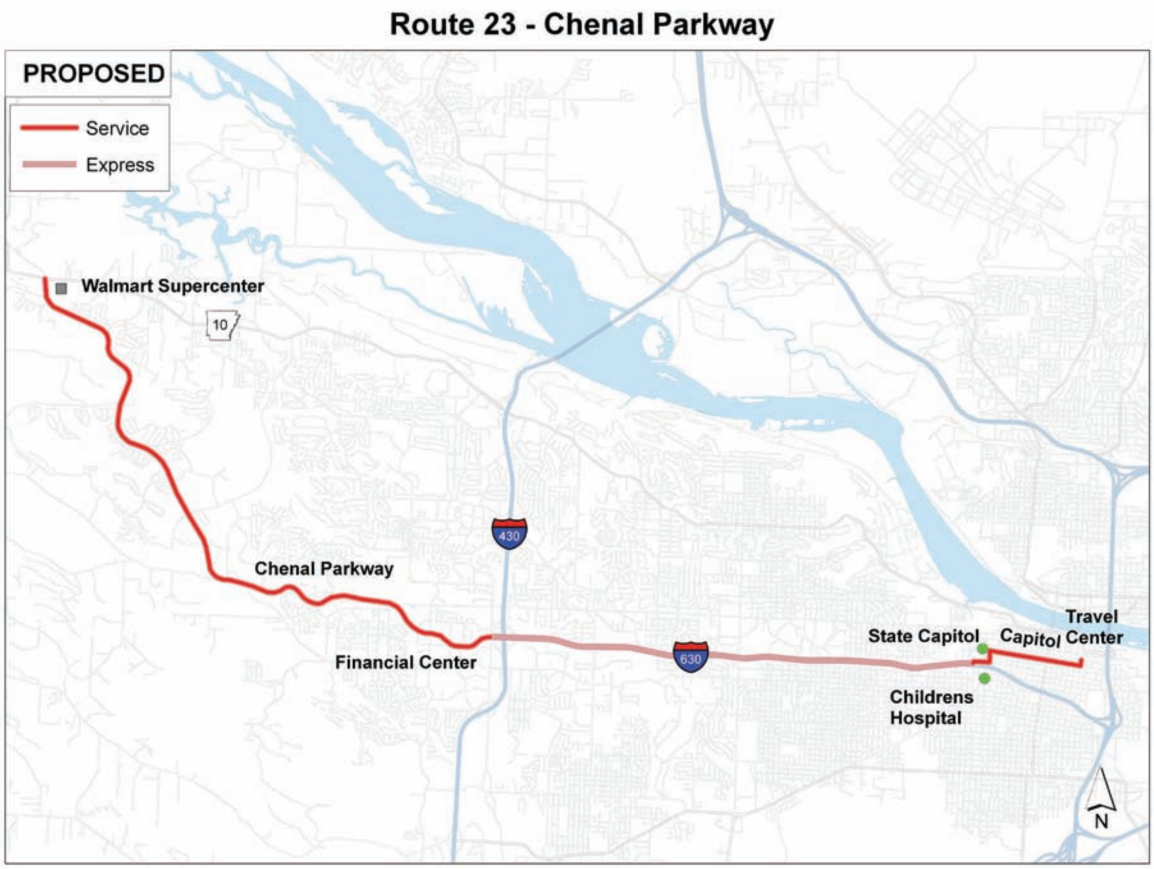
Following are proposed new routes. They are designed to fill in gaps in the existing coverage, and include some proposals for service to jurisdictions that are not currently members of CATA. These include the cities of Benton, Cabot and Bryant, and also unserved portions of Little Rock and Pulaski County.



Route #22 North County: Little Rock – North Little Rock – Sherwood – Jacksonville – Little Rock AFB

Route 22 North County is proposed as a new local route connecting Little Rock with North Little Rock, Sherwood, and Jacksonville. Currently, Sherwood and Jacksonville are served by just three morning and three afternoon commute runs to downtown Little Rock. This new route would provide all day service connecting Little Rock with the JFK Blvd. corridor in North Little Rock, Kiehl Ave, the Sherwood Government complex, and the Social Security offices in Sherwood, downtown Jacksonville, and the Little Rock Air Force Base. Frequencies are proposed at 30-minute service during peak weekday commute hours and 60-minutes during the weekday midday period and all day on Saturday.

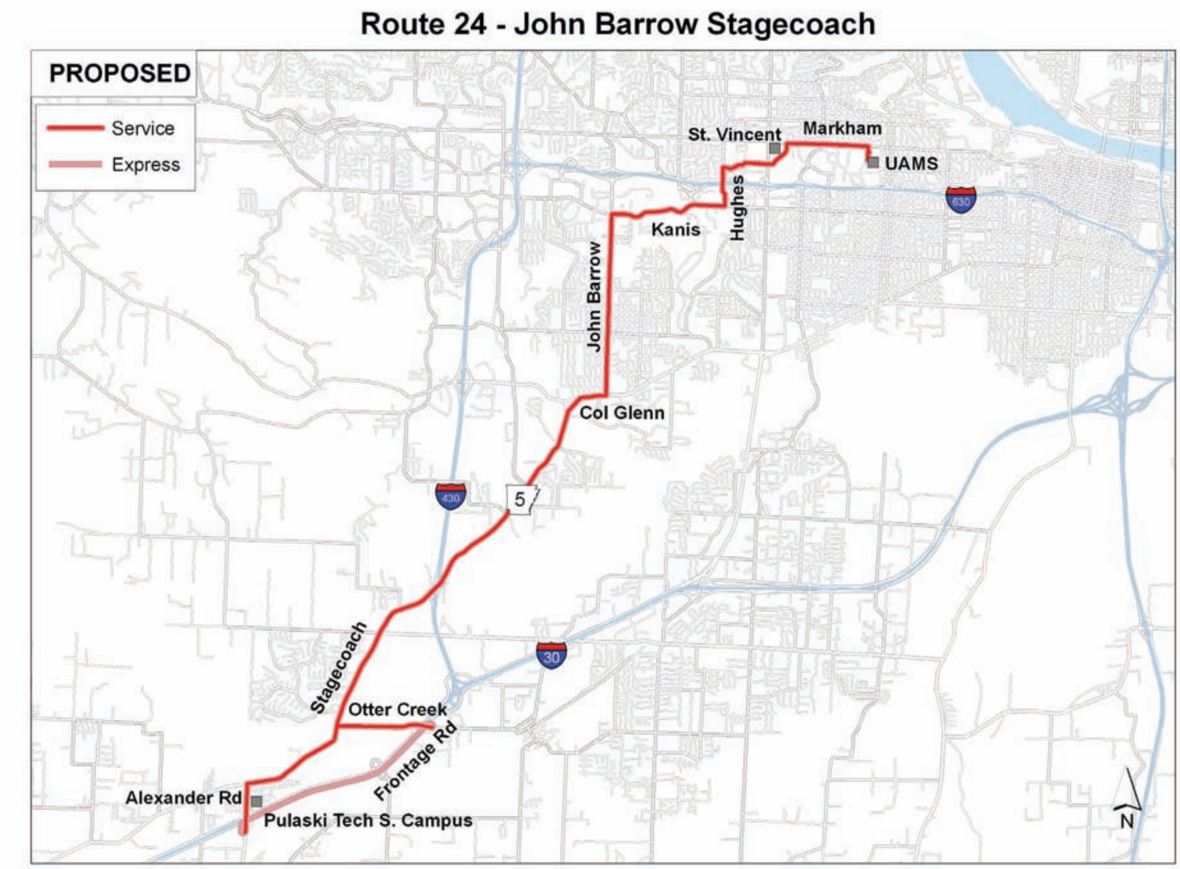
Proposed	Peak	Mid	Sat
Headways	30	60	60
Vehicle Requirements	4	2	2
Roundtrip Running time	120	120	120



Route #23 Chenal Parkway

Route 23 Chenal Parkway is proposed as a new local route connecting downtown Little Rock with the Chenal Valley via I-630, Financial Center Parkway, and Chenal Parkway. This route would provide the only transit service to the rapidly growing West Little Rock / Chenal Valley area. The route would provide a quick link for residents of the Chenal Valley to jobs in downtown Little Rock and the State Capitol area. Reverse commute opportunities would also be available through connections at the River City Travel Center to allow access to shopping centers, offices, and residences in the Chenal Valley. Frequencies are proposed at 30 minutes during peak weekday commute travel times and at 60 minutes during the weekday midday period and all day Saturday.

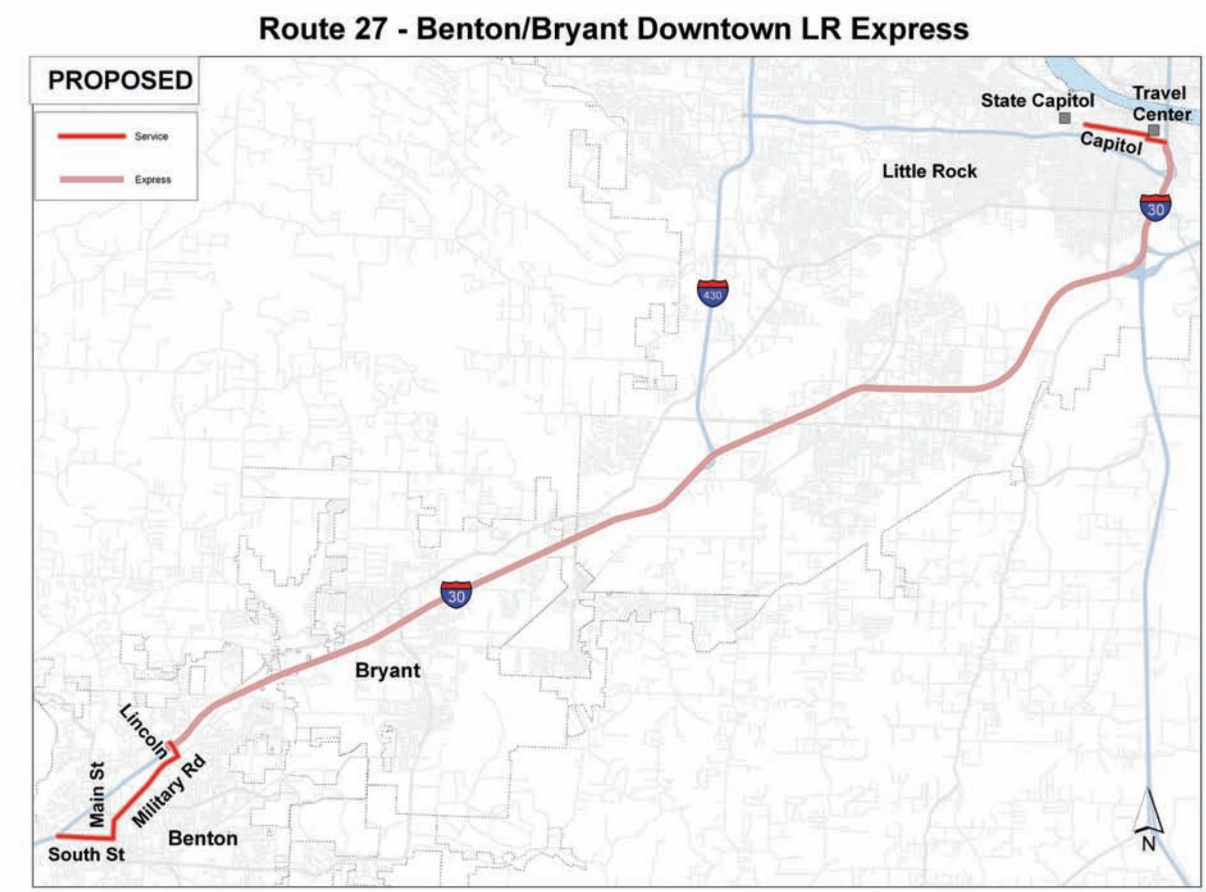
Proposed	Peak	Mid	Sat
Headways	30	60	60
Vehicle Requirements	4	2	4
Roundtrip Running time	110	110	110



Route #24 John Barrow / Stagecoach

Route 24 is proposed as a new local service route connecting UAMS with the Pulaski Tech South Campus near the Saline County line. This route would serve the heretofore-unserved areas of southwest Little Rock including Otter Creek, Pulaski Tech South Campus, John Barrow Road, and Stagecoach. In addition, the route would provide connections to CAT's mid-city transit center at Doctor' Hospital, Park Plaza Mall, and St. Vincent Infirmary. This proposed route would fill in gaps in service coverage in west and southwest Little Rock where transit service historically has not been provided due to budgetary limitations. Proposed frequencies for this route are every 30 minutes during peak weekday morning and evening travel periods. 60-minute headways are proposed during the midday period on weekdays and all-day Saturday.

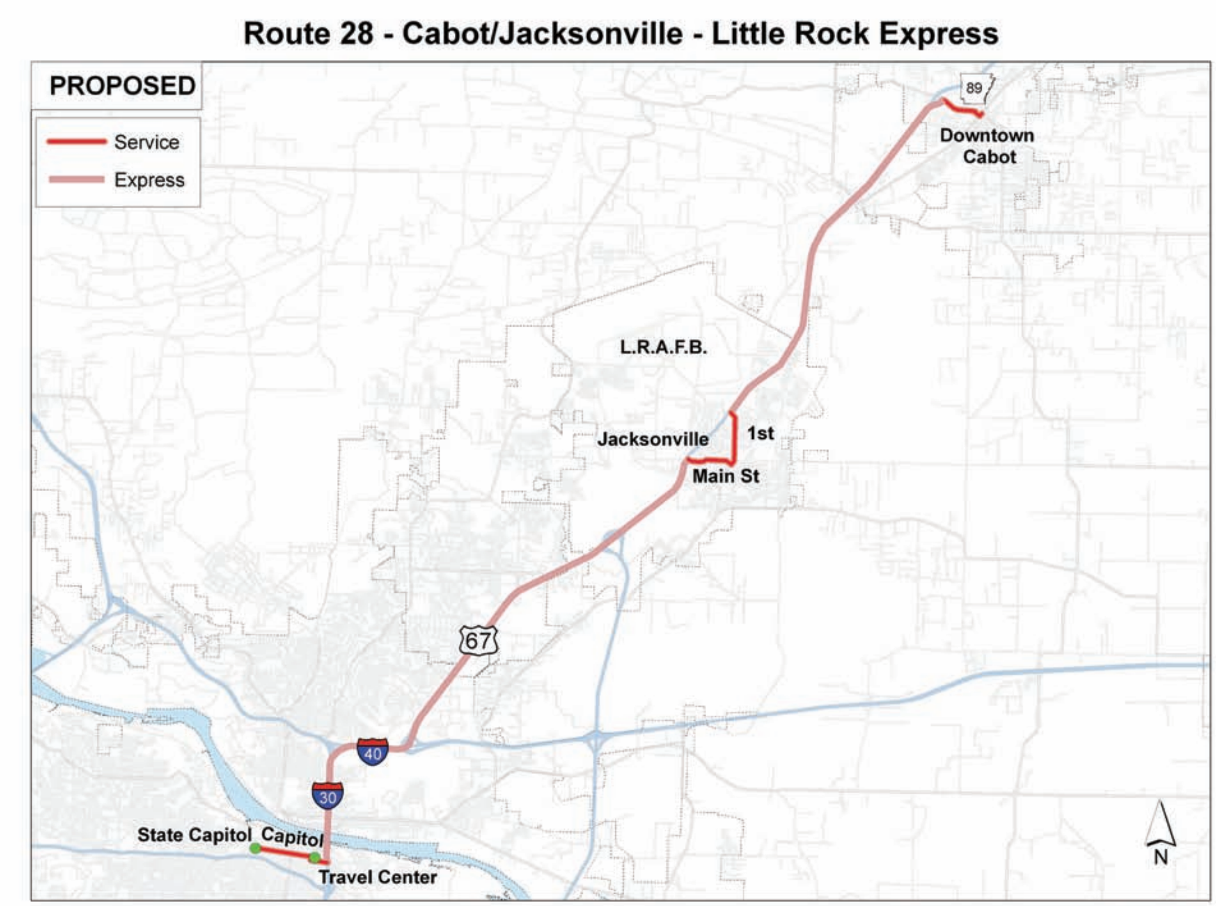
Proposed	Peak	Mid	Sat
Headways	30	60	60
Vehicle Requirements	4	2	2
Roundtrip Running time	120	120	120



Route #27 Benton/Bryant – Downtown Little Rock

Route 27 is proposed to provide commute hour service connecting the Cities of Benton and Bryant with downtown Little Rock via I-30. The route would start in south Benton, travel along the Military Rd. corridor to I-30, stop at a park-and-ride facility in Bryant, then continue nonstop to downtown Little Rock. From downtown Little Rock, the route would continue to the State Capitol and Children's Hospital area via Capitol Ave. Five morning and five afternoon trips are proposed to meet a variety of work shift start and end times. Outbound express runs from Little Rock will also allow for reverse commute traffic, allowing Little Rock residents to travel to Benton and Bryant for employment and other travel purposes. Proposed frequencies for this route are 30 minutes during peak weekday commute travel times only. Sufficient funding should be made available to allow for the immediate addition of new trips, when necessary, to respond to any overload situations should they occur.

Proposed Weekdays	AM Peak	Midday	PM Peak
Headways	30	none	30
Vehicle Requirements	4	-	4
Roundtrip Running time	130	-	130

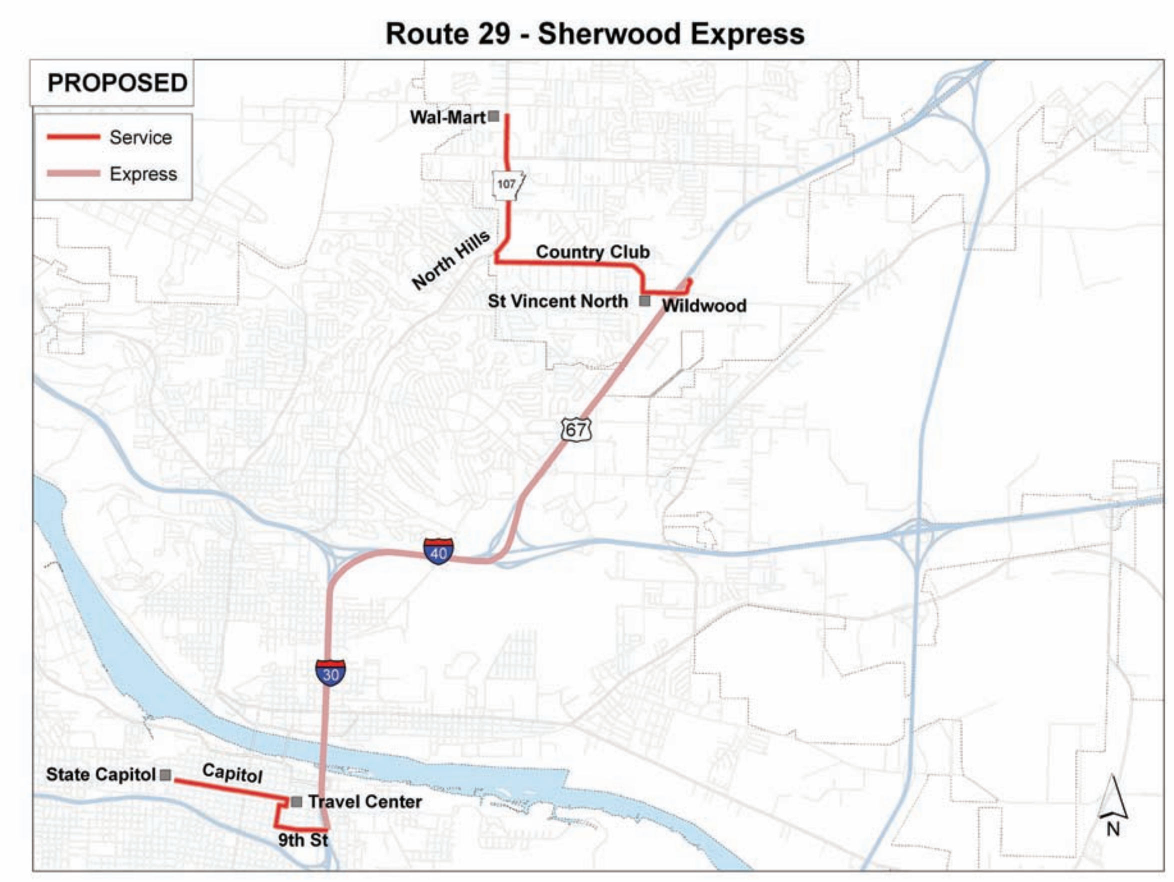


Route #28 Jacksonville / Cabot – Downtown Little Rock Express

Route 28 is proposed to operate express service connecting the Cities of Cabot and Jacksonville with downtown Little Rock via the Hwy. 67 Expressway. Currently, CAT's Route # 36 Jacksonville Express is the system's most productive express route. Because of the route's indirect alignment and numerous stops in Sherwood and North Little Rock, current travel times from Jacksonville are not competitive with other travel modes. By introducing a route dedicated to Cabot and Jacksonville, buses can access the Hwy. 67 Expressway at Main Street in Jacksonville, then travel nonstop to downtown Little Rock for considerable time savings.

An extension of service into Cabot in Lonoke County will provide that rapidly growing, predominately bedroom community with a link to jobs in the downtown Little Rock and State Capitol areas.

Proposed Weekdays	AM Peak	Midday	PM Peak
Headways	30	none	30
Vehicle Requirements	3	-	3
Roundtrip Running time	120	-	120

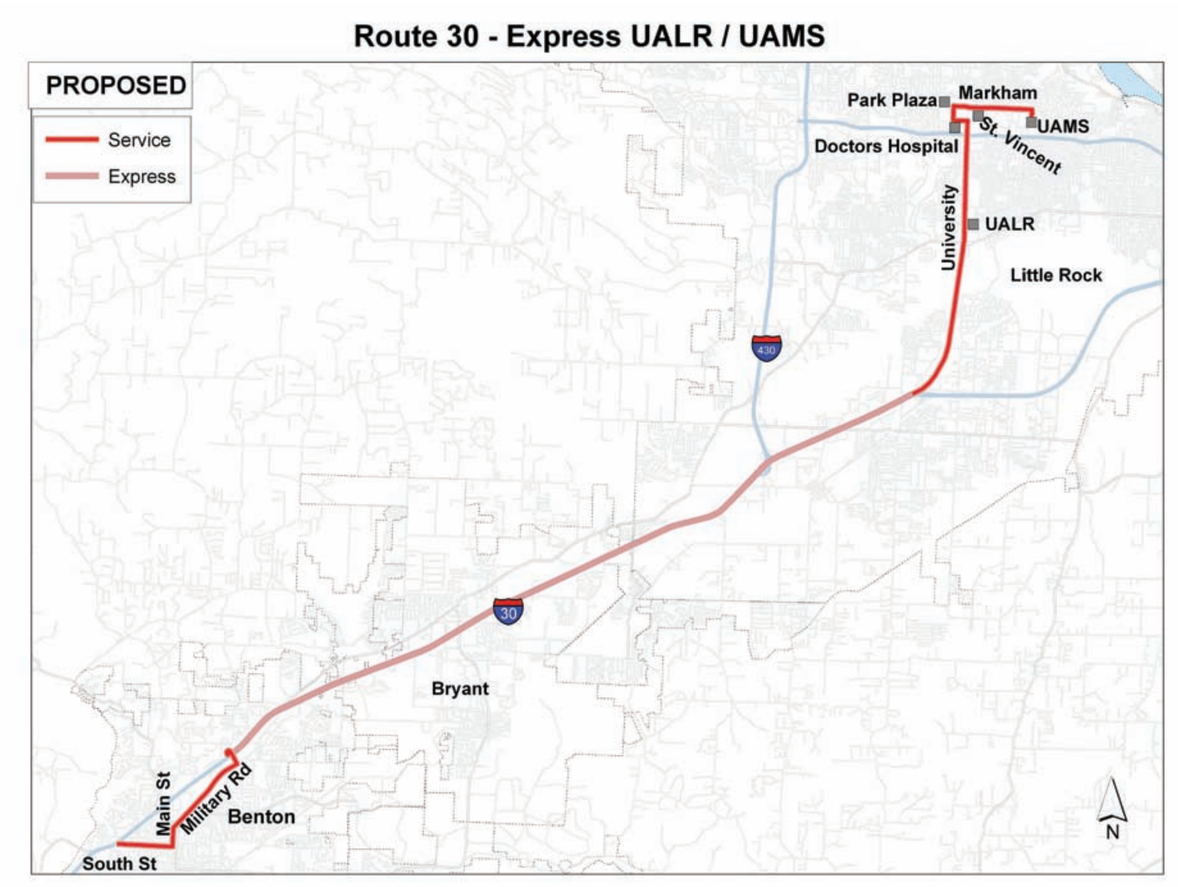


Route #29 Sherwood Express

Route 29 is proposed to link currently unserved areas within the City of Sherwood with downtown Little Rock. In addition to serving new portions of the City, this route would provide a faster expressway oriented service to downtown Little Rock than the proposed local route operating via JFK Blvd. through North Little Rock.

The proposed alignment would serve St. Vincent North Hospital, Country Club Rd., the Hwy. 107 corridor, and the new Wal-Mart Super Center in Sherwood. This route would also enhance park and ride opportunities for residents of Sherwood who do not reside at locations convenient to bus service. A total of 2 a.m. and 3 p.m. roundtrips are proposed for the initial service.

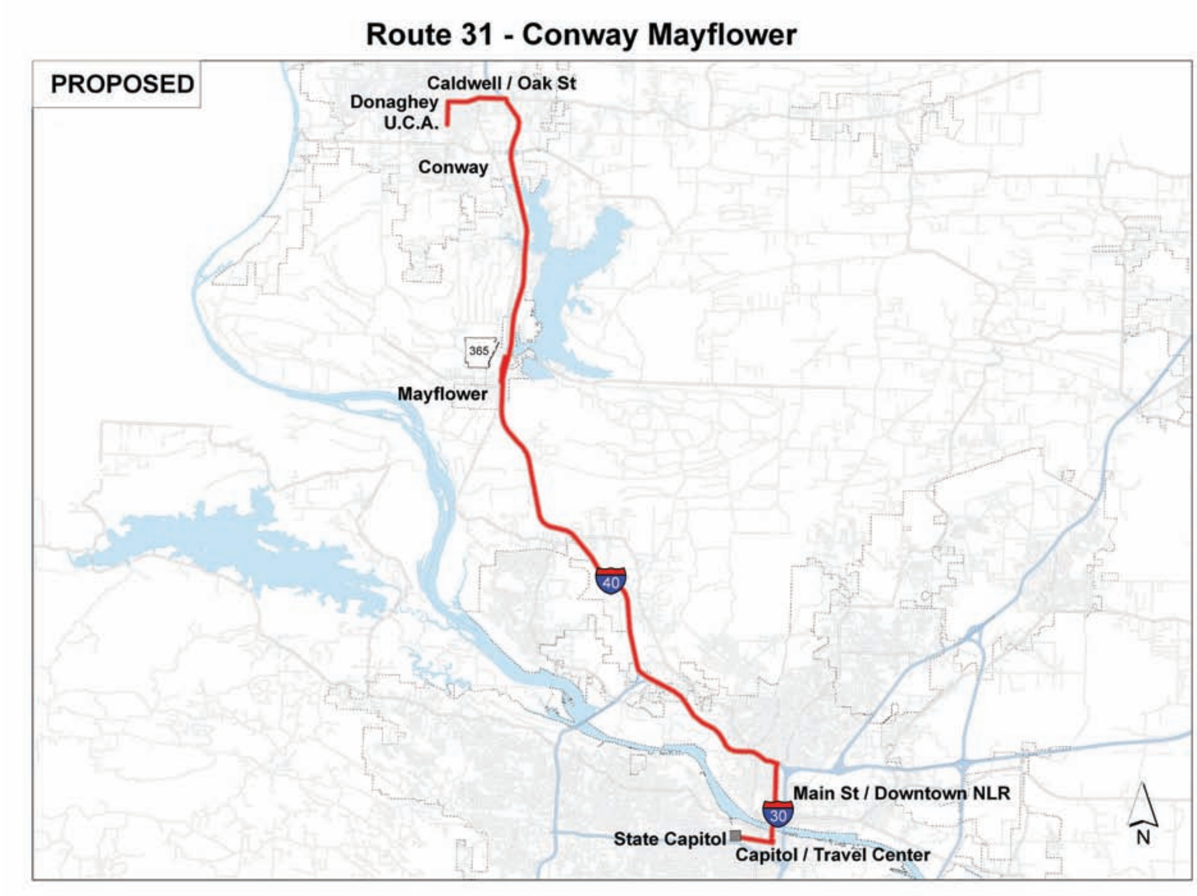
Proposed Weekdays	AM Peak	Midday	PM Peak
Headways	30	-	30
Vehicle Requirements	2	-	2
Roundtrip Running time	110	-	110



Route #30 UALR / UAMS – Saline County Express

Route 30 is proposed to connect the Cities of Benton and Bryant with UAMS via the University Ave. corridor in Little Rock, UALR, Doctors Hospital, the Midtown Transit Center, Park Plaza, and St. Vincent Infirmary. Several institutions in this area are facing parking challenges. Providing direct access to Little Rock medical, educational, and commercial areas for Saline County residents will result in significant benefits including improved connectivity, reduced pressure on parking, fewer vehicle miles traveled and opportunities for reverse commute travel (University Ave. corridor to Benton/Bryant). Initially, 5 a.m. and 5 p.m. daily roundtrips are proposed to permit capture of major shift changes at the medical centers and to allow students some flexibility in terms of meeting class times.

Proposed Weekdays	AM Peak	Midday	PM Peak
Headways	30	-	30
Vehicle Requirements	4	-	4
Roundtrip Running time	140	-	140



Route #31 Conway / Mayflower – Downtown Little Rock

Route 31 is proposed to link the Cities of Conway and Mayflower with Little Rock. Southbound, the route is proposed to originate adjacent to the University of Central Arkansas Campus, travel through downtown Conway, then via Oak Street to I-40 south. The route would serve Mayflower via stops along Highways 89 & 365, before continuing nonstop to downtown Little Rock. Three morning and three afternoon roundtrips are proposed. The Conway / Mayflower service would provide competitive travel options for current motorists, allow for reverse commute travel for Little Rock residents to reach downtown Conway, the University of Central Arkansas area, and the City of Mayflower.

Proposed Weekdays	AM Peak	Midday	PM Peak
Headways	30	-	30
Vehicle Requirements	3	-	3
Roundtrip Running time	150	-	150

River Rail Expansion

River Rail stretcar was established to serve primarily the businesses in the Little Rock River district and North Little Rock's Argenta area. Since its debut in 2004, there have been discussions as to how the line could or should be expanded to address transportation needs of a larger segment of the population in those two cities.

The following recommendations are presented for the purpose of generating discussion, should services be expanded.

River Rail Streetcar services should be extended to provide two independent lines. Line A is proposed to operate a north – south service connecting the McCain Blvd. corridor in North Little Rock with 17th and Main Streets in Little Rock. Line A would operate via JFK Blvd., Argenta, and downtown Little Rock. Line B is proposed to operate with a east –west alignment connecting the Presidential Library and Park Plaza Mall via downtown Little Rock, the State Capitol area, Capitol View, UAMS, and St. Vincent Infirmary.

Line A North – South Rail Streetcar Connector

Starting at 17th and Main Streets in Little Rock, the line would travel north via Main Street into North Little Rock, then continue onto JFK Blvd. to McCain Blvd, then east on McCain Blvd. to the Wal-Mart / Baptist Hospital North area in North Little Rock (replacing the current Route # 10 McCain Mall bus route).

Line B East – West Streetcar Connector

Starting at the Presidential Library, the route would travel west via the existing alignment to Spring Street, then north to Capitol Ave., then west on Capitol Ave to the State Capitol area, then continue to the Park Plaza Mall area via Capitol View, Shifts Station, UAMS, War Memorial Stadium, and St. Vincent Infirmary. An expanded midtown transit center near Park Plaza would allow for rail–to-bus transfers to access additional neighborhoods in Midtown and west Little Rock areas.

Principles:

- Engineering and track alignments must be designed to allow for safe rail travel at speeds at least as fast as conventional CAT bus service.
- Alignments must be linear to minimize turn movements and out-of-direction travel that will prevent rail from providing competitive travel times with other transportation modes.
- Medium to high-density station zoning, and pedestrian friendly accessibility must be in place before a rail platform / stop will be provided.
- System must make design and operating investments that will ensure a competitive, high quality, efficient, direct, and reliable system that meets or exceeds the

comparable experience of an automobile or pedestrian travel experience in terms of comfort, reliability, and travel time.

- The rail operator must receive the legal authority to immediately tow illegally parked vehicles blocking the right-of-way without having to wait for local law enforcement action or approval.
- Separate rail and motorized vehicle pathways should be provided to the extent possible.
- Rail system should be designed to meet multiple trip needs. A well-designed, direct system could provide transportation for conventioneers, tourists, commuters, shopping trips, medical trips, social trips, and recreation. The design of alignments should not focus on one type of transportation need to the detriment of other needs.
- The system must be fully integrated with the bus network with convenient connecting points and uniform fare payment methods and transfers.
- In the event of emergency maintenance or other service interruption, the service provider must have sufficient staff resources and funding in place to allow one-for-one replacement of streetcars by conventional buses for the duration of the service shut down.

STREETCAR SYSTEM

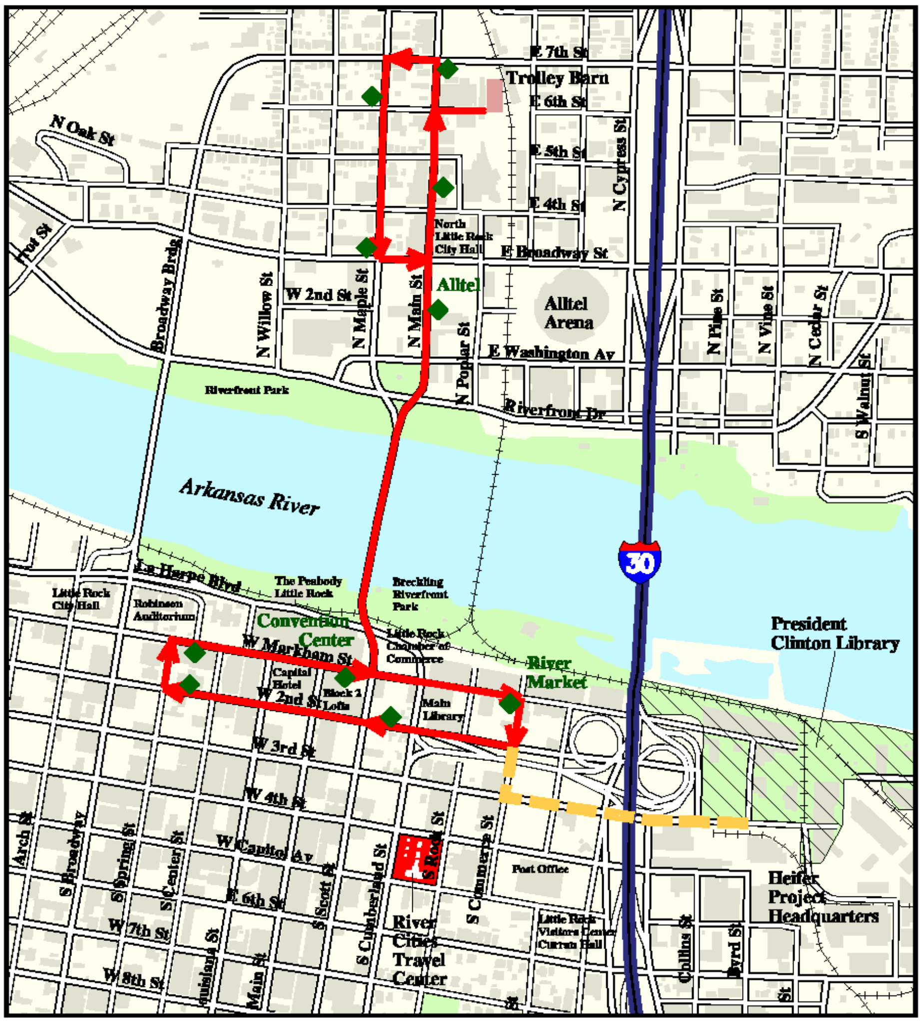
Maple Street,
North Little Rock

The River Rail Vintage Streetcar project, sponsored by CATA, was completed in the fall of 2004. The first phase of River Rail operates on 2.5 miles of track in Little Rock and North Little Rock. The route uses Markham and Second Street between Spring and Commerce in Little Rock, and Main Street, Seventh Street, Broadway St. and Maple Street in North Little Rock. There are eleven stops along the route. The trolley runs Monday through Wednesday 11:00 a.m.-10:00 p.m., Thursday through Saturday 11:00 a.m.-midnight and Sunday 11:00 a.m.-5:00 p.m. Fares are 50 cents adults, under 5 free, 25 cents 65+ and disabled, or riders may purchase a day pass for $2. The following map shows the route of the River Rail. As part of the River Rail Project, CATA constructed a maintenance and storage facility at 100 East Seventh Street in North Little Rock. All three trolleys are accessible to persons with disabilities and air conditioned. Preliminary engineering has also begun on the second phase of the River Rail project, the .9-mile extension to the Clinton Presidential Library. Phase two is planned to be completed in 2005.

River Rail Trolley

RIVER RAIL ELECTRIC STREETCAR
CENTRAL ARKANSAS TRANSIT

SYSTEM MAP



HISTORIC STREETCAR ROUTE, PHASE I
HISTORIC STREETCAR ROUTE, PHASE II (PROPOSED)
STREETCAR PASSENGER PLATFORM

11. Pedestrian and Bicycle

Pedestrian Facilities

INTRODUCTION

Provision of pedestrian facilities is an essential component of mixed-use land development and an intermodal transportation network. Additionally, pedestrian facilities promote a sense of community, and improve opportunities for equality of access and a healthy lifestyle. Although provision of sidewalks is primarily a local government responsibility, sidewalks and shared paths can fulfill a valid transportation need. In order to do that, however, it is essential that sidewalks connect in order for pedestrians to safely travel from one place to the next.

CARTS AREA PEDESTRIAN FACILITIES

Municipal pedestrian sidewalk plans are routinely incorporated into the metropolitan transportation plan. In 2000, five cities had adopted pedestrian plans. Five years later, in 2005, 10 jurisdictions have either adopted separate sidewalk plans, or comprehensive plans with pedestrian elements. Two jurisdictions have not adopted citywide plans, but do require sidewalk construction in their subdivision regulations or other ordinances.

METRO 2025 identified 345.58 miles of sidewalk and shared pathway in the CARTS area (see Map 11-1). Since its adoption in 2000, approximately 210.31 miles of additional walkway have been added throughout the region. *(Note: that this number may include some previously existing un-inventoried walkway.)*

PEDESTRIAN ACCIDENTS

In the Fall of 2004, Metroplan compiled and reviewed pedestrian and bicycle accidents in the four counties that occurred between 2000-2002. This study allowed Metroplan to determine the locations of such accidents and the determination of high risk groups.

A total of 436 pedestrian crashes occurred between the years 2000-2002 in the four-county area, 32 of which involved fatalities. Totals are summarized by county in Table 11-1.

Table 11-1
2000-2002 Number of Pedestrians - Involved in Crashes

County	2000	2001	2002	2000-2002
Faulkner	14 (4)	6 (1)	11	31 (5)
Lonoke	13	8 (1)	8	29 (1)
Pulaski	108(9)	109 (10)	125 (4)	342 (23)
Saline	11 (1)	7	16 (2)	34 (3)
Total	**146(14)**	**130(12)**	**160(6)**	**436(32)**

Note: Numbers in parenthesis are the number of fatalities.

In general, higher pedestrian-related crashes were concentrated in the downtown areas, minority neighborhoods, and transit-dependent areas. Within Pulaski County, North Little Rock had higher concentrations of pedestrian-related crashes occurring on Pike Avenue south of I-40 and East Broadway near I-30. In Little Rock, the higher concentrations of pedestrian crashes occurred in the CBD area, particularly on Broadway Avenue, in the Cloverdale area of southwest Little Rock, and along parts of Asher/Wright Avenue, east of University. Map 11-2 shows the location of crashes involving pedestrians or bicyclists for the four-county area occurring between 2000-2002. Map 11-3 shows the location of pedestrian fatalities between 2000-2002. Many of the fatalities occurred on or near area freeways.

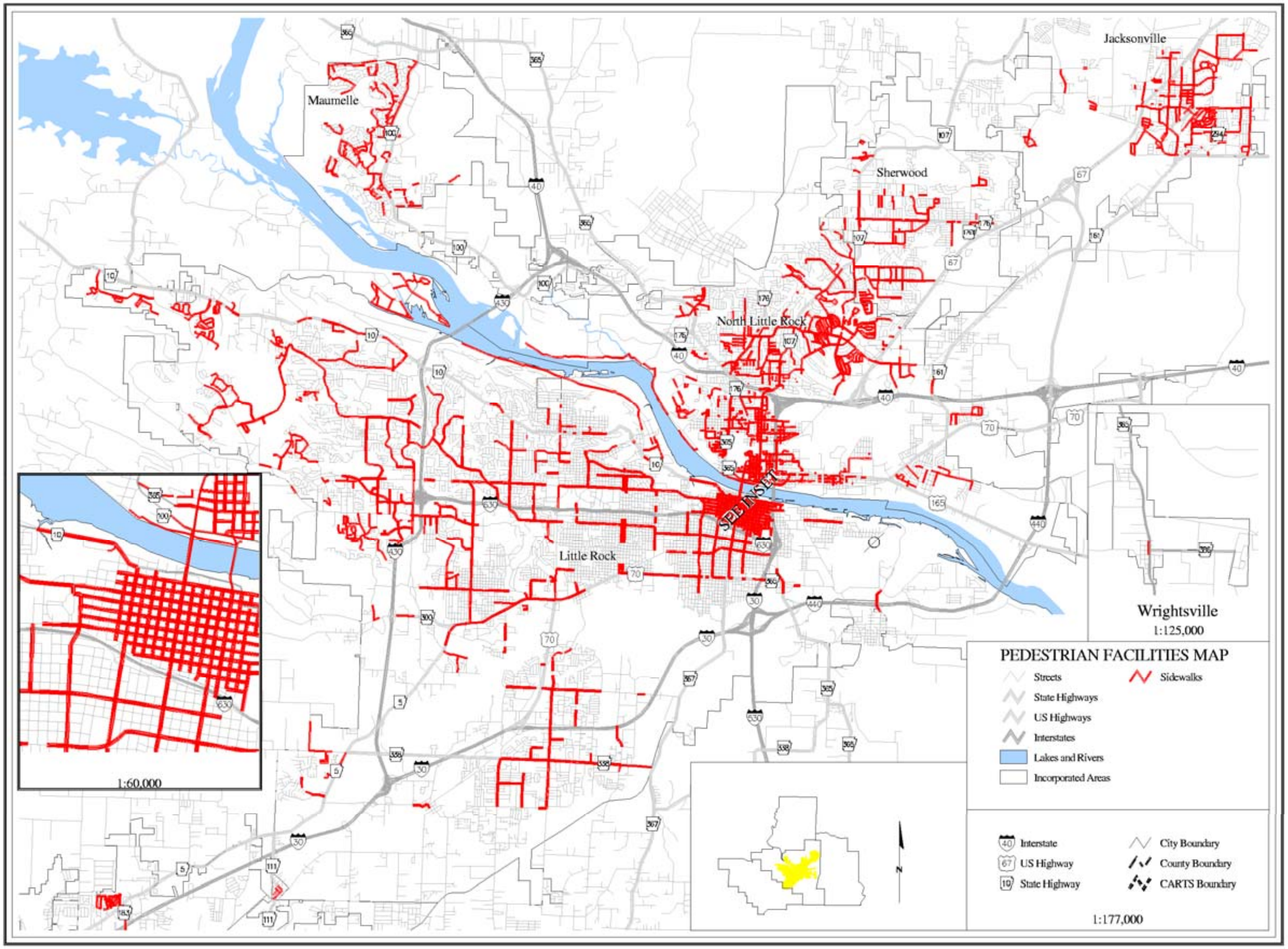
Groups that were determined to have a higher risk of being involved in a pedestrian accident for the four-county area include individuals between the age of 10-19, African Americans and Hispanics, and males. For more information on pedestrian and bicyclist accidents, consult 2000-2002 CARTS Pedestrian/Bicyclist Crash Analysis.

PREVIOUS CARTS PLANNING EFFORTS

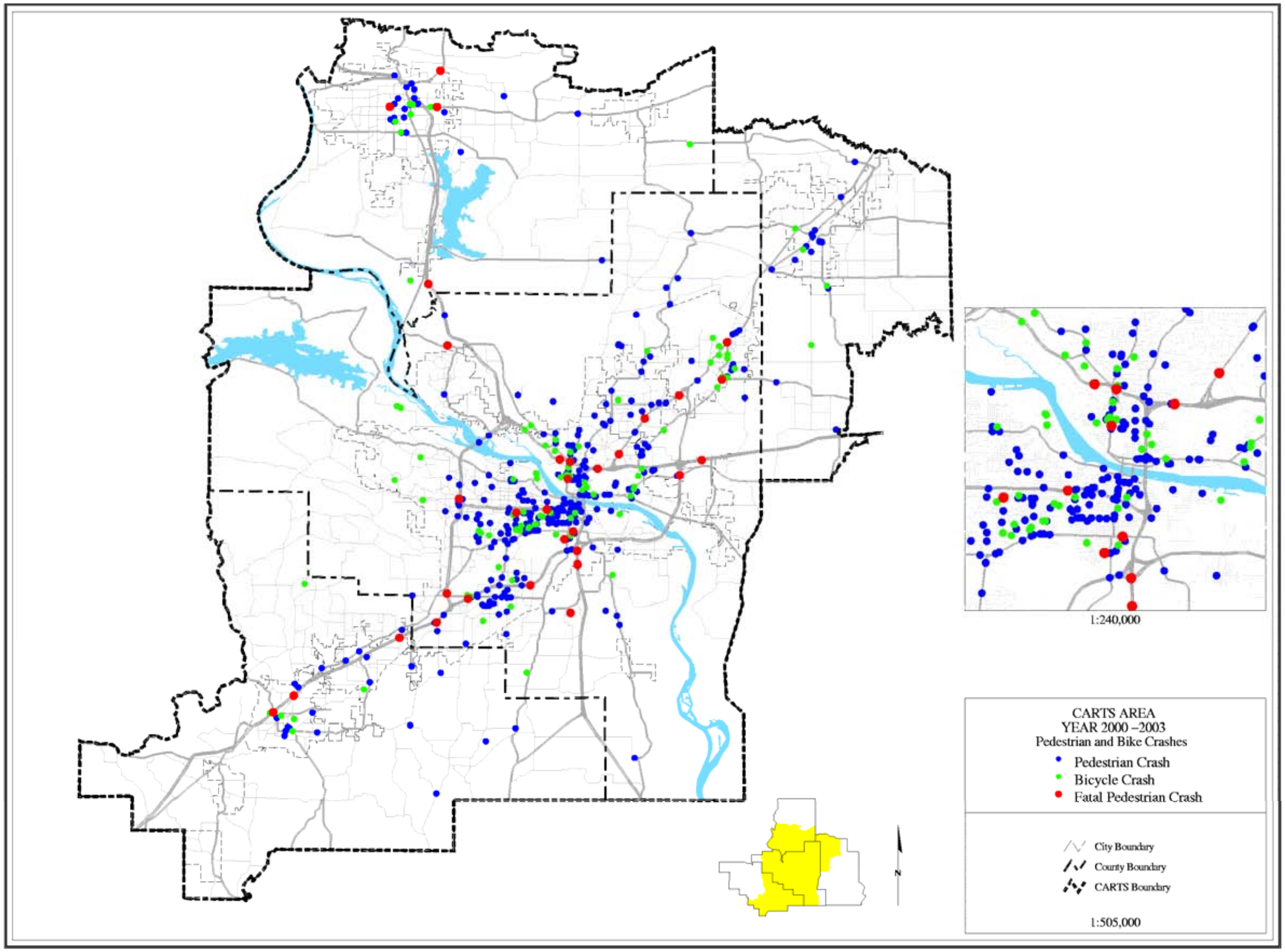
METRO 2020 targeted an average of $1 million per year to fund pedestrian and bikeway projects in the region. Jurisdictions that adopted pedestrian plans or ordinances with pedestrian provisions incorporated the CARTS pedestrian standards into their federally funded roadway projects.

In the development of METRO 2025, the TAC appointed a standing committee to investigate alternatives and develop a pedestrian element for METRO 2025. Safety, access and community were guiding priorities for the committee. The resulting recommendations, listed in Table 11-2, are carried forward in METRO 2030 with a brief assessment of their implementation.

Map 11-1
Pedestrian Facilities Map



Map 11-2
Pedestrian & Bicycle Accidents



Map 11-3
Pedestrian Fatalities

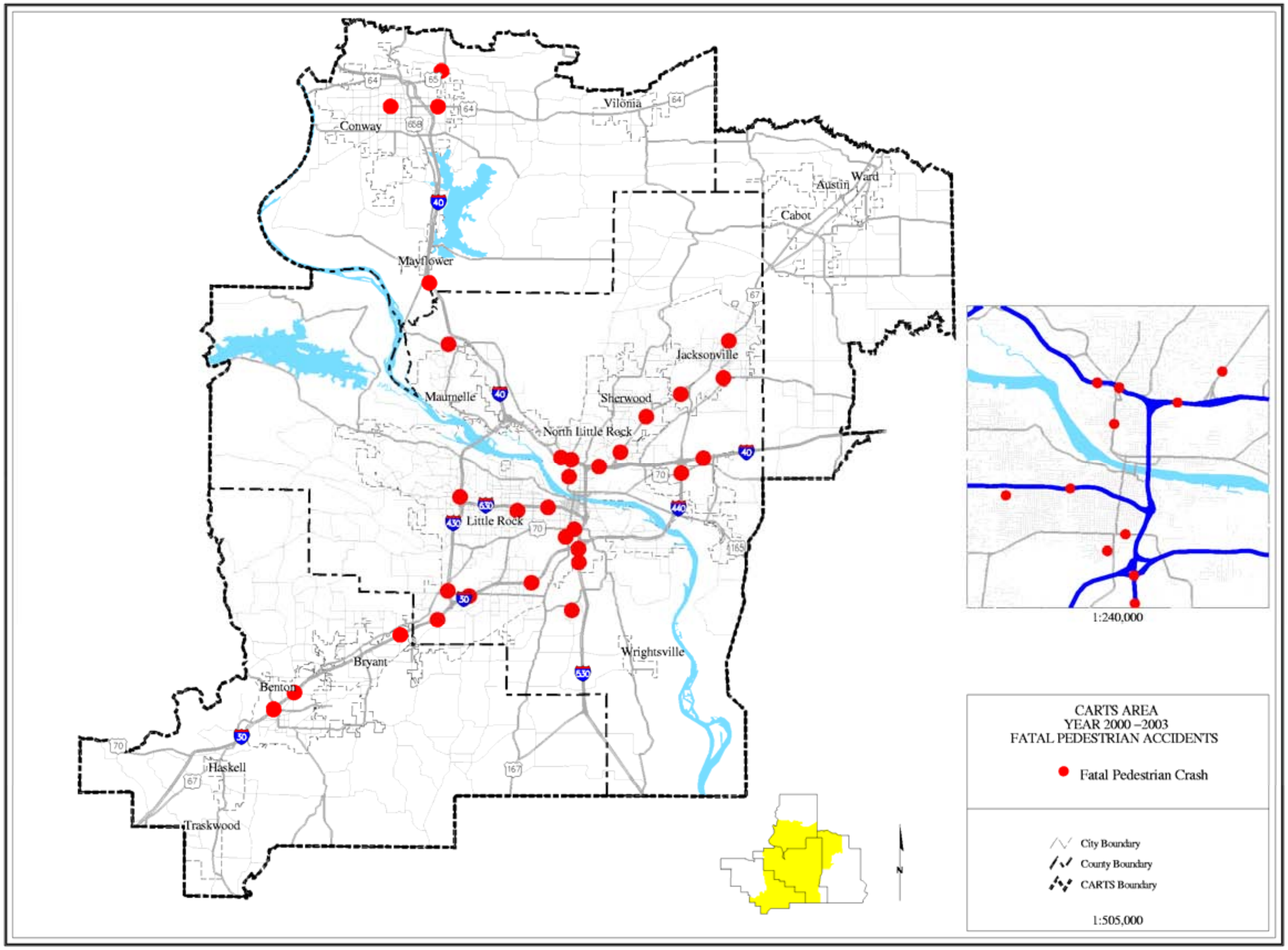


Table 11-2
METRO 2025 Recommendations

Recommendations	Is it being Implemented?
Coordinate with the AHTD to implement its state plan recommendations.	N/A (see State Planning Efforts, below)
Maintain and improve existing sidewalks.	YES
Priority should be given to providing connections to existing sidewalks.	YES
Sidewalks should be built to provide access from neighborhoods to and around schools, parks, transit stops, and shopping areas.	YES
Provide appropriate furniture to pedestrian facilities; for example, benches and trashcans.	YES
Provide pedestrian refuges in appropriate areas.	YES

STATE PLANNING EFFORTS

In September 1997, the Arkansas State Highway Commission adopted a State Bicycle and Pedestrian Transportation Plan to serve as a stand alone element of the Statewide Long-Range Intermodal Transportation Plan. The stated intent of the plan is "to provide direction for planning, development and implementation of safe and useable facilities for bicycle and pedestrian transportation in Arkansas." Since that time, there have been no updates of the plan.

State Pedestrian Transportation Plan Recommendations

1. Encourage local communities to conduct sidewalk inventories as elements of master street plans. Such inventories will identify gaps in existing pedestrian systems and allow communities to target areas for improvements

2. Cooperate with local communities to develop sidewalks in conjunction with urban highway and street improvements.

3. Replace substandard existing pedestrian facilities in conjunction with improvement projects and construct initial pedestrian facilities if local demand exists. Note: Metroplan standards call for construction of sidewalks regardless of current demand. The assumption is that the CARTS area is building an integrated travel network, which should be seamless and supportive of all modes.

The Heights Neighborhood, Little Rock

4. Develop a pedestrian safety program targeting school-aged children.

Characteristics and Needs of Pedestrians

Pedestrians fall into five basic categories.

1. **Children and Pre-Teens** - Usually impulsive and unpredictable, shorter and, therefore, harder to see, and rely on adults to look out for them.

2. **Teenagers** - Walk longer distances, walk during night and evening hours and walk to school.

3. **Elderly -** Walk for exercise, walk because they may no longer be able to drive and walk at a slower pace than any other pedestrian.

4. **Everyday Pedestrians -** Most frequently are present on roadways early in the morning and in the evening, walk or run longer distances than most pedestrians and are concentrated in urban areas where there tends to be more traffic.

5. **People with Disabilities -** They may be walking because they can not drive; pedestrians in wheelchairs or on motorized scooters may be hard to see because they are shorter.

IMPEDIMENTS TO PEDESTRIAN TRAVEL

The characteristics and needs of pedestrians are different from all other travel modes. Recognizing the unique needs of pedestrians is the first step toward improving safety for pedestrians. One of the best ways to encourage walking is to eliminate the conditions that discourage people from walking.

SAFETY: Several issues fall under the category of safety for pedestrians. Surface condition, physical barriers (telephone poles, newsstands) and crosswalks are just a few examples of safety issues. Surface conditions do not matter to all pedestrians, but to the ones it does matter to, it is very important. It is difficult for a person in a wheelchair to traverse a side-walk that is broken. The same is true for families pushing a stroller, or anyone who is unsteady on his/her feet. Physical barriers that cause problems for those people can also be hazardous to any pedestrian. Crosswalks are essential to pedestrian safety since they allow for a safe place for pedestrians to cross a street.

Tucker Creek Trail, Conway

ACCESS: Access is a critical issue for pedestrians. People wishing to walk from their home to the grocery store may not be able to because of the lack of sidewalks in the area. Lack of sidewalks near shopping centers, schools, parks and in neighborhoods may be prohibitive to those who wish to walk instead of drive. Connectivity between pedestrian generators should be a priority for walkway systems. Not only do pedestrians use sidewalks to walk to the store, they also use them for transit connections.

PLAN CONSIDERATIONS

Sidewalks are a necessary element to advance the regional goal of a seamless, multi-modal transportation network. In the 2000 METRO 2025 plan, the TAC went further by recognizing that pedestrian facilities are critical to maintaining and strengthening the fabric of the community.

Good sidewalk planning and engineering must be combined with public education/information, and enforcement of basic pedestrian-vehicle traffic laws (e.g., at cross-walks, regarding the parking of vehicles on pedestrian walkways). It is also important to encourage walking as a mode choice. Table 11-3 exhibits some of the attributes of each of these 4-E implementing strategies.

Table 11-3
Pedestrian Implementing Strategies

Engineering/Planning	Education	Enforcement	Encouragement
Build sidewalks where people want to go	Walking & health (Center for Disease Control & Prevention)	Keep motor vehicles & bikes off the sidewalks (except shared paths)	Organize community walks (e.g., through Parks & Recreation Department)
Employ traffic calming techniques where appropriate	Coordinate with schools for national SAFE Kids Campaign	Control speeding & un-safe vehicle movements at intersections	Enlist business to support employee walking program
Provide street furniture, i.e., benches, trash receptacles, drinking fountains, etc.	Pedestrian Road Show	Enforce jaywalking laws	Provide aesthetic enhancements such as trees, landscaping, textured sidewalks

SIDEWALK/SHARED PATH STANDARDS

All sidewalks constructed with funds provided through CARTS, unless located in a CBD, must be a minimum of five feet wide with a three foot minimum buffer located on both sides of the street.

Shared paths can be used by both cyclists and pedestrians and are separated from motorized vehicular traffic by an open space or barrier and either within the roadway right-of-way or within an independent right-of-way. Shared paths are a minimum of 12 feet wide separated from the roadway by a five foot buffer.

Section II. Pedestrian and Bicycle

A longstanding goal of the citizens within central Arkansas has been the development of a multi-modal transportation system that promotes transportation choices for all citizens. This goal has never been more important than now when our region and world face challenges associated with global emissions and air quality, increased energy prices, a changing global economy, and an aging population.

The vision for the transportation system in central Arkansas set forth below was initially developed for METRO 2020 in 1995, remaining constant in the subsequent adoption of METRO 2025 and METRO 2030.

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

- Maximizes the mobility of people and goods;
- Minimizes transportation related fuel consumption and air pollutions; and,
- Establishes a strong link between the provision of transportation facilities and how we use our land.

This vision and transportation goals for Economic Development, Equality of Access and Transportation Choices, Environmental Quality, Land Use, and Quality Transportation Corridors purposely require a multi-modal transportation system that includes the planning and development of networks for transit, pedestrian, and cyclists for the central Arkansas area.

Big Dam Bridge

Metroplan and its member jurisdictions have begun the development of this multi-modal transportation system through the inclusion of sidewalks in new construction, addition of sidewalks in reconstruction, construction of a trails network, and the construction of bike lanes or identification of bike routes that serve both transportation and recreational purposes.

Since the adoption of METRO 2030 in September of 2005, the central Arkansas area has seen the completion of the Big Dam Bridge over Murray Lock and Dam on the Arkansas River, conversion of the Junction Railroad Bridge over the Arkansas River to a pedestrian and bicycle bridge, additions to the multi-use trails networks of Maumelle and Conway, and the addition of sidewalks along newly constructed and widened roadways throughout the CARTS area.

Planning Efforts

Metroplan supports pedestrian and bicycle facilities by providing technical assistance on comprehensive city plans, master street plans, subdivisions regulations, specific walkable and neighborhood plans, and access management plans for member jurisdictions. Metroplan also develops and funds pedestrian and bicycle facilities connecting major activity centers in the metropolitan region. In response to a request in 2008 to identify existing routes for cyclists, Metroplan, with the assistance of member jurisdictions and the Bicycle Advocacy for Central Arkansas, developed a Bike Central Arkansas Map showing regional bike rides and commonly used bike routes, Figure 11-1.

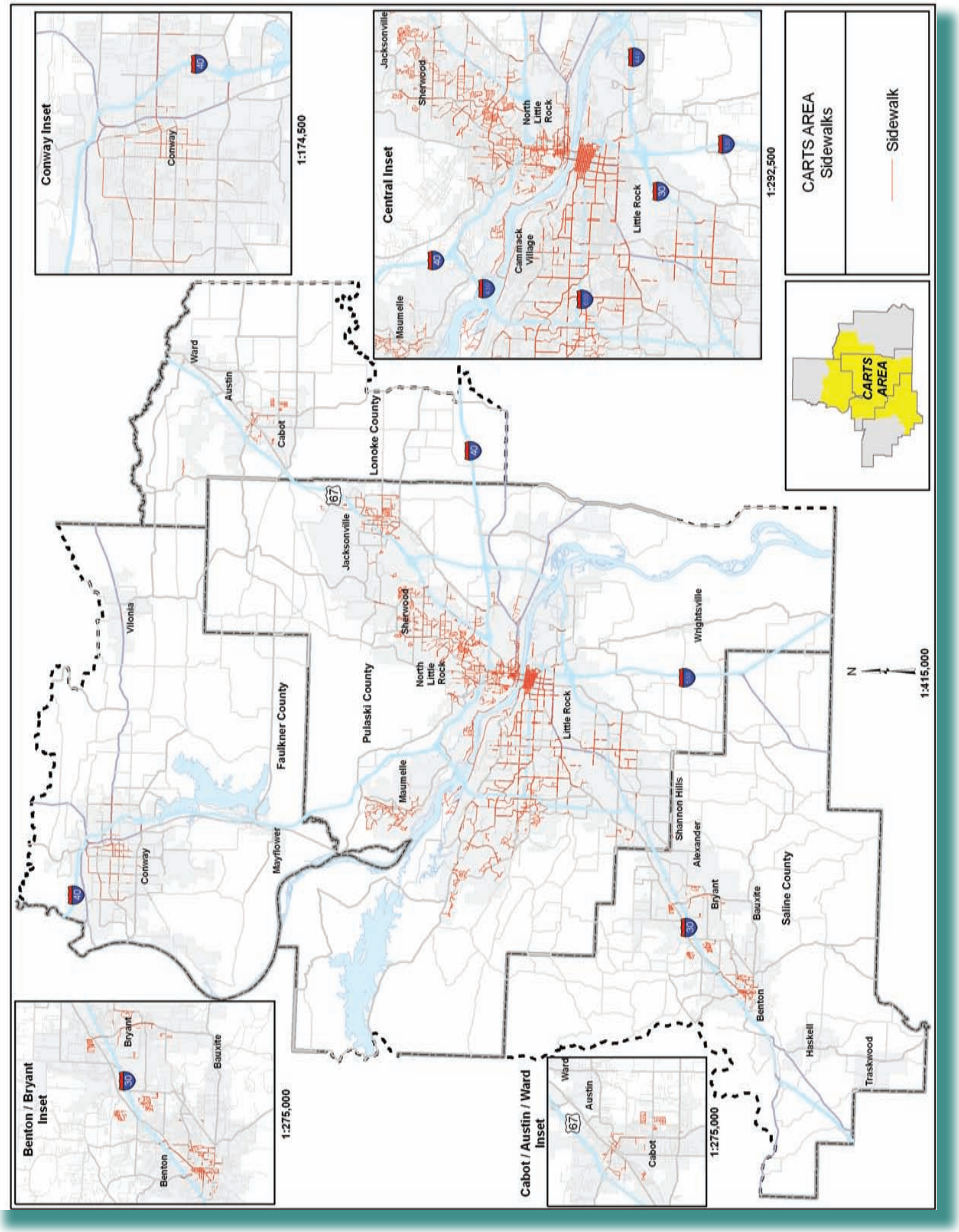
Figure 11-1: **Central Arkansas Bike Route Map**

Pedestrian Facilities

CARTS Area Pedestrian Facilities

Metroplan's inventory of pedestrian and bicycle facilities within central Arkansas consist of a total of 78.5 miles of shared use paths and 528.7 miles of sidewalk. This represents an increase of 261 miles of walkways since Metroplan's inventory of pedestrian and bicycle facilities in 2005 (Note: this number may include some previously un-inventoried walkways). Two major pedestrian facilities that have been added since 2005 include the Big Dam Bridge and Junction Bridge conversion over the Arkansas River. Map 11-1 shows the location of pedestrian facilities within central Arkansas.

Map 11-1: **Pedestrian Facilities within the CARTS Area**



Pedestrian Safety

In the development of a regional pedestrian network it is essential that planning consider the safety of users. When pedestrians do not feel safe, they are less likely to utilize the pedestrian network. Two primary ways that the safety of the pedestrian network is ensured is the use of common design standards, as widened by CARTS Design Standards and the routine analysis of pedestrian crashes within the metropolitan region.

CARTS Design Standards

CARTS Design Standards are used on the construction of new roadways and retrofit of existing facilities within the CARTS area. These standards make certain that the project designed consider the safety of pedestrian in addition to other users of the facilities. Cross-sections were developed using national standards as well as local experience. The standards require:

1. The construction of sidewalks along both sides of functionally classified roadways
2. The existence of a 4-ft buffer between the curb and sidewalk
3. The provision of safe pedestrian crossings

Analysis of Pedestrian Crashes

Metroplan collects, maps, and analyzes pedestrian crashes each year using the Arkansas State Police Statewide Crash Database. This analysis is used to identify and inform member jurisdictions of higher pedestrian crash locations, the development of safety projects, identification of causes/relationships to crashes, and identification of target population groups for educational programs. This analysis is also used to review the CARTS Design Standards and recommend changes based on crash history.

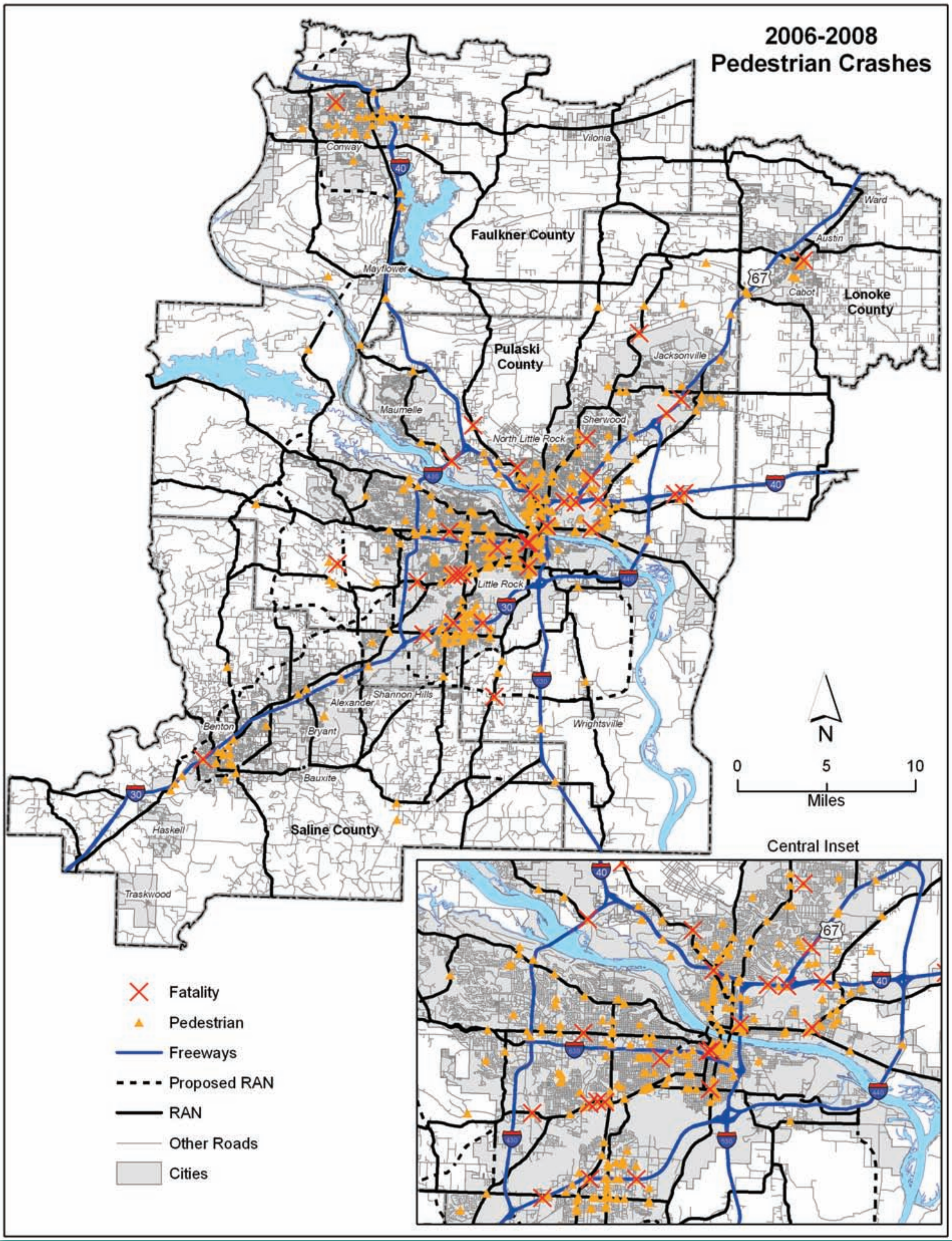
Pedestrian Crashes 2006-2008

From 2006 to 2008 a total of 421 pedestrians were involved in crashes within Faulkner, Lonoke, Pulaski and Saline Counties, resulting in the serious injury of 273 pedestrians and 34 fatalities. While the total number of crashes involving pedestrians is a small percentage of the total number of crashes, it is not insignificant and represents 10% of the motor vehicle fatalities within the metropolitan area. The three year economic cost of these crashes is $46.5 million with a comprehensive cost of $160 million. [1]

Pedestrian Crash Locations

Pedestrian crashes from 2006 to 2008 are displayed on Map 11-2. In general, higher pedestrian-related crashes were concentrated in the downtown areas of Little Rock, North Little Rock, Conway, and Benton as well as predominately minority neighborhoods and transit-dependent areas. Within North Little Rock, the highest concentrations of pedestrian-related crashes occurred on Pike Avenue south of I-40 and East Broadway near I-30. In Little Rock, the higher concentrations of pedestrian crashes occurred in the central business district, particularly on Broadway Avenue, in the Cloverdale area of southwest Little Rock, and along parts of Asher/Colonel Glenn near University Avenue. Within Conway, several pedestrian crashes occurred along Oak Street and in Benton along Military Road and East Streets. The highest concentration of fatalities occurred on Colonel Glenn west of University where 3 fatalities occurred from 2006 to 2008.

Map 11.2: **Pedestrian Crashes 2006 to 2008**



Pedestrian Crash Severity

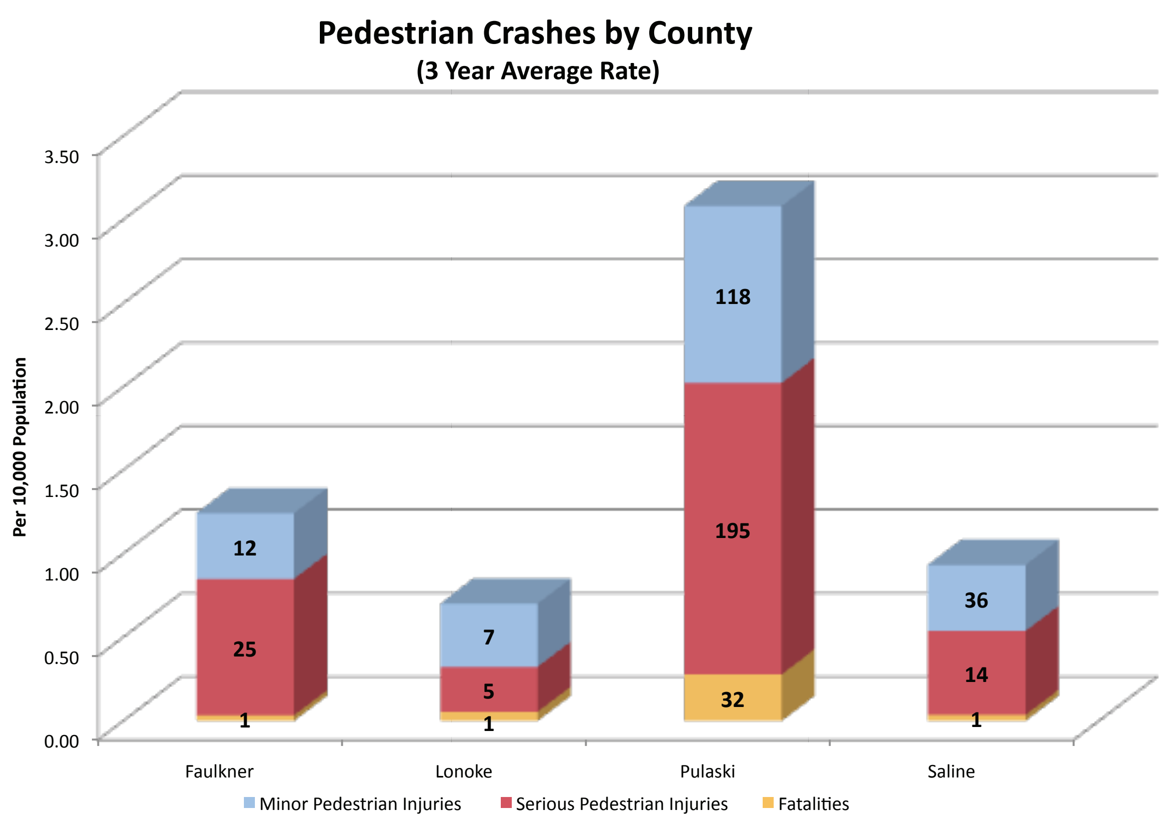
For the analysis of crashes between vehicles and pedestrians, injuries were grouped into pedestrian fatalities, serious pedestrian injuries, and minor pedestrian injuries. These categories were determined using the injury severity from the Arkansas State Police Database which categorizes injuries into five categories (1. Fatal, 2. Incapacitating Injury, 3. Non-Incapacitating Injury, 4. Possible Injury/No Visible Injury, and 5. No Injury/Property Damage Only). A description of these categories is included in Table 11-1.

Table 11-1: **Injury Severity**

	Injury Code(ASP)	Arkansas State Police Description
Pedestrian Fatalities	1	Injury that results in the death of a living person with 30 days of the crash.
Serious Pedestrian Injuries	2,3	Injury which is evident to observer at scene; includes lacerations, broken limbs, skull or chest injuries, abdominal injuries, lump on head, abrasions, and bruising
Minor Pedestrian Injuries	4,5	Individuals which report injury but is not evident to observer, reports of pain, limping, and no report of injury

Pedestrian crashes from 2006-2008 were evaluated to determine recent trends. This includes an assessment of pedestrian crashes by county, race and sex, 10-year age groups, time of day, and roadway system.

Figure 11.2: Pedestrian Vehicle Crashes by County 2006 to 2008 per 10,000 Pop



Crashes by County

Within central Arkansas, Pulaski County has the highest pedestrian crash rate, followed by Faulkner County. Pulaski and Faulkner counties have areas with higher densities of population, and employment centers associated with urban development. This encourages pedestrian activities and may be one of the reasons that these counties have the higher pedestrian crash rates. It could also be attributed to a higher number of pedestrians and vehicles (increased exposure) as a result of having more pedestrian infrastructure. Figure 11-2 shows the pedestrian crash rate for counties.

Crashes by Race and Sex

Throughout the United States, male and minority pedestrians are more likely than other demographic groups to be involved in a crash with a motor vehicle. This is no different in central Arkansas where males are twice as likely to be involved in a pedestrian crash as females, and minorities are almost 3 times as likely to be involved in a pedestrian crash.

Figures 11-3 below and 11-4 on the following page show the percentage of pedestrian crashes that involve males and females for the central Arkansas area, as well as pedestrian fatalities for central Arkansas and the United States.

Figure 11-3: Pedestrian Fatalities by Sex

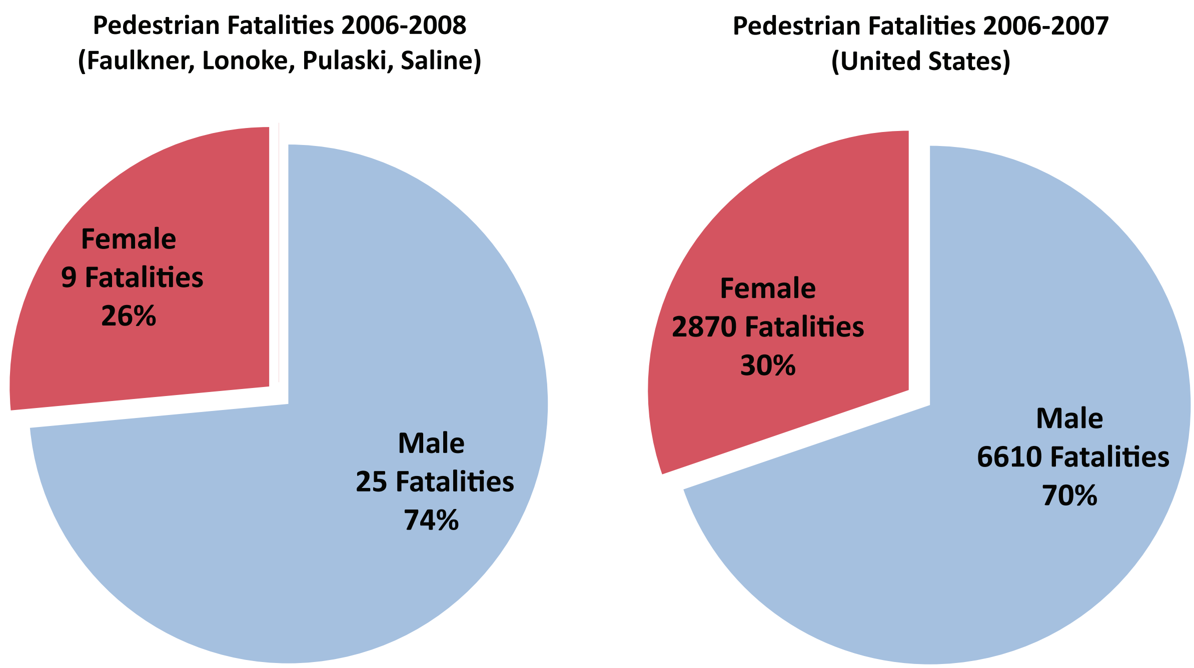


Figure 11.4: Pedestrian Crashes and Fatalities by Sex

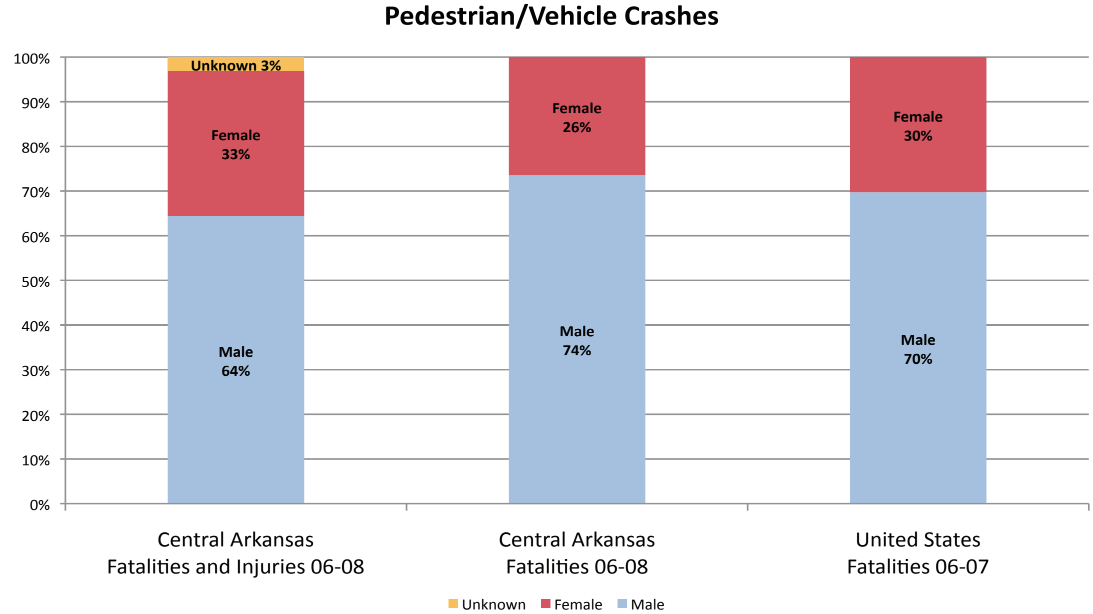
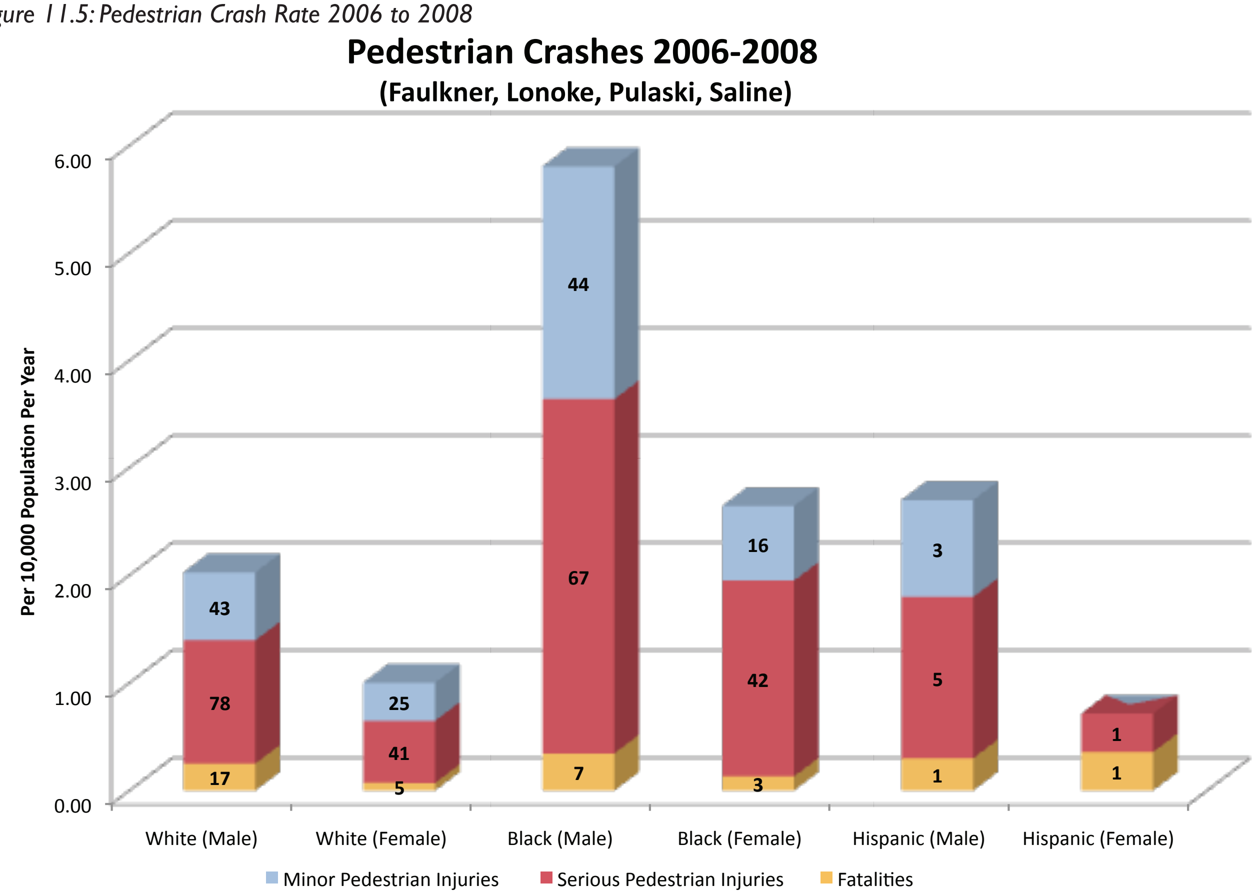


Figure 11.5: Pedestrian Crash Rate 2006 to 2008



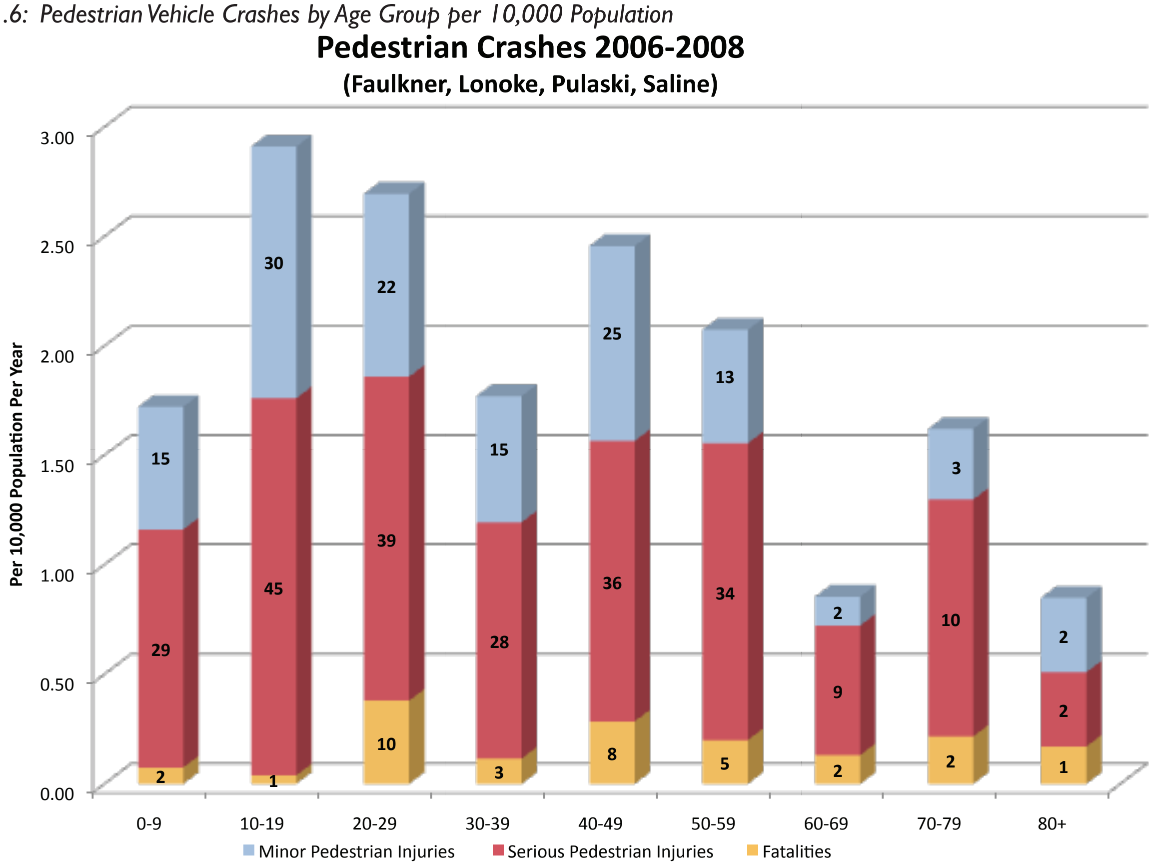
The analysis of pedestrian crashes in the central Arkansas area also found that minorities are more likely to be involved in pedestrian crashes and fatalities. Black males whose overall crash rate is more than twice that of any other group. While the difference in the fatality rate is not quite as severe, Blacks are 50% more likely to be involved in a pedestrian fatality as Whites. This is presented in Figure 11-5.

A review of studies by the Federal Highway Administration (FHWA) concluded that the overrepresentation of crash risk among lower income people and minorities is probably the result of different travel patterns, proximity to dangerous streets, less supervision of children at play near streets, and/or the lower likelihood of large fenced-in yards, compared to higher income neighborhoods.[2] This would seem to be supported by national statistics that show African Americans walk at the highest rate, with walking accounting for 12.6 percent of all trips followed by Hispanics and Asians at 11 percent, and Whites who walked for only 8.6 percent of all trips. [3]. Because African Americans walk more than other ethnic groups, they have higher exposure rates to pedestrian injuries and fatalities.[4] The higher exposure rate of minority pedestrians is consistent with the pedestrian collision data of central Arkansas. In the absence of other obvious contributors, the higher exposure rate, proximity to dangerous streets, and neighborhood characteristics are believed to account for the crash and fatalities rates of minority populations seen in central Arkansas.

Crashes by Age Group

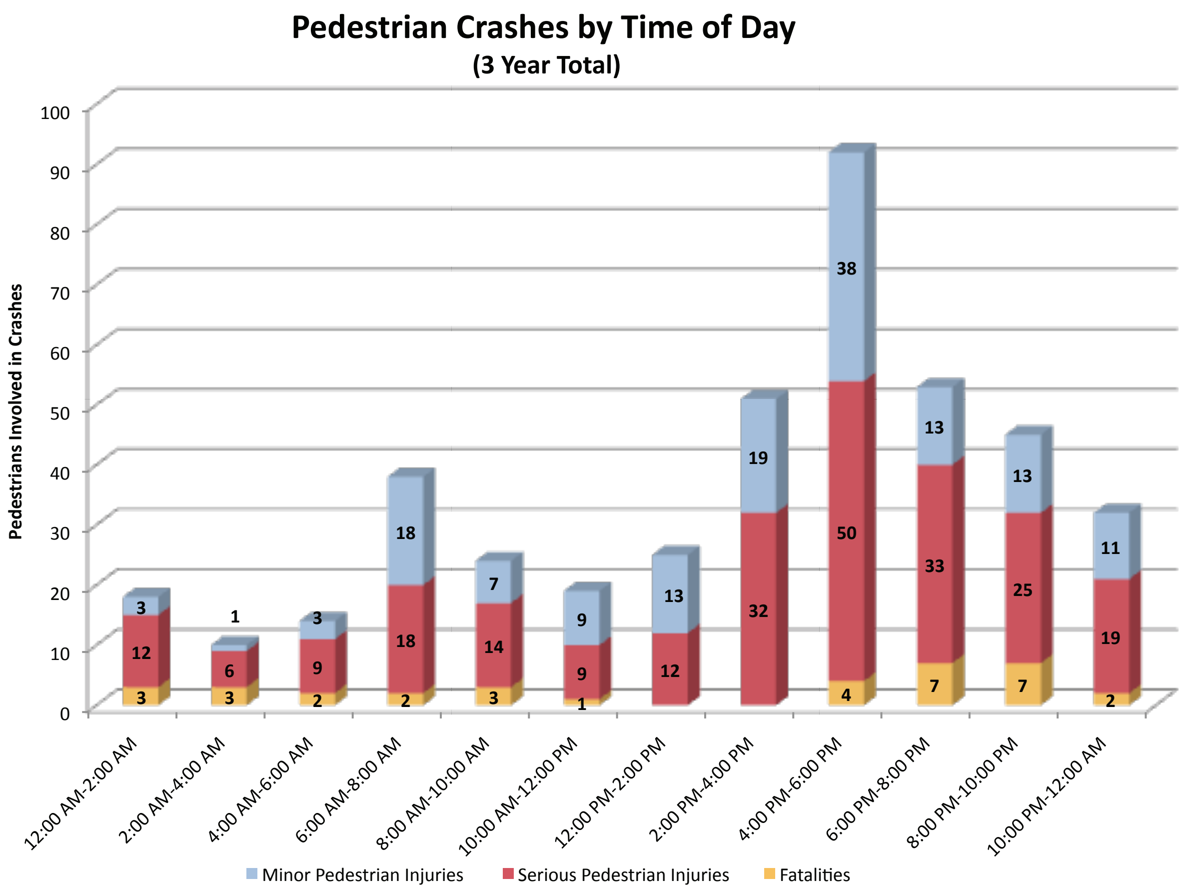
A review of pedestrian crashes by age group showed that those between the ages of 10-19, 20-29, and 40-49 were the most likely to be involved in pedestrian crashes. What is surprising is the

Figure 11.6: Pedestrian Vehicle Crashes by Age Group per 10,000 Population



few number of fatalities within the 10-19 age group (1 fatality) when compared with the 20-29 (10 fatalities) and 40-49 (8 fatalities) age groups. Figure 11-6 show the rate of pedestrians involved in crashes by age group.

Figure 11-7: Pedestrian Vehicle Crashes by Time of Day



Crashes by Time of Day

Analysis of pedestrian crashes by time of day showed that the highest number of pedestrian crashes occurs between 4:00 pm and 6:00 pm. This is the time that many people are getting off work and may be walking to their car, running errands, or exercising/working in the yard. The highest number of fatalities occurs between 6:00 pm and 10:00 pm. This is also the time of the day that the sun is setting or has set, which could be a factor in some of these crashes. Figure 11-7 shows the rate of pedestrians involved in crashes by age group.

Crashes by Roadway System

The two roadway systems with the largest percent of pedestrian crashes are city streets (50%) and state highways (30%). This would be expected, as city streets make up a majority of roadway miles within the region. While pedestrian crashes on freeways and frontage roads accounted for only 14% of the total, pedestrian crashes on freeways and frontage roads resulted in 38% of the pedestrian fatalities (10 fatalities on freeways and 3 fatalities on frontage roads). Further investigation of fatal pedestrian crashes on freeways found the majority of involved individuals standing or walking along the side of the roadway. Figure 11-8 shows the number of crashes, injuries, and fatalities by roadway system.

Ten Year Pedestrian Crash Trend

Pedestrian crashes were compared for the past 10 years in central Arkansas to determine if the number of crashes has been increasing, remaining steady, or decreasing. Figure 11-9 illustrates the number of pedestrian fatalities, injuries, and crashes for the past 10 years within central Arkansas. During this ten year period there has been a slight increase in crashes, injuries, and fatalities (.33 fatality increase per year).

Figure 11.8: Pedestrian Vehicle Crashes by Roadway System 2006 -2008

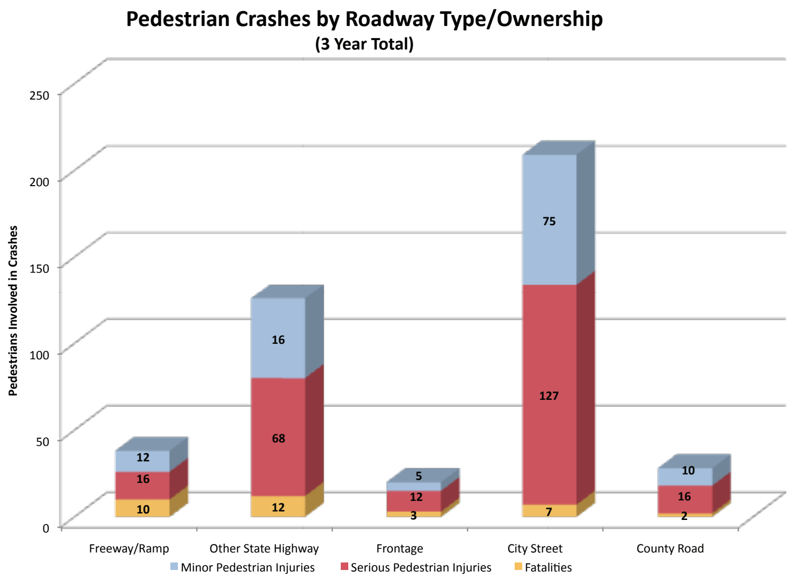
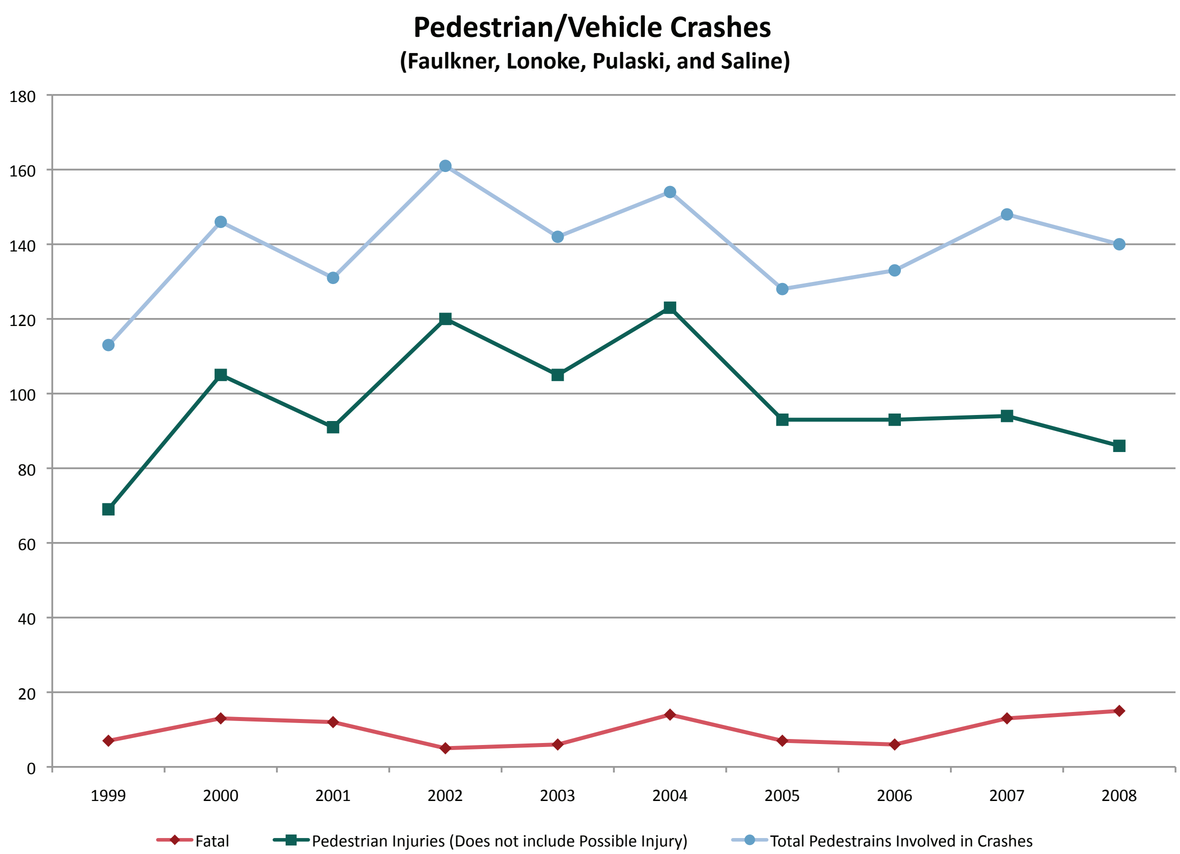


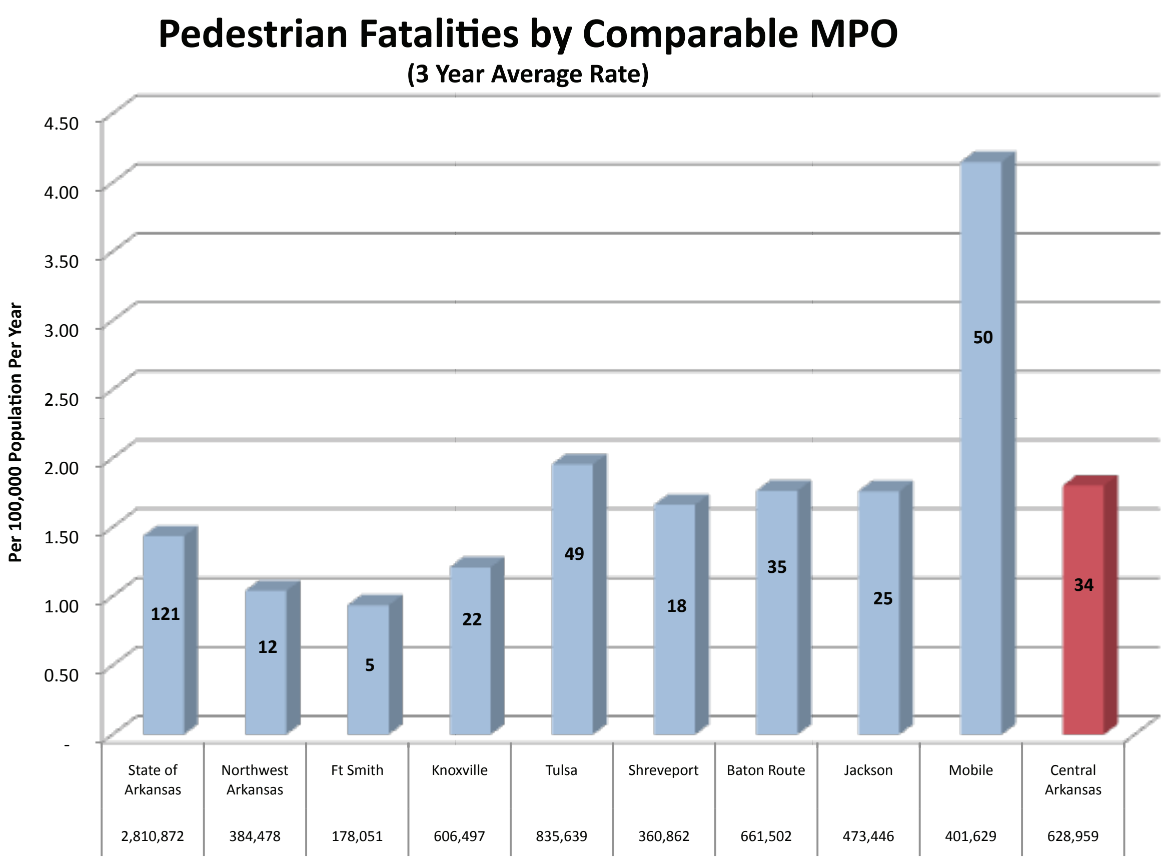
Figure 11-9: Pedestrian Vehicle Crashes 1999 to 2008



Pedestrian Fatality Rate Compared to Similar MPO's

The pedestrian fatality rate for central Arkansas was compared with other medium sized metropolitan areas in the southeast and state of Arkansas, Figure 11-10. This analysis found that the central Arkansas has the third highest rate of the 9 MPO's studied. This was also higher than the state of Arkansas rate as well as MPO's in Fort Smith and Northwest Arkansas. The central Arkansas rate was similar to that of Tulsa, Shreveport, Baton Rouge, and Jackson.

Figure 11-10: Pedestrian Fatalities 2006 to 2008 of Metropolitan Areas in the Southeast



*Fatality Rate Determined using a Query of FARS Database and 2006 Census Estimates

Previous CARTS Planning Efforts

Metroplan supports planning for pedestrian facilities when providing technical assistance on comprehensive city plans, master street plans, subdivision regulations, specific walkable and neighborhood plans, and access management plans. Since 2006 Metroplan has helped the cities of Cabot and Mayflower with the development and adoption of walkable (pedestrian) plans. Walkable plans are currently under development for the cities of Greenbrier and Benton. Metroplan staff has also assisted cities and schools with the development of applications for the Safe Route to Schools Program. Table 11-2 list jurisdictions within CARTS that have a pedestrian or bicycle plan.

Table 11-2: Central Arkansas Jurisdictions Pedestrian and Bicycle Plan

Jurisdiction	Pedestrian	Bicycle
City of Alexander	No	No
City of Austin	No	No
City of Bauxite	No	No
City of Benton	✓*	No
City of Bryant	✓*	✓*
City of Cabot	✓	No
City of Cammack Village	No	No
City of Conway	✓	✓
City of Greenbrier	✓*	No
City of Haskell	No	No
City of Jacksonville	No	No
City of Little Rock	✓	✓
City of Maumelle	✓	✓
City of Mayflower	✓	No
City of North Little Rock	✓	✓
City of Shannon Hills	No	No
City of Sheridan	No	No
City of Sherwood	No	No
City of Vilonia	No	No
City of Ward	No	No
City of Wooster	No	No
City of Wrightsville	No	No
Faulkner County	No	No
Grant County	No	No
Lonoke County	No	No
Pulaski County	✓	✓
Saline County	No	No
Hot Springs Village	✓	No

✓* In process of developing or adopting.

State Planning Efforts

The Arkansas State Highway and Transportation Department adopted the *State Bicycle and Pedestrian Transportation Plan* in September 1997, prior to passage of SAFETEA-LU. Since that time, the Department has continued to refine the plan (see Sidewalk Policy, below); however, as of this writing the Department has no plans to formally update its plan.

In the June of 2005 AHTD adopted the following Sidewalk Policy for state highways.

1. When curb and gutter sections are proposed along a highway with existing sidewalks, the sidewalk will be replaced in accordance with this policy.

2. When curb and gutter sections are proposed along a highway with no existing sidewalks, sidewalks will be constructed on both sides of the roadway in developed areas. In undeveloped areas, sidewalks will be considered on one side of the roadway unless evidence of pedestrian traffic warrants sidewalks on both sides of the roadway.

3. All sidewalk construction will conform to the latest edition of the American Disabilities Act Accessibility Guidelines (ADAAG).

4. The minimum sidewalk width will be 5 ft, and the minimum offset from the back of the curb to a sidewalk edge will be 3 ft. No obstructions (mailboxes, signs, etc) will be allowed in the sidewalk. The minimum vertical clearance to the bottom of any obstruction overhanging the sidewalk will be 80 inches.

5. If local or regional design standards specify pedestrian facility widths greater than the standard shown above, the additional right-of-way and construction costs associated with the greater width will norm*ally be funded by the local jurisdiction that adopted the higher design standards*.

The Arkansas State Highway and Transportation Department is responsible for the Safe Routes to Schools Grant Program. This program, funded through the Federal Transportation Bill, provides funding to cities and schools for the planning, engineering, and construction of pedestrian facilities to improve safety and encourage students to walk and bike to school. Funding is also available for education to students on the benefits and safety considerations of walking and biking to school.

Impediments to Pedestrian Travel

Operation Bottleneck was a public outreach campaign conducted by Metroplan in the fall of 2008 allowing citizens of central Arkansas to identify congestion and safety problems. This outreach resulted in nearly 3000 comments from either the internet or newspaper forms for which 150 were directly related to pedestrian access and safety.

Access emerged as the most important pedestrian issue for citizens, which includes lack of sidewalks, the absence of controlled crossing points, crosswalks, and other pedestrian infrastructure. The absence of pedestrian infrastructure leads to dangerous conditions and risky behavior by pedestrians including exposure to traffic. While some of the comments referred to a specific location, most commented on issues that apply to whole corridors, parts of town, or even the whole community. A sample of the comments related to access is listed below. All comments are replicated as they were submitted.

1. *There are hardly any sidewalks on heavily trafficked areas, making it dangerous to walk around rather than drive.*
2. *There are not enough sidewalks in this lovely place called Conway.*
3. *JFK, Some sections only have sidewalks on one side of the street and it can be dangerous for walkers to try to make it to one side if they have to cross four lanes of traffic.*
4. *Children/adults in the road when there is oncoming traffic because they don't want to walk in ditches or high grass.*
5. *The roads are rough and patched. There is not a shoulder on the main road and there are NO sidewalks!!!!*
6. *Donaghey – sidewalks are necessary to prevent bike-riders and pedestrians from being killed.*
7. *The roads are very congested and the sidewalks are cracked or non-existent.*
8. *Too much traffic to safely walk in the street – no sidewalks at all in our neighborhood.*
9. *I use a wheelchair [and] long sections of Kiehl Ave [are] missing sidewalks [or have] steep angled sidewalks.*
10. *Pedestrians walking north on west side of street have no sidewalk near the intersection with Ridgecrest.*

Many comments were focused on pedestrian safety around schools, citing dangerous conditions that children and drivers encounter that may discourage children from walking. These comments often referred to specific schools or school zones.

1. *Not enough room for pedestrians and vehicles on this narrow street with no sidewalks. Just making it one way with speed bumps would make it more pedestrian friendly for children walking to and from Jefferson Elementary School.*
2. *Need of sidewalks leading from high school, junior high and middle school to accommodate area neighborhoods.*
3. *FUND MORE SIDEWALK GRANTS TO SCHOOLS FOR CHILDREN WALKING TO AND FROM SCHOOLS.*
4. *vehicles entering the flow of traffic on Hwy 64W in front of the Vilonia Primary School.*
5. *Entire school zone on Salem Rd.*
6. *9200 Hwy 107, Sherwood, AR 72120 - school traffic for Abundant Life School across from Wal Mart Super Center location.*
7. *Around Pulaski Heights Elementary.*
8. *Around schools, neighborhoods etc. Kids cross streets with no crosswalks or sidewalks.*
9. *5000 Block of H Street, near three schools and library.*
10. *The primary concern is the area (streets) that border the high school campus in Cabot.*

Pedestrian safety was also a prevailing issue. Many comments focused on safety issues related to crossing the street.

1. *Throughout the city there is no consistency in terms of how the pedestrian signals correspond to the traffic signals.*
2. *The malfunction of the walk and do not walk signs could cause an elderly person to get confused at this intersection since the crosswalk signals do not work.*
3. *Crossing Markham especially by the UAMS parking deck.*
4. *Near the intersection of University and Cantrell. No good place to cross these busy arterials.*

5. *Pedestrians crossing roadway against the signals and or in middle of traffic.*
6. *Safety is especially a problem on residential streets with speed bumps but no sidewalks, and on streets near schools (public and private) with heavy traffic from school buses and private cars.*
7. *There are no safe sidewalks or bike lanes along Harkrider for access from Hendrix College to any of the local eateries.*
8. *I have come real close to hitting joggers and running packs several times early in the morning before sunrise on Conway city streets.*
9. *When trying to walk/run, huge safety concern with the area on Tyler Street from Washington to Salem Road.*
10. *LaHarpe, behind Little Rock City Hall. Pedestrian crossing needs flashing lights or something else to slow drivers.*

Sidewalk/Shared Path Standards

The CARTS Design Standards require the construction of sidewalks along both sides of functionally classified roadways.

Pedestrian friendly design is required, including:

a. **Sidewalks** are required on both sides of the roadway. Minimum sidewalk width is 5 ft. (1.5 m.) and must be compatible with the Americans with Disabilities Act. On state highways, AHTD policy is that sidewalks will be constructed on both sides of curb and gutter facilities through developed areas. In undeveloped areas, sidewalks will be considered on one side of the roadway unless evidence of pedestrian traffic warrants sidewalks on both sides of the roadway.

b. **A buffer** is required between the back of curb and the sidewalk that is a minimum of 4 ft. (1.2 m.). However, no buffers are required in central Business Districts. On state highways, AHTD policy is a 3 feet buffer with no obstructions allowed in the sidewalk and with vertical clearance of 80 inches for any overhanging object.

c. **Safe pedestrian crossing provisions** are required to be demonstrated by the proposing jurisdiction or agency where more than 50 ft. (15.2 m.) of pavement (including the gutter) have to be crossed by a pedestrian where pedestrian crossing is anticipated based on land use. For design options and recommendations see the Pedestrian Facilities section of these standards.

Planned Facilities

Little Maumelle Pedestrian Bridge

The Little Maumelle Pedestrian Bridge began construction in 2010 connecting Murray Park with Two Rivers Park near the I-430 Bridge. This bridge is part of the River Trail connecting Downtown Little Rock with Pinnacle Mountain State Park. With the construction of this bridge it will be possible to bicycle or walk from Riverdale to Pinnacle Mountain using shared use paths and county roadways avoiding a dangerous crossing of Cantrell Road. Map 11-3 indicates the location of the Little Maumelle Pedestrian Bridge.

Map 11-3: Arkansas River Trail

In addition to the pedestrian bridge, all new or reconstructed roadways within the CARTS Area are required include pedestrian facilities (5ft sidewalk with 4 ft buffer).

BIKEWAYS

INTRODUCTION

Like sidewalks, bikeways are primarily a local responsibility. Bikeway facilities complement pedestrian facilities, as well as play a regional role in promoting a multi-modal, inter-connected metropolitan transportation system.

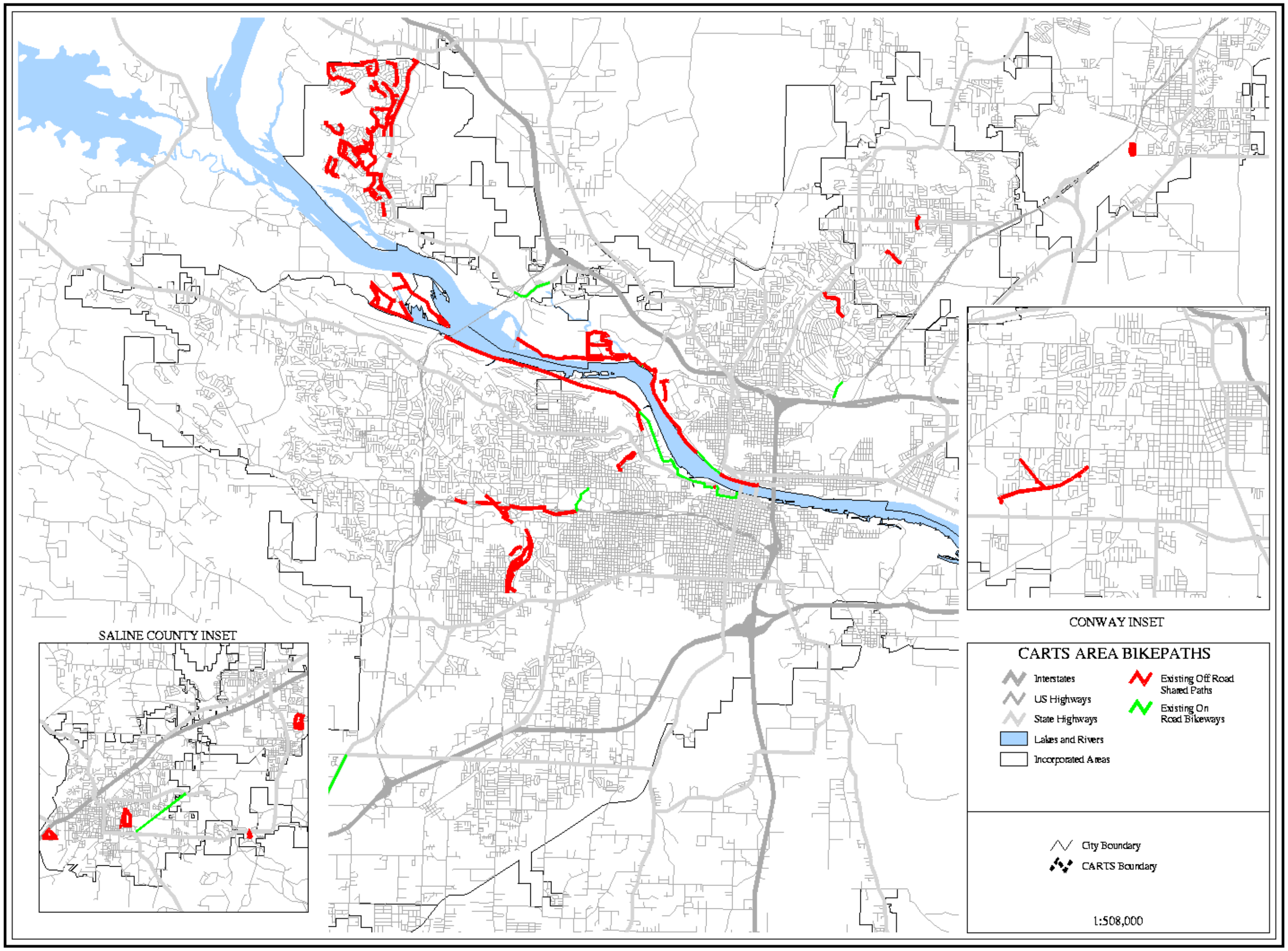
CARTS AREA BICYCLE FACILITIES

METRO 2025 inventoried a total of 24.7 bikeway and shared path miles in the CARTS area. Bikeway/shared path mileage inventoried in 2005 is 70.0, an increase of 45.3 miles.

Map 11-4 depicts existing or programmed (not planned) bikeway facilities in the CARTS area.

Six jurisdictions— Benton, Cabot, Conway, Little Rock, Maumelle, and North Little Rock—had adopted bike plans, park or comprehensive plans with bikeway elements, in 2000. That figure has not changed. Some jurisdictions considered developing bike plans, but ultimately decided against it. Two jurisdictions are in the process of updating their comprehensive plans, and including a bikeway element, but those plans have not yet been adopted.

Map 11-4
Bikeway Map



BICYCLE ACCIDENTS

A total of 108 bicycle crashes occurred between the years 2000-2002 in the four-county area. No fatalities were recorded for the crashes. Totals are summarized by county in the table below.

Table 11-4
2000-2002 Number of Bicyclists - Involved in Crashes

County	2000	2001	2002	2000-2002
Faulkner	6	2	2	10
Lonoke	1	2	4	7
Pulaski	25	17	42	84
Saline	3	0	4	7
Totals	**35**	**21**	**52**	**108**

As with accidents involving pedestrians, higher bicycle-related crashes were concentrated in the downtown areas, minority neighborhoods, and transit dependent areas. Within Pulaski County, North Little Rock had higher concentrations of bicyclist-related crashes occurring on Pike Avenue south of I-40 and East Broadway near I-30. In Little Rock, the higher concentrations of bicyclist crashes occurred in the CBD area, particularly on Broadway Avenue, in the Cloverdale area of southwest Little Rock, and along parts of Asher/Wright Avenue, east of University. Again, these data are very similar to the data for pedestrian crashes. Map 11-2 shows the location of crashes involving pedestrians or bicyclists for the four-county area occurring between 2000-2003.

For more information on pedestrian and bicyclist accidents, consult 2000-2002 CARTS Pedestrian/Bicyclist Crash Analysis.

PREVIOUS CARTS PLANNING EFFORTS

METRO 2020 detailed a comprehensive approach to bicycle planning, and provided a framework for future planning efforts. The METRO 2025 plan update incorporated some of the 2020 guidance.

The TAC appointed a standing committee to investigate alternatives for developing a bikeway element for METRO 2025. With input from area cyclists and the AHTD Bikeways Coordinator, the committee agreed that, (1) bikeway facilities should be considered and designed for use first as a transportation mode; and, (2) the CARTS Regional Bikeway Plan should encompass and integrate four elements, or 4-E: engineering, education, enforcement, and encouragement. Table 11-5 lists examples of the four elements of bicycle planning according to the 4-E.

Frazier Pike Pedestrian/Bicycle Enhancements, College Station

Table 11-5
Elements of Bicycle Planning

Engineering	Education	Enforcement	Encouragement
Hazard Removal	In-class instruction	Basic traffic law enforcement	Media campaigns
Roadway Improvements	On-bike training (e.g., bike rodeos)	Warning programs	Bikeway mapping
Barrier & Bottleneck Elimination	Adult education	Accident statistic compilation	Provision of bicycle amenities
On-Road Bikeway Development	Motorist education	Bicycle patrols	Bike-to-work days
Bicycle Trail Development			Recreation programs

A number of recommendations were also promulgated. Following are the METRO 2025 recommendations, with a brief assessment of their implementation.

Table 11-6
METRO 2025 Recommendations

RECOMMENDATION	IMPLEMENTED?
Downtown Little Rock/North Little Rock river district phases (already identified in locally adopted plans) should be developed first.	YES
More effort should be put into providing facilities for commuters. This may include showers, lockers, secure bike parking.	IN PROGRESS
Work with legislators to obtain tax incentives for companies that provide bicycle-friendly amenities. Note: Amenities may include but are not limited to showers, lockers, parking, internal linkages to roadways and transit stops.	IN PROGRESS
Amenities should be provided for cyclists who wish to bike to shopping and business areas (e.g., secure bike racks, lockers)	LIMITED
Bike routes should include linkages from neighborhoods to and around schools, parks, transit stops, and shopping areas.	SOME
Identify bus routes appropriate for links to potential intermodal users (for example, University), and explore feasibility of adding bike racks to those buses.	IN PROGRESS
PROGRESS	
METRO 2025 should support the implementation of plans in those jurisdictions that have adopted bike plans and encourage/assist other jurisdictions in developing bicycle plans.	YES
METRO 2020 targeted $26 million for pedestrian, bikeway, and other transportation enhancement projects. The TAC Standing Committee recommends that this should be continued into the five-year update.	YES
METRO 2025 should support and encourage the implementation of the State Bicycle & Pedestrian Plan Recommendations. Moreover, the TAC Committee believes that the State Bikeway Plan should be revised and expanded to include detailed and specific strategies for implementing a statewide program.	IN PROGRESS
Safety is an especially critical factor to bicyclists; therefore, shared paths, bike lanes and bike routes should be well maintained and kept free of debris.	YES
Encourage efforts to build a Rails-to-Trails route in Lonoke County. The TAC Standing Committee feels that it would be especially appropriate to create a route named in memory of the late Judge Don Bevis.	IN PROGRESS

STATE PLANNING EFFORTS

In September 1997, the Arkansas State Highway Commission adopted a State Bicycle and Pedestrian Transportation Plan to serve as a stand-alone element of the Statewide Long-Range Intermodal Transportation Plan. The stated intent of the plan is "to provide direction for planning, development, and implementation of safe and usable facilities for bicycle and pedestrian transportation in Arkansas." The AHTD has not updated the plan.

State Bicycle Plan Recommendations

1. Develop a bicycle safety pamphlet to distribute at school, bicycle rodeos, and points of bicycle purchase outlining state laws, common rules of the road, and safety techniques for cycling including the benefits of wearing helmets.

2. Gather bicycle facility design standards from other states and adapt them to serve as standards for the development of such facilities in Arkansas. Until such Arkansas specific standards are available, utilize existing American Association of State Highway and Transportation Officials (AASHTO) bikeway standards and the Federal Highway Administration (FHWA) guidance, "*Selecting Roadway Design Treatments to Accommodate Bicycles.*" *(Note: Metroplan has adopted design standards applicable to CARTS.)*

3. Determine the suitability and feasibility of developing bicycle facilities for urban and rural road improvements and modifications in the state.

4. Appoint an internal AHTD task force to be responsible for developing a process by which local communities can propose state routes traversing their jurisdictions to be signed as bicycle routes and to develop a set of criteria by which other routes would be selected for inclusion on the statewide bicycle suitability map.

5. Identify improvements needed to bring routes selected for the bikeway system up to prevailing standards.

6. Conduct a statewide personal transportation survey to determine the existing amount of utilitarian and recreational cycling taking place and the potential for increasing the frequency of cycling trips.

7. Work with the Department of Parks and Tourism to develop a follow-up survey to determine a qualitative analysis of cyclists' experiences in Arkansas.

CHARACTERISTICS AND NEEDS OF CYCLISTS

Cyclists fall into three basic categories:

1. **Group "A"** comprises the minority of cyclists, who are often the most vocal in advocating bikeway planning. These people are experienced and confident. They do not hesitate to use busy roadways and are more apt to use the bicycle as their commuting vehicle. Group "A" cyclists also participate in long-distance touring.

2. **Group "B"** cyclists are adults who enjoy bike riding, but are not as experienced or as confident as Group "A." Class I bikeways and shared paths are ideally suited for Group "B."

3. **Group "C"** cyclists are children. These cyclists are difficult to quantify, but in general they are between eight and fifteen years of age (old enough for a degree of independence, but too young for a driver's license) and the bicycle is their primary means of solo transportation. Children lack the experience of Group "A" cyclists and the judgment of Group "B" cyclists. Unfortunately, they often possess all of the self-confidence of Group "A," which can make for reckless cycling. Nationwide, about one-half of current cyclists are under the age of 16.

RECOGNIZING BICYCLISTS' PROBLEMS AND NEEDS

The characteristics and needs of cyclists are unique and considerably different than the needs of other transportation modes, including the pedestrian mode. Recognizing the unique needs of bicycling is the first step toward improving bicycling safety and encouraging bicycle use. One of the best ways to encourage bicycle use is to eliminate those conditions that currently discourage its use as a mode of transportation and recreation.

Bicycling needs and problems are generally related to surface conditions, access to and continuity of bicycle facility, safety, security, and the overall riding environment.

Riverfront Drive, Little Rock

SURFACE CONDITIONS: Problems associated with facility surface conditions include poor surface quality, such as cracked pavement, or unsuitable surface material such as cobblestone. Storm grates with slots parallel to the street present hazards to cyclists, as do accumulations of debris and dirt. Construction and maintenance operations may create unexpected hazards or rough pavement conditions. Railroad crossings can be hazardous if the cyclist does not cross at a right angle to the track.

ACCESS AND CONTINUITY: Barriers to bicycle accessibility to desired destinations include topographic and geographic conditions, such as major streams or creeks, and slopes in excess of seven to 10% grade. Limited-access highways, especially where the cross access is severely limited, are major barriers to bicycling. High volume streets and roadways pose significant constraints to bicycling activity. This is especially true for those on which speeds are high, capacity deficiencies exist, or where accident hazards are most severe.

Camp Robinson Rd, North Little Rock

Land use and development of large areas in which through access is restricted or highly congested may also pose significant hazards to cyclists. Examples of this kind of development pattern include major strip developments, high-density areas such as CBDs and other commercial developments, and areas such as campuses needing internal bikeway systems. Rail lines and rail rights-of-way, to which access is severely limited or highly dangerous, are major barriers to bicyclists.

More localized impediments to accessibility include discontinuities (lack of linkages from one area to another) in bicycle facilities, conflicts with parked vehicles, and bicycle facilities designed to inadequate standards.

TRAFFIC SAFETY: The characteristics of bicycles and pedestrians are basically incompatible. When there are large numbers of either, it is difficult to successfully mix these modes on a combined facility. The primary safety concern of the cyclist is conflict with motor vehicles and pedestrian traffic. Intersections pose particular problems for many cyclists: left-turning cyclists often encounter conflicts with traffic; right-turning cars often conflict with straight-through cyclists. Riding on the wrong side of the street is a common traffic violation by cyclists.

BICYCLE AND CYCLIST SECURITY: Security may be a concern, especially in urban areas. Parking that is located in an out-of-the-way area with low security, or is poorly designed, can invite vandalism and theft. In areas where no parking is provided, cyclists may leave their bikes where they impede safe pedestrian movement. Similarly, remote or secluded bicycle facilities may cause some cyclists to fear for their personal safety, resulting in an under-utilized facility.

RIDING ENVIRONMENT: The quality of the bicycle riding experience can significantly affect the desirability of cycling. For example, recreational cyclists will appreciate a pleasing environment that offers a variety of experiences. The work-trip commuter values safety and directness of route, but will also ride out of his/her way to take a route that is less stressful or more aesthetically pleasing.

TYPES OF BICYCLE FACILITIES

Bicycle facilities are divided into three classes:

Class I: Bike facilities are physically separated from motorized vehicular traffic by an open space or barrier, either within the roadway right-of-way or within an independent right-of-way. Two-way shared paths are required to be a minimum of 12 feet (3.6 meters) wide. Metroplan also defines shared pedestrian/bicycle paths and Rails-to-Trails routes as Class I.

Class II: Bike lanes are portions of the roadway designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes should always be one-way facilities carrying bicycle traffic in the same direction as adjacent motor vehicle traffic. The minimum required width for a bike lane is six feet (1.8 meters).

Class III: Bicyclists share space with motorists on roadways with no special provision except for signing of the bike route for bicyclists. Shared lanes typically feature 12-foot (3.6-meter) lane widths or less with no shoulders, allowing cars to safely pass bicycles only by crossing the center line or moving into another traffic lane.

OTHER TYPES OF SHARED FACILITIES: These include wide outside lanes with a width of at least 14 feet that can accommodate bicycle traffic. Shoulders must be paved and a minimum of four feet (1.2 meters) wide when they are designed to accommodate bicycle traffic.

SUMMARY OF BIKEWAY ON-SITE SURVEYS

Metroplan staff took the participation process directly to the people in May 2005, when they set up shop along popular shared paths in Faulkner and Pulaski counties. Weekend cyclists, walkers, runners and skaters were offered Gatorade, ice water and trail mix in return for taking a few moments to fill out a survey. Trail patrons enthusiastically shared their vision and concerns for future growth in central Arkansas. Summaries follow:

User Counts

These are rough visual counts. Users were routinely under-counted, because staff was attempting to keep count while also conducting surveys.

Conway, Tucker Creek

Saturday, April 23, 2005 -7:00 a.m. until about 7:00 p.m.

Bicyclists

Age	Male	Female
25 & under	20	7
26-35	10	6
36-45	2	0
46-55	0	0
Over 55	0	1
Totals	**32**	**14**

Walkers, Runners & Skaters

Age	Male	Female
25 & under	51	43
26-35	15	29
36-45	15	22
46-55	7	6
Over 55	11	6
Totals	**99**	**106**

Maumelle, Lake Willastein

Sunday, April 24, 2005 - 11:00 a.m. until 6:00 p.m.

Bicyclists

Age	Male	Female
25 & under	14	15
26-35	2	2
36-45	1	0
46-55	0	0
Over 55	2	0
Totals	**19**	**17**

Walkers & Runners

Age	Male	Female
25 & under	15	23
26-35	17	23
36-45	6	15
46-55	10	7
Over 55	15	8
Totals	**63**	**76**

North Little Rock

Saturday, April 30, 2005 - 7:00 a.m. until about 7:00 p.m.

Bicyclists

Age	Male	Female
25 & under	38	27
26-35	69	41
36-45	80	28
46-55	36	16
Over 55	8	4
Totals	**231**	**116**

Walkers & Runners

Age	Male	Female
25 & under	11	3
26-35	17	8
36-45	6	4
46-55	9	2
Over 55	1	1
Totals	**44**	**18**

Little Rock, Murray Park

Sunday, May 1, 2005 - 11:00 a.m. until about 6:00 p.m.

Bicyclists

Age	Male	Female
25 & under	10	1
26-35	25	10
36-45	39	12
46-55	23	1
Over 55	1	0
Totals	**98**	**24**

Walkers & Runners

Age	Male	Female
25 & under	5	4
26-35	25	25
36-45	15	11
46-55	21	4
Over 55	4	10
Totals	70	54

Survey Summaries

Little Rock
Murray Park
Saturday, April 30, 2005

Summary of Surveys. A total of 97 people stopped to answer the survey. (Note that not everyone answered all the questions, so none of the numbers will add up.)

How often do you bike?
Less than once a month: 27
Once or twice a month: 10
Less than once a week: 4
Once or twice a week: 16
More than twice a week: 17
Daily: 5

How often do you walk?
Less than once a month: 6
Once or twice a month: 6
Less than once a week: 6
Once or twice a week: 18
More than twice a week: 28
Daily: 23

Today, are you biking or walking?
Biking: 26 Walking: 40 Running/Jogging: 8 Skating: 1

Did you come here with your family?	Yes:	34	No:		
Did you come here with your friends?	Yes:		No:		
Did you drive to get here?	Yes:	79			
If *no*, how did you get here?	Bike:	10	Walk:		Run/Jog: 1

What is your age?
25 or under: 4
26-35: 23
36-45: 16
46-55: 29
55 or over: 23

Males: 55
Females: 30
(Note that 12 people declined to answer the gender question.)

What are your concerns? See the following table + "Other Comments," below.

	1	*2*	*3*	*4*
Lighting	12	6	7	12
Maintenance	23	4	3	0
Security	18	3	4	2
Location	8	5	0	4

Other concerns:

- Need more water fountains 2
- Need trash cans & recycling bins 1
- Dogs not on leash are a danger 1
- Narrow bridges 3
- High traffic between connections 2
- Complete trail system 2
- Broken glass 1
- Grass encroachment 1
- Need bathrooms 1
- Bridges AR River/Little Maumelle 1
- Motorcycles on paths! Dangerous! 1
- Trail quality, e.g., width, surface type 1
- Bikers need to be aware of walkers 1
- No concerns—great as is 4

Would you like to have:
Bike facilities for commuters: 34
Additional recreational bike and walking facilities: 55
Sidewalks and bikeways connecting to "places": 62

How would you fund the desired improvements:
Property tax: 29
Gas tax: 17
Impact fees: 14
Special sales tax: 21
Combination: 32
None of the above: 9
Other: *Following are the "Other" suggestions for funding:*

- Donations only 1
- "Adopt a mile" by businesses & organizations 1
- Income tax 1
- Bond issues 2
- Recreation tax 1
- Fund raisers 1
- Federal & state grants 1
- User fees 1
- Any or VAT tax 1

Where do you live? *(One respondent did not answer this question.)*

Little Rock:	75
North Little Rock:	4
Mayflower:	2
Cabot	1
Cammack Village	1
Alma	1
Fayetteville	1

Thinking about your own community, what are your priorities and concerns? *The following comments pertain specifically to bikeway and pedestrian issues in Little Rock.*

- Continue work on River Trail. Excellent place for walking/running & biking.
- Recreational facilities add a lot to quality of life.
- Looking forward to path over dam.
- Safe biking trails, so that more persons might bike to work, would be great. This would help cut down on air pollution & gasoline use.
- Clean drinking water
- Accessible parks for personal rec.
- I would like to go to my school [by] biking.
- More accessible & better [????] parks & trails.
- Love the new bridge
- Health & fitness
- Great place!
- Enforce dog leash laws
- Security
- Safety, cleanliness of area, friendliness of people
- Need more restroom facilities
- Health & fitness
- Enjoy the River Trail and a.m. looking forward to the lock & dam bridge
- Not sure
- Safety
- Safety—family activities
- Need bridges for bike trail along Fourche Creek
- Need solar-powered lights & signs
- Safety, security, noise reduction
- Having facilities to enjoy, exercise & that offer some type of recreation
- Safety for single/individual walkers
- Speeds in which people drive on Pleasant Forest
- Need bathrooms or port-a-potties
- Lots of special places to walk, bike & play
- More sidewalks on residential and commercial areas
- Safety, recreational areas
- Enforce leash law (There is never ever any law enforcement officer.)
- Not enough sidewalks & paths!
- I like it.

- Security; exercise opportunities; beautiful, WILD landscape
- Class in bike lane
- Wider bridges
- Street sweeper
- Go to Hattiesburg, MS, learn about their trails. They work with college, schools, etc. They have restrooms, water, Gatorade, security phones
- Education on trail etiquette
- Places to go & plenty of trails to ride
- Safety in all recreation facilities
- More benches along trails
- Water stations
- Love the paths! My only concern has been safety at times. Cars have been broken into!
- Security, accessibility.
- Connections to shopping & recreational facilities
- Need ¼ mile markers
- Add sidewalks in town
- *The following comments are concerning Cabot:* There are no current bike paths & limited walking trails. There needs to be a large bike and walking pathway around or looping around the town. I would like to have a bike pathway & walking trail from Hwy 89 to Cherry Park. Trail would run along Hwy 321 and also Campground Road. As these roads are resurfaced I would like them to be widened to accommodate walkers & bicyclists.
- Better bridges

Other comments. *The following comments are still applicable to the City of Little Rock, but do not necessarily pertain to bikeway & pedestrian issues.*

- In my opinion, the LR Parks & Rec Dept has done more to beautify this town than any other single entity. For example: flower beds, stonework entrances to parks.
- Cleaner city
- I'm worried about the level & type of traffic at the river—cars going 60-70 mph—heavy drinking at parks—little police presence.
- Planning—too much unplanned growth
- Great job!
- Safety, environment, good public facilities, public transport
- Safety & beauty
- Safety, pollution
- Health & safety
- Safety
- Security/neighborhood upkeep
- Quality of life = top priority
- Keep up the good work!
- Bad Gov.
- We need more parks
- Support from the group which actually benefits from the programs—it's not quite fair to steal from others.
- Safety
- Security, green spaces for community recreation, high quality of life
- Speed bumps in Rebsamen Park
- Safety, family activities
- Crime

- Traffic speed on Evergreen
- Provide skate surfaces; keep trail clean; train people on how to use rollerblades. Add skating to comment form.
- Lack of tax base to fund public improvements for cities of 2nd class.

Maumelle

Willastein Park
Sunday, April 24, 2005

Summary of surveys. A total of 26 people stopped to answer the survey. (Note that not everyone answered all the questions, so none of the numbers will add up.)

How often do you bike?
Less than once a month: 9
Once or twice a month: 1
Less than once a week: 0
Once or twice a week: 6
More than twice a week: 2
Daily: 0

How often do you walk?
Less than once a month: 0
Once or twice a month: 1
Less than once a week: 0
Once or twice a week: 5
More than twice a week: 9
Daily: 10

Today, are you biking or walking? Biking: 7 Walking: 21

Did you come here with your family?	Yes:	20	No: 6			
Did you come here with your friends?	Yes:	6	No: 18			
Did you drive to get here?	Yes:	11				
If *no*, how did you get here?	Bike:	5	Walk:	8	Jog: 1	

What is your age?
25 or under: 2
26-35: 2
36-45: 7
46-55: 4
55 or over: 11

Males: 11
Females: 10
(Note that 5 people declined to answer the gender question.)

What are your concerns? See the following table + "Other Comments," below.

	1	2	3	4
Lighting	5	4	1	5
Maintenance	18	2	1	0
Security	8	2	5	1
Location	2	2	2	5

Other concerns:

- Bridge crossings 1
- [Disappearing] scenery 1
- Cleanliness of bathrooms 2
- Cleanliness (general) 1
- Safe playground equipment 1
- "Development" destroying existing parks & paths 1

Would you like to have:

Bike facilities for commuters: 4
Additional recreational bike and walking facilities: 14
Sidewalks and bikeways connecting to "places": 18

How would you fund the desired improvements:

Property tax: 5
Gas tax: 1
Impact fees: 5
Special sales tax: 10
Combination: 9
None of the above: 3
Other: "Don't know. Seems like we already pay enough taxes for this if they were properly used." "Sales tax: provided it has a sunset clause."

Where do you live? *(One respondent did not answer this question.)*

Maumelle: 23
Little Rock: 1
North Little Rock: 1

Thinking about your own community, what are your priorities and concerns? *The following comments pertain specifically to bikeway and pedestrian issues in Maumelle.*

- Trails in Maumelle need work, especially at Lake Willastein
- Need signals at Emerald Park to Big Rock
- Complete work on trail to Pinnacle Mountain Park & Maumelle Park
- Need more water fountains
- Complete and tie-in all trails in Maumelle
- Need web site for all trails
- [Poor] drainage across bike/walk paths
- Paths & lighting
- Safety & security
- Handicapped access on trails
- Access to recreational facilities (indoor and outdoor)

- Motor vehicle transportation congestion increasing even more, creating conflict between pedestrian traffic & motor vehicle traffic.
- Expand walking paths
- There needs to be good restroom facilities on biking/walking paths
- Would like to see Lake Willastein Park kept beautiful and well maintained. The restrooms especially need to be improved and kept clean and well maintained.
- Clean, well maintained walking paths
- Preservation of Lake Willastein Park
- Clean restroom facilities on paths
- Having places close to walk, bike and exercise—without having to leave the area

Other comments. *The following comments are still applicable to the City of Maumelle, but do not necessarily pertain to bikeway & pedestrian issues.*

- More parks
- [For example, concerned about] the apartments being built on Lake Willastein, strip malls, etc.
- Public facilities development (parks, libraries, etc.)
- Keeping facilities, roads, etc. up with large increase in population
- Safety
- Community services (police/fire, water, sanitation, etc.)
- Traffic, air pollution, diminishing green space
- Good roads (not patched), drainage, congestion
- Need third I-40 interchange
- Traffic congestion
- More street lights at intersections
- More green space

North Little Rock

Cook's Landing
Sunday, May 1, 2005

Summary of surveys. A total of 122 people stopped to answer the survey. (Note that not everyone answered all the questions, so none of the numbers will add up.)

How often do you bike?
Less than once a month: 8
Once or twice a month: 10
Less than once a week: 1
Once or twice a week: 28
More than twice a week: 25
Daily: 11

How often do you walk?
Less than once a month: 11
Once or twice a month: 10
Less than once a week: 2
Once or twice a week: 17
More than twice a week: 30
Daily: 15

***Today*, are you biking or walking?**
Biking: 44 Walking: 22 Running/Jogging: 3 Skating: 1

Did you come here with your family? Yes: No:
Did you come here with your friends? Yes: No:
Did you drive to get here? Yes:
If *no*, how did you get here? Bike: 15 Walk: 0 Run/Jog: 0

What is your age?
25 or under: 10
26-35: 23
36-45: 23
46-55: 19
55 or over: 18

Males: 59
Females: 40
(Note that 23 people declined to answer the gender question.)

What are your concerns? See the following table + "Other Comments," below.

	1	2	3	4
Lighting	16	8	6	11
Maintenance	41	10	5	1
Security	37	12	3	2
Location	5	7	10	7

Other concerns:

- Need restrooms
- Beautify
- Bike lock-ups & racks on buses
- Get junk out of river
- More mile markers
- Create paths that go down to river
- Crossing the street under the hill on?
- Some areas look unkempt or messy yet could be easily cleaned up or trimmed
- All dogs on leashes!
- Width of path for cyclists & walkers
- Need benches
- Parking security
- Parking security
- Length—need longer paths
- Unleashed dogs
- Stupid people
- Bridge crossing
- Access
- More difficult trails—all are too easy here
- Everything is OK except we need the bridge
- Mile markers
- Toilets
- Paths that go to the river
- Water stations
- Restrooms
- Getting run over by a bike
- Flooding—couple of places get real deep it rains
- Goose attack!!
- Water
- None
- It is great as it is
- Connect Maumelle trails to Cook's Landing
- Longer routes/new routes

Would you like to have:

Bike facilities for commuters:	38
Additional recreational bike and walking facilities:	67
Sidewalks and bikeways connecting to "places":	63

How would you fund the desired improvements:

Property tax:	24
Gas tax:	13
Impact fees:	12
Special sales tax:	25
Combination:	37
None of the above:	6

Other: *Following are the "Other" suggestions for funding:*

- User fees 2
- Any & all 1
- Short-term mil increase 1
- Volunteer "Friends of the Trails" 1
- Not sure 2
- Grants 1

Where do you live? *(13 respondents did not answer this question.)*

Little Rock:	53
North Little Rock:	28
Jacksonville	1
Maumelle	13
Mayflower:	1
Benton	1
Cabot	3
Conway	5
Hot Springs	1
Hot Springs Village	1
Carthage, MS	1
Charlotte, NC	1

Thinking about your own community, what are your priorities and concerns? *The following comments pertain specifically to bikeway and pedestrian issues in North Little Rock, Little Rock, and a few other named communities.*

- Security of cars in parking lots and security of path users and others exercising in the city.
- Bike paths/lanes for bikers to be able to get around the city.
- I would like to see bicycle racks on buses; showers and bike lock-ups for commuters.
- Roadways with shoulders and no curbs! Also, more shoulders and signage on roads for share the road.
- Clean water; long-term investment into city infrastructure
- Width of temporary bridge is too narrow.
- Better trails, better roads and sidewalks connecting
- Walking/biking trails
- Traffic flow—coordinated signals
- Would like to see similar path (more mileage)
- Glass, debris on roads

- Better bike paths; many are too rough or narrow for bikes. It would be great to have a family-friendly route between Maumelle and Cook's Landing. Crystal Hill might make a great alternative.
- Lowering crime, family activities; beautify community
- Put in sidewalks!
- Lack of bike paths
- Crime, traffic congestion
- More opportunities to ride
- Security
- Public transportation should be more evident in connecting bikers/walkers
- Road through soccer fields in Burns Park bike trail has a bad blind spot.
- Longer paths, more miles. More bike races?
- More green space. No tearing down (clear cutting) for development.
- Complete the bridge to Two Rivers from the LR side.
- Fix the bridge from Cook's so it isn't a right angle turn. Perhaps put a barrier to keep out the water.
- Very few safe streets for bikes.
- [Currently] No bike locks. Need bike lockers where people might want to leave bike all day, like airport, western bus stops.
- Bike trails + community planning
- Security & maintenance
- This trail is a great asset to our community.
- Safety & extent of trails
- More resources devoted to Parks/Recreation—especially to bike paths
- Bike routes connecting neighborhoods. Also need bike route to cross I-30; lane on Salem Road
- Great path. Thanks!
- Too much growth in WLR and downtown/midtown decline
- More biking trails
- Livability, including: libraries, schools, parks
- I love the River Trail. I wish LR could have a trail so nice.
- Traffic
- Security & keeping the sanctity of the local "greenbelts"
- No sidewalks!!! Build sidewalks!!!
- Security; habitat restoration; pollution
- Quality of Life (parks, trails, etc.)
- More sidewalks, bike lanes
- Wish the Maumelle bike trail connected to the River Trail!
- [Difficult] Getting to the river
- Crime
- Connecting trails between LR, NLT, Maumelle, Mayflower, Conway
- Safety, places for recreation. Places for kids, away from cars!!!
- We need to connect the River Trail to routes to get out into the surrounding communities & counties. We're on the right track.
- Further development in North Little Rock
- In Maumelle there are many kids who skate, so there should be a skate park for skateboards, inline, and bikes.
- Vote "WET" in Park Hill
- Extend River Rail to Park Hill—increase public transportation

- Security
- Secure area—lighting. Also good clean areas
- More trails
- River Trail from Clinton Library to Riverdale area [is] very poor
- Everything on the river trails is wonderful but I think we need more security in the late afternoon
- Car-free areas; environment; beauty
- Family recreational facilities
- Build the bridge connecting north and south bike trails.
- Maumelle is a great place to live. We've been here 14 years and plan to stay!
- Safety & cleanliness
- Sidewalks & bike paths so one is not so reliant on cars. Population that cannot drive is disenfranchised in so many ways.
- I hope they will put some kind of bike/run/walk path that connects Maumelle with the NLR River Trail. I love the trail!
- They should make the people at the soccer fields clean up their messes after they play soccer. They leave all kinds of Gatorade/water bottles, etc littering the area.
- Needs lots of work
- Cleanliness, curb appeal, safety, community pride
- Beautification: litter control, recycling. More wildflowers are needed.
- We love the idea of the Dam Bridge. Extended loop will be great on both sides of the River.
- More benches
- Crime and grunge
- River walk is great
- Safety/enjoyment. Keep dogs on leashes
- More trails
- Biking & running trails
- Lighting
- Upkeep of a beautiful park; security
- (1) that the Twisters win a game this year (2) the cost of a Travs game doesn't double when the new park is built & (3) that the LR Marathon gets increased funding/support from the city/county/state
- Crime; litter; motorcycles & noise
- Safety
- Annexation to NLR city limits and further development

Other comments. *The following comments are still applicable to the cities of North Little Rock and Little Rock, but do not necessarily pertain to bikeway & pedestrian issues.*

- More people from Arkansas need to go to the Bike Summit.
- I love the parks
- Very beautiful area
- Doing a great job
- We enjoy the bike trail and look forward to connecting the bridge to LR/NLR
- Bike trails alongside streets with cars are risky
- Great job on bike/walking trail
- I would like the loop connected between LR/NLR sooner rather than later
- Trails are great. Expansion should be supported and continued.

- People do not know trail etiquette. Pedestrians do not keep to the right of the trail.
- Please add trail in Cabot
- They seem to be maintained very well; keep it up
- Keep up the good work.
- Increase security on LR side of trail
- Do not develop Emerald Park; no condos
- Safety in all parks
- Need bike path across Maumelle River on Little Rock side of bike path by River Road to bike path at Two Rivers Park
- People who don't pay attention to others on the path
- Completion of the loop would be great.
- Wish [we] had lighted paths for night time walks or riding
- More security
- Continue growing the trail!
- Can't wait for the bridge to open.
- I walked and rode my bike from NLR to Southwest LR. Arch Street has no shoulder in some places; a car came within 1 foot of hitting me. We need wider roads for bikes and walkers
- Great job so far!!
- Put restrooms along paths.
- Select Coreen Fraizer to ride first across Dam upon completion.
- I would like to see a light rail system from Benton, Bryant & Conway to LR. Also expand trolley service to Capitol Building and up Kavanaugh & Main.
- Bike racks on buses & on future light rail system
- Thanks
- More paths, new places to ride
- I like the idea of connecting path to Little Rock & eventually to Pinnacle.
- The more opportunities for children & adults to have easily accessible places for play & exercise are better for all our health—which affect finances for community.
- Good job Pat Hays & all who help!! Thanks!!!
- We're so lucky to have trails in our wonderful city!
- I love this trail
- The LR Marathon is the No 1 thing going in town. If there is a way to add funding to make it even better, it could be one of the best "big" marathons in the country. It already is THE BEST SMALL MARATHON in the U.S.A.
- Appreciate your efforts

Conway
Tucker Creek
Saturday, April 23, 2005

<u>Summary of surveys</u>. A total of 61 people stopped to answer the survey. (Note that not everyone answered all the questions, so none of the numbers will add up.)

How often do you bike?
Less than once a month: 29
Once or twice a month: 4
Less than once a week: 1
Once or twice a week: 3
More than twice a week: 4
Daily: 3

How often do you walk?
Less than once a month: 1
Once or twice a month: 2
Less than once a week: 5
Once or twice a week: 14
More than twice a week: 13
Daily: 18

Today, are you biking or walking? Biking: 6 Walking: 46 Skating: 3

Did you come here with your family? Yes: 26 No: 31
Did you come here with your friends? Yes: 32 No: 26
Did you drive to get here? Yes: 38
If *no*, how did you get here? Bike: 4 Walk: 16 Run: 4

What is your age?
25 or under: 20
26-35: 6
36-45: 15
46-55: 11
55 or over: 8

Males: 20
Females: 29
(Note that 12 people declined to answer the gender question.)

What are your concerns? See the following table + "Other Comments," below.

	1	2	3	4
Lighting	16	7	7	6
Maintenance	14	10	6	2
Security	30	2	1	2
Location	11	3	4	10

Other concerns:

• No 4-wheelers/other motorized vehicles	2
• Require pet poop clean up	3
• More/better mile markers	2
• Additional water fountains	1
• Benches/resting places	1
• Control pests & wild animals	2
• More/better public bathroom facilities, even if pay	2
• Not enough trails, not connected	1

Would you like to have:

Bike facilities for commuters:	18
Additional recreational bike and walking facilities:	45
Sidewalks and bikeways connecting to "places":	44

How would you fund the desired improvements:

Property tax:	15
Gas tax:	5
Impact fees:	9
Special sales tax:	22
Combination:	21
None of the above:	4

Other: "creative fund raising"

Where do you live?

Conway:	59
Greenbrier:	1
Mayflower:	1

Thinking about your own community, what are your priorities and concerns? *The following comments pertain specifically to bikeway and pedestrian issues in Conway.*

- Extend shared path to soccer complex and beyond to new airport
- More parking at opposite end of bike path
- Require pet owners to clean up after their pets
- For safety, separate bike path from walkers (including casual walkers with baby carriages) & joggers. It would be safer to have more trails, specially designated.
- Link and connect these trails!
- Re-do/retrofit the sidewalk system.
- Try to connect some of the walking paths.
- Little Rock and other cities (Maryland, where we have lived and frequently visit) require that pet owners pick after their pets. On some Little Rock trails they have dispensers for "gloves" and a place to deposit droppings.
- More space to run hike, & ride.
- Locate [paths] to places of interest, safety.
- More walking trails in Conway
- We appreciate the walking and biking paths
- Connect existing trail to Conway High School and preferably to Hendrix College
- Long-range, trail toward Little Rock

- "If you pursue building trails in Conway and could use private donations, please feel free to contact me."
- Connected bike/walking paths
- Green space
- I'd like trails closer to where I live so I wouldn't need to drive there—I could walk or bike there.
- Continue building this bike/walk trail as originally planned—site of origin at the high school.
- More sidewalks
- Need more parks, walking & biking trails for individuals & families
- Biking safety & walking safety on roads – bike lanes – discouraging driving
- Develop a trail along Old Wire Road connecting with Conway's trail at Sevier Tavern site at junction of Old Military, Round Mountain and Rocky Gap Road. This trail would start at Mayflower through the Davis properties past Davis Lake, coming out at Seveir Stage House southwest of Round Mountain. Trail would be 3.5 miles on either side of the tavern site, connecting with existing Tucker Creek trail and Wal-Mart.
- More parking availability near parks/trails.
- Traffic signs near parks/trails to permit walkers/joggers to safely cross over to trail.
- Pest control – mosquitoes & snakes specifically)
- It would be nice to have more trails for biking/walking leading to UCA, Toad Suck Square, etc.
- Walking paths & biking to downtown area.
- Complete trail to Ida Burns
- Lighting of trails.
- Really would like to see bike/walk facilities expanded from Tucker Creek to downtown Conway
- More sidewalk and bike trails. If there were more of these then I'd feel safer walking on the road.
- I'd like to see more bike trails and improved sidewalks in Conway.
- More sidewalks throughout city are needed
- Need mountain bike trails, too
- Need more <u>sidewalks</u> in general!!!
- Walking trail on Salem is great—need nice public restrooms & water
- More hiking places
- Keep the trail natural (i.e., don't bulldoze the creek)
- The walking/biking trails should have better mile markers.
- More outdoor trails & sidewalks
- Please put mile markers so I can know how long I go.
- I would like to see a place like this on the east side of town.
- LOVE the bike trail on Tucker Creek, and would like to see the trail on both sides of Tucker Creek.
- Include sidewalks, bike trails, more parks and green spaces with each new development.
- Conway has very few sidewalks that are maintained. Fix them & add new ones!
- There are not enough safe routes for cycling within Conway. Also, bicycle police patrols on the bike trails in Conway are not nearly visible/frequent enough.
- Designated bike routes throughout Conway would be nice. A more active bicycle police force would also be good.
- Community education about cycling safety & driving around cyclists would be helpful, I hope.
- For bike & pedestrian safety we need more sidewalks.
- Bike paths that are safe from car/truck traffic would be a great benefit.

- I took my first trip to Europe last year. I went to Holland. There is nowhere in Holland that you can't get to a bike and their paths are safe and have traffic rules for all. I would love to see something like that in Arkansas.
- Functioning cross-walk lights—i.e., walk/don't walk—very few work
- Bicycle lanes on streets
- More mandatory sidewalks

Other comments. *The following comments are still applicable to the City of Conway, but do not necessarily pertain to bikeway & pedestrian issues.*

- Child safety [because of] cars speeding through neighborhoods, too much traffic and too many inexperienced drivers in Conway.
- Overcrowding [of] roads, schools
- Drainage and infrastructure
- Safety for young children
- Bigger storm drains so it doesn't flood
- Better storm draining
- Controlled growth, maintaining green spaces, city beautification, traffic flow improved
- Security: schools, roads, recreational areas
- Dog park
- Public swimming pools for children
- Better streets, more exits to interstate
- Additional parks & playgrounds
- Beautification, security, recreation, traffic
- Dog park
- Conway is building too much. We need to just have open land in some places. It's getting too crowded, and driving in town is awful . . . terrible roads.
- Bad traffic light coordination.
- The obvious appearance (or fact) of city council serving 1sr, 2nd & 3rd the needs of real estate developers.
- Loafers, drug dealers, drug use
- One thing is zoning—it should be done better
- For the most part, this is a great community to live in!
- Security for children
- I would like to see a play area for children.
- Not enough family type entertainment in the area. Need more places for walking, riding, skating, etc.
- I would love to see a playground similar to Laurel Park.
- Not enough places to do family activities
- There's not enough to do family activities
- Amount of road trash
- Traffic & safety
- Security, schools, clean & well-kept areas

Bikeways

CARTS Area Bicycle Facilities

Metroplan's inventory of pedestrian and bicycle facilities within central Arkansas indicates a total of 78.5 miles of shared use paths and 19.8 miles of bike lanes, an increase of 8.5 miles of shared use paths since Metroplan's 2005 inventory of pedestrian and bicycle facilities. Shared use paths that have been added since 2005 include the Big Dam Bridge, Junction Bridge, sections of the River Trail, and trails within the cities of Maumelle and Conway. Map 11-4 shows the location of bicycle facilities within central Arkansas.

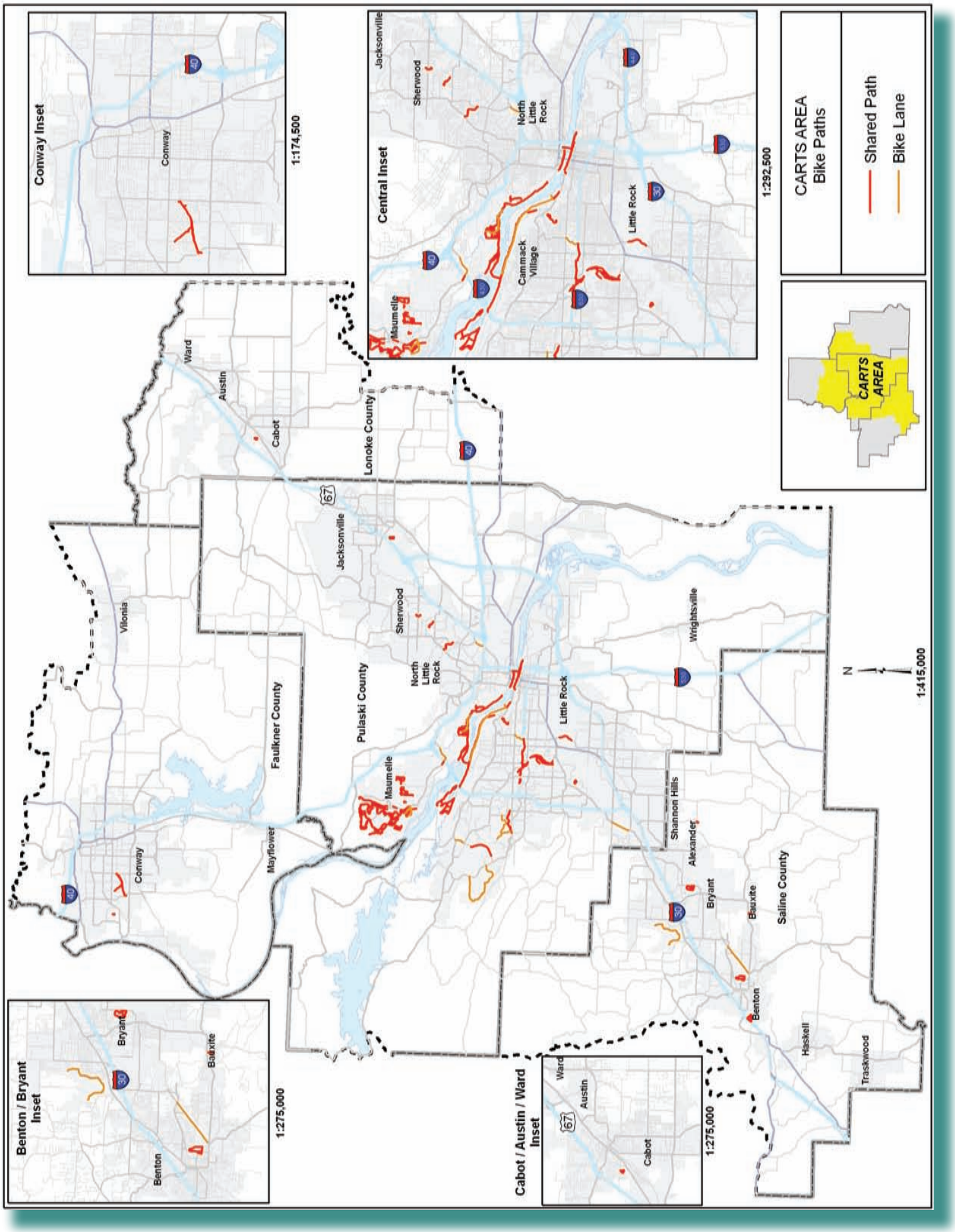
Cyclist Safety

In the development of a regional bicycle network it is essential that planning consider the safety of users. When cyclist do not feel safe, they are less likely to utilize the bicycle network. Two primary ways that the safety of the bicycle network is ensured is the use of common design standards, as widened by CARTS Design Standards and the routine analysis of bicylce crashes within the metropolitan region.

CARTS Design Standards

CARTS Design Standards are used on the construction of new roadways and retrofitting of existing facilities within the CARTS area. These standards make certain that the project designed consider

Map 11.4: Bicycle Facilities within the CARTS Area



the safety of bicyclist in addition to other users of the facilities. When on a planned bikeway route, the bicycle element must be included in the cross-section. The following are shared use paths and bicycle lane requirements.

1. Shared use paths must be a minimum of 12 ft wide (paved surface)
2. Bike lanes must be a minimum of 4 ft wide (not including gutter)
3. Sharrows are recommended for bike routes on shared use facilities

Analysis of Cyclist Crashes

Metroplan collects, maps, and analyzes cyclist crashes each year using the Arkansas State Police Statewide Crash Database. This analysis is used to identify and inform member jurisdictions of higher bicycle crash locations, the development of safety projects, identification of causes/relationships to crashes, and identification of target population groups for educational programs. This analysis is also used to review the CARTS Design Standards and to recommend changes based on crash history.

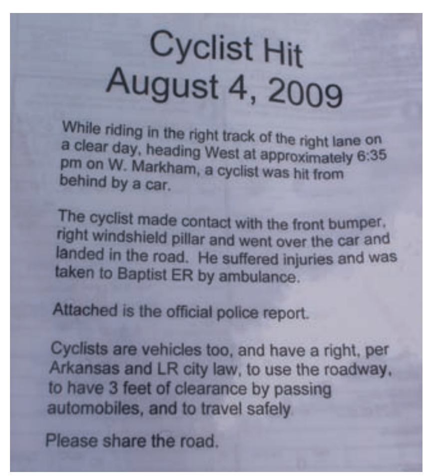
Bicycle Crashes 2006-2008

From 2006 to 2008 a total of 175 cyclists were involved in bicycle/vehicle crashes within Faulkner, Lonoke, Pulaski, and Saline Counties, resulting in the injury of 93 cyclist and 2 fatalities. The three year economic cost of these crashes is $5.5 million with a comprehensive cost of $17 million. [5]

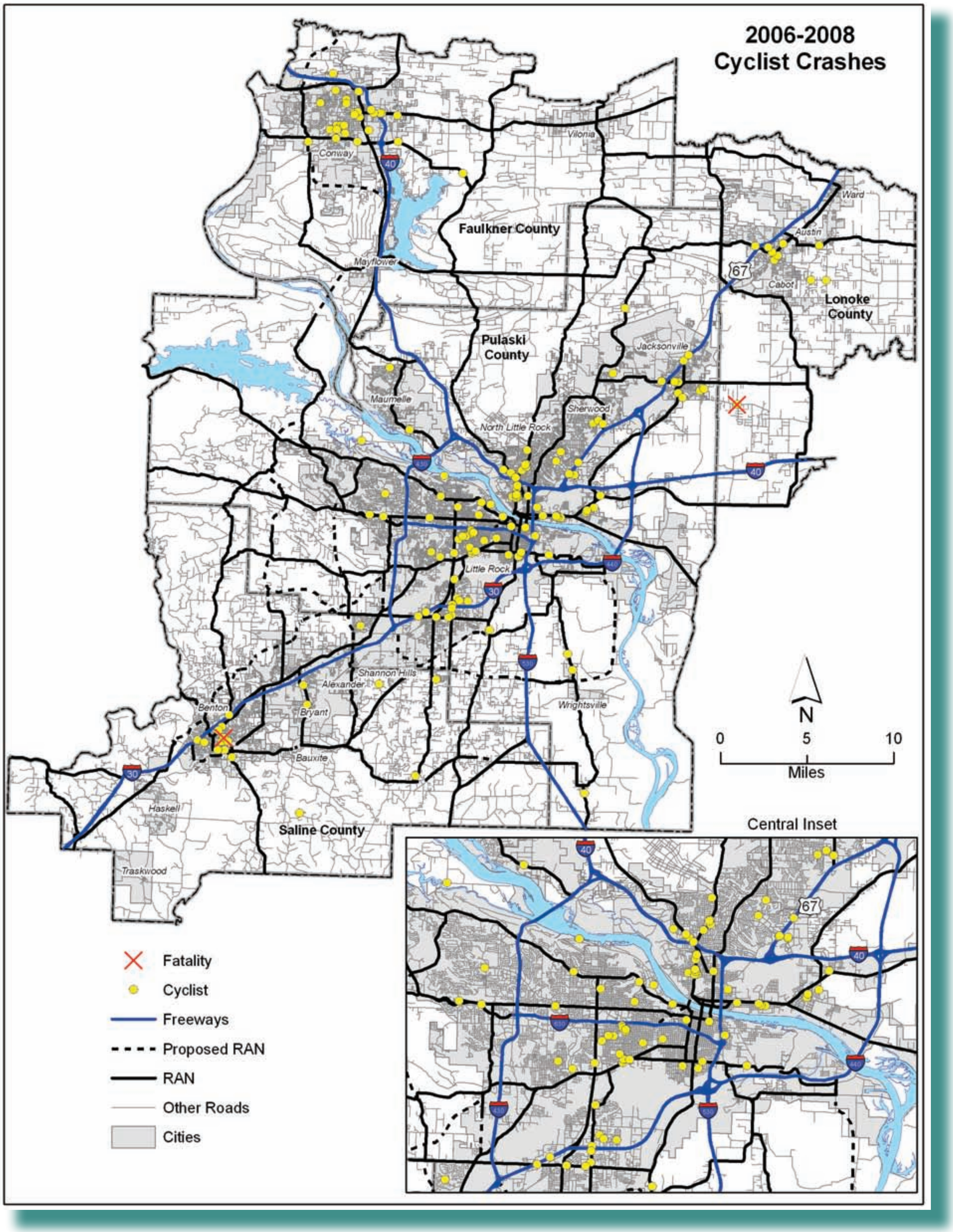
Bicycle/Vehicle Crash Locations

Crashes involving bicyclist and vehicles from 2006 to 2008 were mapped and are displayed on Map 11-5. As with pedestrian crashes, bicycle/vehicle crashes were concentrated in the downtown areas of Little Rock, North Little Rock, Conway, and Benton, as well as predominantly minority neighborhoods and transit-dependent areas. While these crashes tended to be more spread out than with pedestrians, the highest concentrations of crashes were similar to pedestrian crashes and included Pike Avenue south of I-40 and East Broadway near I-30 in North Little Rock and the Cloverdale area of southwest Little Rock. Multiple crashes also occurred around the University of Central Arkansas in Conway and the downtown areas of Benton, Jacksonville, and Cabot. It should be noted that only one crash occurred on facilities with bike lanes, one crash on Rebsamen Park Road.

Bicycle/Vehicle Crash



Map 11.5: Vehicle/Bicycle Crashes 2006 to 2008

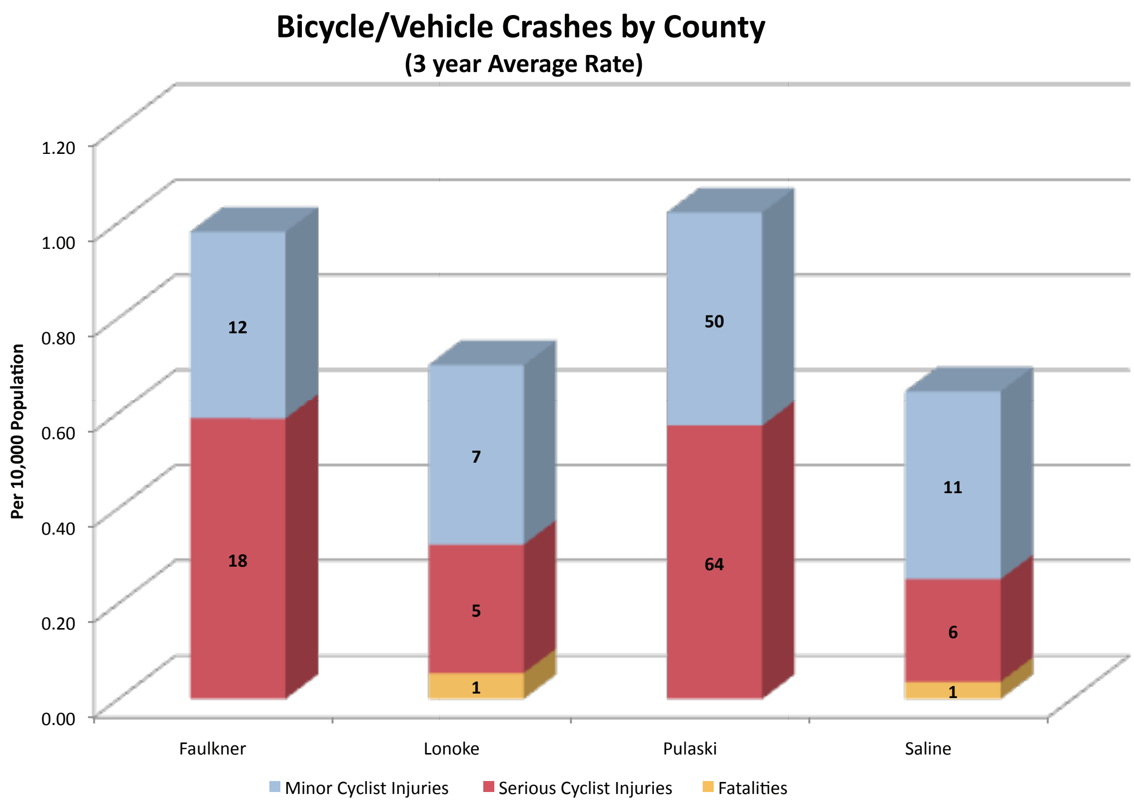


Bicycle crashes from 2006-2008 were evaluated to determine recent trends. This included an assessment of bicycle crashes by county, race and sex, and 10-year age groups, time of day, and roadway system.

Crashes by County

Pulaski County had the highest number and rate of bicycle/vehicle crashes in central Arkansas followed closely by Faulkner County. A single fatality occurred in both Lonoke and Saline Counties

Figure 11-11 shows the number of crashes per county by 10,000 populations.



Crashes by Race and Sex

Within the United States it is common that minorities and males are involved in more bicycle crashes. This statement is also true in central Arkansas where minorities are three times as likely to be involved in a pedestrian crash and males are five times as likely to be involved in crashes. Figure 11-12 on the following page shows the rate of bicycle/vehicle crashes by race and sex.

Crashes by Age Group

A review of bicycle/vehicle crashes by age group found that the highest number of crashes and injuries occurred among the 10-19 age group. This is expected because the majority of this age group cannot drive and therefore is more likely to use bicycles for transportation. Figure 11-13 shows the rate of pedestrians involved in crashes by age group.

Figure 11.12: Vehicle/Bicycle Vehicle Crashes by Race and Sex per 10,000 Population

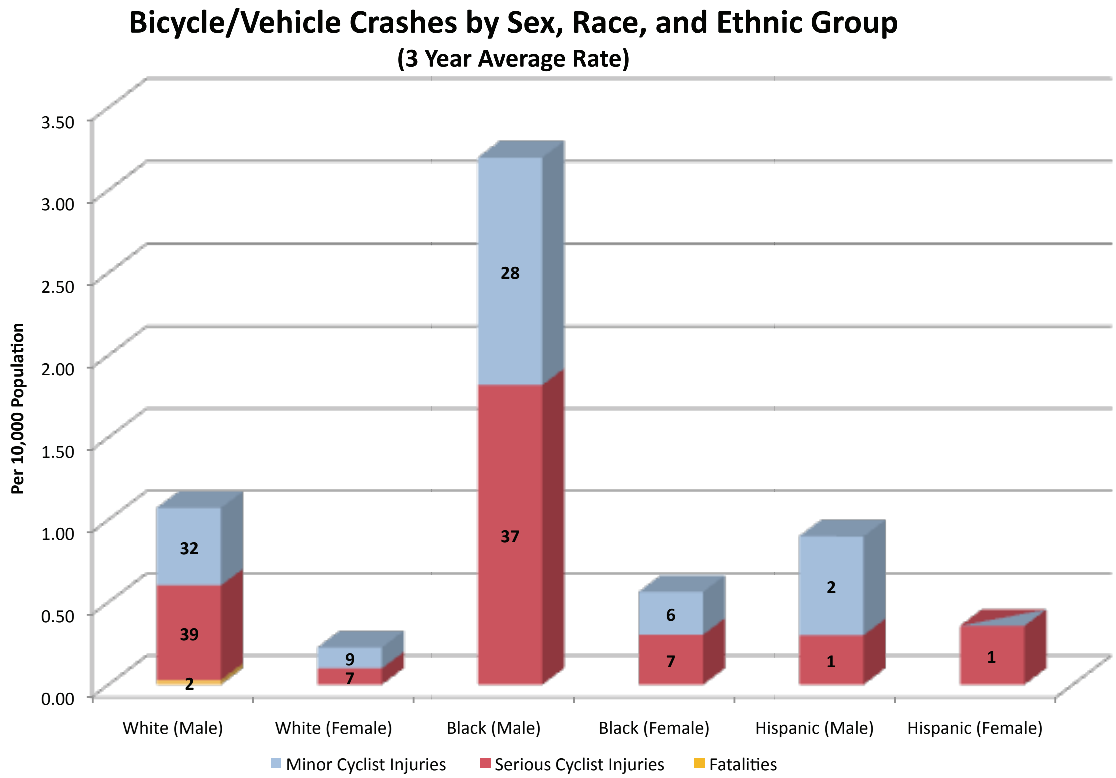
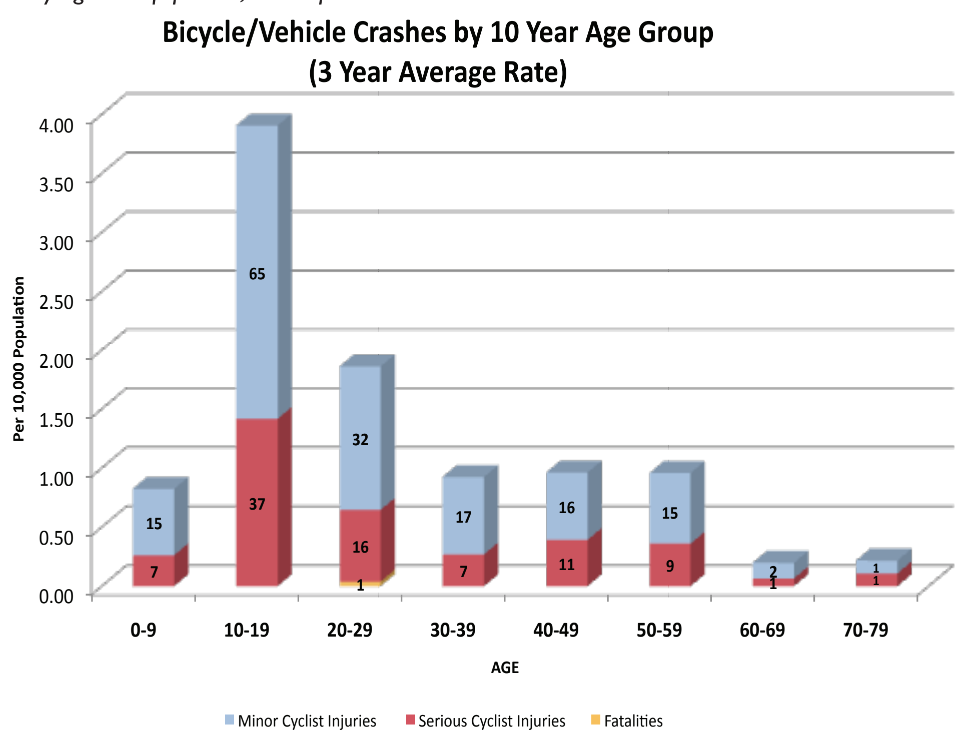


Figure 11.13: Vehicle/Bicycle Crashes by Age Group per 10,000 Population

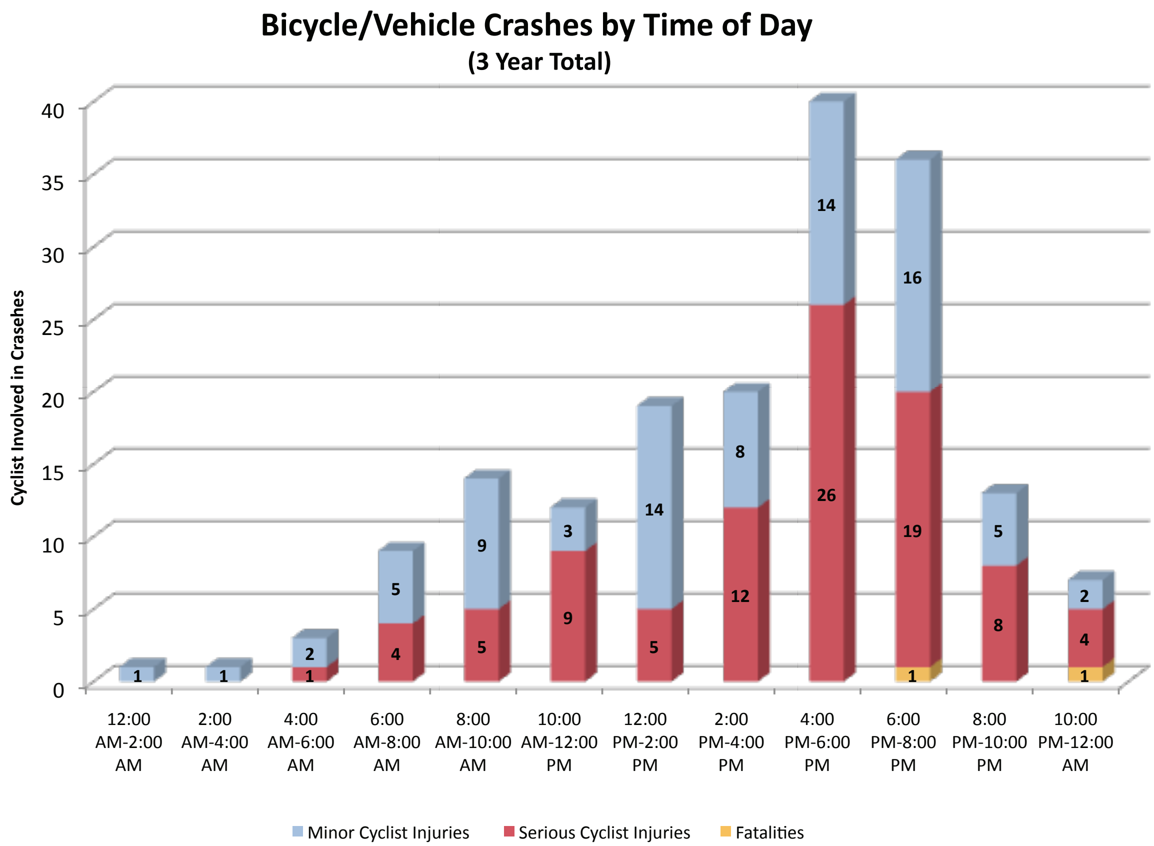


**Age unknown on 1 fatality*

Crashes by Time of Day

Analysis of bicycle/vehicle crashes by time of day showed that the highest number of bicycle crashes occur between 4:00pm and 6:00 pm. This is the time that many people are getting off of work, taking care of errands, or exercising. The highest number of fatalities occurs between 6:00 pm and 10:00 pm. This is also the time of the day that the sun is setting or has set and may be a contributor in some of these crashes. Figure 11-14 show the rate of cyclists involved in crashes by age group.

Figure 11-14: Vehicle/Bicycle Crashes by Time of Day



Crashes by Roadway System

The two roadway systems making up the largest percent of crashes between vehicles and bicycle include city streets (66%) and state highways (24%). A single bicycle fatality occurred on both a city street and non-freeway state highway between 2006 and 2008. Figure 11-15 shows the number of crashes, injuries, and fatalities by roadway system.

Ten Year Bicycle Crash Trend

Bicycle crashes were compared for the past 10 years in central Arkansas to determine if the number of crashes has been increasing, remaining steady, or decreasing. Figure 11-16 shows the number of number of cyclist fatalities, injuries, and crashes between the years 1999 and 2008. During this ten year period, the overall number of crashes and injuries has increased, but it is likely that the increase is due to a corresponding increase in the number of cyclists. Unfortunately, insufficient information on bicycle miles traveled is available to verify this assumption.

Figure 11.15: Pedestrian Vehicle Crashes by Roadway Type 2006 to 2008

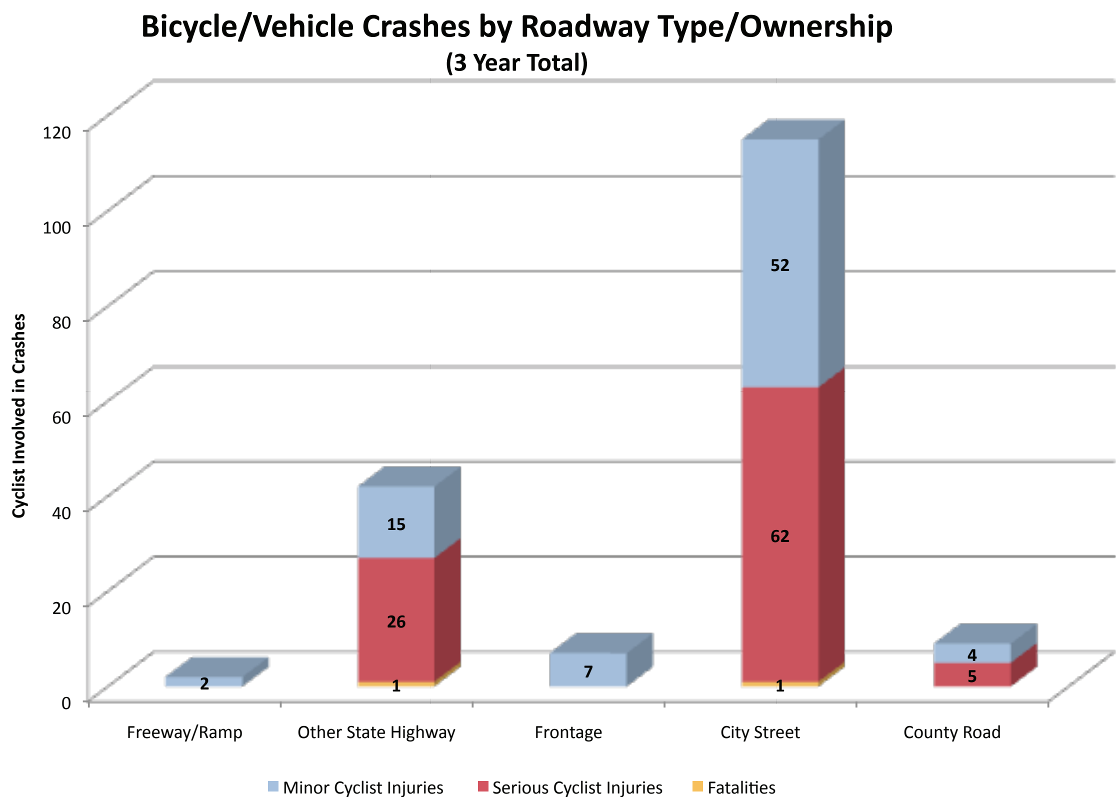
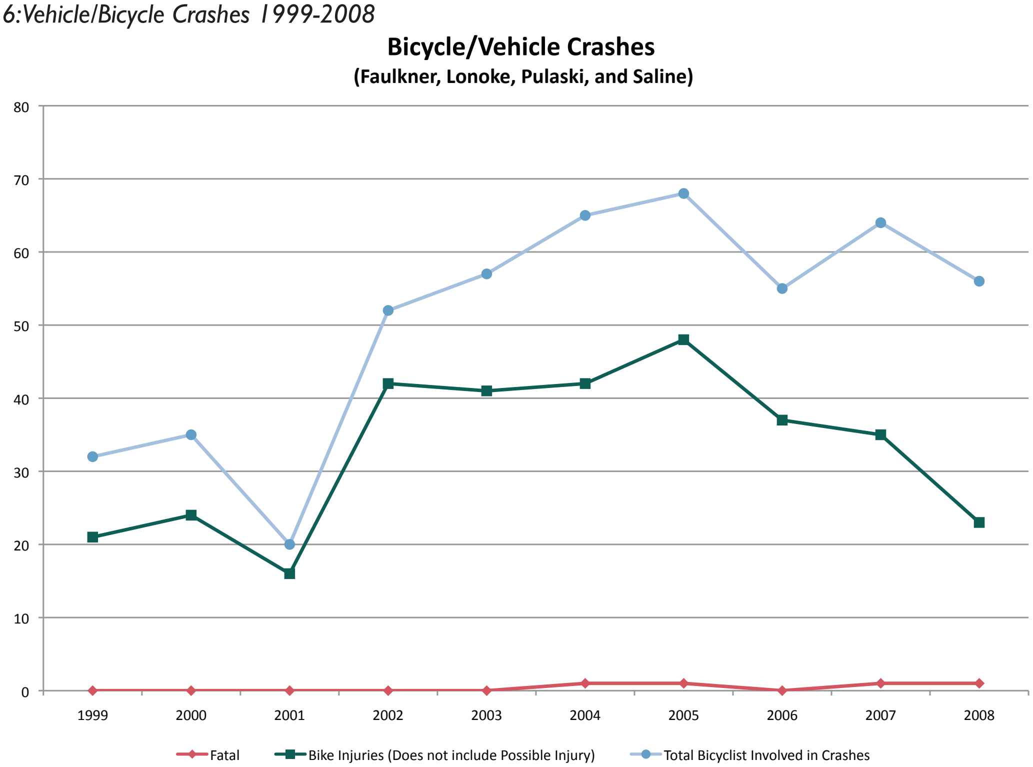


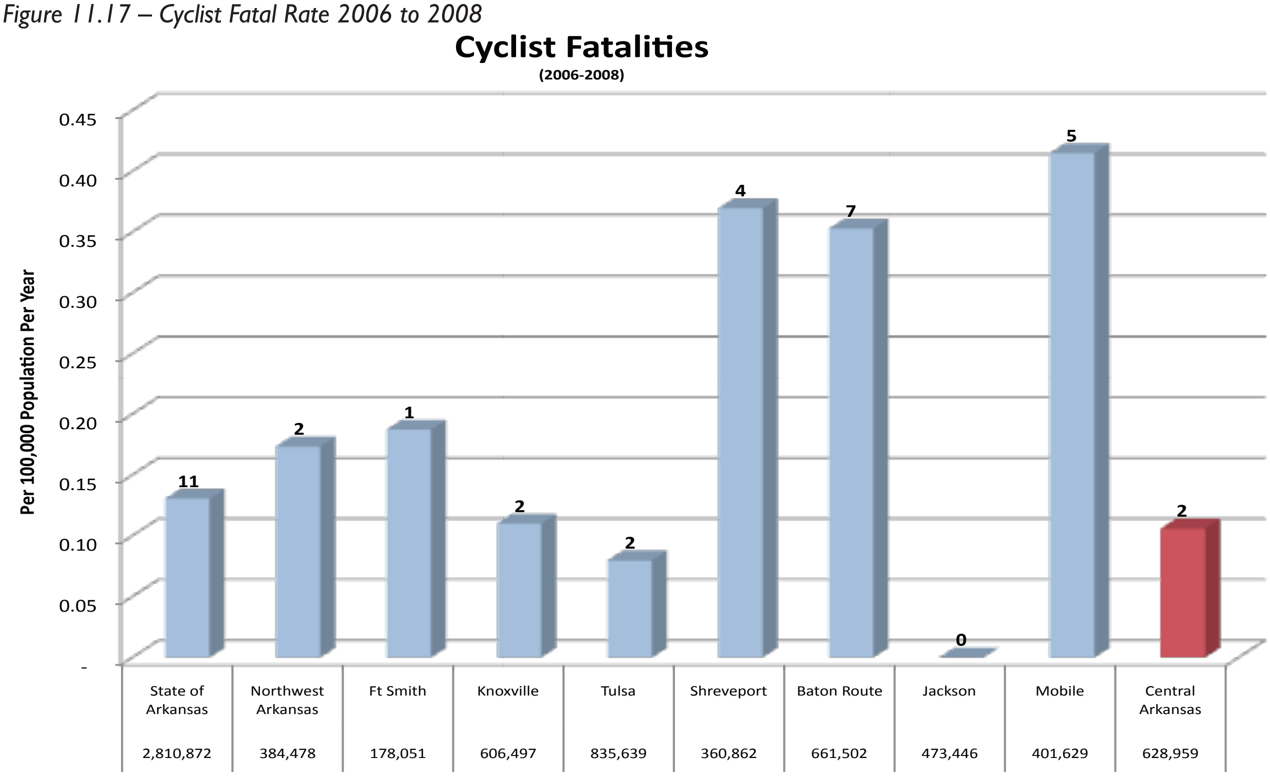
Figure 11.16:Vehicle/Bicycle Crashes 1999-2008



Bicycle Fatality Rate Compared to Similar MPO's

A comparison of the cyclist fatality rate of medium sized metropolitan areas in the southeast showed that the central Arkansas rate was the third lowest of the nine MPOs.

Figure 11.17 – Cyclist Fatal Rate 2006 to 2008



*Fatality Rate Determined using a Quarry of FARS Database and 2006 Census Estimates

Previous CARTS Planning Efforts

During 2008, Metroplan developed a Bike Central Arkansas Map with the assistance of member jurisdictions and the Bicycle Advocacy for Central Arkansas showing regional bike rides and commonly used bike routes. These maps are used by bicyclists in helping to determine connecting routes within central Arkansas and to identify high traffic volume corridors which bicyclists may want to avoid. These maps are also distributed at various conferences held within the region, including the National Trails Symposium held in 2008 and the Arkansas Transportation Planning Conference held in 2009.

During May of 2006, the Central Arkansas Transit Authority purchased bike racks for its entire fixed route fleet using its annual grant money. A total of $40,000-$45,000 was used for the original purchase and installation. The bike racks have been a popular additionto the CATA fleet.

State Planning Efforts

The Arkansas State Highway and Transportation Department adopted the *State Bicycle and Pedestrian Transportation Plan* in September 1997, prior to passage of SAFETEA-LU. Since that time, the Department has continued to refine the plan (see Bicycle Facility Accommodation Policy, below); however, as of this writing the Department has no plans to formally update its plan.

AHTD Bicycle Facility Accommodation Policy Adopted in June of 2005

1. Accommodation of bicycles will be given due consideration when a proposed highway project is on a route that has been designated as a bicycle route by a local adopted bicycle plan or master street plan and the Department concurs that the route should be a designated bicycle route.
2. Bicycle accommodations on routes that have not been designated as bicycle routes by a locally adopted bicycle plan or a master street plan will be considered if the local jurisdiction will provide the required additional funds.
3. When bicycle accommodations are to be made on routes with an open shoulder section, the paved shoulder will be used to accommodate bicycles. Shoulder widths shall confirm to the widths recommended in the American Association of State Highway and Transportation Officials (AASHTO) Green Book.
4. When bicycle accommodations are to be made on routes with a curb and gutter section, the bicycle lane will be in accordance with recommendations in the AASHTO Guide for the Development of Bicycle Facilities. Generally, a bicycle lane width of 4 feet (measured from the lane edge to the edge of the gutter) will be considered.
5. If local or regional design standards specify bicycle facility widths greater than the standard noted above, the additional right-of-way and construction costs associated with the greater width shall be funded by the local jurisdiction that adopted the higher standards.
6. Shared use paths (joint pedestrian/bicycle facilities separated from the roadway) are used primarily for recreational purposes, and as such will not normally be considered for bicycle accommodation on the state highway system. Exceptions will be considered when the local jurisdiction specifically requests the shared use path. In such cases, the minimum shared path width shall be 10 feet and the local jurisdiction shall bear any additional right-of-way and construction cost required for the shared use path and shall assume all future maintenance of the facility.

The Safe Routes to Schools program also supports bicycle usage and the additional of bike facilities. See section on pedestrian facilities.

Recognizing Bicylists Problems and Needs

As part of Operation Bottleneck, citizens of central Arkansas identified congestion and safety problems within the CARTS Area. These responses included a number of comments concerning the lack of bicycle facilities, specific locations of concern for bicyclist, and the education of both motorist and bicyclist. The highest number of responses was received for the River Trail from Riverdale to downtown Little Rock. The following is a sample of specific problems identified by the public. All comments are replicated as they were submitted.

Lack of Bicycle Facilities

1. *Very few places marked for bike traffic (Benton)*
2. *Bicycle path on Hwy 321 to Hwy 89 to Hwy 367, making a loop.*
3. *The city lacks bike lanes on the streets that see the most activity. (Conway)*
4. *No safe route connection Hillcrest and UALR*
5. *From River Mountain Drive to Two Rivers Park either a bridge is needed connecting these two parks or a bike path is needed from Rodney Parham to Taylor Loop. (note that the construction of a pedestrian bridge is scheduled to begin in 2009/2010).*
6. *Bike trail coming into downtown from Cantrell Road.*
7. *I would like to see a safe route from Mississippi to the Shackleford/Chenal Area.*
8. *On major roads (such as Harkrider and Siebenmorgen) which are hard to avoid if you need to bike to certain areas, it is very dangerous for bike riders.*
9. *All over the city - no bike lanes/sidewalks for college students to walk/bike around town*
10. *JFK from Indian Hills to the river, North Hills Blvd from Lakewood to 5th, Camp Robinson Road from Camp through Levy. These are all high volume arteries at key drive times. Having at least one safe corridor through the city to downtown would open many possibilities for commuters and recreational riders who would wish to avoid having to drive to the river area to ride. Loading the bike in the car to drive downtown defeats the purpose to a great extent.*
11. *Section of Cantrell/Hwy 10 between Pinnacle Valley and Jerry (or Taylor Loop Rd). The WLR bicycle route from the River Trail takes us over Pleasant Forest, which I don't mind because I find the hills challenging. But in order to continue to Pinnacle Valley and Two Rivers Park, we must traverse Hwy 10 for a few hundred yards. I avoid heavy traffic times, and mostly ride out there early on weekend mornings, and have gone so far as gotten off my bike and walked if traffic is unusually heavy… Bottom line-- we need a better route from the River Trail to Two Rivers, but until then, we need a safer way to get across Hwy 10.*

Specific Locations

1. *River Trail (Incomplete section from Riverdale to Downtown Little Rock)*
   a. *The Bike Trail coming into downtown Little Rock from Cantrell Road.*
   b. *The section of the river trail on cantrell rd. in front of episcopal collegiate school.*
   c. *Riding under the bridge from the Titus Trail and then being forced to ride the sidewalk along Episcopal Collegiate School then riding a narrow elevated sidewalk over the RR bridge.*
   d. *So-called City Bike Route in LR is a disaster waiting to happen between Cross Street and the Titus Trail.*
   e. *To stay on the bike path, a 90 degree turn is required at North St to stay on the narrow sidewalk at the railroad overpass on La Harpe - unsafe at any speed.*
   f. *The safety problem is in the areas where bicycles must travel on Markham from Arch street to Cross street and where the areas of the River Trail have inadequate lighting, specifically the area from the Big Dam Bridge to River Road and along Burns Park.*
2. *The Rivertrail has to share the road with vehicular traffic on River Road to the west of the NLR Riverfront area. The road is narrow and has no shoulder. Very heavy bicylce and pedestrian traffic. Cars often going too fast.*
3. *All over Conway, I am specifically concerned about Highway 25 north towards Lake Beaverfork and the park.*
4. *No shoulder or bike lane to separate bikes from Hwy 286 or 60W or Dave Ward Drive, which ever name you chose to use.*
5. *The bicycle tire trapping grills are on Bruce Street between the round-about and Hubbard. The lousy road edges are all over old Conway.*

6. *Bicycles have no way of traveling safely from one end of Kiehl to the other. no sidewalks the the entire length*
7. *From River Mountain drive to Two RiversPpark. Either a bridge from Two Rivers to River Mtn or a bike path from Rodney Parham to Taylor Loop*
8. *The Blind and Deaf Schools used to allow bike commuters to cross their land and thus avoid that rutty, no-sight-line hill on West Markham. Now they don't allow us to and we're out on West Markham. Maybe you could ask them to let bike commuters ride through again. OR turn that terrible non-sidewalk on the south side of the Markham hill into a fat bike path.*
9. *The bike trail along Fair Park next to the zoo abruptly ends at Markham and the I-630 merges/diverges. It is a tricky area for commuters in morning/afternoon traffic.*

Education (Drivers)

1. *Education around sharing the road with bicyclists and education on how to properly operate a bicycle as a vehicle.*
2. *Drivers not being knowledgeable of the rights of cyclist on the roads. Camp Robinson Rd, JFK, McCain Blvd, Remount Rd, W. Pershing Blvd*
3. *Most drivers disregard cyclists and don't consider them rightful co-travelers. Some don't pay attention to them; some seem to take glee in driving perilously close to them as they pass them, often illegally.*
4. *Pedestrians and bicyclists on the street, in harm's way.*
5. *Some people would just as soon run over a cyclist if they are slowed down by them.*
6. *Throughout the city. Without specific paths for bicycles, the cyclist either must transport the bike to areas that or safe or take his life in his hands to ride on the street. Little Rock motorists know little about sharing the road.*

Education (Cyclist)

1. *Bicycle safety education shouldn't continue to be this hit-or-miss voluntary affair. So many of the increasing numbers of commuter cyclists I meet are clueless about their responsibilities on the road. They ignore street signs, travel on sidewalks in the business districts, ride the wrong way on one-way streets, run stop signs, don't signal, don't carry lights ... No wonder drivers get annoyed. Get the legislature to add bicycle conduct to the driver's license manual.*
2. *Education around sharing the road with bicyclists and education on how to properly operate a bicycle as a vehicle.*
3. *People walking or biking down the street and getting hit*

Bikelane/Shared Path Standard

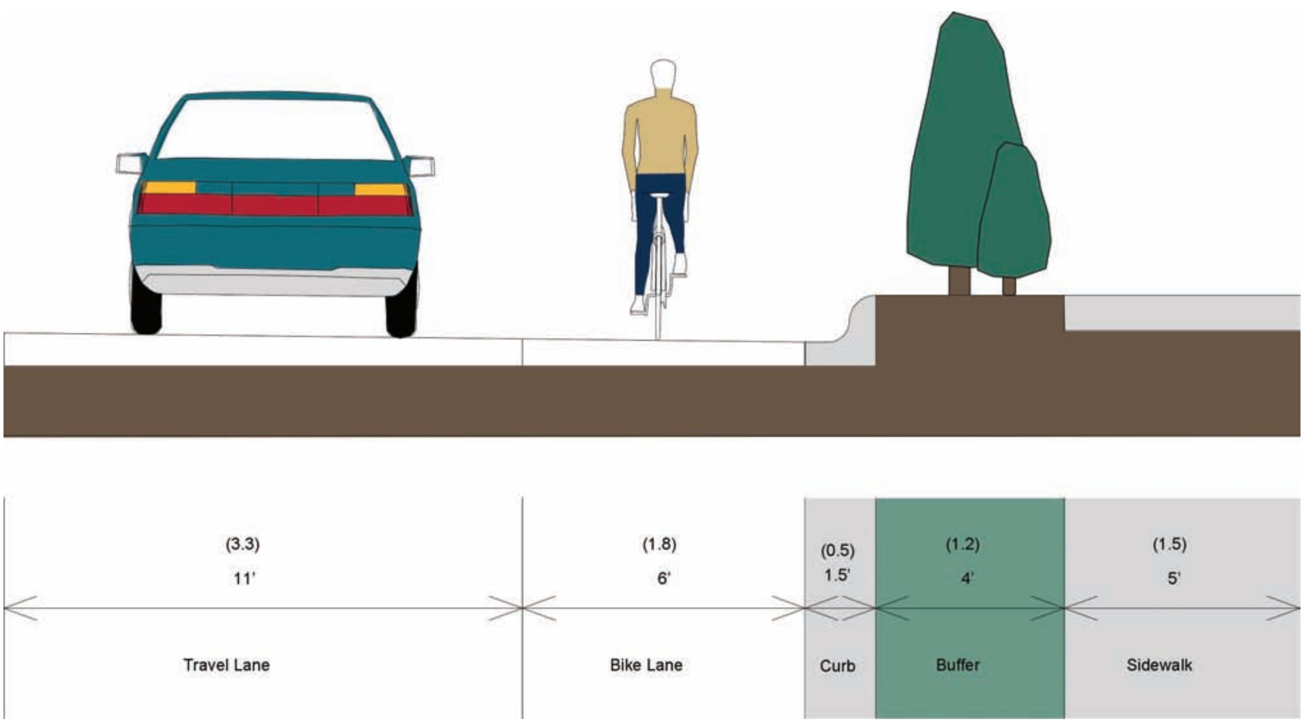
The following figure is from the CARTS Design Standards that requires the construction of bicycle elements along all functionally classified roadways within the CARTS area, which are part of a planned bikeway route.

Figure 11-18: Bicycle Facility Design Standards

If on a **planned bikeway route**, the bicycle element must be included and must adhere to the bicycle design standards as specified herein.

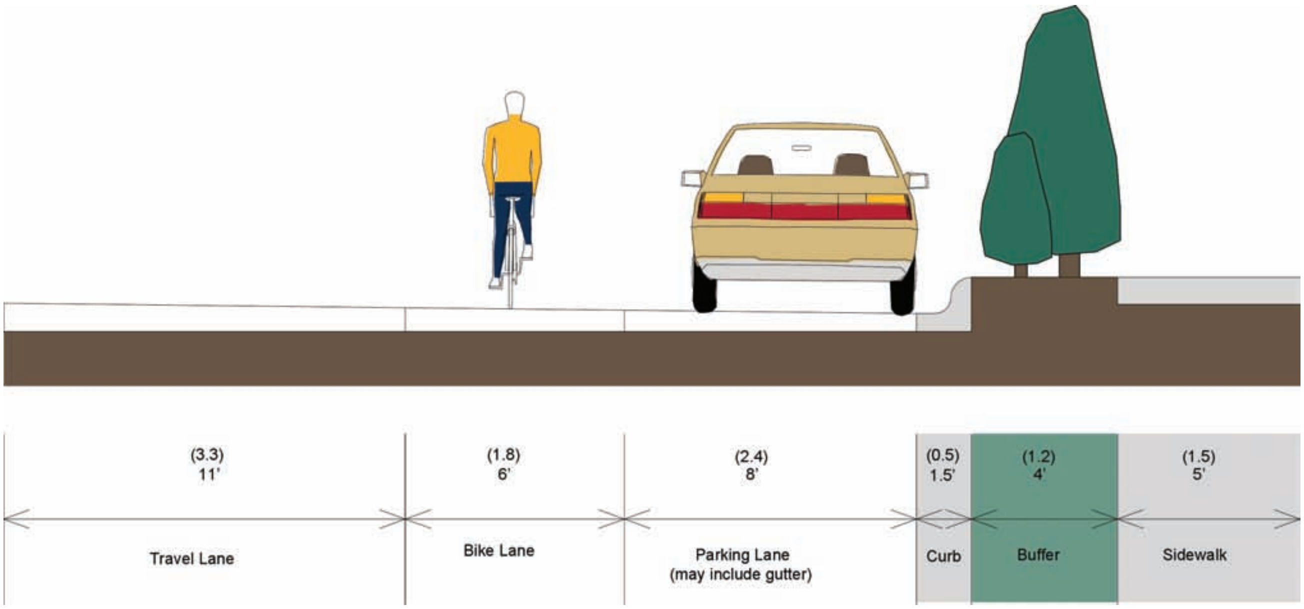
Two-Way Separated Shared Pedestrian/Bike Path
Preferred

One-Way Bike Lane Next to Curb
Preferred



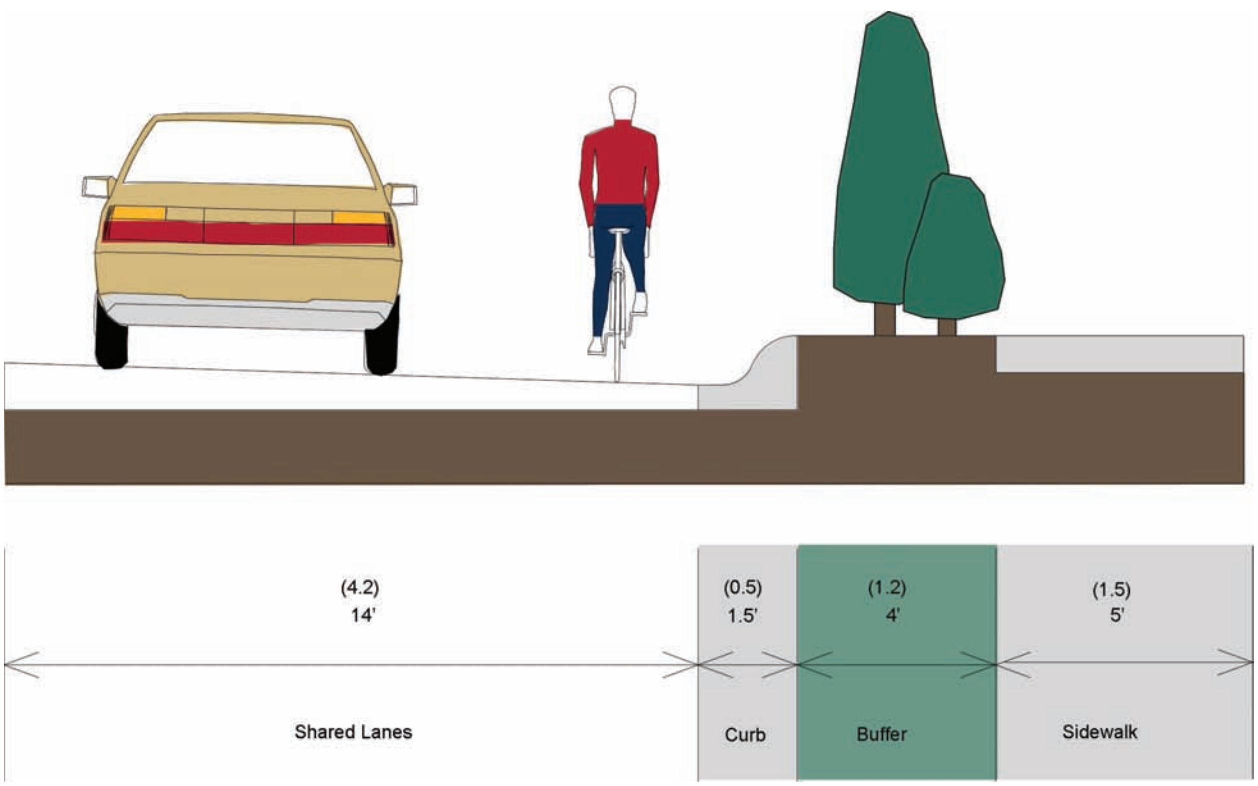
One-Way Bike Lane with Parking Lane

Preferred



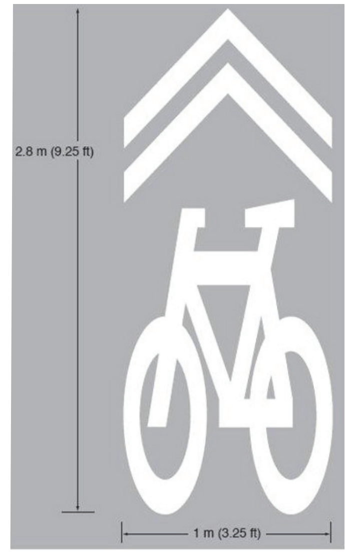
Shared Lanes

Preferred



In the winter of 2009 the Metroplan Board adopted the Sharrow as a lane making for shared use facilities consistent with that proposed by the Manual on Uniform Traffic Control Devices (MUTCD); see Figure 11-19. This marking has been used by several jurisdictions on local roadways.

Figure 11.19: Proposed Shared Lane Marking from the MUTCD



(Endnotes)

1 Calculated using the National Safety Council's Injury Facts, 2009 Edition.

2 An Analysis of Factors Controbutiong to "Walking Along Roadway" Crashes: Research Study and Guidelines for Sidewalks and Walkways, FHWA Tuner-Fairbanks Highway Research Center, Feb. 2002

3 Pucher, J, and JL Renne. 2003. Socio-economics of urban travel. *Transportation Quarterly* 57 (3):49-77.

4 Daniels, F., W. Moore, C. Conti, L. C. Norville Perez, B. M. Gaines, R. G. Hood, I. J. Swain, R. Williams, and C. T. Burgess. 2002. The role of the African-American physician in reducing traffic-related injury and death among African Americans: consensus report of the National Medical Association. *J Natl Med Assoc* 94 (2):108-18.

5 Calculated using the National Safety Council's Injury Facts, 2009 Edition.

12. Intermodal/Freight

Intermodal Transport

In order to maximize the mobility of people and goods in the CARTS area, intermodal linkages and facilities should provide for optimum flows between the various transportation modes. This subsection focuses on the safe and efficient movement of goods, which is vital to a healthy regional economy, and intermodal passenger movement modes and facilities.

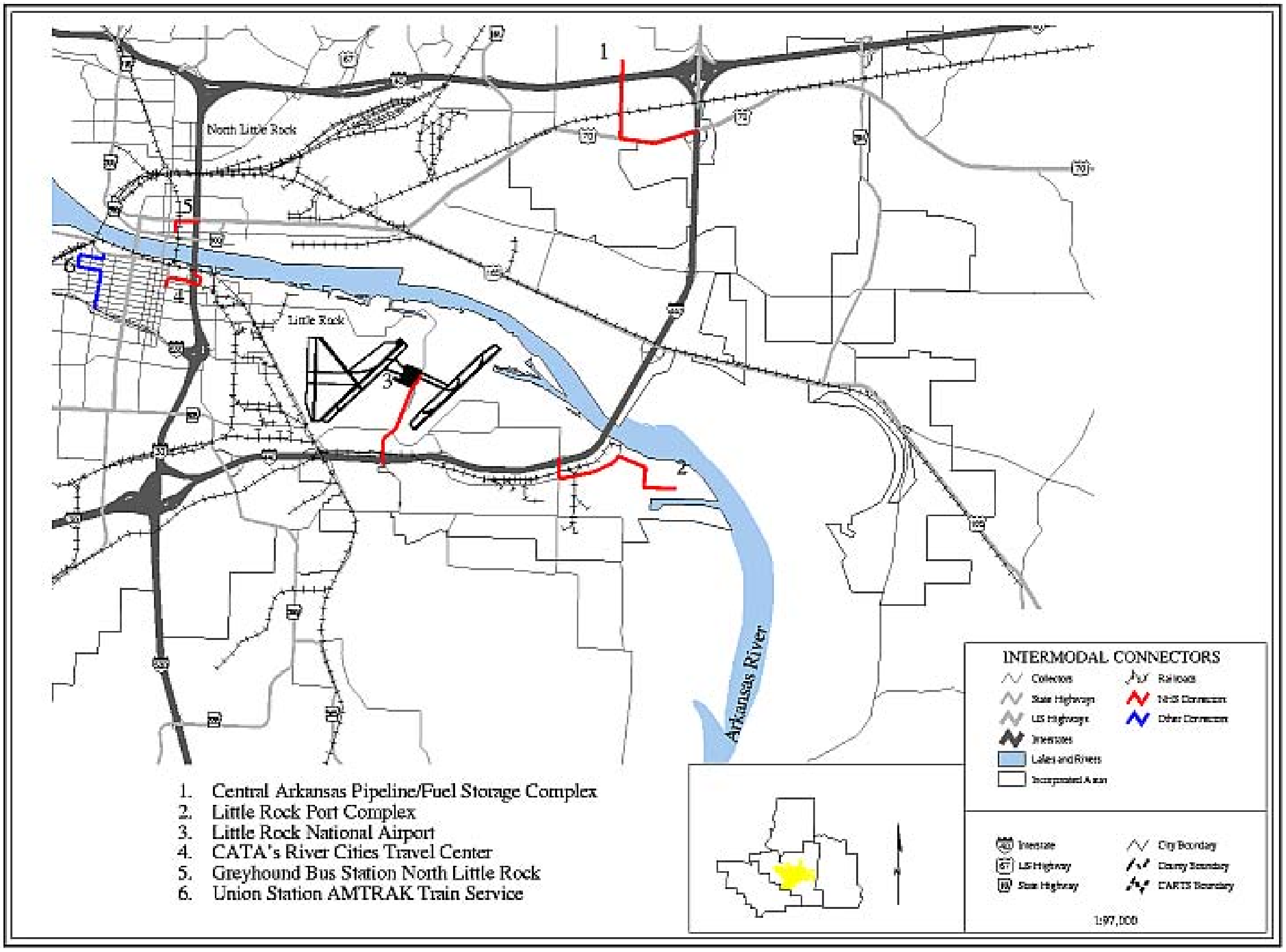
INTERMODAL CONNECTORS TO THE NHS

Designation as an intermodal connector to the National Highway System reflects federal priorities, which give greater importance to linkages providing access to major intermodal facilities located near NHS routes. Unlike other roadways, intermodal connectors are eligible for federal aid, regardless of their assigned functional classification (refer to NHS and Functional Classification sections). At present, there are six (6) intermodal connectors to the NHS in the CARTS area (see Map 12-1). Collectively, these connectors make up 8.19 miles of state highways and city streets.

1. **Central Arkansas Pipeline/Fuel Storage Complex**
   I-440 is linked by 1.88 miles of state highway and city streets to this pipeline-fed gasoline storage complex in North Little Rock. The connection consists of US 70, and Central Airport Road. Central Airport Road is the only access to the storage complex, and the lack of an alternate route is a potential problem. Geometric and physical deficiencies included: inadequate travel way and shoulder widths, lack of stabilized shoulders, flooding due to inadequate drainage, inadequate railroad crossing warning devices, a rough railroad crossing surface, a humped railroad crossing surface with inadequate vehicle under-clearance, and a narrow bridge on Central Airport Road. There is also evidence of rutting, which could potentially result in hydroplaning. In 1999, an overlay was completed on US 70 correcting some of the inadequacies due to rough and uneven pavement. Traffic operation problems included difficulty making left turn movements at the junction of Central Airport Road and US 70 during peak traffic periods.

2. **Little Rock Port Complex**
   I-440 is linked to this intermodal river port by 2.06 miles of city streets. The route serves the river port facilities at the end of Lindsey Road and a slack water harbor located to the south. The designated facilities consist of Fourche Dam Pike, Lindsey Road, Industrial Harbor Drive, Slackwater Harbor Drive, and Intermodal Drive. HPP funds for the construction of the other roadways were included in TEA-21 and in the 1999 CARTS TIP, and have since been completed. The 1998 inventory noted a flooding problem and inadequate drainage facilities, especially near the levee. Other problems included rutting and a rough railroad crossing surface. Frazier Pike provides alternative access to the slackwater harbor, though it is not part of the intermodal connector.

Map 12-1
Intermodal Connectors to NHS



3. LITTLE ROCK NATIONAL AIRPORT

I-440 is linked by 1.64 miles of local streets to the airline passenger terminal and the air cargo area north of the passenger terminal. This route consists of Bankhead Drive, Airport Drive and Temple Street. Virtually all problems noted during the 1998 inventory were on Temple Street, which primarily serves the air cargo area. These problems included inadequate travel way and shoulder widths, lack of stabilized shoulders, flooding due to inadequate drainage, poor illumination making driveways difficult to see at night, and difficulty making turns during the peak traffic periods. An additional NHS connector to the I-440/Lindsey interchange may be needed in the future, if air cargo functions are moved to the southeast as planned.

4. RIVER CITIES TRAVEL CENTER

I-30 is linked by 0.63 miles of state highway and city streets to CATA's new downtown Little Rock bus transfer center. This route follows the SH 10 and 2nd Street ramps to/from I-30 and Cumberland Street. Although this route has not been inventoried, it may be difficult for buses to make turns from 2nd Street to Cumberland Street, due to intersection geometrics. Other potential problems may include peak traffic period delays at the junction with the mainline NHS route (I-30) and signalized intersections.

5. **GREYHOUND BUS TERMINAL**
   I-30 is linked by 0.34 miles of state highway and city streets to the intercity bus terminal in downtown North Little Rock. The designated route consists of US 70 (E. Broadway Street) and Poplar Street. While not formally inventoried, reported problems include peak traffic period delay at signalized intersections and at the junction with the mainline NHS route (I-30), resulting in alternate routes being used by coach drivers.

6. **UNION STATION AMTRAK TRAIN SERVICE**
   I-630 is linked by .82 miles of city streets to Union Station, the AMTRAK passenger depot. The route consists of Chester Street, Capitol Avenue and Victory Street. Access from SH 10 to Union Station via Chester and Markham Streets consists of an additional .33 miles of city streets. No particular access problems were identified.

MOTOR FREIGHT

There are more than 60 franchised motor carriers in the CARTS area providing regular route, common carrier service to destination points in each of the 48 contiguous states. Each carrier has local freight terminals rendering daily delivery, pick-up, and drop-ship service.

RAIL

Both the Union Pacific (UPRR) and Burlington Northern (BN) Railroads serve the CARTS area, and are among the largest Class I railroads in North America. The UPRP owns all Class I trackage in the area, and has four main lines feeding a major automated freight classification yard (hump yard) located in North Little Rock. The UPRR also has a major locomotive repair facility and a material distribution center in North Little Rock, as well as a small switching yard in Little Rock. For the 2nd quarter of 2004, 107 trains arrive and depart from North Little Rock daily, which is an increase of 8% since 1998.

There are four Class III railroads serving the CARTS are:

1. The Arkansas Midland Railroad (AMR), Carlisle Branch, has track parallel to I-40, some of which has been sold. The AMR uses a single locomotive to serve customers along this line in North Little Rock to near the Galloway interchange.

2. The Bauxite and Northern Railway (BXN) owns trackage and uses two locomotives to serve ALCOA's bauxite processing facility in Saline County. The UPRR transports bulk material to/from the ALCOA facility, some of which goes to the Little Rock Port.

3. The Little Rock Port Authority (LRPA) is publicly owned and uses a single locomotive to serve the Port complex and provide switching services for the BN. There is an intermodal transfer facility at the Little Rock Port, which is mainly used for rail/barge and truck/barge transfers.

4. The Little Rock and Western Railway (LRWN) owns trackage from Little Rock west along the Arkansas River to Danville. The LRWN has three locomotives, which haul mainly paper products and grain, some of which goes to the Little Rock Port.

In addition to freight trains, the CARTS area has regularly scheduled intercity passenger train service. Amtrak operates one long-distance train through Arkansas, the Texas Eagle, with daily service to Chicago-St. Louis-San Antonio. Northbound trains depart Union Station in Little Rock at 11:59 p.m., southbound trains depart at 4:30 a.m. daily. During FY03 Amtrak served 11,700 customers in Little Rock and a total of 20,789 for the state. There was a 22% increase in ridership since 1998 from Union Station.

AIRPORTS

There are four general aviation airports, one military air base, and Camp Robinson Airfield located within the CARTS area: Conway Municipal Airport, Little Rock Air Force Base, Little Rock National Airport, North Little Rock Municipal Airport, and the Saline County Airport. Little Rock National Airport is the major commercial airport serving the CARTS area and the state of Arkansas (see Map 12-2).

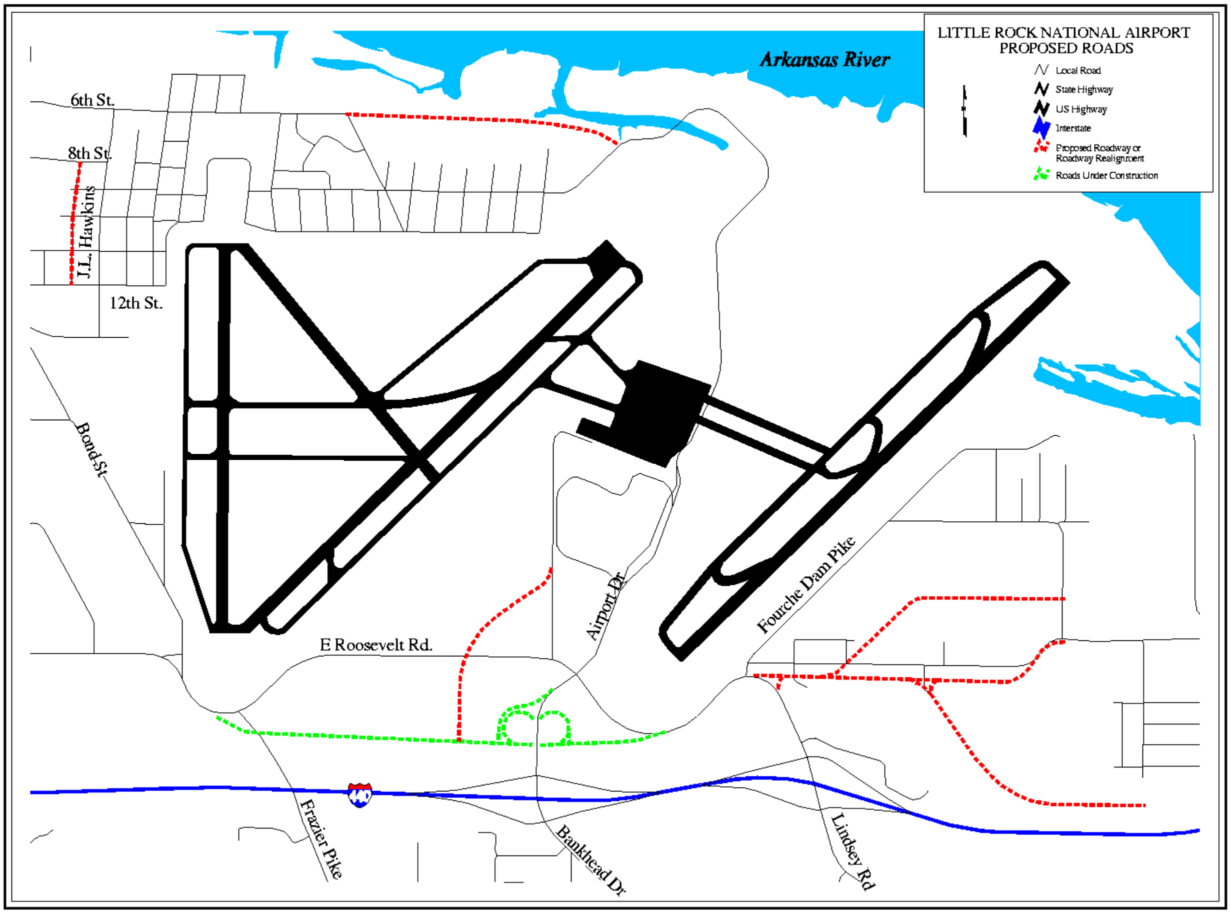
The Conway Municipal Airport (Cantrell Field), North Little Rock Municipal Airport and the Saline County Airport (Watts Field) are all publicly owned airports providing services and flights for privately owned planes and small charter services.

North Little Rock Municipal Airport has two runways and has an average of 102 flights daily. 107 planes are based at the airport. The runways are 5,000 and 3,009 feet in length and both are constructed of concrete.

The Saline County Airport is currently the smallest municipal airfield in the CARTS area, with only one asphalt runway, with a length of 3,980 feet, and no refueling area. Even though it is the smallest, there is still a high volume of flights in and out of the airport daily. There are 101 daily flights and 44 airplanes based at the airport. The airport will be moving to a new and larger location southeast of Bryant in late 2005 or early 2006. Access to the new airport will be from Highway 183.

The Conway Municipal Airport has two asphalt runways and an average of 42 flights daily. The runways are 4,875 and 3,278 feet in length. There are 57 airplanes based at the airport. Like the Saline County Airport, the Conway Municipal Airport will also be moving in the future. The possible future location of the Conway Municipal Airport is an area called Lollie Bottoms located near the Arkansas River southwest of Conway. A migratory bird study is currently underway for the Lollie Bottoms location. If this study clears the location from migratory bird problems, it will still be at least ten years before the airport will relocate. The area currently has few roadways and no utilities. The long range plan for the Lollie Bottoms area includes the Conway Municipal Airport and a new river port.

Map 12-2
Little Rock National Airport



Little Rock National Airport (Adams Field) is located three miles from downtown Little Rock and encompasses some 1,400 acres. The airport complex includes facilities for public parking, commercial airlines, air cargo, general aviation and aircraft related business. There are three runways at the airport, two of which are used primarily for commercial airline traffic. The longest runway is 8,723 feet and the shortest, used primarily by smaller privately owned aircraft, is 5,124 feet long. A Category III instrument landing system allows for the longest runway to be used in periods of inclement weather. Little Rock National is served by 10 airlines with non-stop service offered to Atlanta, Baltimore/Washington, Cincinnati, Charlotte, Dallas/Forth Worth, Dallas Love Field, Detroit, Houston, Las Vegas, Memphis, Phoenix, St. Louis, Chicago, Denver, Newark, Minneapolis and Kansas City.

In 2004, total enplanements were 1,147,617 which is a 17% increase from the 1990 total of 974,642. Table 12-1 shows enplanements for 1990-2004. Between 2003 and 2004 there was an 8% increase in enplanements. While 2004 passenger numbers were up, they are still below those of 2000, the last “normal” year prior to the economic downturn and terrorist attacks of 2001.

Table 12-1
Little Rock National Airport - Annual Enplanements

Year	Enplanements
1990	974,624
1991	971,664
1992	1,038,471
1993	1,114,111
1994	1,225,000
1995	1,261,790
1996	1,271,381
1997	1,259,576
1998	1,272,721
1999	1,288,007
2000	1,285,159
2001	1,191,234
2002	1,095,396
2003	1,063,023
2004	1,147,617

PORT/RIVER

The McClellan-Kerr Arkansas River Navigation System provides a channel from the Mississippi River northwest to Port of Catoosa, fifteen miles east of Tulsa, Oklahoma, on the Verdigris River. The McClellan-Kerr Navigation System was opened in 1969 and consists of seventeen lock chambers that were installed at a cost of $700 million. These locks lift barges 420 feet along the 448 mile route; individual locking heights vary from 14 to 54 feet. There are three locks located in the CARTS area: Murray Lock and Dam, David D. Terry Lock and Dam and the Toad Suck Lock and Dam. The navigation system has a minimum depth of nine feet and a width of 250 feet.

Figure 12-1 shows the amount of tonnage transported on the entire McClellan –Kerr Navigation System, by year, from 1990 to 2004. The annual amount of tonnage has increased from 6.7 million in 1990 to 12.9 million in 2004. Major commodity movements on the river include sand/gravel/rock, industrial and energy resource commodities and others. Figure 12-2 depicts the percentages of these movements since 1990. There are 16 public and private ports on the Arkansas River and Cadron Creek in the CARTS area.

CARTS Area Ports

Little Rock
- Pentzien Inc. Mooring
- Pentzien Inc. Yard
- Port of Little Rock Public Terminal

North Little Rock
- Arkansas Valley Dredging Co., Inc.
- Arkansas Power & Light Co. Lynch Station S.F.I. Dock
- Sothern Farmers Association Dock
- Oakely Port
- Petroleum Fuel & Terminal Co. Dock
- Jeffery Sand Co., Lincoln Ave. Dock
- Oakley Barge Line, Inc., Fleeting Area
- PBW North Little Rock Terminal

Figure 12-1
McClellan-Kerr Navigation System Tonnage 1990-2004

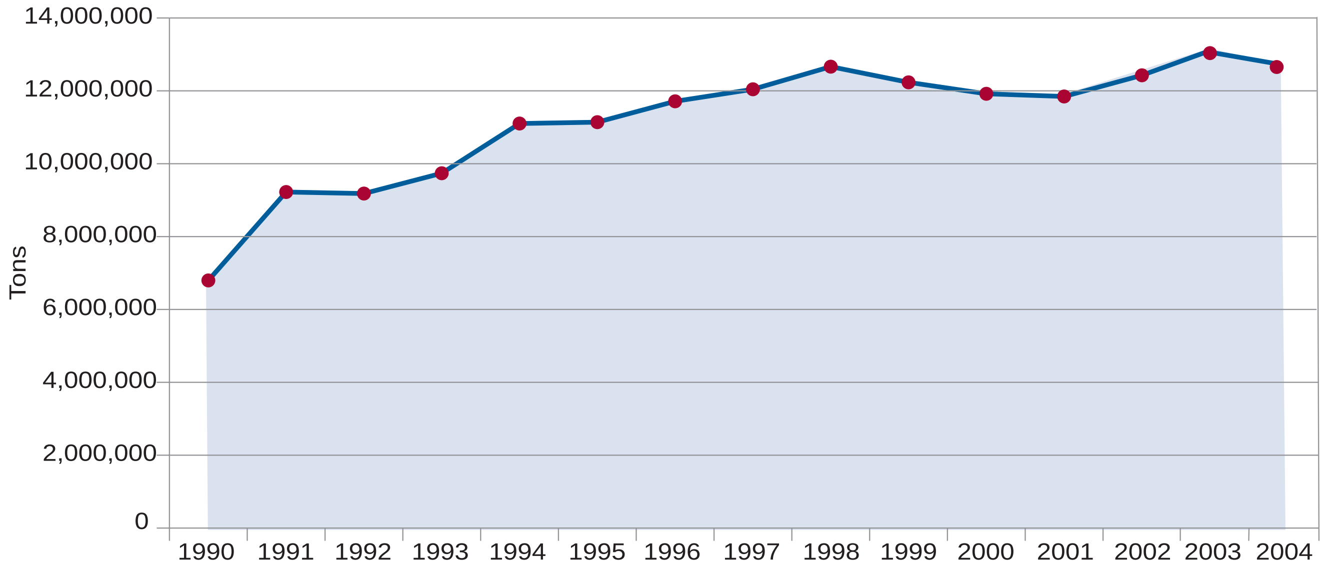
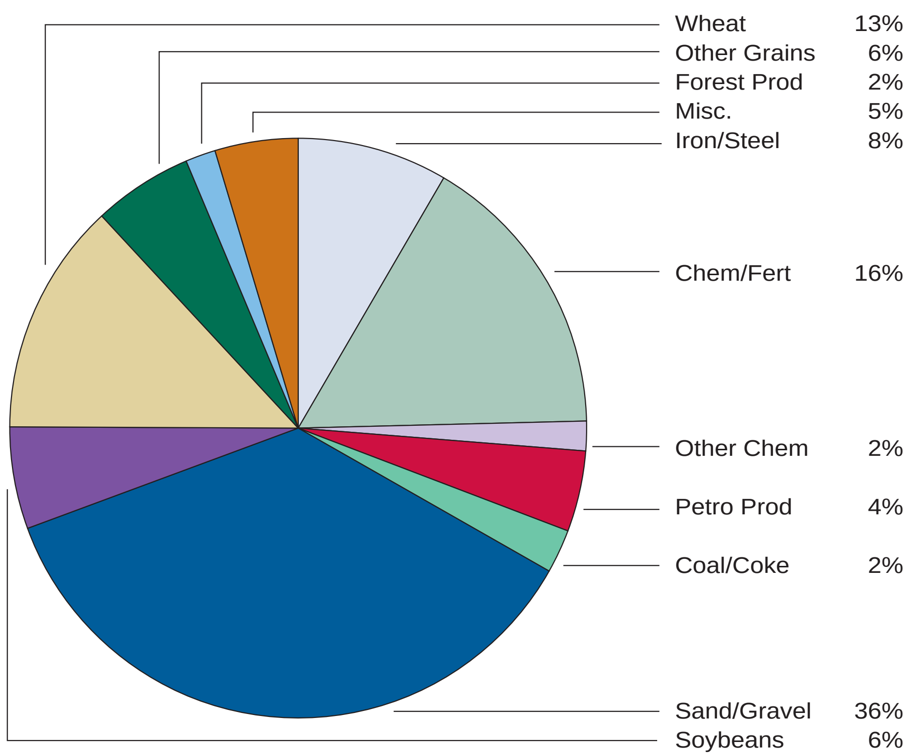


Figure 12-2
Total Commodity Shipments by Percent
McClellan-Kerr Navigation System 1990-2004



LITTLE ROCK PORT

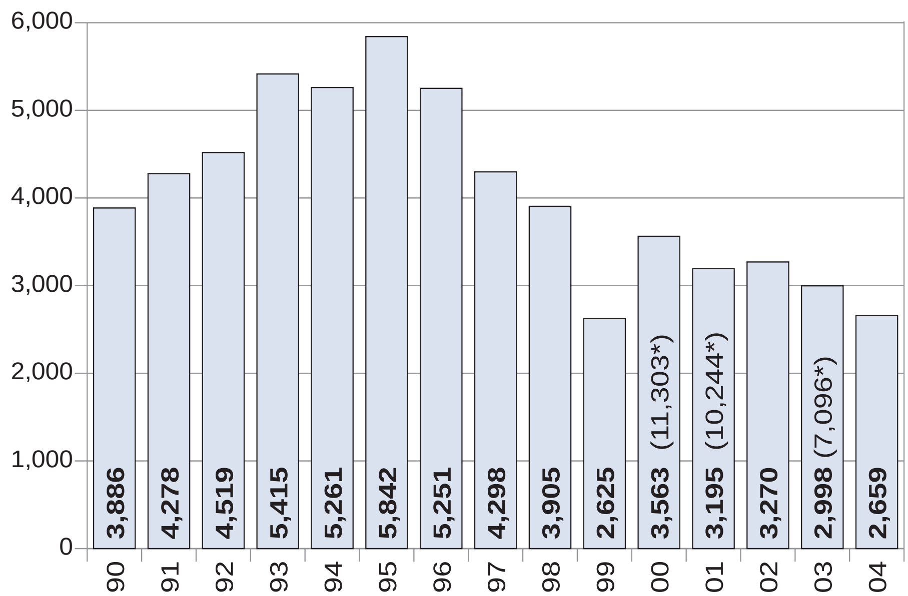
The Little Rock Port is the largest port in the area with 1,500 acres. The port includes industrial and warehousing development along with intermodal operations among rail, truck and barge. Industrial activities that involve truck and rail access currently predominate, although barge related activity exists as well.

In 2004, the Little Rock Port Authority Railroad handled 2,659 cars. Figure 12-3 shows the annual number of cars handled from 1990-2004.

Foreign Trade Zone-14 is located in the Port Authority Industrial Park. The advantage to having a Foreign Trade Zone is that imported goods can be stored or processed without payment of US Customs duties until the goods are moved out of the zone at the point of retail. Little Rock is also a US Customs Port of Entry for freight and passengers with immigration officials on call.

There is extensive truck activity related to the port and adjacent industrial/warehousing operations. Access is provided via Fourche Dam Pike and Lindsey Road interchanges with Interstate I-440, both of these roads have at-grade crossings with the port railroad.

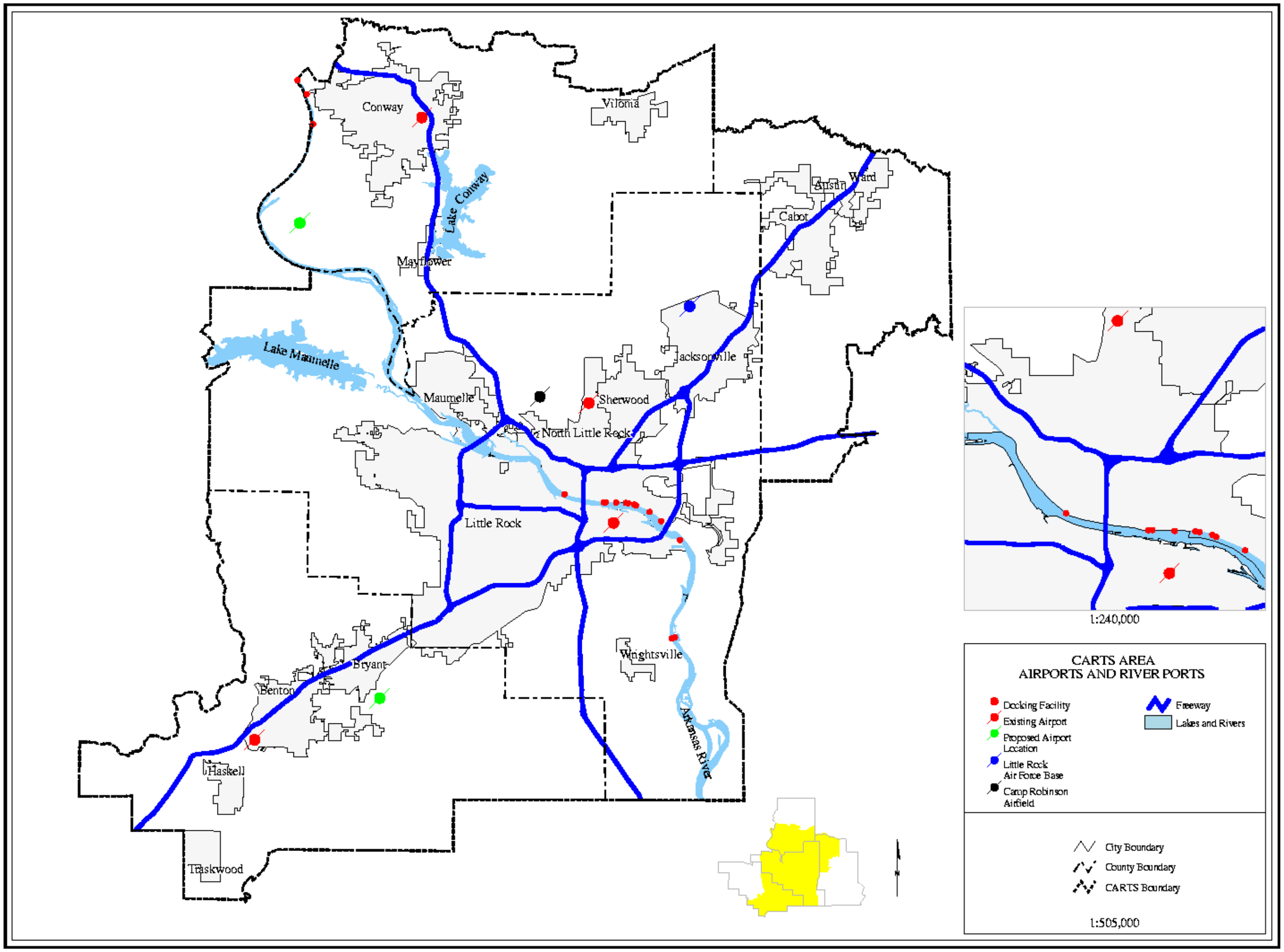
Figure 12-3
Cars Handled Annually
Little Rock Port Authority Railroad 1990-2004



Source: Little Rock Port Authority

**Reflects Burlington Northern (BN) blocking. LR Port Authority makes-up trains for BN.*

Map 12-3
CARTS Area Ports



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13. Air Quality

In June 1997, new and revised NAAQS for ozone and particulate matter (PM) were issued by the U.S. Environmental Protection Agency (EPA). These changes made it more likely that central Arkansas could lose its clean air status. However, implementation of the 8-hour ozone standard was delayed until 2004, while legal challenges were resolved in federal court and implementation rules were developed. Implementation of the new PM-2.5 standards was not only delayed by legal challenges, but also by the need to establish a nationwide fine particulate monitoring program. PM-2.5 implementation rules have yet to be finalized. In both cases, central Arkansas has escaped the first round of non-attainment designations, but the area's future air quality status is less certain.

Proactive Efforts

Since 1997 Metroplan has proactively cooperated with the Arkansas Department of Environmental Quality (ADEQ), Arkansas Department of Health, and other public and private stakeholders to establish and implement the Central Arkansas Ozone Action Days (OAD) program. The twin objectives of the Ozone Action Days program are to increase public awareness of the health risks associated with ozone exposure and to encourage voluntary emission reductions to help keep the region in attainment of federal air quality standards. Financial assistance is provided in part by the Federal Highway Administration (FHWA), through funds made available by the AHTD. The Central Arkansas Ozone Action Days Steering Committee is the established forum for coordinating the ozone awareness and education activities of participating organizations. ADEQ provides daily ozone forecasts during the ozone season. Metroplan notifies news media and participating organizations of ozone advisories and alerts, administers the ozone awareness activities carried out by public relations consultants, and maintains the OAD website: www.ozoneactiondays.org.

Metroplan has been instrumental in two other proactive community efforts to limit emissions, namely the Central Arkansas Clean Cities Coalition and the Central Arkansas Clean Air Task Force.

Metroplan officially became the local host agency for the U.S. Department of Energy's (DOE's) Clean Cities Program in June 2002, when the Central Arkansas Clean Cities program was renewed for another five years. Since then the Clean Cities Coalition has raised funds and worked effectively to promote alternative fuel vehicles and secure grants for alternative fuel projects. Two of these projects include a DOE-funded compressed natural gas refueling station at the Little Rock National Airport and an EPA-funded Adopt-A-School Bus project involving the use of bio-diesel in school buses.

In December 2001, ADEQ and the Little Rock Regional Chamber of Commerce agreed to work through Metroplan and participate in EPA's Ozone Flex Program. A Central Arkansas Clean Air Task Force was formed with broad stakeholder representation to advise the Metroplan Board regarding air quality issues, including the development of an Ozone Flex Plan to keep the region in attainment of the 1-hour ozone standard. An Ozone Flex Plan was developed and a Memorandum of Agreement was signed in March 2003 that established various voluntary emission control strategies to forestall designation under the 1-hour ozone standard as well as help keep the area in attainment of the 8-hour ozone standard. However, the 1-hour standard was revoked in June 2005, at which time the Ozone Flex Agreement with EPA will automatically terminate. EPA has not indicated whether a similar proactive program for the 8-hour ozone standard will be established, although this does not preclude central Arkansas from taking independent steps to reduce ozone-related emissions.

OZONE STATUS

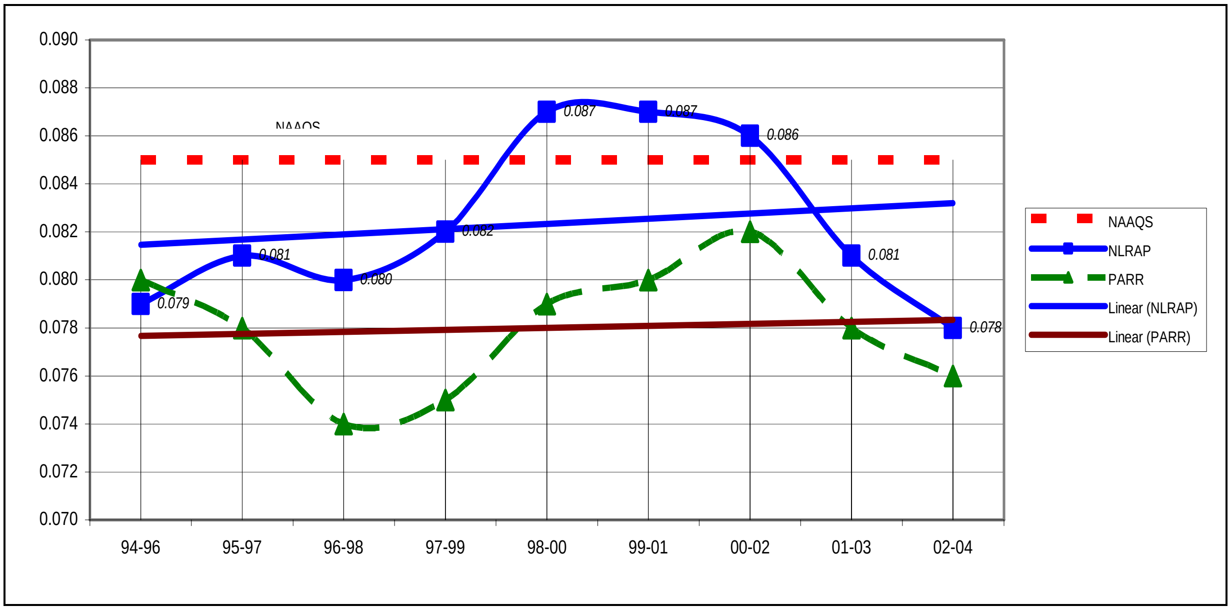
In April 2004, central Arkansas was excluded from the list of areas designated by EPA in non-attainment of the 8-hour ozone standard. Designations were based on the latest three years of ozone monitoring data available at that time (2001-2003), which indicate that mild ozone seasons during 2002 and 2003 kept the region from falling into non-attainment. The 2004 ozone season was likewise very mild, so it is anticipated that the region will remain in attainment of the 8-hour ozone standard through at least 2006, unless unusually severe ozone episodes occur during 2005. Although reduced emissions resulting from a variety of federal actions may gradually reduce the risk of severe ozone episodes after 2006, it is also clear from the historical record that seasonal weather patterns can have a major effect on ozone levels.

Figure 13-1 provides ozone trends since the mid-1990s at two of the three established ozone monitors in Pulaski County[1] in relation to the non-attainment threshold under the new 8-hour ozone standard. The chart shows that while the area exceeded the ozone NAAQS for three years (from 2000 through 2002), the three-year average at the North Little Rock Airport (NLRAP) monitor dropped below the standard just in time to avoid being designated an ozone non-attainment area (based on 2001-2003 data), and this downward trend has continued through 2004. However, the data also show that over the period charted (1994 – 2004) there is a linear trend at both monitors of increasing ozone levels. The linear trend line at the NLRAP monitor, coupled with the annual fluctuations in monitoring data (which are not shown in the chart), suggests there is considerable uncertainty regarding the area's future ozone status.

OZONE -- Ozone is a chemically unstable form of oxygen and is not directly emitted. Hot weather and little or no wind are prerequisites for the formation of ozone, which is produced in direct sunlight through a chemical reaction of volatile organic compounds (VOCs), like paint and gasoline fumes, with nitrous oxides (NOx) from exhaust and smokestack emissions. In Arkansas the ozone season generally lasts from May through September. Emissions inventories and photochemical dispersion modeling done by or for the ADEQ indicate that to reduce the incidence and severity of ozone episodes local control strategies should probably focus on reducing NOx emissions, firstly from on-road mobile sources (cars and trucks), secondly from non-road mobile sources (construction and farm equipment, boats, trains, planes, lawn mowers, etc.), and thirdly from stationary area and point sources. NOx can also be transported across state lines long distances from stationary point sources, such as coal-fired power plants. Much of the VOC emissions in central Arkansas are from natural VOC sources, such as pine trees, which generally overwhelm the man-made VOC sources that come from gasoline stations, fuel transport facilities, auto body shops, dry cleaners, and certain manufacturing processes, etc.

[1] This excludes the recently established ADEQ monitor, for which only 3 years of data is currently available.

Figure 13-1
8-Hour Ozone Trends in Pulaski County – 3-Year Averages of Annual 4th Highest Daily Maximum



Section 13: Air Quality

Air Quality

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. Although no portion of central Arkansas has ever been designated a NAAQS "nonattainment" area[1], at various times since 1970 ambient ozone and particulate levels have threatened our region's clean air status. Air quality continues to be an important factor that could potentially impact the CARTS planning process, public involvement, funding, and the development and implementation of CARTS transportation plans, programs and projects.

Ozone

In 1971, EPA established a one-hour "photochemical oxidant" standard, under which the NAAQS was violated if hourly average ozone levels exceeded 0.08 parts per million (ppm) more than once per year during a three year period. However, ozone monitors did not become operational in Pulaski County until the third quarter of 1977. By 1979, ozone monitoring data clearly showed that the area was out of compliance with the 0.08 ppm standard. However, in 1979 EPA also raised the one-hour ozone standard to 0.12 ppm, which effectively brought Pulaski County back into compliance with the NAAQS, and nonattainment was narrowly missed.

Figure 13-1
Sources of Ozone?

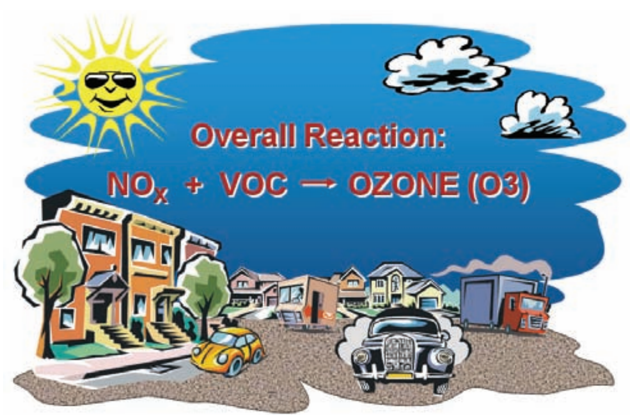
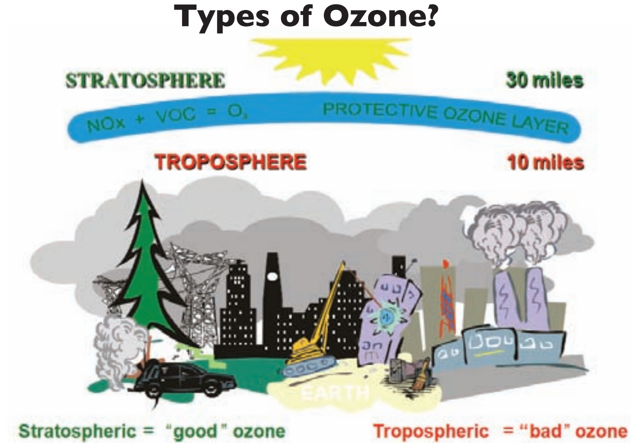


Figure 13-2
Types of Ozone?



Source: Arkansas Department of Environmental Quality

Ozone is the main ingredient in photochemical smog and can be a health hazard in high concentrations, producing in effect "a sunburn on the lungs". Even at low levels, ground-level ozone can cause a number of respiratory effects, especially in sensitive individuals or with repeated exposure. Those most at risk include active children and adults with asthma or COPD.

Ozone is a chemically unstable form of oxygen and is not directly emitted. In Arkansas, the ozone season generally lasts from May through September. Hot weather and little or no wind are prerequisites for ground-level ozone formation, which occurs in direct sunlight through a chemical reaction

[1]The CAA defines an area as nonattainment if it is violating the NAAQS or if it is contributing to a violation in a nearby area.

between two ozone precursors: (1) "volatile organic compounds" (VOCs), such as paint and gasoline fumes, and (2) "oxides of nitrogen" (NO_X) from motor vehicle exhaust and stationary smokestacks. NO_X should not be confused with nitrous oxide (N_2O). The term NO_X refers to the total concentration of nitric oxide (NO) and nitrogen dioxide (NO_2). These mono-nitrogen oxides are produced mainly during combustion at high temperatures. Emissions inventories and photochemical dispersion modeling by ADEQ have established that central Arkansas has an overabundance of VOCs and is thus, "NO_X limited". Accordingly, local control strategies to reduce the incidence and severity of ozone episodes should primarily focus on reducing NO_X emissions, firstly from "on-road" mobile sources (e.g., cars and trucks), secondly from "non-road" mobile sources (e.g., construction and farm equipment, boats, trains, planes, lawn mowers, etc.), and thirdly from stationary "area" and "point" sources. Ozone transport from other areas may contribute to high ozone concentrations in central Arkansas on occasion, and NO_X can also be transported long distances from major point sources, such as coal-fired power plants. Most VOC emissions in central Arkansas are from natural "biogenic" sources, such as pine trees, which generally overwhelm the man-made "anthropogenic" VOC sources that come from gas stations, fuel transport and related facilities, as well as from auto body shops, dry cleaners, certain manufacturing processes, etc. Figures 13-3 and 13-4 show the results of the latest regional NO_X and VOC inventories by ADEQ and EPA.

Figure 13-3

NO_X Emissions Inventory Totals By Source Sector For The Four CARTS Area Counties in 2005

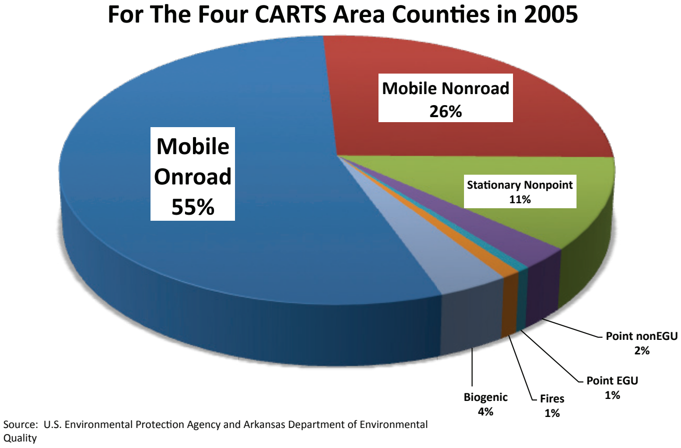
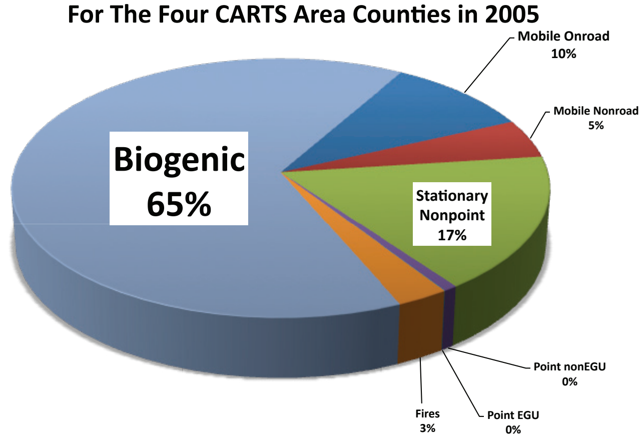


Figure 13-4

VOC Emissions Inventory Totals By Source Sector For The Four CARTS Area Counties in 2005



Source: U.S. Environmental Protection Agency and Arkansas Department of Environmental Quality.

The 1977 CAA Amendments required EPA to reevaluate the NAAQS on a five year cycle. However, the statutory deadlines for reevaluation were missed in 1985, 1990, and 1995. Only after an American Lung Association lawsuit led to a federal court order requiring EPA to complete its review of the 1979 ozone standard, did EPA finally issue a new eight-hour ozone NAAQS set at 0.08 ppm on July 18, 1997.

The eight-hour ozone NAAQS nonattainment area designations were delayed until 2004 due to various lawsuits challenging the 1997 ozone standards. Meanwhile, central Arkansas actually exceeded the 1997 ozone NAAQS at the North Little Rock Airport monitor from 2000 through 2002; but, when designations were finally made on April, 15, 2004, central Arkansas' "design value" (using 2001-2003 ozone data) had dropped below the nonattainment threshold as shown in Figure 13-5.

On March 27, 2008, the eight-hour ozone NAAQS was officially lowered from 0.08 ppm to 0.075 ppm, further increasing the risk of nonattainment in central Arkansas. In accordance with EPA regulations, Governor Mike Beebe submitted a letter on March 10, 2009, recommending that only Crittenden and Pulaski counties be designated nonattainment areas, based on the latest available three years of ozone monitoring data in those counties (i.e., 2006 - 2008). Although central Arkansas would probably have been spared a nonattainment designation, assuming updated ozone data would have been used by EPA (see Figure 13-5), implementation of the 2008 ozone NAAQS was put on hold when, on September 16, 2009, EPA announced that the ozone standards would be "reconsidered" according to an accelerated schedule.

EPA's reconsideration of the 2008 ozone NAAQS was prompted in part by legal challenges that cited a lack of support for the proposed 2008 standards by EPA's own science advisors (i.e., the Ozone Review Panel of the Clean Air Scientific Advisory Committee or CASAC), which had unanimously recommended that the "primary" (health-based) standard be set within a range of from 0.060 to 0.070 ppm. In an April 7, 2008 letter to the EPA Administrator, the CASAC Ozone Review Panel had advised *…your decision to set the primary ozone standard above this range fails to satisfy the explicit stipulations of the Clean Air Act that you ensure an adequate margin of safety for all individuals, including sensitive populations.*

EPA also proposed an accelerated schedule for implementing the new primary standard, and is considering two alternative schedules for designating areas under the proposed secondary standard. Although EPA intends to provide a more detailed implementation plan for the new standards in a subsequent rulemaking, the information in the schedule shown below (Table 13-1) was included in the proposed ozone NAAQS rule published on January 19, 2010.

Table 13-1

March 22, 2010	End of 60-dat Public Comment on Proposed NAAQS
No later than August 31, 2010	EPA Promulgates the Final NAAQS Rule
Primary NAAQS and Secondary NAAQS Alternative 1[2]	
No later than January 7, 2011	Governors Submit Nonattainment Recommendations
No later than March, 2011	States Notified if EPA Intends to Modify Recommendtions
No later than July, 2011	EPA Promulgates Nonattainment Areas[3]
No later than August 2013	States Submit "Infrastructure" SIPs[4]
Secondary NAAQS Alternative 2[5]	
No later than August 31, 2011	Governors Submit Nonattainment Recommendations
No later than May, 2012	States Notified if EPA Intends to Modify Recommendations
No later than August, 2012	EPA Promulgates Nonattainment Areas
	States Submit "Infrastructure" SIPs

[2]NAAQS take effect no later then August 31, 2011. Designations based on certified monitoring data for 2007-2009 or 2008-2010.

[3]The transportation conformity provisions of the CAA apply one year after a nonattainment designation.

[4]The CAA requires states to submit a SIP to EPA within 3 years to the promulgation of a NAAQS.

[5]NAAQS take effect no later than August 31, 2012. Designations based on certified ozone monitoring data for 2009-2001.

Figure 13-5

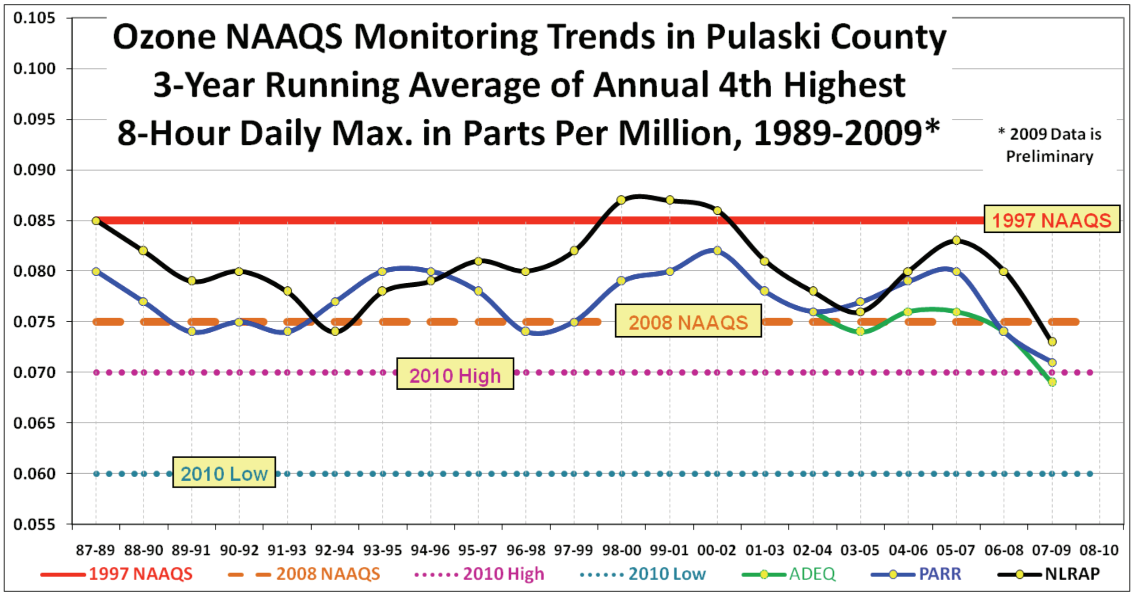
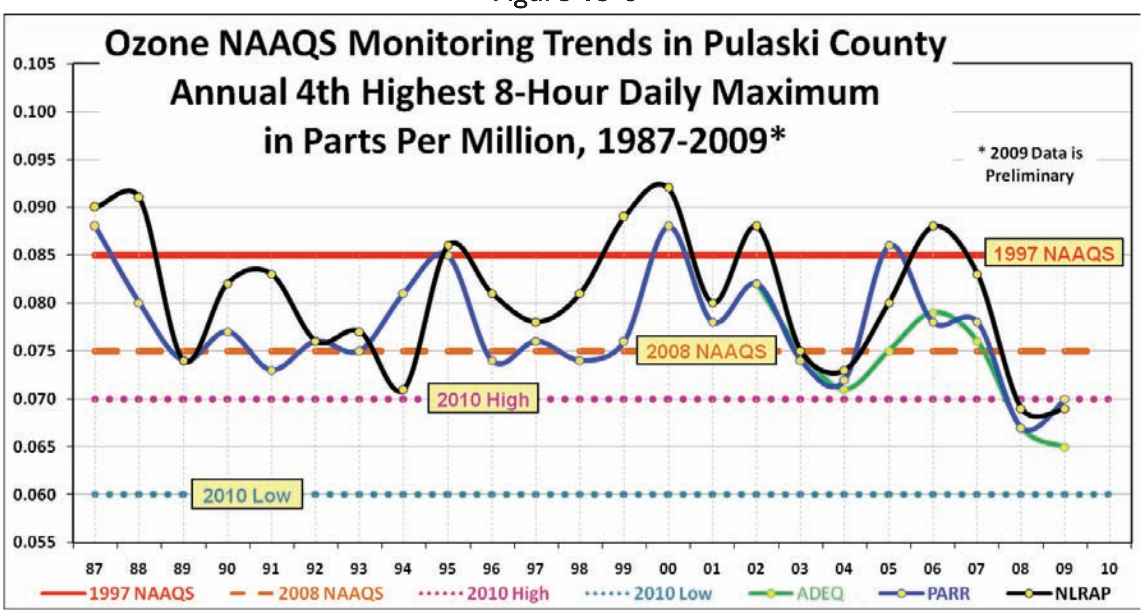


Figure 13-6



Sources: U.S. Environmental Protection Agency and Arkansas Department of Environmental Quality.

Figures 13-5 and 13-6 both show (1) annual ozone monitoring trends through 2009 at the three ozone monitors in Pulaski County, (2) the 1997 and 2008 ozone standards, and (3) the high and low limits of the Ozone Review Panel's recommended range. The two charts differ in that Figure 13-5 shows the three-year running ozone averages (design values) that determine NAAQS compliance, while Figure 13-6 shows the highly variable annual 4th highest values used to calculate the more stable averages shown in Figure 13-5.

The likelihood of central Arkansas attaining a "reconsidered" ozone NAAQS will depend on two factors: (1) the level at which the "primary" (health-based) ozone standard is set, and (2) the latest three years of "quality-assured" ozone monitoring data available when EPA makes nonattainment area designations. These two factors are related to (1) weather conditions during future ozone seasons, and (2) the effective dates of federal regulations implementing a "reconsidered' ozone NAAQS. Although central Arkansas has enjoyed historically low ozone levels during 2008 and 2009 as shown in Figure 13-6, the recent pattern of relatively cool and wet ozone seasons may not continue in future years. Anticipated emissions reductions could also become a major factor in determining our region's ozone NAAQS status if lawsuits prevent EPA from keeping to their preliminary ozone NAAQS implementation schedule.

Hypothetically, at least Pulaski County would probably be included in an ozone NAAQS nonattainment area, assuming (1) the primary (health-based) ozone NAAQS is lowered to 0.065 ppm, (2) the 2010 ozone monitoring data is similar to the 2008 and 2009 ozone data, and (3) final designations are made as currently scheduled in 2011. On the other hand, designations may not occur as scheduled because –

1. If history is any guide, lawsuits could delay implementation of a new or revised ozone NAAQS for several years, much like the 1997 NAAQS were delayed.
2. In the event of a multi-year ozone NAAQS implementation delay, the probability of nonattainment would be expected to decline, due to –
   a. A reduction in motor vehicle emissions resulting from the effects of –
      - Proposed increases in Corporate Average Fuel Economy (CAFE) standards as follows,

Average Required Fuel Economy (MPG) under Proposed CAFE Standards[6]

Vehicle Type	2011-base	2012	2013	2014	2015	2016
Passenger Cars	30.2	33.6	34.4	35.2	36.4	38.0
Light Trucks	24.1	25.0	25.6	26.2	27.1	28.3
Combined	27.3	29.8	30.6	31.4	32.6	34.1

      and

      - Potentially higher fuel prices on fleet turnover and subsequent reduction vehicle-miles traveled (VMT).

[6]On September 28, 2009, the EPA and U.S. DOT jointly proposed to establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards.

b. A significant reduction in oxides of nitrogen (NO_X) from a major point source of ozone precursors impacting the region (i.e., the White Bluff coal-fired power plant near Redfield), which by 2013 will reportedly have reduced NO_X by more than 50 percent.[7]

Thus, if the proposed "reconsidered" ozone NAAQS implementation schedule is delayed, the effects of existing federal regulations, and perhaps of higher fuel prices, may forestall a nonattainment designation or help to quickly bring the region into attainment with the new standards. In either event, the region may not need to consider additional emission control measures to achieve such outcomes. This conclusion is supported by the results of the METRO 2030 Emissions Sensitivity Analysis in Chapter 16 (see Table 16-1).

In short, while there is considerable uncertainty with respect to the region's future attainment status under new or revised ozone NAAQS, it is reasonable to expect that future climatic conditions and the timing of air quality regulations will be major determining factors.

[7]Installing dry SO_2 scrubbers and low NO_X equipment will comply with Arkansas' implementation of EPA's Clean Air Visibility Rule and allow the White Bluff plant to operate beyond September, 2013 (Source: www.entergy-arkansas.com/content/news/docs/White Bluff Enviro controls proj.pdf). However, Entergy and other owners of the White Bluff plant are currently seeking a variance from the Arkansas Pollution Control & Ecology Commission that could delay the installation of the White Bluff pollution controls.

PARTICULATE MATTER STATUS

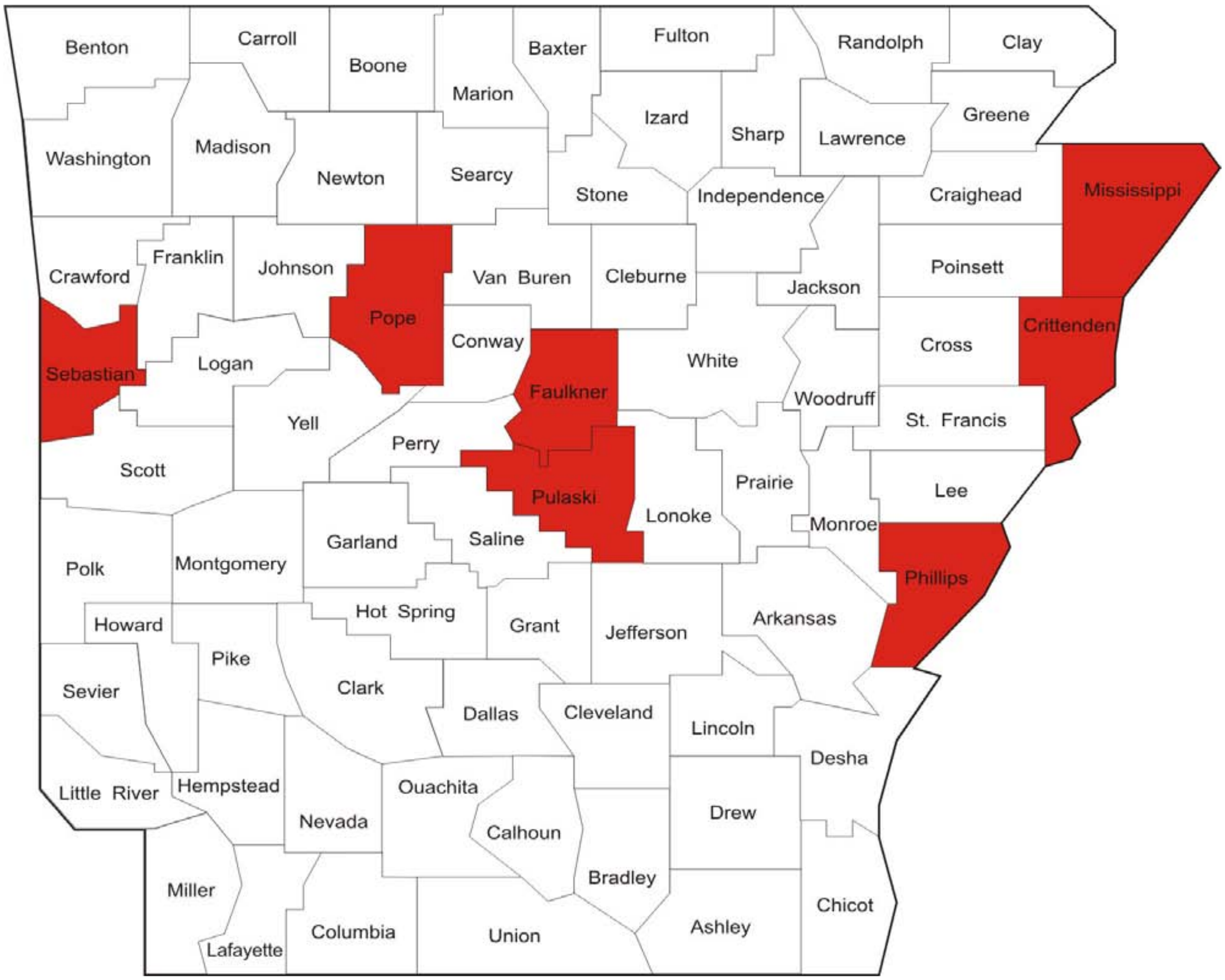
PARTICULATE MATTER – While PM-10 (coarse particles between 2.5 and 10 micrometers in diameter) comes from a variety of sources including windblown dust and grinding operations, PM-2.5 (fine particles less than 2.5 micrometers in diameter) often comes from fuel combustion, power plants, and diesel buses and trucks. PM-2.5 is composed of a mixture of particles directly emitted into the air and particles formed in the air from the chemical transformation of gaseous pollutants (secondary particles). Directly emitted particles mainly come from roads, construction, agriculture, diesel motor vehicles, managed and open burning, wood fireplaces, and utility and commercial boilers (e.g., coal fired power plants). The principal types of secondary particles are ammonium sulfate and nitrate formed in the air from gaseous emissions of sulfur dioxide (SO2) and NOx, reacting with ammonia (NH3). SO2 mainly comes from utility and commercial boilers, while NOx mainly comes from boilers and mobile sources (both on-road and off-road). Nationally, PM-2.5 pollution is a year-round problem which reaches a peak during autumn.

Recently, concern about violating ozone standards has diminished, while simultaneously concern about PM-2.5 has heightened. On January 5, 2005, central Arkansas was excluded from the list of areas designated in non-attainment of the PM-10 and PM-2.5 standards. Designations were based on the latest three years of monitoring data (2001-2003), which show that the area did not exceed either the Annual or 24-Hour PM-2.5 standards. There was never any doubt that the area would remain in attainment of the PM-10 standards, but the early PM-2.5 monitoring data led to concern that central Arkansas might exceed the annual fine particulate standard. Although EPA reports that particle pollution nationwide has been improving[2], there is continuing risk of failing to meet the annual PM-2.5 standard in central Arkansas due to the variability in monitored concentrations and the existing knowledge deficit regarding PM-2.5 formation in Arkansas.

[2] U.S. Environmental Protection Agency (2004). *The Particle Pollution Report: Current Understanding of Air Quality and Emissions through 2003*, EPA 454-R-04-002, December 2004.

Moreover, as required under the Clean Air Act, EPA is currently considering revisions to the PM-2.5 standards, which if lowered as has been proposed would increase the risk of NAAQS non-attainment in at least seven counties (see Map 13-1). For these reasons, Metroplan is coordinating with other stakeholders to increase public awareness of particulate pollution and determine what if anything can be done to reduce the risk of PM-2.5 non-attainment.

Map 13-1
Counties Potentially in Non-Attainment for the Annual PM-2.5



Figures 13-2 through 13-4 show recent trends at three of the four PM-2.5 monitors in central Arkansas in relation to the annual NAAQS[3]. All three sites exhibit a downward trend in the three-year average of the annual mean. However, at the Bond Street monitor there has been an upswing in the annual mean since 2002. Although the seasonality and sources of fine particle pollution in Arkansas are not well understood, available data suggest the peak months for PM-2.5 can vary from year to year and from one location to another.

[3] The most recent PM-2.5 monitor is at ADEQ. No chart is provided because there is only two years of data.

Figure 13-2
PM-2.5 Trends at North Little Rock – Pike Avenue/River Road Monitor

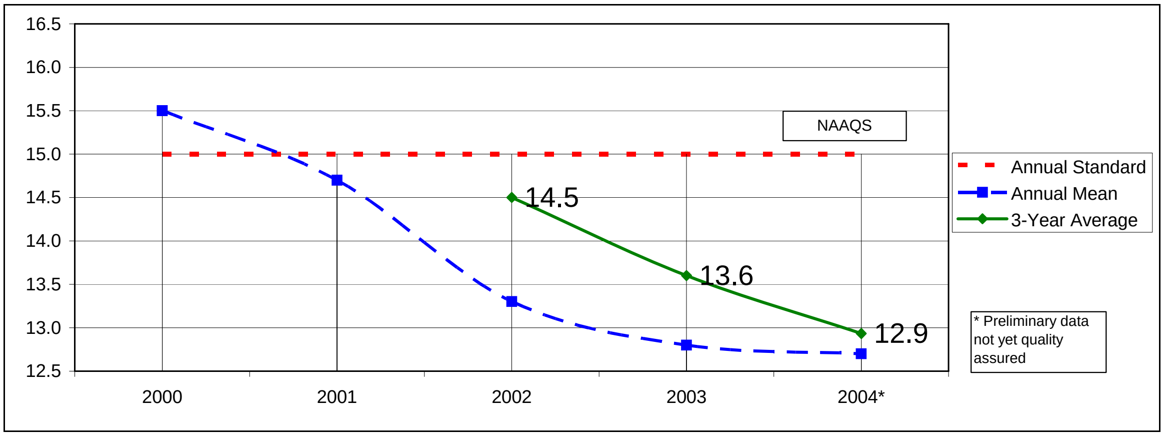


Figure 13-3
PM-2.5 Trends at the Little Rock Bond Street Monitor

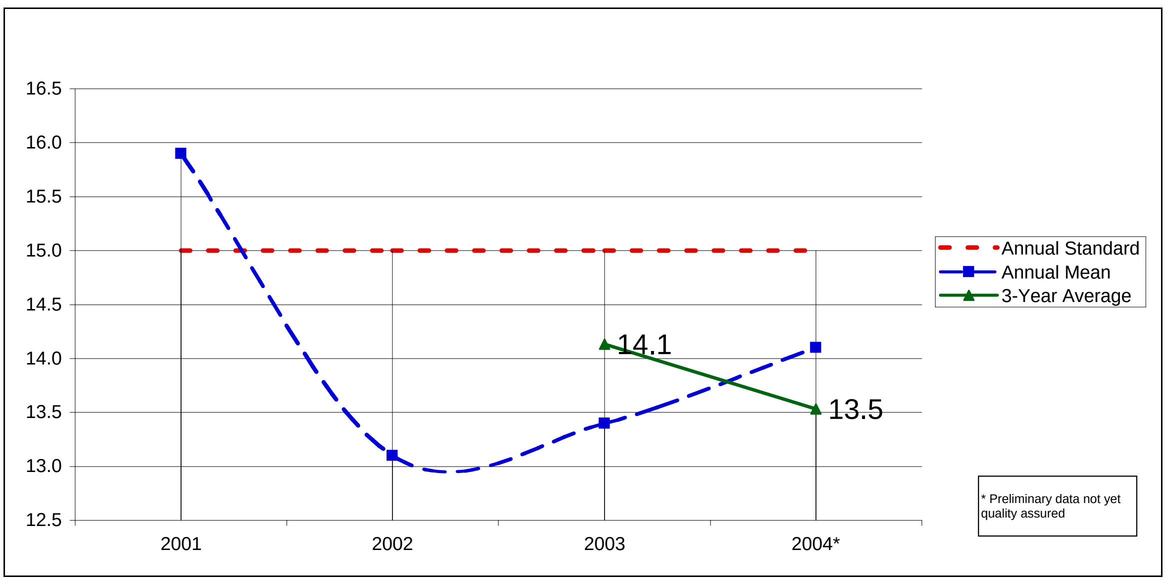
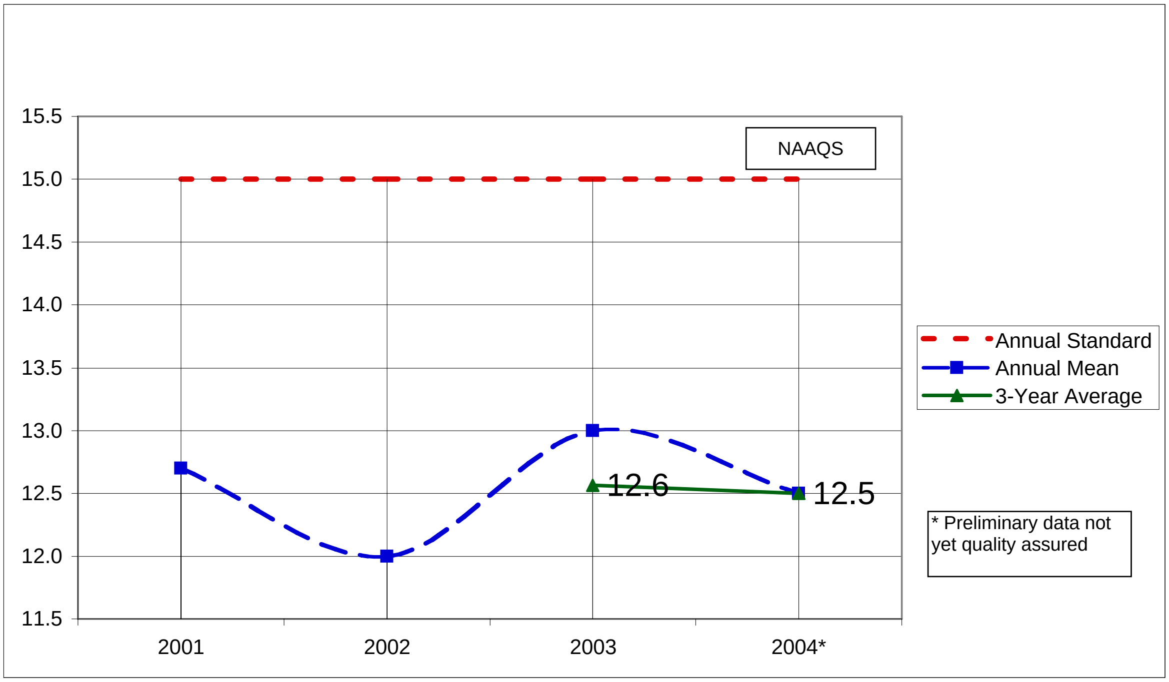


Figure 13-4
PM-2.5 Trends at Conway E. German Lane Monitor



TECHNICAL SUPPORT

From 2001 through 2004 Metroplan undertook a CARTS travel model improvement program in part to support any conformity determinations that may be required. Metroplan consultants helped determine travel model improvement needs during Phase I, while a different consultant team actually developed the 2000 base year computerized travel model during Phase II. The new travel model covers the entire four counties of Pulaski, Faulkner, Lonoke and Saline, uses TransCAD™ software, and includes a post-processor that interfaces with EPA's Mobile Source Emission Factor Model (MOBILE6). This new travel model provides planning tools to effectively model roadway and transit systems in the four-county area. More specifically the CARTS travel demand model (TDM) is designed to forecast travel demand in ways that will be acceptable to FHWA, FTA and EPA, and its post-processor can estimate regional emissions from on-road mobile sources in conjunction with future emissions inventories, SIP development, and conformity determinations. The CARTS TDM can provide emissions estimates for the recommended METRO 2030 plan versus a no-build scenario. (See page 16-1 for air quality assessment of METRO 2030.)

Particulate Matter

In 1971, EPA established a "total suspended particulate" (TSP) standard for particles up to 45 microns in aerodynamic diameter. However, the actual size cut collected by the particulate monitors was not reliable and varied due to wind speed and direction. In 1987, EPA revised the NAAQS from TSP to PM_{10} to focus on "inhalable" particulate matter less than 10 microns in diameter (PM-10). The TSP and PM-10 NAAQS included annual and 24-hour standards for both the primary (health-based) and the secondary (welfare-based) NAAQS. No areas in Arkansas were ever close to exceeding these standards.

When new eight-hour ozone NAAQS were promulgated on July 18, 1997, EPA also issued new fine particulate standards for particles less than 2.5 microns in diameter (PM-2.5) and revised the PM-10 standards to represent the inhalable coarse fraction of particulate matter between 2.5 and 10 microns in diameter. Implementation of the PM-2.5 NAAQS was delayed by lawsuits, much like the 8-hour Ozone NAAQS, until 2004 when EPA designated 39 areas as not meeting the PM-2.5 NAAQS. However, these designations did not become effective until 2005, and no PM-2.5 or PM-10 nonattainment areas were designated in Arkansas.

Shortly thereafter, on September 21, 2006, EPA strengthened the 24-hour PM-2.5 NAAQS by lowering the nonattainment threshold from 65 to 35 micrograms of particles per cubic meter. However, no change was made to the annual PM-2.5 NAAQS, which if it had been lowered as proposed could have brought nonattainment designations to several Arkansas counties, including Pulaski and Faulkner. To date, however, no PM-2.5 nonattainment areas have been designated in Arkansas.

Although air quality monitoring trends in Arkansas indicate that PM-2.5 nonattainment is unlikely under the existing NAAQS, the last review of the PM NAAQS was completed in 2006 and the standards are currently under review. In the future, new or revised PM standards or a changing climate could potentially put central Arkansas at increased risk of PM NAAQS nonattainment.

Greenhouse Gases

New national policies to reduce greenhouse gas (GHG) emissions may soon be established that could significantly impact air quality-related planning in central Arkansas. For example:

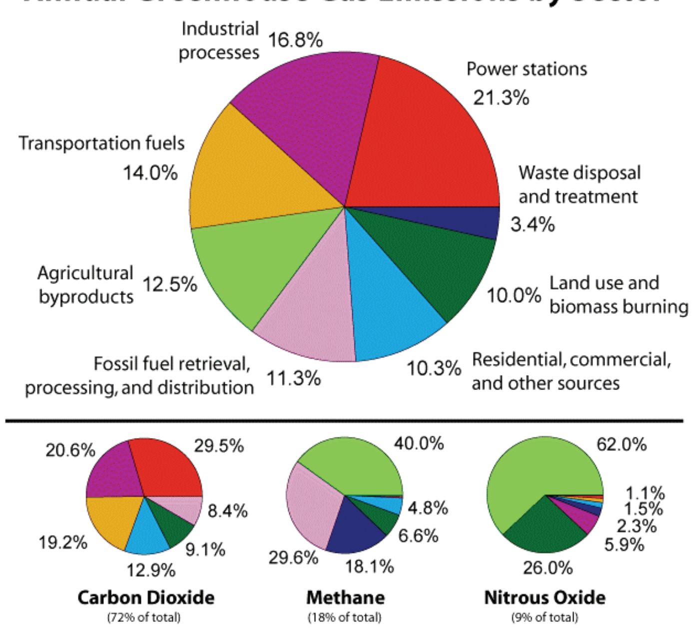
- On December 7, 2009 and coincident with the start of the 2009 United Nations Climate Change Conference in Copenhagen, EPA issued a final "Endangerment Finding" that six key, well-mixed greenhouse gases represent a threat to the public health and welfare of current and future generations. This finding allows EPA to regulate these GHGs collectively as a "criteria" air pollutant under the CAA. EPA also issued a "Cause or Contribute Finding" that the combined GHG emissions from new motor vehicles and engines contribute to the atmospheric concentrations of key GHGs, and hence to the threat of climate change. These two findings allow EPA to finalize proposed new GHG Emissions and Corporate Average Fuel Economy (CAFE) Standards that would reduce carbon dioxide (CO_2) emissions from light-duty vehicles by 21 percent in 2030. However, if Congress adopts legislation that would effectively reduce carbon emissions, EPA may determine that regulating GHG emissions as "criteria" pollutants is not necessary.
- EPA has already issued regulations effective December 30, 2009, requiring large industrial facilities, including power plants, refineries and factories that emit 25,000 tons or more of CO_2 annually, to begin monitoring and reporting their GHG emissions yearly. These large industrial facilities are responsible for nearly

Greenhouse Gases

GHGs are any of the chemical compounds in the atmosphere that contribute to the greenhouse effect. Although some greenhouse gases such as carbon dioxide are produced and emitted through both natural processes and human activities, other GHGs such as fluorinated gases are created and emitted solely through human activities. The six principal greenhouse gases that enter the atmosphere because of human activities are:

- Carbon Dioxide (CO_2),
- Methane (CH_4),
- Nitrous Oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6).

Figure 13-7
Annual Greenhouse Gas Emissions by Sector



The estimated worldwide GHG emissions in 2000 by sector are shown above in Figure 13-7.[8]

[8]Image created by Robert A. Rohde/Global Warming Art.

70 percent of all stationary source GHG emissions in the U.S., and the GHG monitoring data would be needed for a GHG "cap and trade" system included in proposed legislation currently under consideration in Congress.

- EPA has proposed that, when large industrial facilities emitting 25,000 tons or more of CO_2 annually seek CAA construction and operating permits to build or significantly modify their facilities, they must demonstrate the use of "best available control technologies" (BACT) to minimize GHG emissions. This rulemaking would provide that if the proposed light-duty vehicle CAFE Standards (noted above) are finalized and take effect in 2010, the CAA permits would automatically be required for all new or modified major stationary sources of GHG emissions, which may potentially impact the planned installation of "dry SO_2 scrubbers and low NO_X equipment" at the White Bluff coal-fired power plant near Redfield.
- On June 22, 2009, the draft Oberstar-Mica "Surface Transportation Authorization Act of 2009" was released in the U.S. House of Representatives. To date the bill has not been formally introduced or assigned a number. On June 26, 2009, H.R. 2454, the Waxman-Markey Cap and Trade bill or "American Clean Energy and Security Act of 2009" (ACES) was passed by the House. On September 30, 2009, S. 1733, the draft Kerry-Boxer "Clean Energy Jobs and American Power Act" (CEJAPA) was introduced in the Senate. All three bills include provisions which would require MPO and Statewide planning processes to –
    - Increase sustainability, connectivity, and livability
    - Reduce transportation-related GHG emissions, fuel consumption, reliance on foreign oil, and the impacts of climate change
    - Improve public health
    - Promote consistency among transportation, housing, and land use patterns, and
    - Develop emissions reduction targets and strategies with public input to meet national goals and federally set minimum emission reduction targets in Transportation Management Areas (TMAs) and states that would be enforced through MPO and State planning process certifications

Carbon Dioxide is generated through the burning of fossil fuels (e.g., oil, natural gas, coal, etc.) and vegetable matter, and is also released into the atmosphere from solid waste, trees and wood products, and as a result of other chemical reactions (e.g., manufacture of cement). Although carbon dioxide is removed from the atmosphere ("sequestered") when it is used by plants during photosynthesis to make sugars, it is also produced during respiration by plants, animals, fungi and microorganisms. While carbon dioxide transmits invisible light, it absorbs strongly in the infrared and near-infrared. Human activities have caused the atmospheric concentration of carbon dioxide to increase by about 35% since the start of industrialization.[9]

Methane is the principal component of natural gas and a relatively potent GHG emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from

[9] "After two large annual gains, rate of atmospheric CO2 increase returns to average". NOAA News Online, Story 2412. 2005-03-31

livestock and other agricultural practices and by the decay of organic waste in solid waste landfills. Methane is naturally oxidized in the atmosphere, producing carbon dioxide and water.

Nitrous Oxide, commonly known as "laughing gas", is a potent and long-lived GHG. It is used as an oxidizer, an anesthesia, and a food additive/aerosol propellant. It is also emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Nitrous oxide emissions may be the single most important ozone-layer depleting substance.

Hydrofluorocarbons, Perfluorocarbons, & Sulfur Hexafluoride are powerful, synthetic GHGs emitted from a variety of industrial processes. The manufacture or use of refrigerators, air conditioning systems, foams and aerosols are the main sources of fluorinated gas emissions. Fluorinated gases not only trap much more heat than the other GHGs, there are no natural processes to remove these gases from the atmosphere, so they take much longer to break down. Some fluorinated gases can deplete the ozone layer and are, thus, being phased out.

Every greenhouse gas has a Global Warming Potential (GWP), which represents its effect on climate change relative to a similar amount of CO_2. GWPs for a representative list of GHGs evaluated by the International Panel on Climate Change (IPCC) are shown in the following table.

Table 13-2

Greenhouse Gas	Lifetime (years)	GWP time horizon		
		20 years	100 years	500 years
Carbon dioxide (CO_2)	variable	1	1	1
Methane (CH_4)	12	72	25	7.6
Nitrous oxide (N_2O)	114	289	298	153
CFC-12/Freon-12 (dichlorodifluoromethane)	100	11,000	10,900	5,200
HCFC-22/Freon-22 (chlorodifluoromethane)	12	5,160	1,810	549
HFC-23 (hydrofluorocorbon trifluoromethane)	270	12,000	14,800	12,200
HFC-134a (hydrofluorocarbon 1,1,1,2-tetra-fluoroethans)	14	3,830	1,430	435
Carbon tetrafluoride (tetraflurомethane)	50,000	5,210	7,390	11,200
Sulfur hexafluoride (SF_6)	3,200	16,300	22,800	32,600
Nitrogen trifluoride (NF_5)	740	12,300	17,200	20,700

Proactive Efforts

During the late 1990s, Metroplan began to enhance its proactive posture on air quality related issues in partnership with other public and private organizations, as follows.

1. Ozone Action Days

In 1997, the Central Arkansas Ozone Action Days (OAD) program was created by agreement between the Arkansas Department of Environmental Quality (ADEQ), Arkansas Department of Health (ADH), and Metroplan. Federal financial assistance for the ozone awareness activities of OAD consultants has been provided, in part, by the AHTD in the form of discretionary CMAQ grants to Metroplan. The twin objectives of the Central Arkansas OAD program have been to:

- Increase public awareness of the health risks associated with exposure to ground-level ozone, and
- Encourage voluntary emission reductions to help keep the region in attainment of the National Ambient Air Quality Standards (NAAQS) for ozone.

An OAD Steering Committee was established to coordinate the ozone awareness and education activities of organizations participating in the OAD program and currently includes representatives of the following organizations –

- AR Clean Cities Coalition (Winrock)
- AR Dept. of Environmental Quality
- AR Department of Health
- AR Energy Office, AR Dept. of Eco. Develop.
- AR Environmental Federation (AEF)
- AR Respiratory Health Assn. (ARHA - formerly American Lung Assn. of AR) *The ARHA ceased operation on Dec. 31, 2009*
- AR State Highway & Transportation Dept.
- Central Arkansas Transit Authority
- City of Little Rock
- Entergy Services
- Federal Highway Administration
- Metroplan
- Metroplan's OAD consultant (CJRW)
- National Weather Service (NWS)
- Pulaski County

2. Clean Cities

What is Clean Cities?

Clean Cities is a government-industry partnership designed to reduce petroleum consumption in the transportation sector by advancing the use of alternative fuels and vehicles, idle reduction technologies, hybrid electric vehicles, fuel blends, and fuel economy measures.

The mission of Clean Cities is to advance the nation's economic, environmental and energy security by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption.

During the late 1990s, Metroplan began participating in the Clean Cities program, which at that time was hosted by the City of Little Rock. In 2000, Metroplan agreed to take the Clean Cities host agency function and assume the task of renewing the Central Arkansas Clean Cities (CACC) Program for another five years. It took approximately 20 months to complete the renewal process, which culminated in June 2002 when the national Clean Cities Program sponsor, the U.S. Department of Energy (DOE), became the 25th signatory to the CACC Memorandum of Understanding (MOU, refer to www.ozoneactionsdays.org/2002ClnCtyPrg.pdf).

As the Clean Cities host agency, Metroplan was responsible for administering the CACC Program and managing Coalition finances. Metroplan's administration of the Clean Cities program was carried out largely without using any Clean Cities funds. Funds donated or grants received were used to –

- Hire consultants to function as Clean Cities Coordinator for the CACC Coalition
- Print CACC newsletters (refer to www.ozoneactiondays.org/news_links.htm)
- Provide matching funds for federal and state grants, including:
  - A DOE funded project at the Little Rock National Airport to: 1) install a compressed natural gas (CNG) refueling station and 2) help acquire a service fleet of natural gas vehicles (NGVs)

- An EPA and Arkansas Department of Economic Development (ADED) funded project to: 1) coordinate the Central Arkansas Adopt-A-School Bus Partnership, 2) conduct a pilot study to test biodiesel use in school buses, and 3) defray incremental biodiesel costs in school buses
- A DOE and ADED funded project to: 1) provide biodiesel blending facilities at a major fuel terminal in central Arkansas, 2) defray the incremental cost of biodiesel use by participating public fleets, and 3) promote retail biodiesel distribution to the public

For nearly a decade, Metroplan hosted numerous CACC meetings and several workshops, administered grants and contracts, hired consultants, prepared newsletters for printing, and worked with DOE, EPA, the State Energy Office and various other Clean Cities stakeholders to advance the goals and objectives of the CACC Program. In 2007, Metroplan conducted an Analysis of Idle Reduction Strategies which is posted at www.ozoneactiondays.org/2007MetroplanAnalysisOfIdleReductionStrategies.pdf.

In 2007, the CACC Program was renewed again for another five year period. Shortly thereafter the CACC Coalition was expanded statewide and renamed the Arkansas Clean Transportation (ACT) Partnership. During 2008, Winrock International agreed to take on a coordination role and began hosting Clean Cities meetings. On October 3, 2008, Winrock hosted a successful Alternative Fuel Vehicle (AFV) Odyssey Day event at their Little Rock headquarters. The Clean Cities host agency function was formally transferred from Metroplan to Winrock International on February 6, 2009. Metroplan continues to participate in the renamed Arkansas Clean Cities Coalition, including the Steering Committee and Working Groups (refer to arcleancities.org).

3. Ozone Flex

In December 2001, ADEQ and the Little Rock Regional Chamber of Commerce agreed to work through Metroplan and participate in EPA's Ozone Flex Program, which could potentially forestall a nonattainment designation under the one-hour ozone NAAQS which was still in effect at that time. The Central Arkansas Clean Air Task Force was formed with broad stakeholder representation to advise the Metroplan Board regarding air quality issues, including the development of an Ozone Flex Plan to keep the region in attainment. A consultant was hired to assist Metroplan and the Clean Air Task Force, an Ozone Flex Plan was developed, and a Memorandum of Agreement was signed in March 2003 that established various voluntary emission control strategies to forestall nonattainment of the one-hour ozone standard, as well as help maintain the promulgated but not yet implemented eight-hour ozone standard. When the one-hour NAAQS was revoked in June 2005 the Ozone Flex Agreement with EPA was subsequently terminated. A copy of the 2003 Central Arkansas Ozone Flex Plan is posted online at www.ozoneactionsdays.org/2003FlexPlan.pdf.

4. Green Agenda

As the central Arkansas Council of Governments and MPO, Metroplan helps communities deal with common environmental issues like air quality that transcend local political boundaries. Since METRO 2030 was adopted in 2005, Metroplan has led a coordinated effort to address Goal 3, Environmental Quality, and the associated objectives. Metroplan helps facilitate the quality growth of our local communities by developing and supporting plans and projects that protect and enhance our natural environment and contribute to long-term economic vitality. This coordinated effort is called the Central Arkansas Green Agenda, and supports interagency regional planning efforts related to –

- Maintaining good air quality as measured by NAAQS attainment
- 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 for 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

The Green Task Force, comprised of local government representatives, was formed in the spring of 2009 to guide the development of these programs. The Green Task Force is an advisory group that serves as a clearinghouse for policies, programs and projects on environmental resource quality and conservation and reducing fossil fuel consumption. The Green Central Arkansas website (www.greencentralar.org) was created to facilitate the sharing of green information by local governments and other public agencies in central Arkansas. Metroplan is also monitoring federal and state legislation related to air quality, greenhouse gases, and energy policy that may impact CARTS Area transportation planning.

5. Transportation Conformity and Interagency Coordination

Given the uncertainty of an ozone NAAQS nonattainment designation, preparations have been underway to address the transportation conformity provisions of the Clean Air Act.

Federal regulations require that metropolitan transportation plans, programs, and projects must conform to the purpose of the State Implementation Plan (SIP) required by Section 110 of the Clean Air Act (CAA) of 1970, as amended. A SIP is the federally approved and enforceable plan by which each state identifies how it will attain and/or maintain the National Ambient Air Quality Standards (NAAQS). Transportation Conformity would apply to the transportation plans, improvement programs, and projects developed, funded, or approved by the U.S. Department of Transportation (USDOT), Metroplan, AHTD, or CATA, one year after any portion of the CARTS Area is designated an Ozone NAAQS nonattainment or maintenance area.

Federal regulations also require the SIP to include well-defined interagency consultation procedures for the development of the SIP, long-range plan (LRP), transportation improvement program (TIP), and associated conformity determinations involving Metroplan, AHTD, ADEQ, EPA, FHWA, and FTA. In order to prepare for possible Ozone NAAQS nonattainment and transportation conformity, Metroplan and the AHTD started working on drafting interagency consultation procedures for transportation conformity in anticipation of a possible nonattainment designation in the year 2000. As the risk of nonattainment waxed and waned, work on an interagency agreement did also.

After revised eight-hour ozone NAAQS were issued in March 2008, a CARTS Air Quality Planning Group was formed to coordinate the development of an interagency agreement that would be executed in the event of a NAAQS nonattainment area designation. In order to facilitate and maintain a record of group communications a Yahoo! Group website was created at tech.groups.yahoo.com/group/cartsaq. The agencies currently participating in the CARTSAQ group include –

- Arkansas Department of Environmental Quality (ADEQ)
- Arkansas State Highway and Transportation Department (AHTD)
- Central Arkansas Transit Authority (CATA)
- Federal Highway Administration-AR Division (FHWA) - also represents the Federal Transit Administration-Region 6 (FTA)
- Metroplan (MPO)
- United States Environmental Protection Agency-Region 6 (EPA)

From a transportation planning standpoint, an Ozone NAAQS nonattainment area in central Arkansas would be expected to have the following consequences –

- **Interagency MOA**. As previously noted, well defined interagency consultation procedures for the development of the SIP, LRP, TIP, and associated conformity determinations would be established. An interagency Memorandum of Agreement (MOA) would be used for this purpose, and subsequently the MOA would be included in a "Conformity SIP".
- **State Implementation Plan**. A regional emissions inventory would be conducted by ADEQ, and based on that inventory a State Implementation Plan (SIP) would be developed by ADEQ to achieve the NAAQS within a specified time period in cooperation with the EPA and in consultation with affected agencies, such as Metroplan. The SIP would include separate emission budgets for on-road mobile, non-road mobile, and other anthropogenic emission sources. The inventory and SIP development could take two to three years to complete. Transportation conformity would apply to the on-road emissions budget.
- **Transportation Conformity.** The Metropolitan Transportation Plan for the CARTS Area (LRP) and CARTS Transportation Improvement Program (TIP), and any amendments to these documents would be subject to the transportation conformity provisions of the CAA. Transportation conformity requires that planned activities not cause any new NAAQS violations, worsen existing violations, or delay timely attainment of an air quality standard. Metroplan would be responsible for approving and submitting conformity determinations covering the entire non-attainment area, even for those areas that may extend beyond the CARTS boundary. The Metroplan Board (MPO) would be responsible for making conformity determinations on the LRP or TIP, and on any amendments to the LRP or TIP. The MPO's conformity determinations would have to be approved by EPA and U.S. DOT (FHWA/FTA). Federal approval would be contingent upon a quantitative demonstration of conformity with the on-road emissions budget established in the SIP (or through a similar interim emissions test in the absence of an approved SIP emissions budget for on-road sources).

6. CARTS Travel Model Improvement Program

From 2001 through 2004, Metroplan undertook a CARTS travel model improvement program, in part to support any transportation conformity determinations that might be required in the event of a nonattainment designation. Metroplan consultants helped determine travel model improvement needs during Phase I, while a different consultant team actually developed the 2000 base year computerized travel model during Phase II. The CARTS travel model covers the entire four counties of Pulaski, Faulkner, Lonoke and Saline, uses TransCAD™ software, and includes a post-processor that interfaces with EPA's Mobile Source Emission Factor Model (MOBILE6). This travel model was designed to effectively simulate existing and future roadway and transit networks in the four-county area. More specifically the CARTS travel demand model (TDM) is designed to forecast travel demand in ways that will be acceptable to FHWA, FTA and EPA, and its post-processor was included to estimate regional emissions from on-road sources in concert with regional emissions inventories, SIP development, and conformity determinations. EPA is currently transitioning from MOBILE6 to the new Motor Vehicle Emissions Simulator Model (MOVES). Accordingly the TDM's air quality post-processor will be updated to interface with MOVES. The CARTS TDM base year was calibrated to match Highway Performance and Monitoring System (HPMS) estimates of daily vehicle miles traveled (DVMT). However, when it becomes necessary and through the interagency consultation process noted above, the CARTS TDM will be updated, improved and revalidated using new local data. A TDM update and revalidation will be costly and take approximately two years to complete. Since the CARTS TDM was developed following the 2000 Census using block level data for some Traffic Analysis Zone (TAZ) inputs, it is anticipated that the next CARTS TDM update will occur following the 2010 Census when block level data becomes available. Both Metroplan and the AHTD use the CARTS TDM for planning projects and coordinate to maintain consistent model results.

General Implications of Conformity on the CARTS Planning Process

If an Ozone NAAQS nonattainment area were designated in the CARTS Area, the regional transportation planning process would be significantly impacted by the transportation conformity provisions of the CAA.

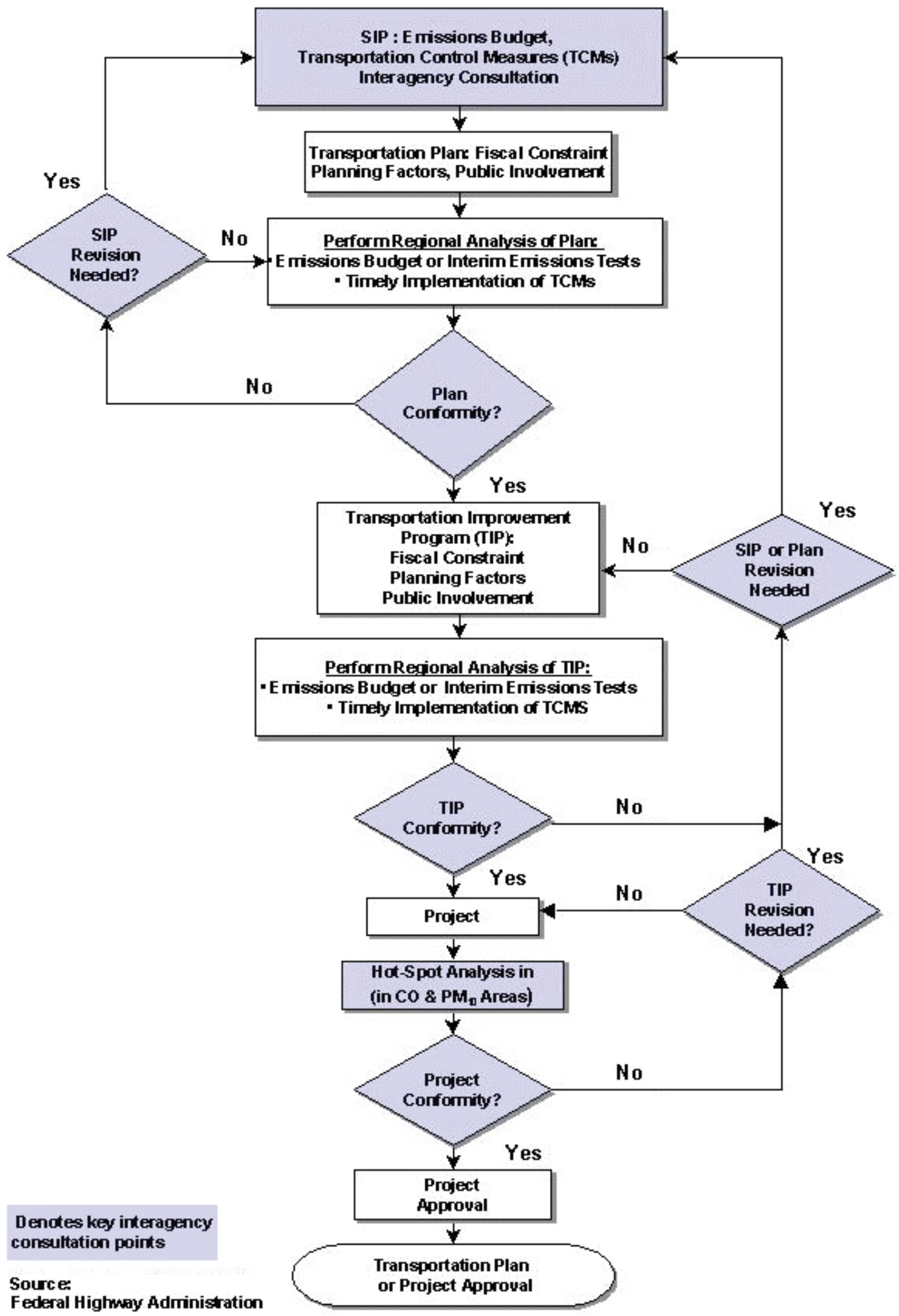
1. Due to the lengthy time required to prepare a conformity determination and obtain federal approval, a CARTS LRP and TIP update schedule of every other year should be established, although various actions outside Metroplan's control may trigger a conformity determination and could thus alter the LRP and TIP update schedule. Interim TIP amendments would be restricted to "Exempt Projects" only, which means that all project sponsors should be forward thinking and be prepared during each TIP update cycle to provide all necessary project details.
2. The CARTS planning and programming process would be modified to address CMAQ funded projects, which must be separately approved through the interagency consultation process.
3. The CARTS Public Participation Plan would be updated to reflect the participation of non-traditional stakeholders, as well as the interagency air quality planning and consul-

tation process. This could result in adding new members to the CARTS Transportation Advisory Council (TAC) and Technical Coordinating Committee (TCC) and/or creating a joint TAC/TCC Standing Committee on Congestion Mitigation and Air Quality.

A graphic example of the transportation conformity process which shows key components of a transportation conformity determination is provided in Figure 13-3.

Figure 13-8

Transportation Conformity Process



14. Financials

Introduction

The development of a long-range plan is an eligibility requirement for federal transportation program funding. On June 9, 1998 the Transportation Equity Act for the 21st Century (TEA-21) was enacted replacing the Intermodal Surface Transportation Act of 1991 (ISTEA). TEA-21 authorizes Federal surface transportation programs over highways, highway safety, and transit for the five-year period 1998-2003. In addition, the Act requires:

> *"A financial plan that demonstrates how the adopted long-range transportation plan can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan, and recommends any additional financing strategies for needed projects and programs. The financial plan may include, for illustrative purposes, additional projects that would be included in the long-range transportation plan if reasonable additional resources beyond those identified in the financial plan were available. For the purpose of developing the long-range transportation plan, the metropolitan planning organization and State shall cooperatively develop estimates of funds that will be available to support plan implementation.[1]"*

Congress extended TEA-21 a total of twelve times during the 108th Congress. On December 8, 2004, President Bush signed into law a $388 billion omnibus funding bill (H.R. 4818), providing funds for transportation and other domestic programs for the current federal fiscal year (FY05). On August 10, 2005, President Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). However, this financial plan was developed using information prior to SAFETEA-LU enactment.

Method

Transportation facilities that are public responsibilities in the Central Arkansas region include a variety of road types such as the State Highway System, county roads and city streets. The system also includes several public transit services including Central Arkansas Transit Authority (CATA) fixed route service in Pulaski County, South Central Arkansas Transit (SCAT) fixed route service in Saline County and service to Pulaski County, and paratransit operations in all four counties in the CARTS area. Funding for construction, capital equipment, operations and maintenance of the facilities and equipment that comprise these facilities comes from a variety of federal, state and local sources. The basic method for assessing financial resources likely to be available involved review of historic data on program funding from each source and the amounts authorized under current legislation. The trends suggested by this review have been extended to 2030 in constant 2003 dollars.

[1] Transportation Equity Act for the 21st Century (TEA-21), Public Law 105-178.

For federal and state programs related to highway funding, the analysis of fiscal resources expected to be available to the central Arkansas region was performed by the Arkansas Highway and Transportation Department (AHTD). The department considered allocations of funds under federal programs expected to be available to Arkansas, the availability of state funds to match specific federal program allocations, and the proportion of total state and federal funding historically expended on projects within the CARTS area. The result of this analysis, expressed as an average annual funding under specific federal program categories, was supplied to Metroplan. Federal and State funding levels for 2003 remains at the same level estimated in 1998 due to the late passage of the new transportation bill.

To estimate funding from local government sources (i.e. cities, towns and counties) likely to be available for transportation purposes, an analysis of recent revenues was conducted.

Revenues and expenditures for public transportation were based on data provided AHTD from 2003. TEA-21 funding is included in figuring the federal portion for public transportation due to the delay be Congress in passing a new transportation bill.

TRANSPORTATION FUNDING SOURCES

Funding for the broad range of transportation services and facilities provided in a metropolitan area comes from an equally broad and diverse set of sources. The transportation services and facilities commonly found in a metropolitan area include: the road network (freeways, arterials, collector roads and local streets); public transportation services; and human service transportation providers.

Funding for the construction, acquisition, maintenance and operation of transportation facilities is derived from a variety of federal, state, local and private sources.

FEDERAL TRANSPORTATION FUNDING

In 1998, the TEA-21 was passed to build on the initiatives established in ISTEA. It is assumed that federal funding levels for the CARTS area will at least remain at TEA-21 levels throughout the 25 year plan period.

TEA-21 FUNDING CATEGORIES

- National Highway System (NHS)
- Surface Transportation Program (STP)
- Interstate Maintenance
- Congestion Mitigation and Air Quality Improvement (CMAQ)
- Bridge Program
- High Priority Projects (HPP)

Table 14-1 presents the federal annual average allocations for the CARTS region by category.

Table 14-1
Annual Average Federal Funding By Category – Base Year 2005

NHS	$5.62 million
STP[1]	$18.28 million
HPP	$0.60 million
Bridge	$3.72 million
Interstate Maintenance	$8.29 million
Enhancement	$1.57 million
Federal Transit	$6.72 million
Total	**$44.80 million**

[1] STP includes state, metro and small urban.

1. National Highway System

The NHS program, created in 1991, is intended to support roads of national significance. The NHS focuses on roads such as the interstate system and those significant to national defense, to multimodal connectors and to international trade. The NHS funds may be applied to transit projects if certain tests are met. The project must be in the same corridor as a NHS designated facility and the project must help to improve the level of service on the NHS facility. The project must be more cost-effective than improving the NHS facility. Up to 50% of NHS funds may be transferred to Interstate Maintenance, STP, CMAQ and/or Bridge fund categories. All NHS funding, with the approval of the Secretary of Transportation and after an opportunity for public comment, may be transferred to STP if it is in the best interest of the public. Selection of projects and programming of funds for NHS projects is done by the state transportation agency (AHTD) in cooperation with the Metropolitan Planning Organization (Metroplan).

2. Surface Transportation Program (STP)

Federal guidelines permit a wide range of flexibility in the use of STP funds. Funds may be used for roadway or transit capital projects as well as for bike and pedestrian ways. STP funds, however, may not be used to support transit operating costs.

Ten percent of STP funds allocated to the state must be allocated for safety programs and another 10% allocated for transportation enhancement programs. The remaining 80% of STP funds are required to be allocated as follows:

- 62.5% to urbanized and other areas of the state in proportion to the area's relative share of the state population; (referred to as attributed STP) and
- 37.5% to any area of the state.

Project selection and programming of STP funds (allocated to metropolitan areas of over 200,000 population) is by the Metropolitan Planning Organization (Metroplan) in cooperation with the state (AHTD).

Funds allocated for transportation enhancement and safety activities are eligible to be used for the following:

- Hazard elimination
- Railway-highway crossing improvements
- Provision of facilities to be used for pedestrians and bicycles
- Provisions of safety and educational activities for pedestrians and bicyclists

- Acquisition of scenic easements and scenic or historic sites
- Landscaping and other scenic beautification
- Historic preservation
- Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals)
- Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails)
- Control and removal of outdoor advertising
- Establishment of transportation museums.[2]

3. Interstate Maintenance

The interstate maintenance program provides funding for resurfacing, restoring, rehabilitating and reconstructing most routes on the Interstate System. The addition of single occupancy lanes is ineligible for funding under this category. Apportioned funds are based on the following formula:

- 33-1/3% based on total lane miles on Interstate System routes open to traffic in each state as a percent of the total such lane miles in all states.
- 33-1/3% based on total vehicle miles traveled (VMT) on Interstate System routes open to traffic in each state as a percent of such vehicle miles traveled in all states.
- 33-1/3% based on the total of each state's annual contributions to the Highway Account of the HTF attributable to commercial vehicles as a percent of the total such annual contributions by all states.[3]

Up to 50% of the interstate maintenance apportionments may be transferred to NHS, STP, CMAQ or Bridge.

4. Congestion Mitigation and Air Quality Improvement Program

CMAQ was created to address congestion and air quality problems in those areas not meeting the national ambient air quality standards. Arkansas currently does not have any officially designated air quality non-attainment areas, therefore; funds are apportioned under the state's discretionary STP. The West Memphis area may be designated a non-attainment area for ozone in the near future. When this occurs, CMAQ funding will be distributed in West Memphis on the basis of either specific projects or per capita population. Remaining funding may still be used as discretionary STP by the state in other areas that are in attainment with air quality standards.

5. Bridge Program

The Highway Bridge Replacement and Rehabilitation Program (HBRRP) provides funding assistance to replace or rehabilitate deficient bridges and to seismically retrofit bridges located on any public road. Up to 50% of HBRRP funding may be transferred to Interstate Maintenance, NHS, STP and /or CMAQ.

6. High Priority Projects (Demo Projects)

High Priority Projects (HPP) are projects specifically designated by congressional action with specific funding assignments. In the CARTS region the following projects are HPP:

- Construct access route between interstate highway, industrial park and Slackwater Harbor: $.75 million
- Construct Geyer Springs rail-grade separation: $.75 million

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[2] TEA-21, 23 U.S.C., 101 (a) (35).
[3] FHWA.dot.gov, fact sheets.

- Construct Baseline Road rail-grade separation: $3.75 million
- Construct North Belt Freeway: $5.25 million
- Development of Little Rock Port Authority: $2 million
- Development of Little Rock River Rail Project: $2 million
- Improvements to I-30 from Benton to Geyer Springs: $2 million

The designated funding may only be used to fund the specified projects.

7. Federal Transit Funds

- **5309 (formerly Section 3)** -This federal program subsidizes the cost of construction of a newly fixed guideway system or an extension to an existing fixed guideway system. A fixed guideway system refers to any transit system that uses exclusive or controlled rights-of-way or rails, entirely or in part. 5309 is also referred to as New Starts and is funded under Capital Investment Grants. 5309 funds are allocated at the discretion of the Secretary of Transportation although Congress earmarks all available funding. Funding is available for a total of three years and 80% is Federal with a 20% local match.[4]

- **5307 (formerly Section 9)** - The federal program to help subsidize the operating and/or capital cost of mass transit. Eligible costs include: planning, engineering, most administrative, maintenance, fuel, parts and operating costs. Federal share is not to exceed 80% of the net project cost. The federal share may be 90% if the cost is for vehicle-related equipment attributable to compliance with the Americans with Disabilities Act and the Clean Air Act. The federal share may not exceed 50% of the net project cost of operating assistance. These funds are allocated by a formula based on population and population density for urban areas with a population between 50,000 and 199,999.[5]

- **5311 (formerly Section 18)** - 5311 funds are provided to offset a portion of the cost of providing transportation services in rural areas. Some portions of the CARTS area are currently defined as "non-urbanized." Funding is determined by a formula based on the latest U.S. Census figures for areas with a population less than 50,000. The matching ratio is a maximum of 50% of the net operating costs and 50% local match. The maximum federal share for capital and project administration is 80% unless the project meets the requirements of the Americans with Disabilities Act, the Clean Air Act or bicycle access projects, then the maximum federal share is 90%.

- **5310 (formerly Section 16)** - 5310 provides funding for transportation services to the elderly and disabled. The funds are allocated by a formula that considers the number of elderly individuals and individuals with disabilities in each state. The 5310 funds may be allocated to private non-profit corporations or public bodies and the matching ratio is 80% federal and 20% local.

[4] 49USC5309
[5] 49USC5307

Section 14: Financial

President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) on August 10, 2005, too late for development of METRO 2030 and its financial plan adopted on September 28, 2005. Although SAFETEA-LU has technically expired, it remains valid via congressional continuing resolutions. METRO 2030.2 follows the intent of SAFETEA-LU in regard to financial constraint and the development of the financial plan. METRO 2030.2 represents an addendum to and revision of METRO 2030. It is not a "new" long-range transportation plan wherein the plan horizon has been extended another five years into the future to develop a plan for the Year 2035.

METRO 2030.2 maintains the minimum twenty-year plan horizon required by federal regulation, while clearly demonstrating financial conformity for the revised 2030 plan.

The methodologies for assessing the financial resources/costs likely to be available for METRO 2030.2 were modified somewhat from METRO 2030. Expected revenue and costs were developed and stated in constant dollars for METRO 2030. The tighter financial plan requirements of SAFETEA-LU in regard to forecasting procedures and year-of-expenditure (YOE) issues, coupled with the uncertainty of future transportation funding levels and legislative frameworks, necessitated modifications from the methodologies used in METRO 2030.

METRO 2030.2 FUNDING CATEGORIES and FORECAST METHODOLOGIES

With the exception of a few major federal fund categories being subdivided further for clarification and the inclusion of a new federal fund category related to air quality attainment status, fund categories/programs and program definitions remain essentially the same as those used for METRO 2030.

FORECASTING ROADWAY REVENUE

New statewide and MPO revenue fund marks in inflation-adjusted dollars by fund category were initially developed by AHTD utilizing the following assumptions.

- Statewide Program funds used the year after apportioned, except for FY 2010 Apportionment which is used for both 2010 and 2011.
- Revenue estimates provided for 2010 and inflated at 3.9% a year, except for Enhancement and STP Urban <200,000 funds which were held constant.
- Matching funds are assumed to be provided by the State on most State Highways.
- Unless otherwise noted, estimates are based on average SAFETEA-LU funding throughout the life of the Act and an assumed 93% Obligation Limitation on Federal-Aid highway funds. THE ESTIMATES ARE NEITHER LIMITS NOR GUARANTEES.
- Bridge Fund - Estimates are distributed by the study area's proportion of the statewide length of functionally obsolete and structurally deficient bridges off the Interstate system.
- CMAQ Fund (Congestion Mitigation and Air Quality) Non-attainment - Estimates are based on the FY 2009 Crittenden County per capita amount.
- Enhancement Fund - Forty-five percent of statewide funds distributed propor-

tionately among the study areas by population. Includes State and ATEP projects.

- Interstate Maintenance - Assumes $58,000,000/year through 2012 goes to bond repayment. Based on study area percent of statewide Interstate lane-miles.
- SRTS (Safe Route To Schools) Fund – Statewide total of $1.090 per year distributed based on study area's percent of population.
- NHS (National Highway System) Fund - Distributed by an average of the study area's proportion of statewide NHS lane-miles and VMT.
- REC-TR (Recreational Trails Program) Fund - Statewide total of $1.090 per year distributed based on study area's percent of population. After 2010 grown at 3.9%.
- Safety Fund - Distributed by average of area's proportion of statewide Federal-aid eligible lane-miles and vehicle-miles traveled (VMT). This category includes some sub-categories of funds such as rail-highway crossings that were previously included with the STP category. Eligible projects are described in 23 USC 148.
- STP (Surface Transportation Program) Funds - Distributed by average of area's proportion of statewide Federal-aid eligible non-freeway roadway VMT and lane miles.
- STP Urban <200,000 Fund - 2010 STP funds for small urban areas <200,000 distributed at $5.39/capita based on population of urbanized areas <200,000 and cities of over 10,000. Funds for 2013, when Census urbanized area populations should be released, are based on $5.86 per capita using State Data Center growth forecasts. Assumes Fayetteville-Springdale-Rogers urbanized area exceeds 200,000 in 2010 Census. Two (2) million is available for roadway projects with a one (1) million maximum and two (2) million is available for signal/intersection improvements with a $0.350 million maximum.
- STP Urban >200,000 Fund - 2013 estimates are based on per capita funds throughout SAFETEA-LU grown to 2013 at 3.9% a year. Assumes Fayetteville-Springdale-Rogers urbanized area exceeds 200,000 in 2010 Census.
- State Maintenance Fund - Average State dollars spent on routine maintenance determined by lane-miles on State Highways + $2,000,000/Highway District for overlays distributed by averaging the area's % of District VMT and lane-miles.
- Earmarks Fund – The dollar value of earmarks received within the CARTS area from 1998-2008 totaled $69,036,415; averaging $6,265,038 per year. 2010-2014 actual TIP programmed figures. The two multi-year periods represent number of period years time the yearly earmark average.
- Matching Local Funds – Local funds were assumed to be available to match all federal funds forecast to be available.

Those fund marks by year were then modified slightly in an effort to accurately reflect the dollars programmed in the draft FY 2010-2013 TIP/STIP. Moneys originally forecast to be available during the 2010-2013 period but not programmed in the draft TIP/STIP were carried forward into the two remaining future plan periods (2014-2019 and 2020-2030) on a one-third/two-thirds basis, respectively; in order to maintain the overall original fund balances.

Table 14-1, Annual Roadway Fund Estimates for METRO 2030.2, details the roadway funding forecasts by category, plan year and assumed methodologies.

Local Annual Revenue Sources

Local revenue sources were derived by a compilation of historical street/road fund annual budgets from reporting CARTS' jurisdictions. Compilation of funding sources was complicated by differences among the jurisdictions in reporting. The categories for local revenue are as follows:

- State Gas Tax Turnback
- Local Taxes
- Miscellaneous Income
- General Fund
- Interest Income

1. State Gas Tax Turnback

This is the largest source of revenue for roadway improvements. Arkansas levies a gasoline tax of 21.6 cents per gallon. Revenues generated from this tax are apportioned as follows:

- $13 million goes to the State Aid Road Fund, which is divided among the counties to be used for the County Aid road system.
- 75% is divided equally among the seventy-five counties.
- The remaining 25% is distributed on the basis of population according to the most recent census, with each county receiving the proportion that its population bears to the total population of the state.

2. Local Taxes

The second largest source of revenue, local taxes, includes property taxes, sales taxes and city taxes. The counties may levy a three mil road tax that is shared with the cities. Local property tax is generated based on the assessed value of taxable property within a jurisdiction. While property tax revenue may be used for a multitude of purposes, a certain share of it is typically used for roadway, infrastructure or other public capital improvements.

3. Miscellaneous Income

Miscellaneous income, the third largest local revenue category, is derived from a variety of sources such as donations, sale of materials and commissions.

4. General Fund

The fourth largest revenue source, the general fund, is that "pot of money" from which a typical local jurisdiction pays its operating bills during the course of a fiscal year. As opposed to specific funds, such as street fund or transportation fund, the general fund may be used to pay a variety of costs, including transit, at the discretion of the local governing body and within given confines of the adopted budget.

5. Interest Income

The funding for roadway spending from interest income is the fifth largest funding source in the CARTS area. Interest income is the money generated from the interest earnings of other public monies of the jurisdiction.

Local Roadway Spending History

Spending was divided into four primary categories. Personnel, the largest category, contains expenses such as salaries, insurance, taxes and other fringe benefits for employees. Other categories include capital expenditures, operational and miscellaneous.

Mass Transit Funding

Funding for mass transit operations has historically been much more limited than roadway funding. Mass transit in the CARTS area is funded by federal programs, fare revenue, general fund (local contribution), and state assistance. In many metropolitan areas a dedicated funding source is identified as the primary funding source for mass transit services. These dedicated sources are often local sales taxes, motor fuel taxes, a portion of real property taxes, special assessments and others. In the CARTS area, the primary funding in 2005 was from local jurisdictions' general fund distributions.

GENERAL FUND

The largest source of transit funding in the CARTS area was from contributions of the local governments participating in the Central Arkansas Transit Authority. Local contributions to CATA operations were made by Cammack Village, Little Rock, Maumelle, North Little Rock, Sherwood, Jacksonville and Pulaski County.

FARE REVENUE

Revenue from CATA operations, primarily from the farebox, is the second largest source of funding for CATA operations.

State Funding

Transportation funding from state sources were provided by the AHTD as either annual averages or 2030 total.

1. **State Funds** - State funds were determined by figuring what it would take to match forecasted federal funds, plus fully fund state projects.

2. **Road Maintenance** - Road maintenance revenue was determined by an average of what was spent in previous years for routine maintenance, plus $2 million annually for overlays. This forecast assumes funding will at remain least equal with previous spending.

3. **Mass Transit** - Mass transit funding varies from year to year based on legislative appropriations, but is very limited.

Transportation Funding Projections

Table 14-2 summarizes the estimated annual funding available in 2003, by category, and forecasts annual average funding available using various assumptions, as indicated below. The $119.88 million represents the area's current commitment to transportation. The 2003 total represents a 14% increase over funding in 1998. Total funding over the 25-year plan period is estimated to be $3.8 billion, a 12% increase over 2025 projections. Federal funding 2003 totals are the same as 1998 totals due to late passage of a new transportation bill. All projections are in constant (un-inflated) 2003 dollars.

Overall Forecast Assumptions

1. **Federal Roadway Funding**

   Funding is assumed to remain constant through the 25-year plan period at TEA-21 levels; plus the inclusion of projects listed in the FY 2000-2001 CARTS Transportation Improvement Program (TIP) and/or State Transportation Improvement Program (STIP).

   - NHS: $140.52 million
   - State STP: $306.26 million
   - Metro STP: $150.75 million
   - Bridge: $93.00 million
   - Interstate Maintenance: $207.15 million
   - Enhancement: $39.25 million
   - HPP: Funding already included 2000-2001 funding. The total reflects only the 90% obligation limitation: $15.00

Table 14-2
Anticipated Revenues for METRO 2030

Revenue Sources	Base Year Annual Amount 1998 (Millions $)	Base Year Annual Amount 2005 (Millions $)	Forecast	25 Yrs Total *METRO 2030* (Millions $)
1. Federal				
National Highway System (NHS)	$11.32	$5.62	Constant	$140.52
Surface Transportation Program (STP)				
- State	$13.97	$12.25	Constant	$306.26
- Metro	$5.31	$6.03	Constant	$150.75
High Priority Projects (HPP) (Demo)	$0.59	$0.60	Constant	$15.00
Bridge	$2.88	$3.72	Constant	$93.00
Interstate Maintenance	$7.56	$8.29	Constant	$207.15
Enhancements	$1.63	$1.57	Constant	$39.25
5307 (old FTA Sec. 9)	$4.67	$3.44	Constant	$86.10
5309 (old FTA Sec. 3)	-	$2.45	Constant	$61.29
5310 (old FTA Sec. 16)	$0.17	$0.48	Constant	$11.88
5311 (old FTA Sec. 18)	$0.35	$0.35	Constant	$ 8.70
Total Federal	**$48.45**	**$44.80**		**$1,119.90**
2. State				
State Funds	$9.07	$8.01	Constant	$200.30
Road Maintenance	$1.81	$4.15	Constant per capita	$103.73
Mass Transit	$0.15	$0.18	Constant	$ 4.56
Total State	**$11.03**	**$12.34**		**$308.59**

Revenue Sources	Base Year Annual Amount 1998 (Millions $)	Base Year Annual Amount 2005 (Millions $)	Forecast	25 Yrs Total *METRO 2030* (Millions $)
3. Local				
Roadway				
Gas Tax Turnback	$21.60	$33.74	Constant per capita	$843.54
Other Sources	$5.20	$4.18	Constant per capita	$104.58
Taxes	$12.20	$23.37	Constant per capita	$584.20
Transit				
General Fund	$4.30	$6.83	Constant per capita	$170.69
Farebox*	$1.40	$1.98	Constant per capita	$49.53
Human Services**	$0.61	$0.0	Constant per capita	$0.0
Total Local	**$45.31**	**$57.99**		**$1,752.54**
Total	**$104.79**	**$117.20**		**$3,181.03**

* *2030 assumes an increase in farebox revenues based on increased ridership*

** *Base year 2005 and 25-year total Human Services included in general fund*

Funding Note: The Surface Transportation Program (STP) – Metro fund split into two funding pools by the Metroplan Board in 2000. Seventy percent of the funds, the regional urbanized area (RUZA) funds are dedicated to funding transportation improvements on the Strategic Transportation Network comprised of the RAN, strategic regional transit and strategic regional bicycle networks. The remaining thirty percent, the local urbanized area (LUZA) fund, is divided on a per capita basis among member jurisdictions to fund transportation improvements, consistent with METRO 2030 vision, goals and objectives, on any federally eligible project proposed at the discretion of the member jurisdiction.

Funding is subject to an obligation limitation, which is set aside for HPP and may not be used elsewhere and does not expire if not used by the end of the fiscal year but carries over until obligated.

2. Federal Transit Funding

- 5307 funding was forecast by assuming the funding of $3.44 million for the entire plan period.
- 5309 - Assumed at $2.45 million level throughout the 25-year plan period.
- 5310 and 5311 are assumed to remain at TEA-21 funding levels throughout the 25-year plan period.

3. State

- To receive federal funding the state must match 20% of federal allocations. Funding is assumed to at least equal the 20% match for programmed projects for the 25-year plan period. State funding estimates, therefore; are based on 20 per-cent of the METRO 2020 federal roadway funding.

- Funding is assumed to remain at constant per capita level. This means that funding will increase at the same rate as population increases in the CARTS area.

- State funding for mass transit is assumed to remain at the same level through this plan period as evidenced in recent years. Forecast was made using the 1998 total of $60 thousand, divided by four years (1995-1998). This generated an average of $15 thousand annually. The average was then multiplied by 25 for a total of $.375 million over the 25-year life of the plan.

4. LOCAL REVENUE

For all local revenue, the assumption is that per capita funding levels remain constant. This implies that revenues generated will increase generally at the same rate as population.

- Gas Tax Turnback

The following formula was used:

T=((((F/P1)*P1)*Y)+(((F/P1)*P2)*Y))/2
Where:
F= Annual amount in 2003 gas tax turnback dollars
P1= 2000 decennial census population
P2= 2030 forecasted population
Y= 30-year plan period
T= 2030 gas tax dollars

- Taxes property/road

The following formula was used:

T=((((F/P1)*P1)*Y)+(((F/P1)*P2)*Y))/2
Where:
F= Annual amount in 2003 taxes property/road dollars
P1= 2000 decennial census population
P2= 2030 forecasted population
Y= 30-year plan period
T= 2030 taxes property/road dollars

FORECASTING TRANSIT REVENUE

The forecasting of transit fund revenues followed the same generally procedures as for roadway. However, since most of the fund categories are related to non-urban systems or the application processes for those funds are determined at the state level, the fund table and the issues related to financial constraint focused on the urban systems funded via 5307.

5307 Transit Funds. Conway will be eligible for these funds if designated an urbanized area after release of the 2010 Census in 2013. Funding for the Conway urban population will be at the similar per capita rate as the other areas, 3.5%.

Table 14-2, Annual Transit Fund Estimates for METRO 2030.2, details the transit funding forecasts by category, plan year and assumed methodologies.

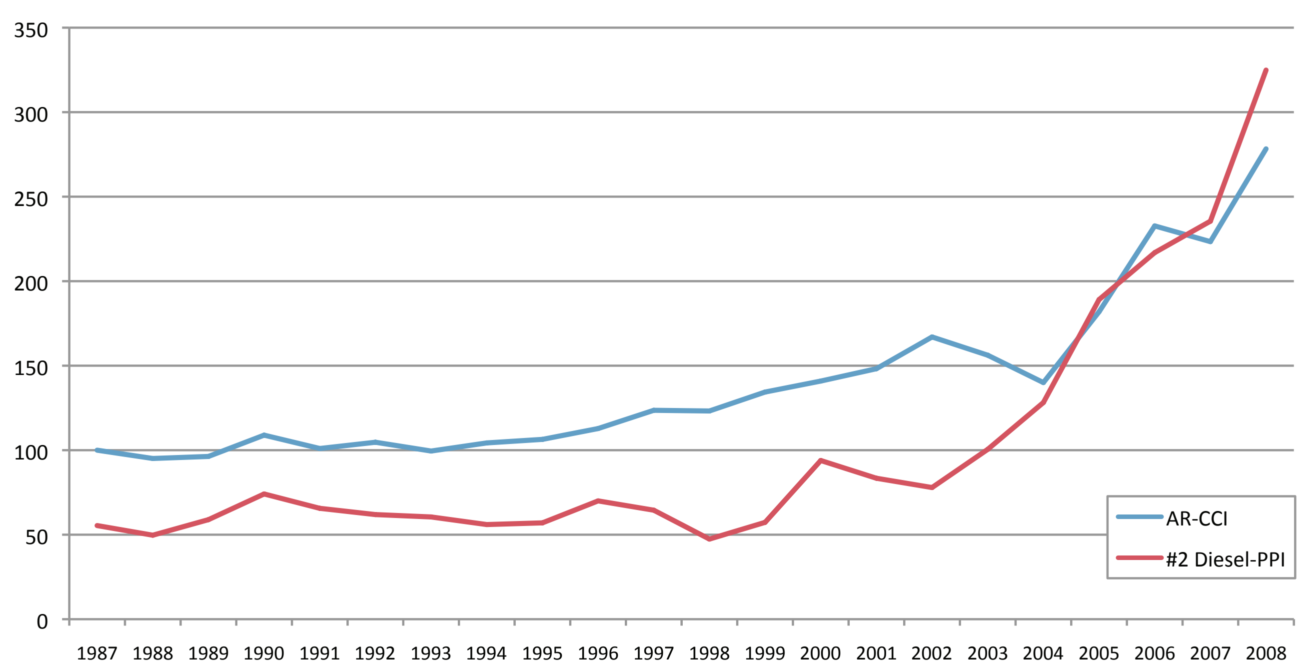
FORECASTING COSTS

The methodology for forecasting future project costs was a combination of two methodologies. First, 2005 costs reflected in METRO 2030 were adjusted for inflation at 1.8518 to derive a new 2010 cost estimate. The 2010 estimates were then inflated at 1.07 per year and placed in the appropriate year of the TIP to derive the actual year-of-expenditure cost for each project.

For projects beyond the four-year TIP cycle, the forecast methodology was developed by Metroplan as part of its research effort in support of the Governor's Blue Ribbon Commission on Highway Finance.

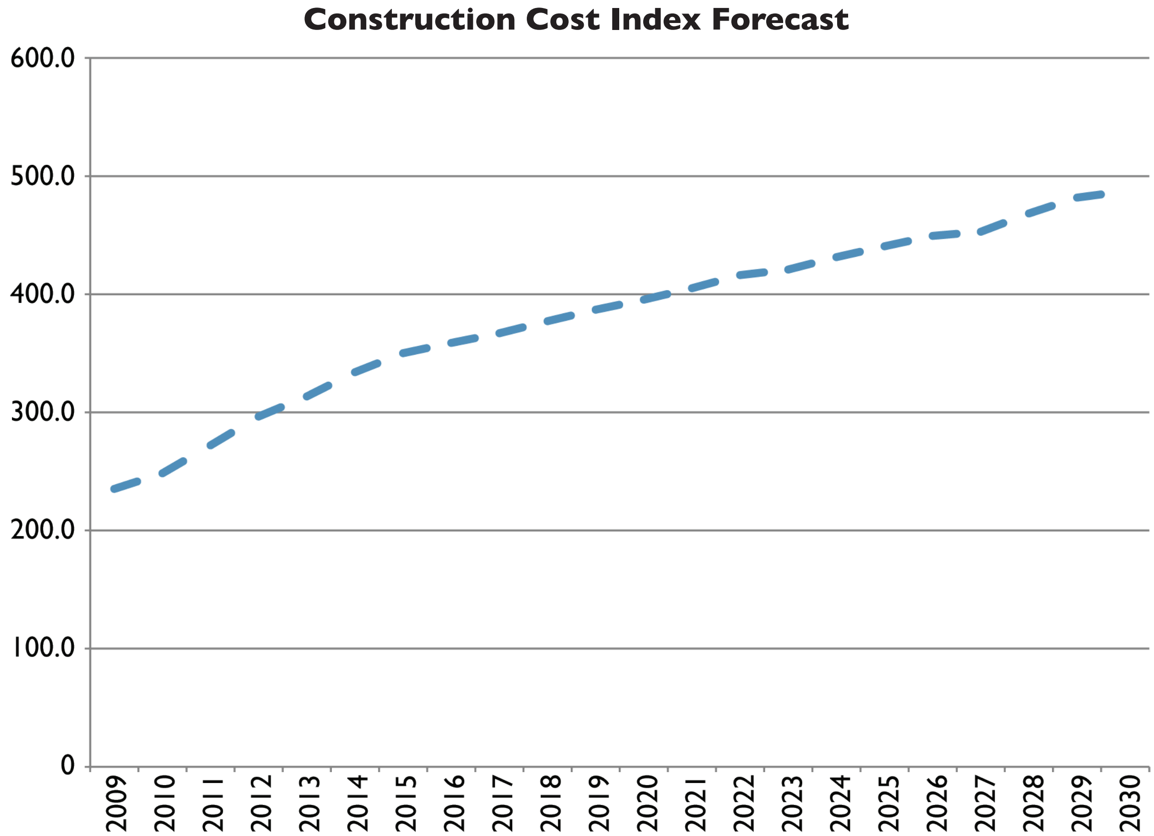
Figure 14-1

Comparison of AHTD CCI with PPI of Crude Petroleum and Petroleum Products



Source: Arkansas Bureau of Legislative Research, U.S. Bureau of Labor Statistics

Figure 14-2



Projecting highway construction costs many years into the future is always risky, but recent events, such as the major spike in costs that began in 2004 and the recession of 2008-2009, made this task even more daunting. In order to develop reliable cost estimates, the practices of departments of transportation in other states were reviewed, along with resources from the Federal Highway Administration and Associated General Contractors of America (AGCA). According to AGCA, petroleum-related products account for 38% of the Highway Producer Price Index tracked by the Bureau of Labor Statistics. Additionally, AGCA noted the correlation between highway construction cost increases and the steep increase in the price of diesel. Figure 14-1 confirms the relationship between the Arkansas Highway Transportation Department's Construction Cost Index (AHTD CCI) and the price of Diesel #2, with an extremely high correlation coefficient of .94.

Because of the strong correlation between highway construction costs and the price of diesel #2, projections to the year 2020 of the price of diesel #2 from the Energy Information Administration (EIA) were used to forecast the AHTD Construction Cost Index for the twenty-year plan period. Year-of-expenditure (YOE) cost estimates were then made for each project in the plan based on the overall yearly change in the forecasted construction cost index.

The forecasted value increase by year used in METRO 2030.2 is reflected in Figure 14-2 above.

15. Financially Constrained Plan

2030 Financially Constrained Plan

The development of a long-range plan is a requirement for federal transportation program funding. On June 9, 1998 the Transportation Equity Act for the 21st Century (TEA-21) was enacted replacing the Intermodal Surface Transportation Act of 1991 (ISTEA). TEA-21 authorizes Federal surface transportation programs over highways, highway safety, and transit for the six-year period 1998-2003. In addition, the Act requires:

> *"A financial plan that demonstrates how the adopted long-range transportation plan can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan, and recommends any additional financing strategies for needed projects and programs."*

The Financially Constrained Plan is taken then from the broad needs and aspirations of the Vision Plan and pared down to fit within the reasonably expected revenue. It reflects what we can do with the dollars the region will have between now and 2030. And it begins with the estimates of existing funding shown in Table 14-2.

ANTICIPATED REVENUES

Funding for the construction, acquisition, maintenance and operation of transportation facilities is derived from a variety of federal, state, local and private sources. Anticipated revenues from existing sources for *METRO 2030* are listed in Table 2.

Most of these funding categories have some limitation on their use. Even those roadway and transit funds that are legally "flexible" have historically been largely committed to a particular use and will continue to be during this plan period.

Based on current estimates of existing federal, state and local funds, total funding available for *METRO 2030* is $3.181 billion. In comparison, the total cost to implement the Vision Plan is estimated at $9.925 billion, in currently known costs – much more if it were possible to fully cost it to 2050.

Riverdale, LR from Emerald Park, NLR

The preparation of the *METRO 2030 Financially Constrained Plan* assumes $3.181 billion from existing revenue sources projected to be available during the plan period.

CONSTRAINED PLAN DEVELOPMENT

The selection of projects for the Constrained Plan from the transportation Vision Plan is always a challenging process. In this plan, historic state and regional priorities were funded first. Preserving and maintaining the existing transportation system has the top priority and consumed the majority of resources. After that, previously committed projects such as the North Belt Freeway and the regional Rail Grade Separations were funded. Optimizing the Regional Arterial Network via projects such as signal coordination and intersection improvements were then considered before additional capacity expansions on that system. Finally, on the transit side, the plan calls for new revenue to double the base bus transit services in order to reach a minimum acceptable level of transit service in the area.

Table 3 shows the funding breakdown for the *METRO 2030 Financially Constrained Plan* and is followed by more detailed explanations of each major category element.

Table 15-1
METRO 2030 Recommended Plan and Financial Constraints

		Recommended Plan Cost in $ Millions		
		Maintenance/ Operations	Capital	Total
Roadway Categories	Maintenance and Operations	$2,000		$2,000
	Committed Roadway Improvements		$305	$305
	Committed Rail Grade Separations		$41	$41
	Regional Arterial Network Optimization Improvements		$201	$201
	Additional Roadway Capacity Improvements		$216	$216
	Total Roadway Costs	**$2,000**	**$763**	**$2,763**
	Pedestrian and Bicycle	**$0**	**$25**	**$25**
	Total Roadway +Pedestrian/Bicycle	**$2,000**	**$788**	**$2,788**
Transit Categories	Local Transit Service - Fixed Route	$194	$36	$230
	Local Transit – Paratransit	$59	$5	$64
	River Rail	$14		$14
	Total Transit Costs	**$267**	**$41**	**$308**
Total Plan Costs/Budget		**$2,267**	**$829**	**$3,096**

MAINTENANCE AND OPERATIONS

Before identifying future roadway and non-roadway improvements to fund, the operations and maintenance costs of the existing transportation system had to be considered. *METRO 2025* estimated that maintenance of the transportation system in place at that time at $3.5 billion, more than the entire forecasted revenues. Subsequently, the state accelerated a major rehabilitation and reconstruction effort on some of the oldest segments of the area freeway system which has helped to reduce the burden of expected maintenance expenses during this plan period, but the estimated maintenance costs of our current transportation system still exceeds $3 billion. The decision was made to continue funding maintenance and operations at the same level as for *METRO 2025* at $2 billion, in order to undertake some major capacity improvements within the area.

COMMITTED NETWORK

The base roadway network consists of both the existing roadway network plus those future improvements to which funding or reasonably expected funding has been committed. These projects include a wide range of improvements including new facilities, widening of existing facilities, and new interchanges. The listing of committed roadway improvements, included in Table 15-2, totals approximately $305 million. Map 15-1 illustrates where these roadways are located.

Map 15-1
Committed Roadway Improvements

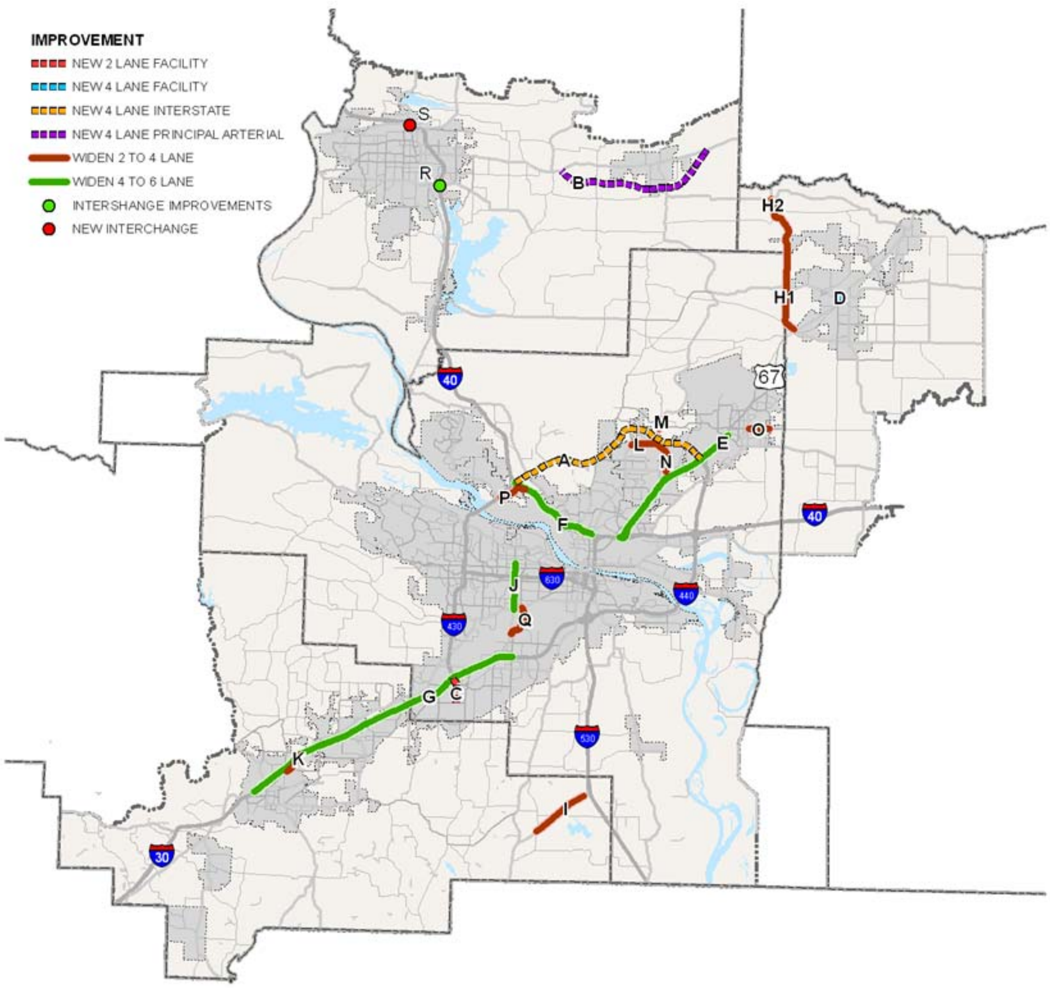


Table 15-2
Committed Roadway Improvements

		Facility	Limits	Improvements	Status	Cost(1,000) New Funding Required
New Facilities	A	North Belt	I-40/I-430 to I-440/US Hwy 67	New 4 Lane Interstate	Planned	$200,000
	B	Vilonia Bypass	East of Saltillo Rd/US Hwy 64 to US Hwy 64/Cypress Valley Rd	New 4 Lane Principal Arterial	Planned	$17,000
	C	South Loop	Mabelvale West to Alexander	New 2 Lane Facility	Planned	$2,722
	D	State Hwy 89	Realignment 2nd to Galloway/Main	New 4 Lane Facility	Under Construction	*
Widening	E	US Hwy 67	I-40/US Hwy 67 to S Redmond Rd	Widen 4 to 6 Lane	Under Construction/ Planned	$26,000
	F	I-40	I-40/I-30 to I-40/North Belt (West)	Widen 4 to 6 Lane	Under Construction	*
	G	I-30	Geyer Springs Rd(W of University Ave) to South of Hwy 5	Widen 4 to 6 Lane	Under Construction	*
	H	State Hwy 5	Hwy 5/US Hwy 67 to North of Hwy5/Hwy 89	Widen 2 to 4 Lane	Under Construction	*
	I	US Hwy 167	US Hwy 167/I-530 to Hwy 367	Widen 2 to 4 Lane	Planned	$17,000
	J	University Ave	Lee Ave (N of I-630) to Asher Rd	Widen 4 to 6 Lane	Planned	$8,474
	K	Military Rd	Congo Rd to I-30	Widen 2 to 4 Lanes	Planned	$3,100
	L	State Hwy 107	State Hwy 107/Kellog Rd to Brockington Rd/ Oakdale Rd	Widen 2 to 4 Lane	Planned	$2,899
	M	State Hwy 107	South of Jacksonville Cutoff Rd to N of Kelso Rd/Bobbit Ln	Widen 2 to 4 Lane	Planned	$3,200
	N	Brockington Rd	State Hwy 107 to Kiehl Ave	Widen 2 to 4 Lane	Planned	$5,000
	O	Graham Rd	E Center to J. P. Wright Loop Road	Widen 2 to 4 Lane	Planned	$2,700
	P	Crystal Hill Rd	Crystal Hill Rd/I-40 to I-430/Maumelle Blvd	Widen 2 to 4 Lane	Planned	$4,400
	Q	Mabelvale Pike	Asher to 56th Street	Widen 2 to 4 Lane	Under Construction	$2,845
Inter-change	R	I-40/State Hwy 60		Interchange Improvements	Under Construction	*
	S	1-40/State Hwy 25		New Interchange	Planned	$10,000
Total New Funds Required						**$305,340**
Total Cost of All Projects						**$465,440**

* Funds committed Prior to 2005

RAIL GRADE SEPARATIONS

The Metroplan Board approved funding 12 rail grade separations for completion by 2020. The locations of these rail grade separation projects are presented below and a list with their current status is provided in Table 15-3, in the Vision Plan. The total dollar commitment to complete these improvements is $41 million.

Map 15-2
Committed Rail Grade Separations

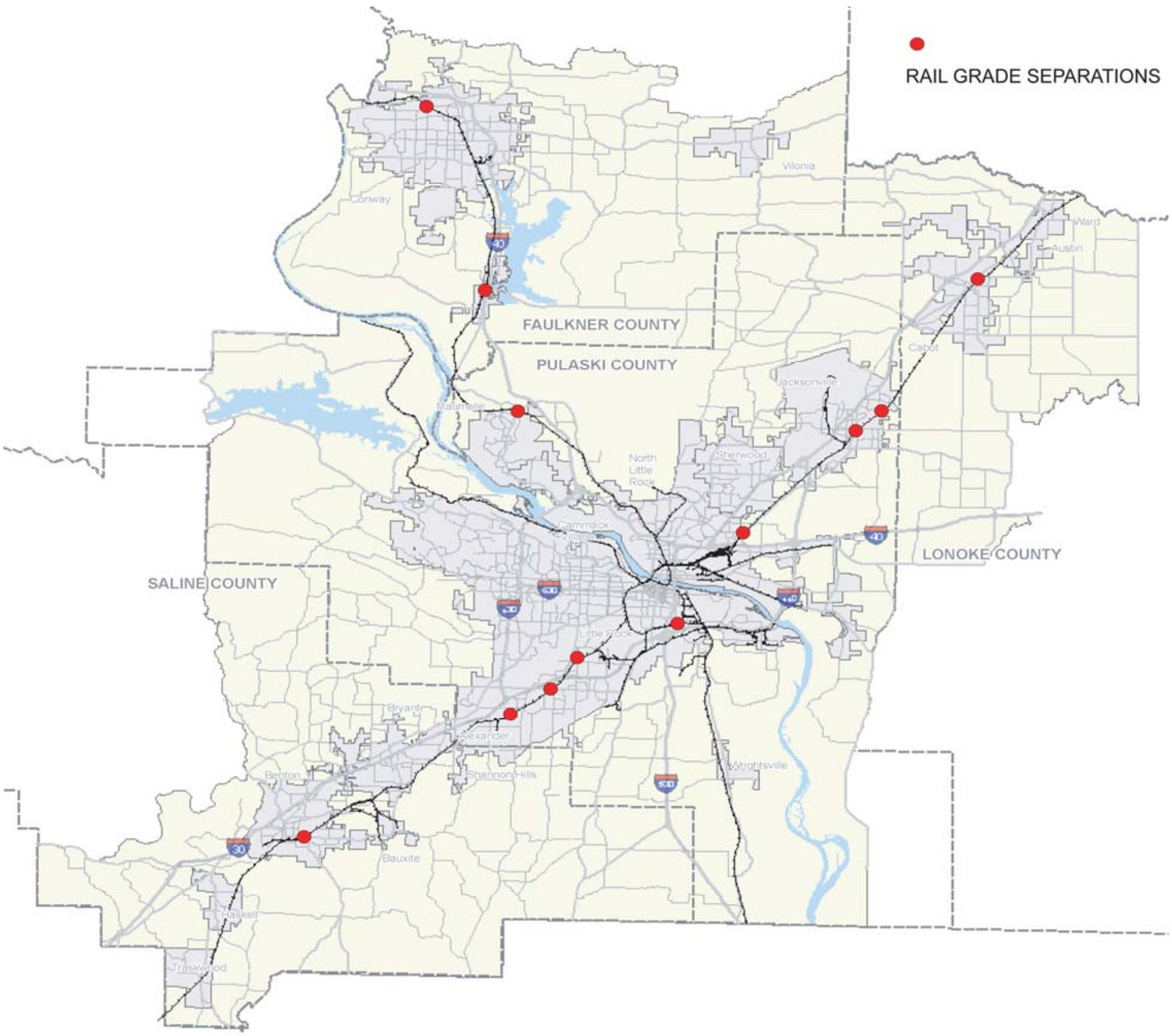


Table 15-3
Committed Rail Grade Separations by Jurisdiction and Funding Status

Rail Grade Crossing Location		Jurisdiction	Cost Estimate	Funds Programmed or Spent to Date	Additional Funds Required ($1,000)	Status
1	E. Main Street	Jacksonville	$4,323	$4,323	$0	Completed
2	Baseline Road	Little Rock	$5,200	$5,200	$0	Completed
3	Maumelle Blvd.	Maumelle	$6,491	$6,400	$91	Const. Scheduled TIP
4	North Cabot Area	Cabot	$4,778	$359	$4,419	Awaiting Const. $
5	Salem Road	Conway	$3,209	$388	$2,821	Awaiting Const. $
6	South Loop	Little Rock	$5,721	$921	$4,800	PE Underway
7	Edison Avenue	Benton	$6,440	$5,500	$940	PE Underway
8	Geyer Springs	Little Rock	$8,017	$844	$7,173	PE Underway
9	JP Wright Loop	Jacksonville	$3,332	$0	$3,332	No Action
10	Hwy. 89 Extension	Mayflower	$5,944	$0	$5,944	No Action
11	McCain/Fairfax	North Little Rock	$6,872	$0	$6,872	No Action
12	Confederate Blvd.	Little Rock	$4,684	$0	$4,684	No Action
Total			$65,011	$23,935	$41,076	

REGIONAL ARTERIAL NETWORK OPTIMIZATION IMPROVEMENTS

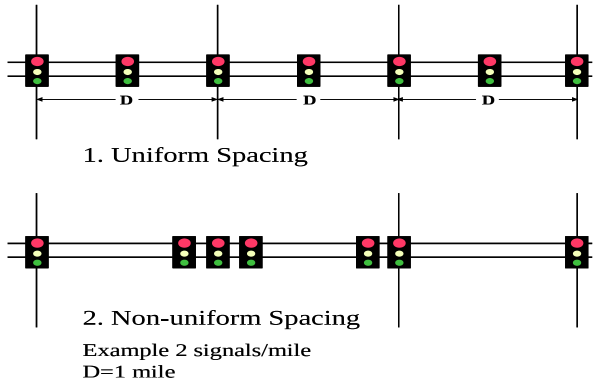
In 2002, Metroplan undertook the Regional Arterial Network (RAN) Study covering the highest priority 295 miles of the 682 mile system. The study identified a total of $201 million of improvements distributed among all modes (Table 15-5). They include intersection improvements, access management, intelligent transportation systems such as signal coordination, and minor widening categories intended to maximize the efficiency and capacity of the 16 priority Regional Arterial Network corridors. Consistent with *METRO 2030* Goals, these identified improvements should be implemented prior to undertaking any major widenings to add new travel lanes. Recommended improvements on the RAN total $201 million. Improvements by type, jurisdiction, and cost are identified in the study, although actual improvements suggested by the study will be determined by detailed engineering and planning studies as projects are moved forward.

Baseline Rd./ UPRR Grade Separation, LR

Types of Improvements Proposed

One purpose of the RAN Study was to identify roadway improvements that could be made short of very expensive major widenings to help improve the efficiency of the arterial system. The following are types of improvements that would be studied at the corridor level:

Signal Coordination



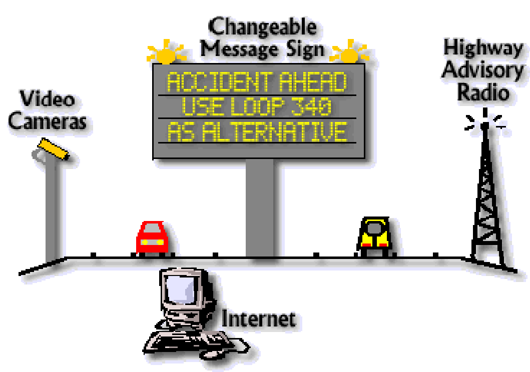
Intersection Improvements

Typical Roundabout

Dedicated Left-turn Bays, Right-turn Lanes

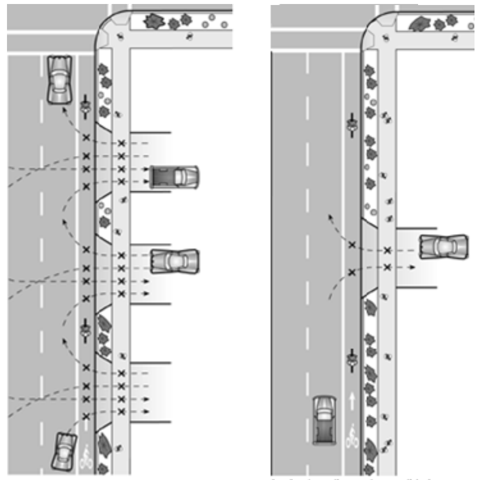
Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) provide for early detection of congestion and for a variety of ways to inform drivers of roadway status and alternative routes, if needed.



Driveway Spacing/Consolidation

Driveway consolidation is one tool that can be used to reduce conflict points on a roadway and increase safety and operating capacity.



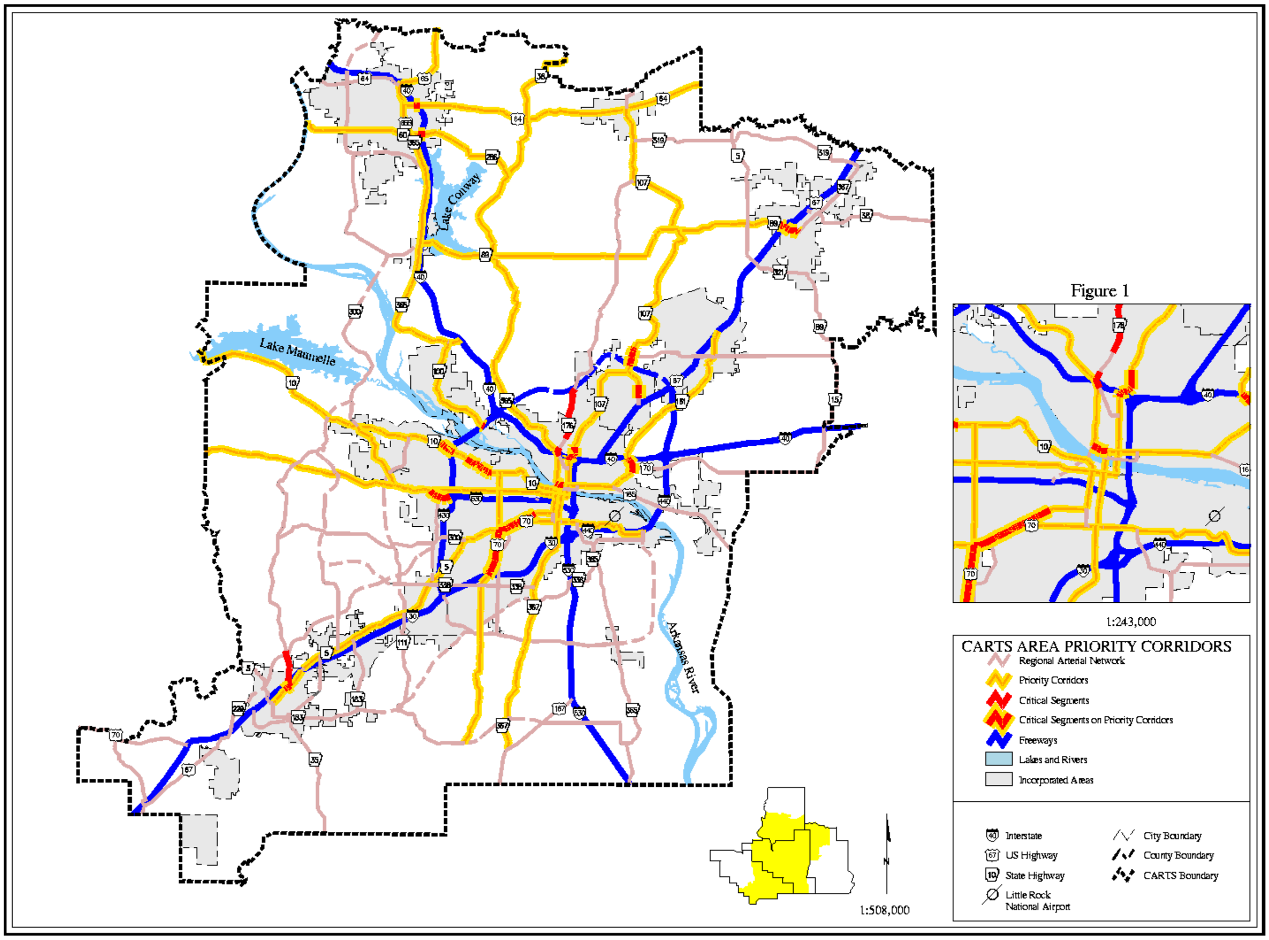
Bridge Replacement

Replacing narrow and functionally obsolete bridges can remove choke points along a corridor and improve operating capacity.

Selection of Projects

Metroplan has identified 295 miles on the RAN as Priority Corridors and Critical Segments that have the highest priority for state and regional investment (Map 15-3). The strategy outlined in the Constrained 2030 Plan is to first improve the capacity of existing roadways through intersection improvements; signal coordination and access management. The next step will be to widen priority corridors where warranted; and, finally, to expand the investment to the remaining routes on the RAN so that the region could approach a complete network by 2050. Projects on the RAN priority corridors will be selected for funding based on technical factors, such as congestion relief, and on the willingness of a jurisdiction or implementing agency affected to bring forward the project.

Map 15-3
Regional Arterial Network Priority Corridors



ADDITIONAL ROADWAY CAPACITY IMPROVEMENTS

Beyond the existing committed roadway improvements, the Transportation Advisory Council (TAC) recommended that $216 million be allocated to roadway capacity improvements in the following manner to implement important components of the Roadway Vision Plan. These allocations represent major capacity improvements to both the freeway system and the RAN.

Table 15-4
Additional Roadway Capacity Improvements

Additional Roadway Capacity Improvements	Cost in $ millions
Individual Projects	
Hwy. 67/167 - S. Redmond to North of Vandenberg	$32.00
I-430/I-630 Interchange	$50.60
Grouped Project Categories	
Arterial/Freeway Interchange Improvements	$52.50
Recommended Interchange Priorities**	
I-40 and Hwy. 65	
I-40 and Hwy. 64	
I-430 and Hwy. 10	
Hwy. 67/167 and Hwy. 5	
Hwy. 67/167 and Hwy. 89	
Capacity Improvements on the RAN*	$80.90
Recommended Intersection Improvement Priorities	
Hwy. 321 at Hwy. 367/Hwy. 5	
Hwy. 321 at Kerr Station Road	
Hwy. 321 at Hwy. 89	
Hwy. 89 at Campground Road	
Hwy. 35 at Market Street	
Total	$216.00

** Includes both priority and non-priority corridors*
*** Freeway interchanges in Jacksonville are assumed in the Hwy. 67/167 Individual Project*

Beyond the improvements to Hwy. 67/167 through Jacksonville identified in the preceding table, the TAC also recommended that projects or segments of projects, potentially affected by the decision to expand the Little Rock Air Force Base should be elevated in priority if the decision to expand the Base actually comes to fruition.

NON-ROADWAY CONSTRAINED PLAN ELEMENTS

Pedestrian/Bike

The Constrained Plan retains past plan recommendation to fund pedestrian/bike improvements in the metropolitan area at a minimum of $25 million over the plan period. Funding of this element can be accomplished through many funding sources, including, but not limited to: attributed surface transportation program (STP) funds, the Arkansas Transportation Enhancement Program (ATEP), local funds, private and, if incorporated into new road construction, most roadway eligible funding.

As in the case with the RAN, the Regional Urbanized Area (RUZA) pool of attributed surface transportation program funds is limited to funding only the regionally strategic elements of the Bike and Pedestrian Plan. This includes elements that link multiple jurisdictions. Consequently, most of the funding for the pedestrian and bicycle improvements will come from local government funds and the private sector.

TRANSIT

EXPANSION RECOMMENDED - ADDITIONAL FUNDING NEEDED

The Metroplan Board strongly recommends the passage of a .25¢ local sales tax in Pulaski County within the first five years of this transportation plan. Those funds should be used to replace the current general fund revenue contributions of CATA's member governments, with the remaining revenue dedicated to doubling bus transit and paratransit services from current levels. Such service expansion will automatically become part of this financially constrained plan upon passage of such a dedicated tax.

In addition, the Metroplan Board strongly recommends to the Board of Directors of the Central Arkansas Transit Authority that a comprehensive bus transit plan be developed prior to the proposal of a dedicated transit tax. Such a plan should involve all major beneficiaries, users and funding sources of the current system to identify the deficiencies and needs of the system, identify potential new ridership that will be attracted by an optimum system and define the capital and operational resources needed to achieve such a system.

Table 15-5
Regional Arterial Network Optimization Recommendations

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
1	CS9	Camp Robinson Rd.	At 37th St., 34th Street, 33rd Street, I-40 EB ramp	Signal upgrade	ST	ITS	NLR	71,875
2	2	University Ave.	At Asher Ave.	Reconfigure Asher Ave., modify right turn islands, access management	ST	INT	LR	1,552,500
5	2	University Ave.	Cantrell Rd. - Mabelvale Cutoff	Implement Advanced Traffic Control System	MT	ITS	LR	1,335,150
5	9	Financial Center Pkwy	At Shackleford	Grade separation/interchange reconfiguration study	ST	INT	LR	115,000
7	13	Hwy. 107	At Arnold Rd.	Add signal, intersection improvements	MT	INT	PUL	241,500
7	11	Hwy. 64	I-40 SB - I-40 NB	Interchange study	ST	INT	CON	57,500
9	3	Hwy. 65	At Pickles Gap Rd.	Add signals	ST	INT	CON	184,000
9	6	Asher	University Ave. - Roosevelt Ave.	Reconstruct four lanes, access management, consolidate driveways	ST	WID	LR	3,404,000
9	8	Hwy. 365	Hwy. 100 - Broadway	Alternative alignment study	ST	WID	NLR	25,971
12	5	Hwy. 10	At Rodney Parham Rd.	Intersection improvements (TBD)	ST	INT	LR	1,725,000
12	5	Hwy. 10	At I-430	Intersection improvements (TBD)	ST	INT	LR	1,150,000
14	9	Chenal/Financial Center Pkwy	End one-way pair - Shackleford	Implement Advanced Traffic Control System	ST	INT	LR	256,034
14	1	Hwy. 107	At North Hills Blvd., Osage Dr., Kierre Rd., Randolph Rd.	Signal upgrade	ST	ITS	NLR	130,525
17	8	Broadway Bridge	At bridge	Replace/rehabilitate critical bridge	ST	BRG	LR	27,378,178
18	3	Hwy. 365	Hwy. 100 - I-40	Access Management	ST	AM	MAU	112,700
18	7	Hwy. 161/Hwy. 70	At Hwy. 161/70	Add signal, turn lanes and pedestrian crossing treatments	ST	INT	NLR	241,500
20	8	S. Broadway	Markham - I-630	Access Management	MT	AM	LR	161,269

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
21	16	Hwy. 89	At Rockwood Dr., Hwy. 67/167 SB, Hwy. 67/167 NB, Reyland Dr.	Signal upgrade	ST	ITS	CAB	71,875
22	1	Hwy. 107/N. Main St./Scott St.	Corridor-wide	Implement Advanced Traffic Control System	MT	ITS	SHW/NLR/LR	1,484,115
25	5	Hwy. 10/Chester St.	Fairview Rd. - I-630	Implement Advanced Traffic Control System	MT	ITS	LR	1,310,572
25	CS13	Congo Rd.	Scott Rd. - Longhills Rd.	Add shoulders	ST	WID	BEN	163,588
27	1	Hwy. 107	At Club Rd., North Hills Blvd., McCain	Pedestrian Improvements	ST	ALT	SHW/NLR	20,700
29	14	Markham/3rd St.	Chenal Pkwy - Cumberland St.	Implement advanced traffic control system	MT	ITS	LR	1,395,547
30	2	University Ave.	At Markham St.	Intersection improvements	LT	INT	LR	1,610,000
32	3	Hwy. 65B/ Harkrider/Hwy. 365	Siebenmorgan Rd. - Hwy. 286	Reconstruct to four lanes with sidewalks	ST	WID	CON	3,121,618
34	7	Hwy. 161/Hwy. 70/Broadway	I-40 - Broadway	Implement Advanced Traffic Control System	LT	ITS	NLR	819,558
34	11	Hwy. 64	At I-40/Hwy. 64	Add park-and-ride lot	ST	ALT	CON	115,000
34	3	Hwy. 365	At 6th St., Bruce St., Robins St.	Signal upgrade	ST	ITS	CON	66,125
38	13	Hwy. 107/ Brockington Dr.	At intersection	Signal upgrade	MT	ITS	SHW	5,750
38	5	Hwy. 10	At Mississippi St.	Intersection improvements (TBD)	ST	INT	LR	1,725,000
40	6	Hwy. 5	At Fourche Creek, McHenry Creek, McHenry Relief	Replace critical bridges with new two lane bridges	ST	BRG	LR	1,312,482
40	8	Hwy. 365/Pike Ave.	At Pershing Blvd., 22nd St., 18th St., 16th St., 8th St.	Signal upgrade	ST	ITS	NLR	150,938
42	10	Hwy. 367	Gaines St. - South Loop (proposed)	Widen shoulders, add bike lanes	MT	WID	LR	1,182,784

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
42	1	Hwy. 107	At Dee Jay Hudson Dr., Maryland Ave., Kiehl Ave., Club Rd.	Signal upgrade	ST	ITS	SHW	218,500
45	6	Hwy. 5	I-30 - Otter Creek Rd.	Add shoulders	MT	WID	BRY	1,376,619
46	13	Hwy. 107	At Hwy. 89	Realign intersection	MT	INT	PUL	1,969,248
46	1	Main Street	At UP RR bridge	Replace bridge	ST	BRG	NLR	14,547,553
46	7	Hwy. 161	At I-40 EB, I-40 WB	Signal upgrade	ST	ITS	NLR	35,938
52	14	Markham St.	At Fair Park Rd.	Intersection improvements (TBD)	MT	INT	LR	1,725,000
54	7	Hwy. 70/Broadway	At Broadway N/W	Improve intersection	ST	BRG	NLR	241,500
57	8	Hwy. 365/Pike Ave.	At Hwy. 100	Add signal	MT	ITS	NLR	253,719
59	8	Hwy. 365/Pike Ave.	Pershing Blvd. - Hwy. 100	Access Management	MT	AM	NLR	237,259
59	11	Hwy. 64	At Skunk Hollow Rd., Rooster Rd.	Add signals	MT	INT	FAU	724,500
59	16	Hwy. 89	At Hwy. 67/167	Interchange area study	ST	WID	CAB	57,500
64	1	Hwy. 107	Kellog Dr. - McCain Rd.	Access management, sidewalks	MT	AM	SHW	866,353
64	14	Markham St.	At Brookside Drive and Mississippi Street	Intersection improvements (TBD)	MT	INT	LR	3,450,000
64	3	Hwy. 65	CARTS Bndry - I-40	Access management and sidewalks	ST	AM	CON	1,599,420
67	6	Hwy. 5	At Hilltop, Countyline	Add signals, intersection improvements	MT	INT	BRY	759,000
70	8	Hwy. 365	At Winfree Creek	Replace critical bridge	MT	BRG	PUL	7,752,688
71	1	N. Main St.	At 22nd St., 18th St., 13th St.	Add left turn lanes	MT	INT	NLR	724,500
71	8	Clinton Rd./Hwy. 365	Camp Robinson S. entr. - North Belt	Widen shoulders	MT	WID	PUL	957,980
71	11	Hwy. 64	Harkrider - I-40 SB	Access management, consolidate driveways	ST	AM	CON	1,562,008
74	1	Hwy. 107	McCain Rd. - A St.	Access management, add sidewalks, consolidate driveways	ST	AM	NLR	3,201,715
76	7	Hwy. 70/Broadway	At Lynch Dr. & Atkins Dr.	Signal upgrade	ST	ITS	NLR	96,313

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
77	14	Markham St.	Chenal Pkwy - I-430	Access Management	MT	AM	LR	596,059
77	5	Hwy. 10	I-430 - University Ave.	Access management, consolidate driveways	ST	WID	LR	7,383,000
85	CS18	Remount Rd.	At Five Mile Creek	Replace critical bridge	MT	BRG	NLR	150,871
87	8	Hwy. 365	At Parkway Drive, UP RR	Replace critical bridge	MT	BRG	NLR	4,878,668
87	6	Hwy. 5/Asher	I-430 - Colonel Glenn	Widen shoulders	MT	WID	LR	483,000
87	8	Hwy. 365	Military Dr. - I-40	Reconstruct two lanes, curb and gutter, sidewalks and bike lanes	MT	WID	NLR	2,865,966
87	15	Hwy. 65B/ Industrial Blvd	Hwy. 365 - Exchange Ave. (I-40 SB)	Capacity improvement (to be determined by interchange study)	ST	WID	CON	2,755,541
92	7	Hwy. 70	Hwy. 161 - Hwy. 165	Construct off-road path	MT	ALT	NLR	388,125
92	10	Hwy. 367	South Loop (proposed) - Hwy. 167	Widen shoulders	MT	WID	LR/PUL/SAL	1,294,014
95	6	Hwy. 5	At Lincoln, Longhills, Salem	Add signals and/or intersection improvements	MT	INT	BEN	471,500
100	14	Markham St.	At Bowman Rd.	Intersection improvements (TBD)	MT	INT	LR	2,875,000
101	11	Hwy. 64	Museum - Hwy. 36	Add off-road path	MT	ALT	CON/FAU	1,712,925
101	6	Military Rd.	Hwy. 35 - Congo Rd.	Access Management	MT	AM	BEN	506,000
101	11	Hwy. 64	Museum - Hwy. 36	Access Management	MT	AM	CON/FAU	1,066,503
101	14	Kanis Rd.	At Denny Rd.	Realign intersection	MT	INT	LR	230,000
101	9	Chenal Pkwy	Hwy. 10 - S. of Taylor Loop Rd.	Pave and widen shoulders	MT	WID	LR	423,488
106	CS18	Remount Rd.	Maryland Ave. - Camp Robinson Rd.	Add paved shoulders	ST	WID	NLR	345,380
109	8	Saltillo Rd.	At Little Cypress Creek	Replace critical bridge	MT	BRG	FAU	394,036
109	5	Hwy. 10	At Kavanaugh Blvd.	Intersection improvements (TBD)	MT	INT	LIT	575,000
109	5	Hwy. 10	At Tyler, Kavanaugh	Upgrade signals	ST	ITS	LR	11,500
113	1	Hwy. 107	At Kellog Dr.	Realign and signalize intersection	MT	INT	SHW	264,500

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
115	2	University Ave.	At Cantrell Rd.	Widen EB approach with new right turn lane, extend NB left turn lane	ST	INT	LR	644,000
118	8	Hwy. 36/Saltillo Rd./Clinton Rd.	S. of Pumping Station Rd. - Hwy. 89	Add paved shoulders	MT	WID	FAU	2,041,480
119	12	Roosevelt Rd./ Lindsey Rd.	22nd Street - Fourche Dam Pike	Improve/widen shoulders, add bike lanes	MT	WID	LR	6,414,108
121	12	Roosevelt Rd.	Asher Avenue/Hwy. 5	Realign intersection	MT	INT	LR	575,000
122	6	Hwy. 5	Otter Creek Rd. - I-430	Access Management	MT	AM	LR	3,576,500
125	7	Hwy. 70/Broadway	Hwy. 165 - I-30 EB Frontage Rd.	Reconstruct four lanes with curb and gutter, access management and sidewalks; consolidate driveways	MT	WID	NLR	5,826,015
129	6	Hwy. 5	I-430 SB - I-430 NB	Reconstruct interchange	MT	WID	LR	483,000
131	2	Chicot Rd.	Baseline Rd. - Mabelvale Cutoff	Access Management	MT	AM	LR	164,220
133	9	Kanis Rd.	At Chenal Parkway	Add signal at west intersection	MT	INT	LIT	471,500
133	7	Hwy. 161	Fairfax Dr. - I-40 WB	Access Management	ST	AM	NLR	322,000
135	16	Sayles Rd.	At Fortson Rd.	Add signal	LT	INT	PUL	241,500
137	7	Hwy. 161	Military Rd. - N. Beltway (constr.)	Add paved shoulder and bike lanes; replace low clearance underpass	MT	WID	PUL	5,080,102
140	8	Clinton Rd	Hwy. 89 - Camp Robinson S. entr.	Realign and pave (two lanes undivided with shoulders)	MT	WID	FAU/PUL	9,878,624
142	16	Hwy. 89	Hwy. 365 - I-40	Grade separation/interchange study	ST	INT	MAY	115,000
143	9	Chenal Pkwy	Hwy. 10 - End one-way pair	Add bike path	MT	ALT	LR	2,062,238
143	7	Hwy. 161	Hwy. 67/167 - 2nd St.	Access Management	MT	AM	JAX	215,740
145	2	University Ave.	At Cantrell Rd.	Construct SB right turn lane, widen and extend WB approach an build raised median	MT	INT	LR	1,035,000

RAN Priority Ranking*	RAN Corridor	Highway	Limits	Improvements*	Priority	Major Imp Type	Jurisdiction	Cost
148	5	Hwy. 10	Ranch Blvd. - Taylor Loop Rd.	Access management, sidewalks	MT	AM	LR	624,335
148	14	Kanis Rd.	CARTS Bndry - Chenal Pkwy	Add shoulders	MT	WID	PUL/LR	1,956,282
150	16	Sayles Rd.	At Batesville Pike	Reconfigure intersection	MT	INT	PUL	575,000
150	16	Sayles Rd./ Batesville Pike/ Tates Mill Rd.	Faulkner Co. line - Hwy. 107	Widen lanes, add paved shoulders	MT	WID	PUL	805,630
153	15	Hwy. 60	At Old Hwy. 60	Add signal	MT	INT	FAU	241,500
153	15	Hwy. 60	Arkansas River - Conway Loop	Widen shoulders	MT	WID	FAU	389,785
156	7	Hwy. 161	At Trammel Rd.	Add signal and reconfigure intersection; replace low clearance RR underpass	ST	INT	PUL	4,841,500
157	5	Hwy. 10	CARTS Bndry - Ferndale Cutoff Rd.	Widen shoulders, add off-road path	LT	WID	PUL	4,237,382
157	16	Hwy. 89	Hwy. 107 - Rockwood Rd.	Add off-road path	MT	ALT	PUL/CAB	1,656,000
160	12	Roosevelt Rd.	At Union Pacific RR	Replace critical bridge	MT	BRG	LR	4,239,194
160	2	Chicot Rd.	Mabelvale Cutoff - Hogue Rd	Widen/add shoulders, straighten curves	MT	WID	LR/SAL	9,513,950
168	12	Roosevelt Rd.	Asher Avenue/Hwy. 5 - Confederate Blvd.	Reconstruct four lanes with sidewalks	MT	WID	LR	7,827,781
Total								200,781,107

* *Exact improvements to be determined by engineering studies.*

ABBREVIATIONS
ST – Short Term, MT – Mid Term, LT – Long Term
ALT – Alternate modes
AM – Access Management
BRG – Bridge
INT – Intersections
ITS – Intelligent Transportation Systems
WID – Minor (non-capacity) Widenings

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Section 15: Financially Constrained Long Rang Plan

Table 15-1 shows the funding breakdown for the METRO 2030.2 Financially Constrained Plan and is followed by more detailed explanations of each major category elements. This table is formatted similarly to Table 15-1 in METRO 2030 for ease of comparison.

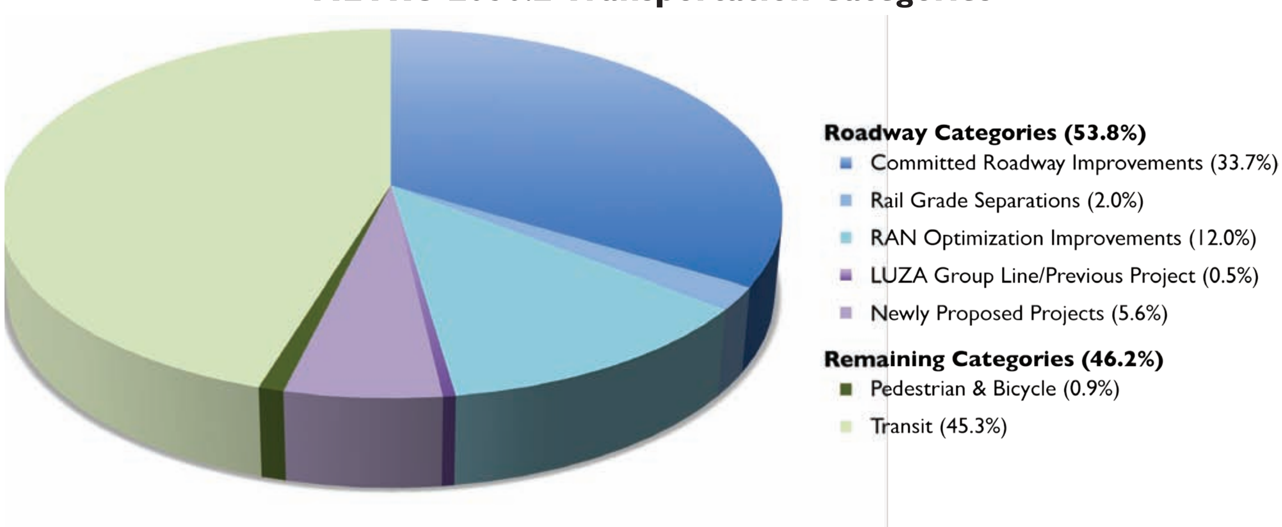
Table 15-1

METRO 2030.2 Recommended Plan and Financial Constraints

		Recommended Plan Cost in $ Millions		
		Maintenance	Capital	Total
Roadway Categories	Maintenance/Operations	1,655.2	-	1,655.2
	Committed Roadway Improvements	84.7	839.9	924.6
	Committed Rail Grade Separations	37.0	17.5	54.5
	Regional Arterial Network Optimization Improvements	312.5	17.3	329.8
	LUZA Previous Projects	10.8	1.6	12.4
	Additional Roadway Capacity Improvements	47.8	106.6	154.4
	TOTAL ROADWAY COSTS	2,148.0	982.9	3,130.9
	Pedestrian & Bicycle	0	25.0	25.0
	TOTAL ROADWAY/PEDESTRIAN/BICYCLE	2,148.0	1,007.9	3,155.9
Transit Categories	Local Transit Service-Fixed Route	-	-	543.7
	Local Transit-Paratran;sit	-	-	45.0
	River Rail	-	-	26.0
	TOTAL TRANSIT COSTS	1,094.2	147.8	1,242.0
TOTAL PLAN COSTS/BUDGET		**3,242.2**	**1,155.7**	**4,397.9**

Figure 15-1

METRO 2030.2 Transportation Categories



Roadway Element-

To develop the list of projects included in the roadway element of METRO 2030.2, projects listed in Tables 15-2, 15-3, 15-4 and 15-5 of the *METRO 2030 Metropolitan Transportation Plan, Technical Report* were reviewed to determine their current status and classified appropriately; as completed, substantially completed, modified or no progress.

The resultant list, as classed, along with updated 2009/2010 project cost estimates was presented to the TAC and TCC for review and approval. Projects classified as completed or substantially completed were dropped from further consideration. Projects where only a portion of the project had been completed necessitated a change in the original project scope or limits description and were then classified as "modified". The costs for those "modified" projects were then adjusted and/or updated to reflect the newly described project and included in METRO 2030.2. Finally, projects were no progress had been made since 2005, the costs were updated for 2009/2010 and the project retained intact for inclusion in METRO 2030.2.

Costs beyond 2010 were developed utilizing one of the two forecasting methodologies described earlier and applied individually to each project. The resultant year-of-expenditure (YOE) cost for each project was then determined and listed as appropriate in the plan.

In addition to the projects retained from review of those METRO 2030 tables, METRO 2030.2 includes two line items for projects funded by local urbanized area (LUZA) attributed-STP funds: 1) a grouped-project category line item for non-capacity improvement projects (detailed specifically in the TIP) and 2) one line item for a specific LUZA funded capacity improvement project.

The resultant list of METRO 2030.2 projects (developed from the process described above and shown above the red line in Table 14-2) are projects which fulfill the objective to complete the "Committed Roadway Improvements" by 2030; while at the same time reflecting the Metroplan Board's commitment to construct twelve rail grade separations by the Year 2020. A commitment originally made by the Board in 1995 as part of METRO 2020.

The remainder of transportation projects listed in Table 14-2 (below the red line, starting at line 131) is projects newly proposed for inclusion in METRO 2030.2. These projects were a part of the Vision Plan developed after METRO 2030, but had not been able to demonstrate financial constraint to be included in the adopted financially constrained plan. Most of the projects were brought forth through development of the draft 2010-2013 state transportation improvement program (STIP). Projects on lines 142 and 143 were amended into the list by the TCC and later approved upon review by the TAC.

Financial constraint for the METRO 2030.2 roadway element was determined in the following manner:

1) The funding marks by program category and plan timeframes were developed first resulting in a total Roadway Fund Estimate budget of $3.156 billion and a total Transit Fund Estimate budget of $1.241 billion. Total METRO 2030.2 plan budget is $4.397 billion.
2) Two cost forecasting methodologies were independently developed.
3) Cost estimates for the previously approved METRO 2030 list of projects (as

modified) were updated, and year-of-expenditure costs were developed by project as programmed by selected timeframe.

4) Costs of newly proposed roadway network improvements were developed or updated and costs by year-of-expenditure developed as programmed by selected timeframe.
5) The overall total Roadway Fund Estimate budget of $3.156 billion as compared against the list of Roadway Plan Improvements budget of $1.475 billion, leaving $1.680 billion or 53% of identified funding for maintenance and operations.

Transit Element-

To develop the list of projects included in the transit element of METRO 2030.2, see Table 14-3, the costs in 2009 dollars by route for maintaining the current CAT bus, paratransit and streetcar systems were developed by CATA staff. The 2009 costs by bus route, paratransit and streetcar systems were then forecast by year-of-expenditure using the same methodologies described for the roadway element to determine the overall costs to maintain the current CAT system over the twenty-year plan period.

In addition to the CAT system, a transit feasibility study for the City of Conway determined that it is “feasible” to establish bus service within the City of Conway over the plan period. The 2009 cost for establishing and operating a two-route bus system were estimated at $1.250 million per year, or $43.341 million over the plan period.

Combining the operating expenses of both transit systems with expected capital outlays produced forecasted expenditures of $ .615 billion during the plan period.

Transit projects included in the plan and funded through programs other than Section 5307 were not specifically listed due to the individual and cyclical nature of those programs’ decision-making processes.

Financial constraint for the METRO 2030.2 transit element was determined in the following manner:

1) The funding marks by program category and plan timeframes were developed first resulting in a total Transit Fund Estimate budget of $1.241.
2) The same two cost forecasting methodologies independently developed and used for the roadway element were used for the transit cost estimates.
3) Cost estimates by bus route for the CAT system, year-of-expenditure costs developed and programmed over the twenty-year plan period; total $ .423 billion.
4) Costs from the Conway Transit Feasibility Study were used for the proposed two route system, year-of-expenditure costs developed and programmed over the twenty-year plan period; total $ .043 billion
5) Capital costs over the plan period were assumed to equate to the projected federal funding available; total $ .149 billion.
6) Financial constraint was determined by project lines only for the Section 5307 funded CAT and Conway urban systems. The overall total transit 5307-funded budget of $ .615 billion compared favorably to expected draft transit plan main-

tenance/improvement expenditures of $ .615 billion.

7) Specific project/improvement lists were not developed for systems funded outside Section 5307 due to the competitive, annual decision-making process for distribution of those funds. It was assumed that the expenditures over the plan period would ultimately equal the $ .626 billion funding expected to be available over the life of the plan.

Figure 15-2

Annual Roadway Fund Estimates for METRO 2030.2[1]
(Millions of dollars of estimated obligation limitation + match)

YEARS	Bridge[2]	CMAQ Non-Attainment[3]	Enhancement[4]	Interstate Maintenance[5]	SRTS	NHS[6]	REC_TR	Safety[7]	STP/CMAQ Equity Bonus[8]	STP Urban <200,000[9]	STP Urban >200,000[10]	State Maintenance[11]	EARMARKS	TOTALS
2010	0.000	0.000	2.352	4.050	0.403	0.000	$1.000	2.531	12.000	0.369	20.239	7.283	6.605	**$69.974**
2011	0.000	0.000	2.444	4.050	0.403	6.986	$1.039	0.000	39.250	0.369	11.108	7.283	12.120	**$84.231**
2012	12.700	5.389	2.539	4.050	0.431	36.000	$1.080	5.725	0.000	0.369	10.008	7.283	0.000	**$84.721**
2013	55.500	5.599	2.638	4.050	0.431	6.875	$1.122	10.125	5.625	0.440	13.985	7.283	0.000	**$112.787**
2014-2019	24.453	38.489	18.138	150.596	15.507	162.325	$7.710	45.659	145.076	3.025	83.471	43.698	66.083	**$805.403**
2020-2030	73.532	98.188	46.271	382.861	38.161	406.076	$19.670	115.110	364.989	7.716	212.952	80.113	164.993	**$2,012.809**
Total	166.184	147.664	74.383	549.657	55.336	618.263	$31.620	179.150	566.941	12.289	351.762	152.943	249.801	**$3,155.994**

Revenue estimates are provided for 2010 and should be inflated at 3.9% a year. Note that Enhancement and STP Urban <200,000 funds stay constant.
All amounts shown are for Federal funds only. Matching funds are assumed to be provided by the State on most State Highways.

1 Unless otherwise noted, estimates are based on average SAFETEA-LU funding throughout the life of the Act and an assumed 93% Obligation Limitation on Federal-Aid highway funds. **THE ESTIMATES ARE NEITHER LIMITS NOR GUARANTEES.**
2 Distributed by the area's proportion of the statewide length of functionally obsolete and structurally deficient bridges off the Interstate system.
3 CMAQ - Congestion Mitigation and Aire Quality - Estimated by the FY 2009 Crittenden County per capita amount.
4 Forty-five percent of statewide funds distributed proportionately among the study areas by population. Includes State and ATEP projects.
5 Assumes $58,000,000/year through 2012 goes to bond repayment. Based on study area percent of statewide Interstate lane-miles.
6 NHS - National Highway System Distributed by an average of the study area's proportion of statewide NHS lane-miles and VMT.
7 Distributed by average of area's proportion of statewide Federal-aid eligible lane-miles and vehicle-miles traveled (VMT). This category includes some sub-categories of funds such as rail-highway crossings that were previously included with the STP category. Eligible projects are described in 23 USC 148.
8 STP- Surface Transportation Progam - Distributed by average of area's proportion of statewide Federal-aid eligible non-freeway roadway VMT and lane miles.
9 2010 STP funds for small urban areas <200,000 distributed at $5.39/capita based on population of urbanized areas <200,000 and cities of over 10,000. Funds for 2013 when Census urbanized area populations should be released are based on $5.86 per capita using State Data Center growth forecasts. Assumes Fayetteville-Springdale-Rogers urbanized area exceeds 200,000 in 2010 Census. $2 million is available for roadway projects with a $1 million maximum and $2 million is available for signal/intersection improvements with a $0.350 million maximum.
10 2013 estimate based on per capita funds throughout SAFETEA-LU grown to 2013 at 3.9% a year. Assumes Fayetteville-Springs-Rogers urbanized area exceeds 200,000 in 2010 Census.
11 Average State $ spent on routine maintenance determined by lane-miles on State Highways + $2,000,000/Highway District for overlays distributed by averaging the area's % of District VMT and lane-miles.
12 Current distribution of 5307 funds. Conway will be eligible for these funds if designated an urbanized area after release of the 2010 Census in 2013. Funding for the Conway urban population will be at the similar per capita rate as the other areas. Also starting in 2013 Fayetteville-Springdale-Rogers is expected to be officially designated as an urbanized area over 200,000 population and 5307 funds may no longer be eligible for operating expenses. A suggested average annual revenue growth rate is 3.5%. Each MPO should dicuss local funding levels and projects with the transit manager.

REC_TR- Recreational Trails Program - A mention of the program and project eligibility is all that is necessary, along with the estimated statewide amount of $1.090 million per year in 2010. After 2010 grow the estimated amount by 3.9%.
There is no estimate per MPO.

SRTS - Safe Routes to Schools - A mention of the program and project eligibility is all that is necessary, along with the estimated statewide amount of $1.090 million per year in 2010.
is reached. There is no estimate per MPO.

ARRA - American Resource and Recovery Act and EARMARKS are special funding approved by Congress.

TCSP, Public Lands and other special funding programs approved by Congress are not included in the above funding estimates.

1 STATEWIDE PROGRGAMS funds will be used the year after they are apportioned. Use the FY 2010 Apportionment for both 2010 and 2011.
2 CARTS and West Memphis.
3 Bi-State, Hot Springs, Jonesboro, NARTS, Pine Bluff, and Texarkana.
4 All areas if portion of planning boundary is outside the urbanized area.

Figure 15-3

Annual Transit Fund Estimates for METRO 2030.2[1]
(Millions of dollars of estimated obligation limitation + match)

YEARS	CATA Local	Transit (5307)[5]	Urban Systems CATA + 5307	Transit (5309)[6]	Transit (5310)[6]	Transit (5311)[6]	Transit (5316)[6] <200,000	Transit (5316)[6] >200,000	Transit (5317)[6] >200,000	Transit (5317)[6] < 200,000	TOTALS
2010	12.473	4.930	17.403	1.188	1.768	12.758	0.466	1.734	0.248	0.856	$35.099
2011	12.909	5.103	18.012	3.750	1.768	12.758	0.466	1.734	0.248	0.856	$38.270
2012	13.358	5.280	18.638	3.750	1.829	13.205	0.482	1.794	0.256	0.886	$39.472
2013	15.372	6.475	21.847	3.750	1.893	13.666	0.500	1.856	0.266	0.918	$43.278
2014-2019	106.567	44.720	151.287	27.754	13.539	97.719	3.569	13.283	1.900	6.556	$305.481
2020-2030	273.599	113.938	387.537	70.706	34.491	248.951	9.093	33.839	4.840	16.703	$780.364
Total	434.279	180.446	614.724	110.898	55.288	399.057	14.577	54.240	7.757	26.776	$1,241.964

Statewide Application-based Federal Transit Administration Programs[1]
The amounts shown are the 2010 Federal estimates. The suggested average annual revenue growth rate is 3.5%
FTA 5307 - Urbanized Areas
FTA 5309 - Bus & Bus Facilities
FTA 5310 - Elderly & Disabled
FTA 5311 - Nonurbanized Areas
FTA 5316 - Job Access > 200K[2]
FTA 5316 - Job Access < 200K [3]
FTA 5316 - Job Access Nonurbanized [4]
FTA 5317 - New Freedom > 200K [2]
FTA 5317 - New Freedom <200K [3]
FTA 5317 - New Freedom Nonurbanized [4]

1 Unless otherwise noted, estimates are based on average SAFETEA-LU funding throughout the life of the Act and an assumed 93% Obligation Limitation on Federal-Aid highway funds. **THE ESTIMATES ARE NEITHER LIMITS NOR GAURANTEES.**
2 Distributed by the area's proportion of the statewide length of functionally obsolete and structurally deficient bridges off the Interstate system.
3 Estimated by the FY 2009 Crittenden County per capita amount.
4 Forty-five percent of statewide funds distributed proportionately among the study areas by population. Includes State and ATEP projects.
5 Current distribution of 5307 funds. Conway will be eligible for these funds if designated an urbanized area after release of the 2010 Census in 2013. Funding for the Conway urban population will be at the similar per capita rate as the other areas. Also starting in 2013 Fayetteville-Springdale-Rogers is expected to be officially designated as an urbanized area over 200,000 population and 5307 funds may no longer be eligible for operating expenses. A suggested average annual revenue growth rate is 3.5%. Each MPO should dicuss local funding levels and projects with the transit manager.
6 These fund categories represent statewide totals and are determined through annual application processes.

Figure 15-4

Roadway Network Improvements - Year of Expenditure (YOE) - METRO 2030.2 LRP

Line #	RAN Priority	RAN Corr. #	Highway/Road	Limits	From	To	Improvements	Priority	Imp Type	Jurisdiction	Cost Est. Year	Cost Est.	2010-2013 2010 Cost	2011 Cost	2012 Cost	2013 Cost	2014-2019 Cost	2020-2030 Cost	TOTAL
1			I-630/I-430	Interchange			Modifications Phase III	COM	Reconstruction	LR	2009	6,120,316		86,308,000	7,715,699				94,023,699
2			I-40	Interchange			New Interchange	COM	New	MAU	2005	12,277,000	696,000				18,816,380		19,512,380
3			30/440/530	Interchange			Modifications	COM	Reconstruction	LR	2005	1,290,000	1,350,000						1,350,000
4			Hwy 67	Redmond Rd to Vandenburg Blvd.			Widen from 4 to 6	COM	WID	JAX	2005	27,171,193			7,049,000	4,387,000	41,644,009		53,080,009
5			I-40/Hwy 65	Interchange			Modifications	COM	Reconstruction	CON	2005	10,500,000	assumed in line item 140						0
6			Hwy 67	Interchange @ Hwy 5			Modifications	COM	Reconstruction	CAB	2005	9,702,000	798,000				14,869,799		15,667,799
7			North Belt	I-40/I-430 to I-440/Hwy 67			New 4 Lane Interstate	COM	NEW	JAX/SHW/NL	2008	200,000,000					16,478,430	685,287,704	701,766,134
8			South Loop	Mablevale Road to Alexander Road			New 2 Lane Facility	COM	NEW	LR	2005	2,722,000	assumed in line item 17						0
9			Hwy 67	Kiehl to 440			Widen from 4 to 6	COM	WID	SHW/JAX	2005	20,200,000	12,731,000						12,731,000
10			University Ave	19th to Asher Av			Widen from 4 to 6	COM	WID	LR	2005	8,474,000							0
11			Military Rd	Congo Rd to I-30			Widen from 2 to 4	COM	WID	Benton	2005	3,100,000	8,250,000						8,250,000
12			Hwy 107	N of Jacksonville Cutoff to Bayou Meto			Widen from 2 to 4	COM	WID	PULCO	2005	6,400,000							0
13			Brockington Road	Maryland to Kiehl Av			Widen from 2 to 4	COM	WID	SHW	2005	5,000,000							0
14			Graham Road	E Center to JP Wright Loop Road			Widen from 2 to 4	COM	WID	JAX	2009	9,491,926	2,026,000	7,995,824					10,021,824
15			Crystal Hill Road	Crystal Hill Rd/I-40 to Old Crystal Hill Rd			Widen from 2 to 4	COM	WID	NLR	2005	4,400,000						8,256,478	8,256,478
16									Committed Roadway Improvements		Subtotal		25,851,000	94,303,824	14,764,699	4,387,000	91,808,618	693,544,182	924,659,324
17			South Loop	UPRR @ South Loop			New rail grade overpass	COM	NEW	LR	2005	4,800,000	6,803,690						6,803,690
18			Geyer Springs	UPRR @ Geyer Springs			New rail grade overpass	COM	NEW	LR	2005	6,439,000	734,000				9,868,752		10,602,752
19			JP Wright Loop	UPRR @ JP Wright Loop			New rail grade overpass	MT	NEW	JAX	2005	3,332,000					5,106,800		5,106,800
20			Hwy 89 Extension	North of Hwy 89 @ Hwy 365			New rail grade overpass	MT	NEW	MAY	2005	5,944,000					9,110,089		9,110,089
21			McCain/Fairfax	UPRR @ Fairfax			New rail grade overpass	MT	NEW	NLR	2005	13,635,000		1,070,000	3,434,700	11,185,000			15,689,700
22			Springer Blvd	UPRR @ Springer Blvd			New rail grade overpass	MT	NEW	LR	2005	4,684,000					7,178,946		7,178,946
23									Rail Grade Separations		Subtotal		7,537,690	1,070,000	3,434,700	11,185,000	31,264,588	0	54,491,978
		1	Hwy 107/N. Main St./Scott St.								2005	22,176,820					33,989,369		33,989,369
		2	Chicot Rd./University Ave.								2005	14,609,670					22,391,554	1,208,448	23,600,002
		3	Hwy 65B/ Harkrider/Hwy 365								2005	9,949,245	2,555,000				4,691,591		7,246,591
		5	Hwy 10/Chester St.								2005	17,339,717				10,341,000	17,437,506	7,951,330	35,729,836
		6	Military Rd./Hwy 5/Asher		NOTE: FOR LINES 24 - 122						2005	13,088,601		2,361,000			18,048,704		20,409,704
		7	Hwy 161/Hwy 70/Broadway		Individual optimization projects are summarized						2005	20,269,463					19,847,709	3,236,915	23,084,624
		8	Hwy 36/Saltillo Rd./Clinton Rd./Pike/S. Broadway		By RAN Corridor/Critical Segment (CS) Number						2005	64,495,866				49,351,000	56,199,272	367,788	105,918,060
		9	Chenal/Financial Center Pkwy/Kanis Rd								2005	3,213,260					4,202,167		4,202,167
		10	Hwy 367								2005	2,476,798					3,796,072		3,796,072
		11	Hwy 64								2005	4,513,936					6,830,170		6,830,170
		12	Roosevelt Rd./Lindsey Rd.								2005	19,056,083				7,128,000	22,709,149		29,837,149
		13	Hwy 107/Brockington Dr.								2005	2,274,998					3,486,782		3,486,782
		14	Kanis Rd/Markham/3rd St.								2005	18,741,109					18,741,109		18,741,109
		15	Hwy 60/Hwy 65B/Industrial Blvd								2005	6,331,826					6,331,826		6,331,826
		16	Hwy 89/Sayles Rd./Batesville Pike/Tates Mill Rd.								2005	5,024,236					5,024,236	453,168	5,477,404
		CS13	Congo Rd.								2005	250,724					250,724		250,724
		CS18	Remount Rd.								2005	760,580					760,580		760,580
		CS09	Camp Robinson Rd.								2005	110,159					110,159		110,159
123									RAN Optimization Improvements		Subtotal		2,555,000	2,361,000	0	66,820,000	244,848,680	13,217,649	329,802,329
127			LUZA - Proposed Projects								2009		3,122,982	2,838,054	2,611,131	878,832			9,450,999
128			Scott Hamilton	Baseline Rd to JE Davis	Base Line Rd	JE Davis Drive	Widen		WID	LR	2009	2,991,000	2,991,000						2,991,000
129									LUZA Group Line/Previous Project		Subtotal		6,113,982	2,838,054	2,611,131	878,832	0	0	12,441,999
131	New		Conway Western Arterial Loop	I-40 So.Terminal Interchange to	I-40 S	I-40 N	New interstate interchange and new 4 la		NEW	Conway	2009	2,436,000	2,436,000						2,436,000
132	New		Conway Western Arterial Loop	I-40 So.Terminal Interchange	Hwy 365	Sturgis Rd	New 4 lane arterial		NEW	Conway	2009	5,532,000				7,376,143			7,376,143
133	New		Conway South Interchange	I-40 So.Terminal Interchange	I-40	Hwy 365	New interstate interchange and new 2 la		NEW	Conway	2009	23,000,000		13,979,000		13,700,000			27,679,000
134	New		Hwy 5	Saline Co. to Otter Creek Rd	County Line Rd	Otter Creek Rd	Widen		WID	LR	2009	12,000,000	13,643,000						13,643,000
135	New		Hwy 5 Drainage Structure				Reconstruction		BRG	BRY	2009	1,000,000		1,262,000					1,262,000
136	New		Hwy 367 UPRR Overpass		W 34th Street		Reconstruction		BRG	LR	2009	6,200,000			6,724,000				6,724,000
137	New		Hwy 10 UPRR Viaduct				Safety Improvements		SAFETY	LR	2009	1,700,000			2,254,000				2,254,000
138	New		Hwy 67 Cable Median Barrier	Jacksonville to Cabot	Vandenburg	Hwy 89	Safety Improvements		SAFETY	JAX/CAB	2009	1,500,000			1,990,000				1,990,000
139	New		I-30 Cable Median Barrier	Benton to Hwy 70	Sevier Street	Hwy 70	Safety Improvements		SAFETY	JAX/CAB	2009	1,700,000			1,700,000				1,700,000
140	New		I-40 Widening	I-40 Widening	Conway	Pulaski County	Interchange reconstruction and addition		WID	Conway	2009	36,000,000			42,420,000				42,420,000
141	New		Hwy 25 Relocation	I-40 to Hwy 25	I-40	Existing Hwy 25	New 2 lane arterial		WID	Conway	2009	9,000,000				10,002,000			10,002,000
142	New		Hwy 107	Bayou Meto to north of Arnold D	Bayou Meto	North of Arnold Drive	Widen to 4 lane		WID	JAX		8,695,313				11,593,975			11,593,975
143	New		Benton Parkway	Hwy 35 to River Street	Hwy 35	River Street			NEW	Benton		19,000,000				25,333,824			25,333,824
									NEWLY PROPOSED PROJECTS		Subtotal		16,079,000	15,241,000	55,088,000	68,005,942	0	0	154,413,942
											Grand SubTotal		58,136,672	115,813,878	75,898,530	151,276,774	367,921,886	706,761,831	1,475,809,571
											Estimated $ for Maintenance		26,735,982	32,570,966	41,730,981	81,281,820	293,299,053	17,345,888	492,964,690
											Fund Mark Comparison		11,837,693	-31,582,830	8,822,598	-38,489,588	437,481,119	1,306,047,495	1,680,184,486
											Four Yr TIP Balance\ Total Budget					401,125,854			3,155,994,057
																182,319,749			
																-49,412,128			
																351,713,726			

Figure 15-5

Transit Network Improvements - Year of Expenditure (YOE) - 2030.2 LRP

Route #	Route Name	From	To	Improvements	Priority	Imp Type	Jurisdiction	Cost Est. Year	Cost Est.	2010-2013 2010 Cost	2011 Cost	2012 Cost	2013 Cost	2014-2019 Cost	2020-2030 Cost	TOTAL
1	Pulaski Heights							2009	$452,742	478,236	523,779	570,758	603,668	693,896	849,558	15,698,076
2	SMain Street							2009	$295,656	312,304	342,046	372,725	394,216	453,138	554,790	10,251,380
3	Baptist Medical Ctr							2009	$856,476	904,704	990,861	1,079,734	1,141,990	1,312,680	1,607,154	29,696,880
4	Levy/Amboy							2009	$378,690	400,014	438,108	477,403	504,930	580,400	710,601	13,130,446
5	WMarkham Street							2009	$848,484	896,262	981,615	1,069,658	1,131,334	1,300,432	1,592,157	29,419,771
6	Granite Mt							2009	$297,798	314,567	344,524	375,425	397,072	456,421	558,810	10,325,650
7	E Ninth							2009	$267,624	282,694	309,616	337,386	356,839	410,175	502,189	9,279,417
8	Rodney Parham							2009	$510,192	538,921	590,244	643,184	680,269	781,947	957,361	17,690,059
10	McCain Mall							2009	$786,534	830,824	909,945	991,560	1,048,732	1,205,484	1,475,909	27,271,758
11	ML King							2009	$317,880	335,780	367,757	400,742	423,848	487,200	596,493	11,021,960
12	Airport/Pres. Library							2009	$405,330	428,154	468,928	510,987	540,450	621,230	760,591	14,054,143
13	Pulaski Tech							2009	$497,976	526,017	576,111	627,783	663,981	763,224	934,438	17,266,489
14	Rosedale							2009	$817,506	863,540	945,777	1,030,605	1,090,029	1,252,953	1,534,027	28,345,660
15	65th Street							2009	$358,266	378,440	414,480	451,655	477,697	549,097	672,276	12,422,277
16	UALR							2009	$548,028	578,887	634,016	690,882	730,718	839,937	1,028,359	19,001,959
17	Mablevale/UALR							2009	$622,740	657,806	720,451	785,070	830,336	954,444	1,168,554	21,592,473
18	McAlmont							2009	$568,230	600,227	657,388	716,351	757,655	870,899	1,066,268	19,702,430
19	Hensley							2009	$218,796	231,116	253,126	275,830	291,734	335,338	410,565	7,586,387
20	College Station							2009	$246,828	260,727	285,557	311,169	329,110	378,302	463,166	8,558,350
21	Mablevale/University							2009	$480,762	507,834	556,196	606,082	641,028	736,841	902,137	16,669,622
22	NLR/SHW/JAX							2009	$0	0	0	0	0	0	0	0
23	Chenal Prky							2009	$0	0	0	0	0	0	0	0
24	Stagecoach/J Barrow							2009	$0	0	0	0	0	0	0	0
25	Pinnacle Mtn Xpress							2009	$130,050	137,373	150,455	163,950	173,403	199,322	244,035	4,509,267
26	Maumelle Xpress							2009	$114,750	121,212	132,755	144,662	153,003	175,872	215,325	3,978,765
27	Benton/Bryant							2009	$0	0	0	0	0	0	0	0
28	JAX/Cabot							2009	$0	0	0	0	0	0	0	0
29	SHW Xpress							2009	$0	0	0	0	0	0	0	0
30	UAMS/UALR							2009	$0	0	0	0	0	0	0	0
31	CON/MAY							2009	$0	0	0	0	0	0	0	0
36	JAX/SHW Xpress							2009	$140,760	148,686	162,846	177,452	187,684	215,736	264,132	4,880,619
37	Links							2009	$1,300,000	1,373,203	1,503,976	1,638,871	1,733,367	1,992,449	2,439,414	45,075,337
38	River Rail							2009	$750,000	792,232	867,679	945,503	1,000,019	1,149,490	1,407,354	26,005,002
B	Conway System [2]							2009	$1,250,000	*1,320,387*	*1,446,131*	*1,575,838*	1,666,699	1,915,816	2,345,590	43,341,670
C	Capital								$3,944,000	4,503,141	4,931,987	5,374,347	5,684,227	6,533,834	7,999,566	147,815,467
								Subtotal		**18,723,287**	**20,506,354**	**22,345,610**	**23,634,038**	**163,857,421**	**365,524,607**	**614,591,317**
									Fund Mark $	17,402.900	18,011.825	18,638.400	21,846.750	151,286.974	387,537.500	614,724.349

[1] YOE estimates for Section 5307 Funds
[2] First 3 yrs Section 5311

16. Environmental Assessment of Constrained Plan

As part of the development of the Financially Constrained Plan, the natural and man-made environment was evaluated consistent with TEA-21 planning factors. In addition, this plan identified locations of minority and low-income populations to identify disproportionately high and adverse health and environmental impacts.

Environmental Assessment of METRO 2030

"Protect and enhance the environment, promote energy conservation, and improve the quality of life" is one of the seven TEA-21 planning factors that MPOs must consider during the planning process. The METRO 2030 vision states that the plan should "minimize transportation related fuel consumption and air pollution." The plan also includes four Environmental Quality objectives – *Air Quality, Water Quality, Sensitive Lands, and Reduce Fossil Fuel Consumption*. These four objectives are not necessarily dependent on the availability of financial resources and may be achieved if governments take policy actions as suggested in the METRO 2030 Vision, Goals and Objectives. Nevertheless, this section attempts to assess impacts of the financially constrained long-range transportation plan on the environmental quality of the CARTS area in accordance with the plan's four environmental objectives.

Air Quality *– Maintain good air quality as measured by attainment with the Clean Air Act pollution standards.*

Although the CARTS area is currently in attainment of the national ambient air quality standards for ozone (and all other "criteria pollutants"), the CARTS regional travel demand model was used to conduct an emissions sensitivity analysis, which compared ozone precursor emissions (i.e., VOC and NOx) from a 2002 base network with 2010 and 2030 future networks. While not all input files were based on local data, the table below shows that regardless of the future network considered the 4-county CARTS region will generate significantly reduced on-road emissions. In fact, estimated VOC and NOx emissions of all future networks are significantly lower than the emissions produced by the 2002 network, and there is relatively little difference between the 2030 constrained and vision networks. This suggests that default fleet emissions data built into EPA's mobile source emissions factor model (MOBILE 6.2) are likely to have a more significant effect on CARTS area fleet emissions than network capacity improvements. It also suggests that emissions from on-road sources are not likely to cause the region to exceed the national ambient air quality standards (NAAQS) for ozone. Yet, when comparing alternative 2010 and 2030 networks, the addition of roadway capacity appears to increase average speeds and vehicle miles traveled, with only a slight increase in emissions.

Table 16-1
Emissions Sensitivity Analysis[6]

CARTS Networks (includes entire four counties)	Daily VMT (x1,000,000)	Average Speed	VOC (Tons/Day)	NOx (Tons/Day)
2002 Network	19.27	42.9	41.95	69.61
2010 With North Belt	22.79	42.2	24.66	43.22
2010 Without North Belt	22.67	41.9	24.58	42.50
2030 Vision	30.69	40.9	13.11	12.63
2030 Constrained	29.98	40.6	12.86	12.30

Participants in the Central Arkansas Ozone Action Days program and Central Arkansas Clean Cities Coalition have proactively worked to help reduce vehicle emissions during the past decade by engaging in ozone awareness and education activities, alternative fuel and alternative fuel vehicle projects, and grants management. In the future, it is expected that these and/or other voluntary efforts will continue as long as there is a perceived risk of NAAQS non-attainment.

WATER QUALITY *– Reduce the growth in non-point source urban runoff by minimizing the amount of paved surfaces (i.e., roads and surface parking lots).*

This objective can best be accomplished through local action; the constrained plan does not address the water quality objective directly. METRO 2030's Vision, Goals, and Objectives note, "Local governments should be encouraged to adopt land development regulations that reduce pavement requirements, encourage more structured parking, and provide natural areas to filter paved surface run-off." The growth in urban run-off from paved surfaces may be reduced as a result of changes in local development regulations emanating from the proactive efforts of CARTS participants. If no proactive efforts are undertaken to minimize paved surfaces and their contribution to urban runoff, implementation of METRO 2030 would increase total pavement area beyond what would otherwise occur with a no-build scenario, resulting in a net increase in non-point source urban runoff from paved surfaces. However, the additional paved surface area due to METRO 2030 implementation is relatively small compared to the paved surface area of local streets, driveways and parking lots that are added as new subdivisions are developed, which underscores the need to address this environmental objective through local development regulations.

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

Map 16-1 identifies sensitive environmental areas in the CARTS area, as well as the listed projects included in the constrained transportation plan. As projects proceed towards implementation, project sponsors should consider whether to use appropriate facility design features and/or mitigation measures to reduce any adverse environmental impacts. In this regard, the use of "context sensitive design" principles can help address various environmental concerns during project planning and development. The following list identifies some of the sensitive lands that if present may need to be considered during project planning and development.

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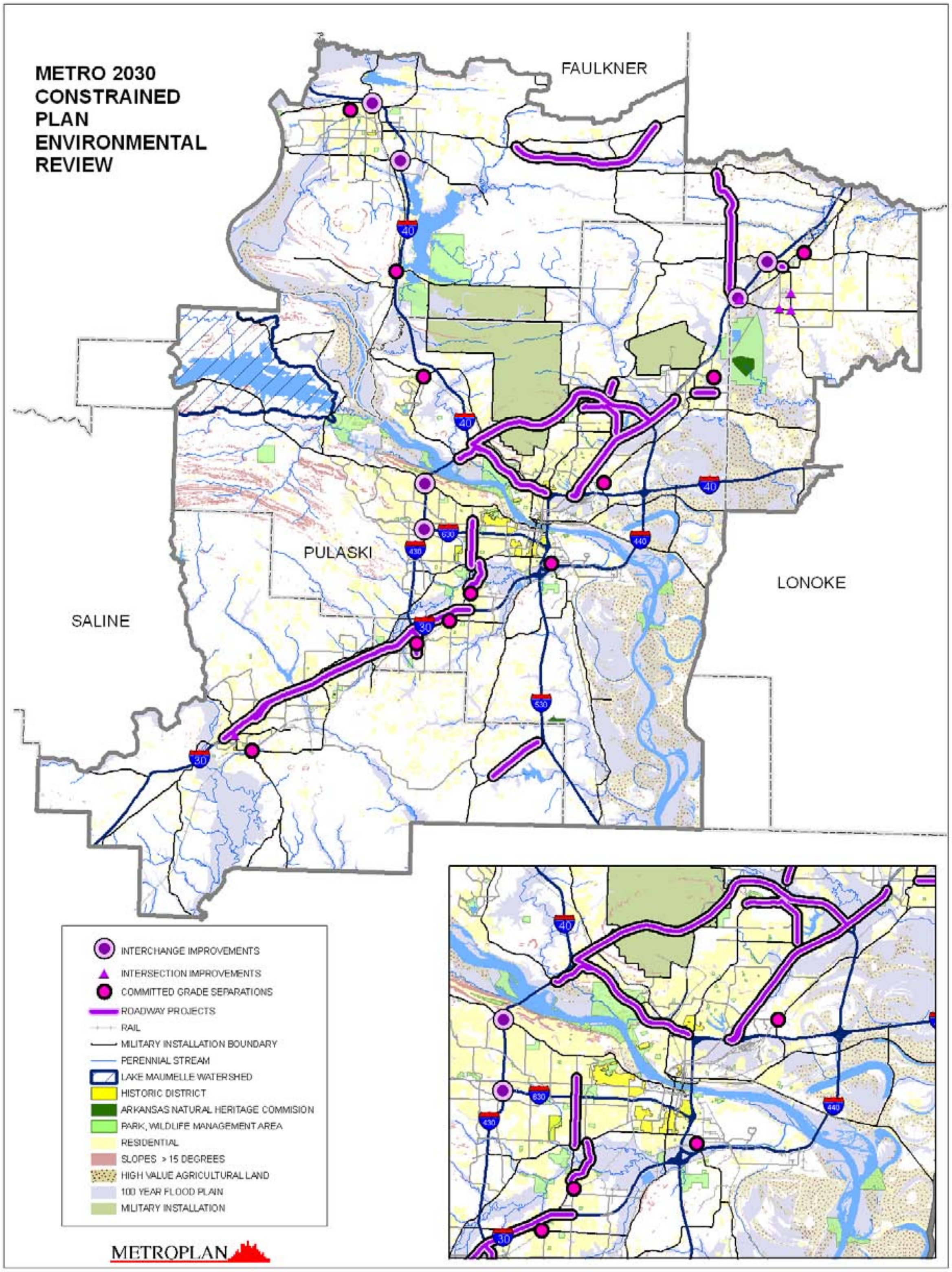
[6] The CARTS model produces daily data, but MOBILE6.2 requires hourly data. For this reason a speed-capacity lookup table and hourly factors were borrowed from another area to distribute vehicle type and VMT data into hourly bins by facility type prior to calculating VOC and NOx emissions from the CARTS networks.

Map 16-1
Sensitive Environmental Areas in the CARTS Area



- Cemeteries
- Quarries, Gravel Pits & Mines
- Perennial Stream Buffers
- Lakes and Protected Watersheds
- Parks and Wildlife Management Areas
- Designated Natural Areas
- Steep Slopes (15 Degrees or greater)
- 100 Year Flood Plains & Wetlands
- Military Installations
- High Value Agricultural Land
- Developed Residential & Other Areas
- Archeological/Historic Sites & Districts

REDUCE FOSSIL FUEL CONSUMPTION – *Reduce fossil fuel use in the transportation sector.*

This METRO 2030 objective includes four strategies. Each CARTS participant will determine the extent of their proactive efforts in support of the following fuel use reduction strategies.

HIGH DENSITY/MIXED USE LAND DEVELOPMENT – Changes in local development regulations are critical to the achievement of higher density clusters, which could have the effect of reducing motor vehicle trips and trip lengths, and supporting public transit and pedestrian travel modes.

SUBSTITUTE TECHNOLOGY FOR TRANSPORTATION – The CARTS area, like other metropolitan areas, is being affected by the revolutionary changes currently taking place in communications technologies, which in time may help to dampen transportation demand. Web- and tele-conferencing is becoming increasingly common, and enhanced technology may facilitate more dispersed work group interaction in the future. However, the net effect of telecommuting on fuel use is somewhat uncertain, due to potential changes in travel behavior and location choice.

FLEET FUEL EFFICIENCY – Some CARTS participants, other agencies and area households are already replacing gasoline fueled cars with more fuel efficient and less polluting gasoline/electric hybrids. The viability of biodiesel and compressed natural gas alternatives have also been demonstrated locally through the Central Arkansas Clean Cities and Adopt-A-School Bus programs. As the worldwide supply of oil begins to fall below demand, it is anticipated that a transition to less expensive, renewable fuels will occur as a result of market economics and/or government policy.

MODAL OPTIONS – Securing additional funding is critical to expanding and enhancing pedestrian, bikeway and transit options. If fuel prices increase sufficiently, it may be possible to gain public support for funding alternative modes, especially if deployment can occur relatively quickly. As an adaptive response during periods of dramatic fuel price increases, it may also be possible to facilitate widespread ridesharing relatively quickly and without major expenditures.

METRO 2030 does not include specific funding for these four strategies, except in a very limited way for non-motorized modes and public transit, so an overall reduction in fossil fuel use will largely depend on market forces, and only partly on the proactive behavior of CARTS participants. However, an analysis of METRO 2030 impacts on motor vehicle fuel usage has been performed (see below).

FUEL USE ANALYSIS – The constrained plan assumes that there will be more households and vehicles in the CARTS area in the year 2030 than there were in the year 2005. In 2030, the average rate of fuel use (in miles per gallon) by CARTS area vehicles is likely to be less than it was in 2005, partly due to the effect of higher oil prices. Increases in fuel economy standards could also drive improvements in average vehicle fuel economy. Nevertheless, because daily vehicles miles traveled (DVMT) in the 4-county CARTS region is forecast to grow by more than 10 million (or 55.5 percent) between 2002 and 2030[7] (refer to Table No. 16-1), total fuel usage by on-road vehicles is also likely to increase during the 25 year period. This analysis is consistent with federal energy projections that show national petroleum consumption and energy use by mode increasing through the year 2030, despite higher oil prices and improved overall vehicle fuel economy.[8]

More specifically, the constrained plan assumes an increase of nearly 700,000 (or 2.6 percent) in DVMT over what would otherwise be the case if planned roadway projects that add capacity were not undertaken (i.e., excluding TIP projects already underway). Since average fuel economy would be the same regardless of the roadway network (i.e., build vs. no build), an increase in DVMT would likely result in more fuel usage. However, added capacity could also increase average speeds, due to less traffic congestion, and thereby potentially reduce fuel consumption for those vehicles no longer traveling in stop and go traffic. Consequently, the net effect of the constrained plan's network capacity improvements could be less dramatic than suggested by the DVMT difference, but would on balance probably increase total vehicle fleet fuel usage, especially since relative few trips would be diverted to transit without new expenditures and provided the auto occupancy rate would not differ between the two networks.[9]

ENVIRONMENTAL JUSTICE

On February 11, 1994, President William Jefferson Clinton signed Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.*

The purpose of the order is to identify and address disproportionately high and adverse health or environmental effects that federal policies, programs and activities may have on minority and low-income populations. Intended for use as an internal management tool, the order is supplementary to existing regulations and is not a basis for judicial review.

For purposes of this planning effort, mapping was done to depict the distribution of "benefits and burdens" (*i.e.*, of the constrained plan recommendations) to low-income and minority CARTS area residents.

CARTS AREA MINORITY AND LOW-INCOME PEOPLE

In response to the supplementary requirements to consider minority and low-income people, Metroplan prepared a 2003 report on diversity within the CARTS area. The full report is included in the Appendix and available in download format on the Metroplan website.

[7] The rate of growth in DVMT is forecast to decline from the historic high rates experienced during the later half of the Twentieth Century that was due in part to increased auto ownership and more women entering the workforce.
[8] *Annual Energy Outlook 2006 with Projections to 2030 (Early Release) – Overview*, Energy Information Administration, United States Department of Energy, from www.eia.doe.gov/oiaf/aeo.
[9] Market influences and changes in regulations, technology and/or fuel sources could also alter analysis results.

METRO 2030 CONSTRAINED PLAN

For purposes of visual simplification, maps in this section depict low-income and minority groups as one "EJ Group." "EJ" areas are comprised of Census Block Groups having a population density minimum of 1000 people per square mile, and which have either a median household income of less than one-half the regional median household income of $39,145, or have a 50 percent or greater minority population.

"Employment centers" are comprised of traffic analysis zones that have an employment density of 1000 per square mile or greater, and also have a greater employment density than population density.

ROADWAYS

Roadway projects in the Constrained Plan are comprised of the following types:

- Projects to preserve and maintain the existing network;
- Previously committed projects, such as North Belt Freeway and the rail grade separations adopted by the Board in 1997; and
- Projects that optimize the Regional Arterial Network. A two-tiered strategy is proposed for improving capacity on these roadways: first, by improving intersections, introducing access management and signal coordination; and second, by widening selected priority corridors, based on technical factors, such as congestion relief, and on the willingness of the affected jurisdiction or agency to bring forward the project.

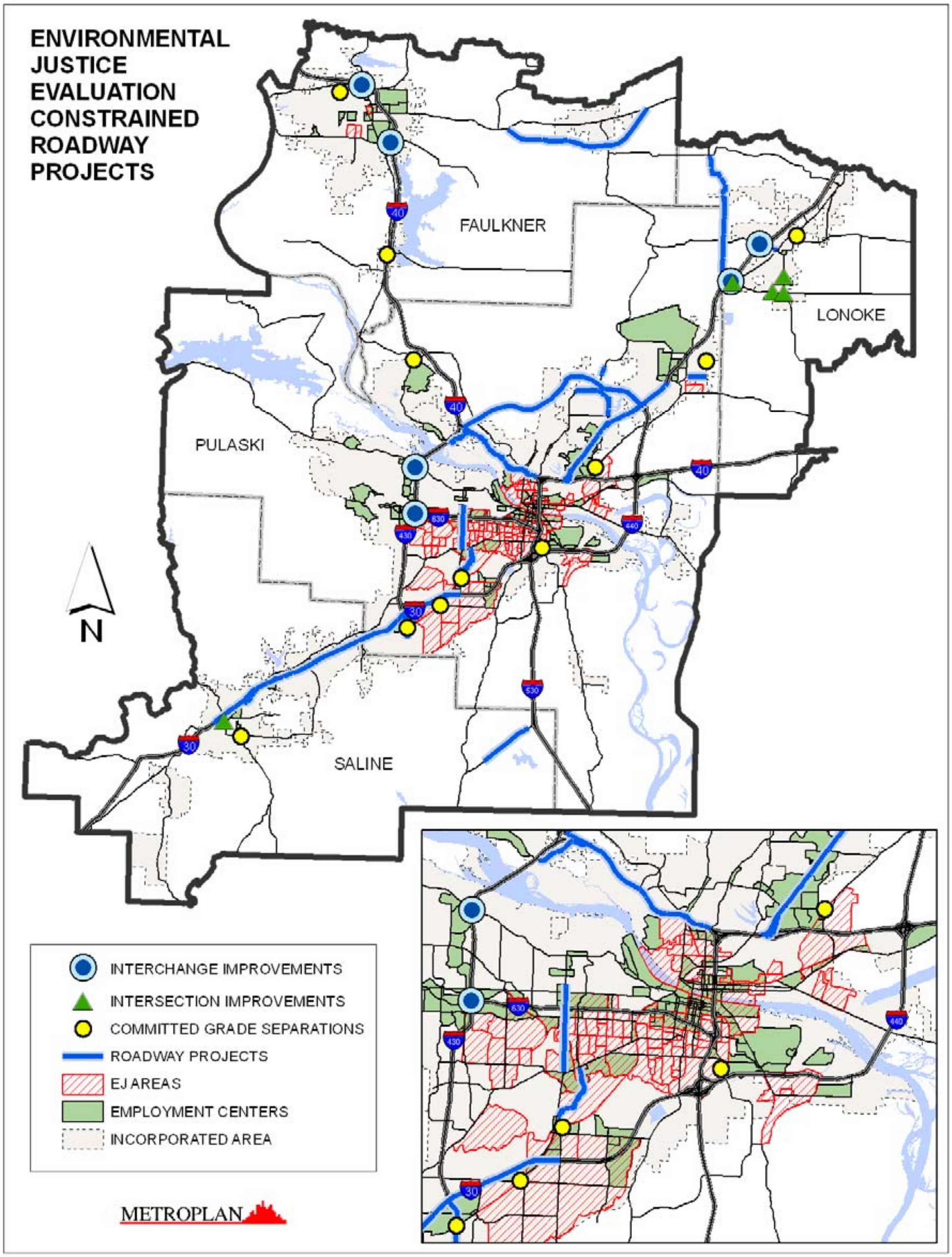
The listing of committed roadway improvements, included in Appendix A, totals approximately $305 million. Map 16-2 depicts METRO 2030's committed roadway improvements, employment centers and current location of minority and low-income groups. Included in the committed projects are eleven rail grade separations, located throughout the CARTS area. Five—Baseline Road, South Loop, Geyer Springs, Springer Blvd and McCain/Fairfax—are located in or adjacent to areas identified as of environmental justice interest.

TRANSIT

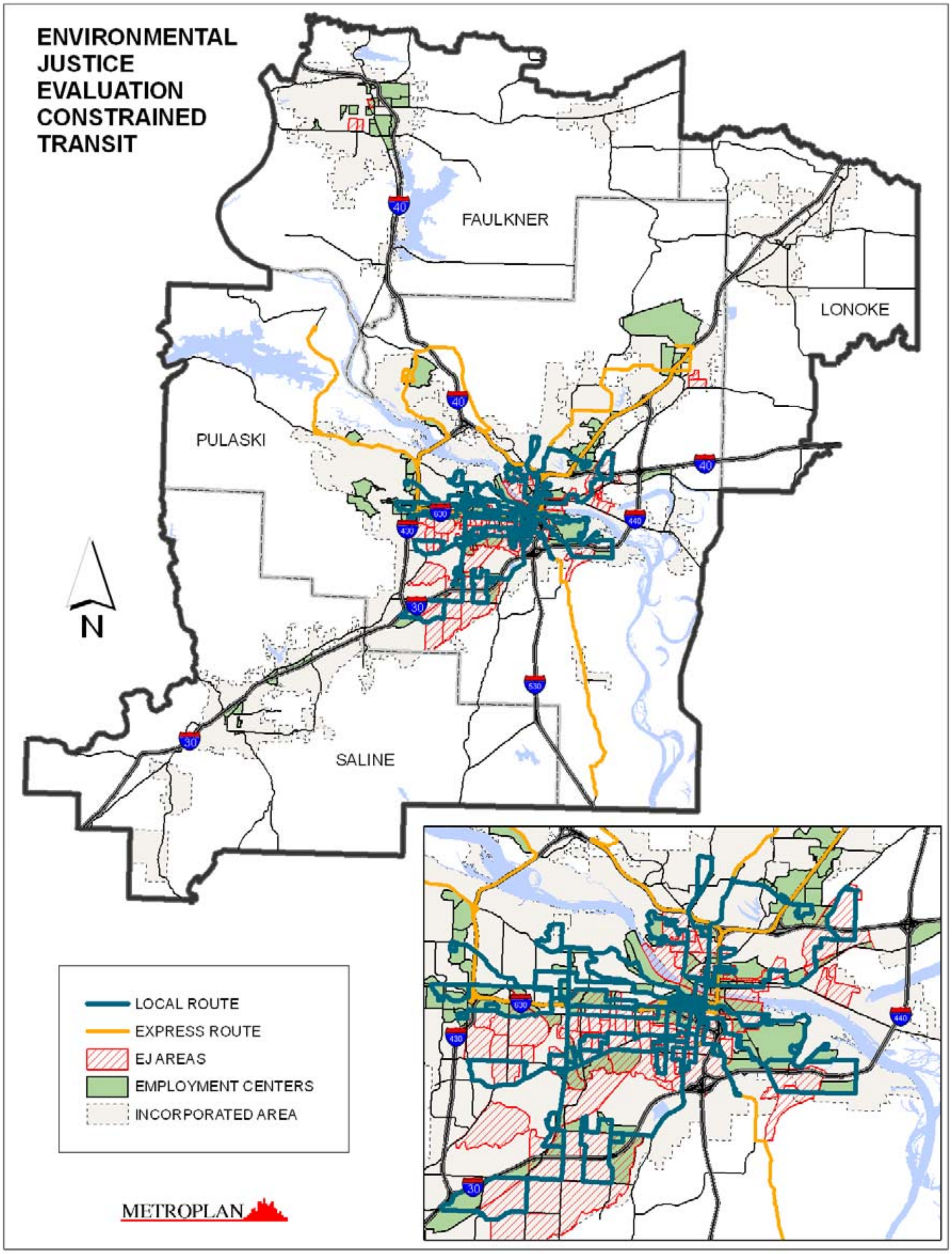
The Constrained Plan calls for maintaining the existing level of bus service.

Map 16-3 depicts the current service area for CATA's fixed route and express bus service. The service area addresses most of the neighborhoods defined as low income or minority.

Map 16-2
METRO 2030's Committed Roadway Improvements, Employment Centers and Current Location of Minority and Low-Income Groups



Map 16-3
Current Service Area for CATA's Fixed Route and Express Bus Service



The following three tables—Service Hours by Route, Express Route Service Summary, and Current Service Headways— explicate the current level of service. The Central Arkansas Transit Authority provided all three tables.

Table 16-2
CATA Service Hours by Route

	WEEKDAY	SATURDAY	SUNDAY
1 Pulaski	5:30a-7:17p	5:30a-7:17p	None
2 South Main	5:47a-8:30p	5:47a-6:44p	8:50a-4:30p
3 Baptist	5:22a-8:48p	5:22a-7:10p	9:15a-4:48p
4 Levy	5:27a-6:50p	5:27a-6:50p	None
5 Markham	5:25a-8:44p	5:25a-7:02p	9:15a-4:44p
6 Granite Mt.	5:50a-8:38p	5:50a-6:58p	8:55a-4:38p
7 E. 9th	5:55a-6:52p	5:55a-6:52p	None
8 R. Parham	6:20a-8:42p	6:20a-6:05p	9:14a-4:44p
10 McCain	5:35a-7:11p	5:35a-7:11p	None
11 M L King	5:43a-8:18p	5:43a-6:42p	8:50a-4:24p
12 E 6th	5:22a-8:39p	5:24a-6:59p	8:38a-4:37p
13 Tech.	5:28a-7:09p	5:18a-7:09p	None
14 Rosedale	5:10a-9:12p	5:14a-7:28p	8:58a-5:08p
15 65th St.	5:22a-7:08p	5:22a-7:08p	None
16 UALR	5:38a-8:56p	5:38a-7:01p	8:43a-4:55p
17/17A Mabel	5:03a-9:16p	8:30a-5:10p	8:42a-5:15p
18 McAlmont	5:19a-7:00p	5:19a-7:00p	None
19 Hensley X	5:20a-9:40a /12:20p-1:50p/ 3:15p-7:14p	9:00a-6:43p	None
20 College Sn	5:20a-6:36p	5:20a-7:02p	None
21 University	6:15a-7:02p	6:15a-7:02p	None

Routes 25, 26, & 36 are commuter express: providing 2 am & 3 pm roundtrips

Table 16-3
CATA Express Route Service Summary

Route Name	Weekday Service	Saturday Service
Rt. 19 Hensley	8 northbound trips 6 southbound trips	7 northbound trips 6 southbound trips
Rt. 25 Pinnacle Mtn./Hwy. 10	5 roundtrips	No Service
Rt. 26 Maumelle Express	5 roundtrips	No Service
Rt. 36 Jacksonville/Sherwood/ Gravel Ridge	5 roundtrips	No Service

Table 16-4
CATA Current Service Headways

Central Arkansas Transit Authority Weekday Frequencies (in minutes)
(November 2005)

Route	Locations	Peak	Off-Peak
Rt. 1	Pulaski Heights	:35	:35
Rt. 2	South Main St.	:35	:35
Rt. 3	Baptist Medical Center	:35	:35
Rt. 4	Levy	:60	:60
Rt. 5	West Markham	:35	:35
Rt. 6	Granite Mountain	:40	:40
Rt. 7	East Ninth	:40	:40
Rt. 8	Rodney Parham	:40	:40
Rt. 10	McCain Mall	:30	:30
Rt. 11	M.L. King	:30	:45
Rt. 12	East Sixth	:30	:45
Rt. 13	Pulaski Tech	:30	:30
Rt. 14	Rosedale	:30	:30
Rt. 15	65th St.	:40	:45
Rt. 16	UALR	:30	:30
Rt. 17/17A	Mablevale	:40	:30
Rt. 18	McAlmont	:35	:40
Rt. 20	College Station	:60	:60
Rt. 21	University Ave.	:45	:45

Current Standard :30 Minutes Peak Hours
:60 Minutes Off-Peak Hour

The draft METRO 2030 called for a doubling of bus service, anticipating a dedicated sales tax to help pay for expansion of service and increased headways and frequency. The effect of doubling the service would be to bring the existing transit system up to minimum acceptable standards. Upon review and with the advice of the Federal Highway Administration, the Metroplan Board of Directors elected to remove the standard from the Constrained Plan and instead place it as an element of the financially unconstrained Vision Plan.

Other than routine and normal adjustments made to service during an operating year, and barring any new source of revenue, CATA's existing service can be assumed to remain fairly flat during this plan period.

The Metropolitan Transportation Vision Plan seeks to frame the transportation improvements that central Arkansas needs when the region reaches one million people sometime around 2050. This is by necessity a broad framework, but it is important to begin laying the foundations for it now. Forty-five years is both a long way off and just around the corner.

The Vision Plan is organized as follows:

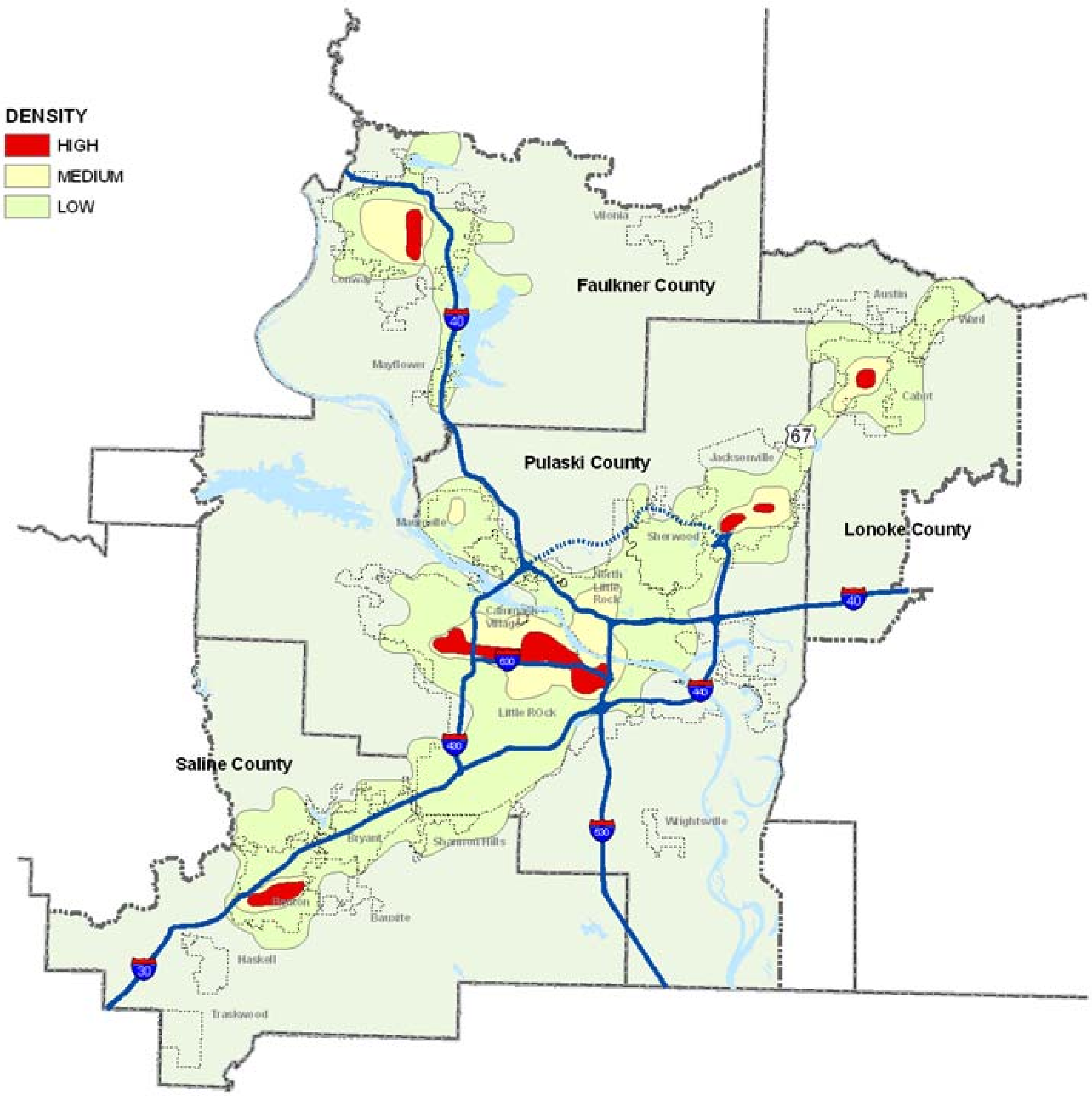
- **LAND USE VISION**
- **ROADWAY VISION**
    - Freeways
    - Regional Arterial Network
    - Rail Grade Separations
    - Other Roadway Improvements
    - Pedestrian and Bicycle Facilities
    - Maintenance and Operations
    - Advanced Systems Management
- **TRANSIT VISION**
- **FREIGHT MOVEMENT AND ECONOMIC DEVELOPMENT**
- **FINANCIAL IMPLICATIONS**

LAND USE VISION

In order to draft this transportation vision, the Transportation Advisory Council had to make some assumptions on the scope and nature of the urban area being served in 2050. They analyzed several different land use scenarios and evaluated each using thirty-five separate variables. Then the committee took the results out to the public for their comments.

The end result is a modestly more compact region than current trends would yield (Map 17-1). Most new growth would be focused on existing cities and the major travel corridors that connect them. Some areas of existing cities would densify and redevelop as mixed-use areas.

Map 17-1
Preferred Growth Concept



ROADWAY VISION PLAN

The following section identifies the roadway elements of the Vision Plan and their associated costs where known. The Vision Plan includes seven (7) roadway improvement categories as follows:

- Freeways
- Regional Arterial Network Capacity Improvements
- Rail Grade Separations
- Additional Roadway Capacity Improvements
- Bicycle/Pedestrian Facilities Improvements
- Maintenance and Operations
- Advanced Systems Management

METROPOLITAN FREEWAY SYSTEM-CAPACITY IMPROVEMENTS

The freeway network within the metropolitan area should be completed and expanded to six through travel lanes by 2030. That means completing the Northbelt Freeway. It also means widening I-40 to six lanes between I-430 and Conway at Hwy. 65 and eastward into Lonoke County. It calls for extending the widening of Hwy. 67/167 beyond its planned terminus at Redmond Road in Jacksonville to the Vandenberg/LRAFB exit in the short-term and then on to Cabot and Hwy. 89 by the end of the plan period, plus extending the widening of I-30 southwest from Sevier Street in Benton to at least Hwy. 67.

Nearly all the freeway-to-freeway interchanges in the metropolitan area need some level of reconstruction to increase capacity and safety. The I-630/I-430 Interchange is one of the highest needs, but the I-630/I-30, I-40/Hwy. 67/167, I-430/I-40, I-30/I-40 (North Terminal) and the I-30/I-530/I-440 (South Terminal) also need attention.

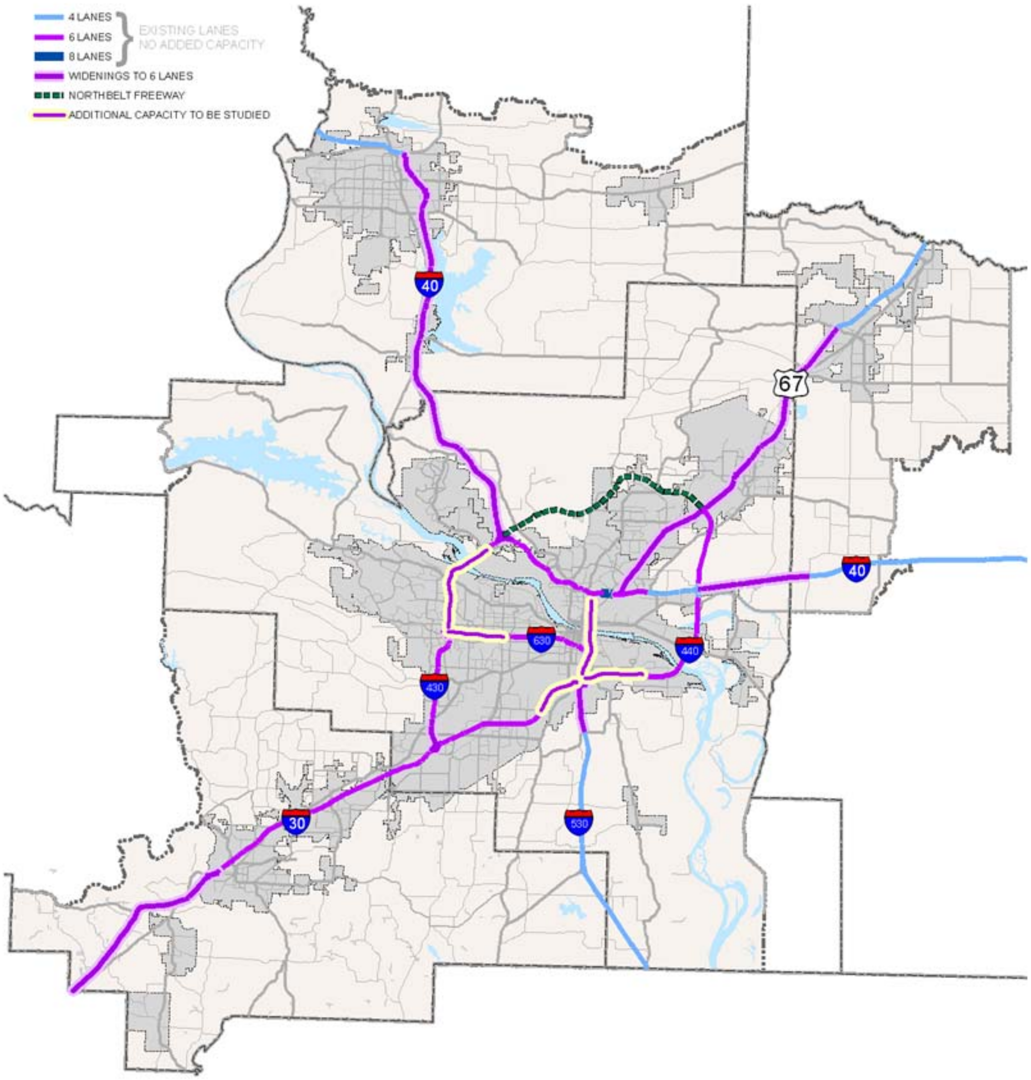
Warden Road/ Landers Road Fly-Over McCain Blvd at Hwy. 67

The recently completed Areawide Freeway Study also indicated that additional capacity may be needed at some point in the future on a) I-30 between the North and South Terminals where five interstate highways merge and diverge within five miles, b) I-430 south of I-40 to I-630, c) I-630 from I-430 to University Avenue, d) I-30 from South Terminal to 65th Street and e) I-440 from South Terminal to Lindsey Road (Map 17-2). At an appropriate time, these freeway segments should be studied consistent with the regional policy on freeway capacity.

Although traffic projections indicate a significant increase in cross-country heavy truck traffic, currently AHTD's plans do not show more than two lanes entering the metropolitan area from any of the radial freeways. It is also unclear what impact the completion of I-49 in western Arkansas and I-69 in eastern Arkansas will have on truck traffic through the metropolitan area.

The Areawide Freeway Study identified $1.2 billion of potential capacity improvements. These improvements included freeway widenings; interchange improvements, ramp widenings, and a three-phase Intelligent Transportation System (ITS) implementation plan. These recommendations for improvements are included in the Roadway Vision Plan Capacity Improvements Table 17-1.

Map 17-2
Freeway Capacity Improvements



It is the intent of this Plan that the metropolitan freeway system is built to six general purpose through lanes and that demand over that capacity be met with a robust regional arterial network and public transit. If there is a perceived need to widen metropolitan freeways beyond six through lanes, it is expected to be supported by a thorough analysis that considers alternative means of meeting travel demand in a corridor with improved arterials and public transit and also considers the impact of induced travel demand on local roadways.

Table 17-1
Roadway Vision Plan Capacity Improvements

		ID #	Facility	Limits	Improvements	Estimated Cost	Priority H=High M=Medium L=Low N=New
Regional Arterial Network Planning Study	New Facilities	1	Conway Loop	I-40 to Old Military Rd and State Hwy. 64 to I-40	New 4 Lane facility	$28,800,000	H/M
		2	State Hwy. 89 Relocation - Mayflower RR Crossing	State Hwy. 365 to Existing State Hwy. 89	New 4 Lane facility	$3,600,000	H/M
		3	State Hwy. 38 Connection - North Cabot RR Crossing	Existing State Hwy. 38/Lincoln St to State Hwy. 367	New 2 Lane facility	$13,300,000	M
		4	Rahling Rd Ext	Chenal Pkwy to Lawson Rd and Baseline Rd to State Hwy. 5	New 4 Lane facility	$32,400,000	L
		5	South Loop	I-30/I-430 to I-440/Frazier Pike Rd	New 2/4 Lane facility	$82,800,000	M
		6	Rock Island	Hwy. 183 to Dixon Rd / Arch Street Pike	New 2 Lane facility	$39,200,000	M
		7	US 64/65 Connection	State Hwy. 64 to State Hwy. 65	New 2 Lane facility	$8,400,000	M
	Widenings	8	University	Asher Rd to Forbing Rd (N of I-30)	Widen 4 to 6 Lane	$7,500,000	H
		9	Conway Loop	Old Military Rd to State Hwy. 64	Widen 2 to 4 Lane	$17,500,000	H/M
		10	Camp Robinson Rd	34th St to 37th St	Widen 2 to 4 Lane	$1,800,000	H
		11	State Hwy. 161	I-40 to US Hwy. 70	Widen 2 to 4 Lane	$7,600,000	H
		12	Chenal Pkwy / Financial Center Pkwy	End one-way pair to Shackleford Rd	Widen 4 to 6 Lane	$5,200,000	H
		13	State Hwy. 10	Taylor Loop Rd to I-430	Widen 4 to 6 Lane	$8,700,000	H
		14	Camp Robinson Rd	Remount Rd to 47th St	Widen 2 to 4 Lane	$3,700,000	H
		15	Congo Rd	Longhills Rd to I-30	Widen 2 to 4 Lane	$2,700,000	H
		16	State Hwy. 365 / McArthur / Pike	I-40 to Pershing Blvd	Widen 3 to 4 Lane	$1,200,000	M
		17	State Hwy. 365	State Hwy. 286 to State Hwy. 100 (Maumelle Blvd)	Widen 2 to 4 Lane	$45,600,000	M/L
		18	State Hwy. 286	I-40 to Saltillo Rd.	Widen 2 to 4 Lane	$17,000,000	M/L
		19	Maumelle Blvd	Millwood Cir to I-430	Widen 4 to 6 Lane	$17,900,000	L
		20	State Hwy. 107	State Hwy. 64 to Jacksonville-Cato Rd	Widen 2 to 4 Lane	$47,800,000	L

		ID #	Facility	Limits	Improvements	Estimated Cost	Priority H=High M=Medium L=Low N=New
Regional Arterial Network Planning Study	Widenings	21	State Hwy. 65	CARTS Boundary to I-40	Widen 4 to 6 Lane	$10,500,000	L
		22	State Hwy. 365	Clinton Rd to I-40	Widen 2 to 4 Lane	$27,200,000	L
		23	State Hwy. 5 / Stagecoach Rd	I-430 to Colonel Glenn Rd	Widen 2 to 4 Lane	$7,900,000	L
		24	State Hwy. 5	I-30 to Otter Creek Rd	Widen 2 to 4 Lane	$25,700,000	L
		25	Kanis Rd	Stewart Rd to Chenal Pkwy	Widen 2 to 4 Lane	$3,000,000	L
		26	State Hwy. 367	Gaines St to South Loop (Proposed)	Widen 2 to 4 Lane	$19,400,000	L
		27	Chenal Pkwy	State Hwy. 10 to South of Taylor Loop Road (Proposed extension)	Widen 2 to 4 Lane	$7,000,000	L
		28	State Hwy. 161	Main St to Fairfax Dr	Widen 2 to 4 Lane	$44,100,000	L
		29	US Hwy. 64	Gorman Rd to White County Line	Widen 2 to 4 Lane	$9,800,000	L
		30	Chicot Rd	Mabelvale Cutoff to South Loop Rd	Widen 2 to 4 Lane	$5,300,000	L
		31	State Hwy. 89	State Hwy. 5 to Galloway/Main	Widen 2 to 4 Lane	$5,400,000	L
		32	State Hwy. 10	Ferndale Cutoff Rd to State Hwy. 300	Widen 2 to 4 Lane	$7,200,000	L
		33	State Hwy. 60	Arkansas River to 1/2 mile West of Hogan Lane	Widen 2 to 4 Lane	$6,400,000	L
Areawide Freeway Study	Widenings	34	I-30/I-430		Interchange Improvements	$1,500,000	H
		35	I-30 / I-530		Interchange Improvements	$6,000,000	H
		36	I-430/ I-630/ Shackleford Rd		Interchange Improvements	$50,600,000	H
		37	I-430 / I-40		Ramp Widening	$1,500,000	H
		38	Freeway	Freeway System	ITS	$1,200,000	H
		39	Freeway	100 miles of Freeway in Little Rock	Full ITS Implementation	$33,000,000	M
		40	Freeway	Freeway System	ITS	$4,100,000	M
		41	I-30	Sevier to US Hwy. 67	Widen 4 to 6 lanes	$30,200,000	M
		42	I-40	State Hwy. 65 to I-430	Widen 4 to 6 lanes	$149,900,000	M
		43	I-40	I-440 to Kerr	Widen 4 to 6 lanes	$34,500,000	M
		44	Hwy. 67/167	S Redmond Rd to State Hwy. 89	Widen4 to 6 lanes	$114,100,000	H
		45	I-530	Dixon to I-30	Widen 4 to 6 lanes	$29,600,000	L
		46	I-430	I-30 to State Hwy. 5	Widen 4 to 6 lanes	$100,800,000	L
		47*	I-430	Rodney Parham to State Hwy. 100	Capacity and Operational Improvements (TBD)		L*
		48*	I-440	I-30 to Lindsey	Capacity and Operational Improvements (TBD)	$92,900,000	L*
		49*	I-40	State Hwy. 65 to I-430	Capacity and Operational Improvements (TBD)	$167,800,000	L*

	ID #	Facility	Limits	Improvements	Estimated Cost	Priority H=High M=Medium L=Low N=New
Areawide Freeway Study	50*	I-30	South Terminal to 65th Street	Capacity and Operational Improvements (TBD)	$60,300,000	L*
	51*	I-30	South Terminal to North Terminal	Capacity and Operational Improvements (TBD)	$78,500,000	L*
	52*	I-30	South Terminal to North Terminal	Capacity and Operational Improvements (TBD)	$250,000,000	L*
	53*	I-630	I-430 to University Ave	Capacity and Operational Improvements (TBD)	$53,000,000	L*
Additional METRO 2030 Improvements	54	US Hwy. 70	I-30 to Graland county	Widen 2 to 4 lanes	$31,000,000	L
	55	I-30	US 70 to US 67	Widen 4 to 6 lanes	$17,000,000	L
	56	Graham Rd	JP Wright Loop Rd to Kerr Rd	Widen 2 to 4 lanes	$10,200,000	L
	57	State Hwy. 321	US 67 to Kerr Rd	Widen 2 to 4 lanes	$7,600,000	L
	58	Maumelle Interchange/ Murphy Drive	I-40 to Maumelle	New Interchange and new 2 lane facility	$34,600,000	L
	59	State Hwy. 60 - Industrial	I-40 to US 65B	Widen 4 to 6 lanes	$2,300,000	L
	60	Chenal	Start 1 Way Pair to Kanis	Widen 4 to 6 lanes	$10,900,000	L
	61	Springhill Rd	Stage Coach/Hwy. 5 to Hilltop Dr	Widen 2 to 4 lanes	$4,900,000	L
	62	Alcoa	Stage Coach/Hwy. 5 to Boone	Widen 2 to 4 lanes	$1,800,000	L
	63	Hwy. 35/Carpenter	Military/Hwy. 5 to Salt Creek Rd	Widen 2 to 4 lanes	$3,100,000	L
	64	Hwy. 5	Hwy. 89 to White County	Widen 2 to 4 lanes	$17,500,000	L
	65	Eastern Conway Loop	US 64 to I-40	New 2 lanes	$8,500,000	L
	66	Springhill Rd	Hilltop to Baseline (P)	Widen 2 to 4 lanes	$5,300,000	L
	67	Baseline	Crystal Valley to Springhill	New 4 Lanes	$13,700,000	L
	68	Baseline	Crystal Valley to Hwy. 5	Widen 2 to 4 lanes	$4,700,000	L
	69	I-30	Hwy. 70 to County Line	Widen 4 to 6 lanes	$44,100,000	L
	70	Hwy. 5	Salt Creek Rd to Hwy. 298	Widen 2 to 4 lanes	$6,900,000	L
	71	Batesville Pike	Camp Robinson to Mission, Kellog Acres to Fortson	Widen 2 to 4 lanes	$5,100,000	L
	72	Fairway	Fairway to Koehler	New 2 lanes	$900,000	L
	73	Hwy. 89	Clinton Road to Jacksonville, Conway Road Mayflower City Limits	Widen 2 to 4 lanes	$29,600,000	L
	74	Clinton Rd	Hwy. 365 to Hwy. 89	New 2 lanes	$13,400,000	L
	75	Hwy. 89	San Hills to State Highway 15	Widen 2 to 4 lanes	$8,800,000	L
	76	River Bridge	Mayflower/Maumelle	Study	$50,400,000	L

	ID #	Facility	Limits	Improvements	Estimated Cost	Priority H=High M=Medium L=Low N=New
	77	Saline Parkway	Saline Parkway Corridor Study	Study	$100,000	L
Total Costs					$2,163,500,000	

* *Freeway widenings greater than six lanes would only be considered on a case by case basis under special circumstances, such as to accommodate truck, transit, and/or HOV lanes.*

REGIONAL ARTERIAL NETWORK CAPACITY IMPROVEMENTS

The Metroplan Board has defined a 682- mile Regional Arterial Network (RAN) that will be designed to move intra-regional trips around the area efficiently without forcing them onto a freeway (Map 17-3). The RAN system will rank just behind the freeway network in the volume of traffic it will carry. RAN corridors are located parallel to the area freeways to act as reliever valves if incidents block the freeways. Over 70% of the RAN designated mileage is currently on state highways.

Dave Ward Drive, Conway

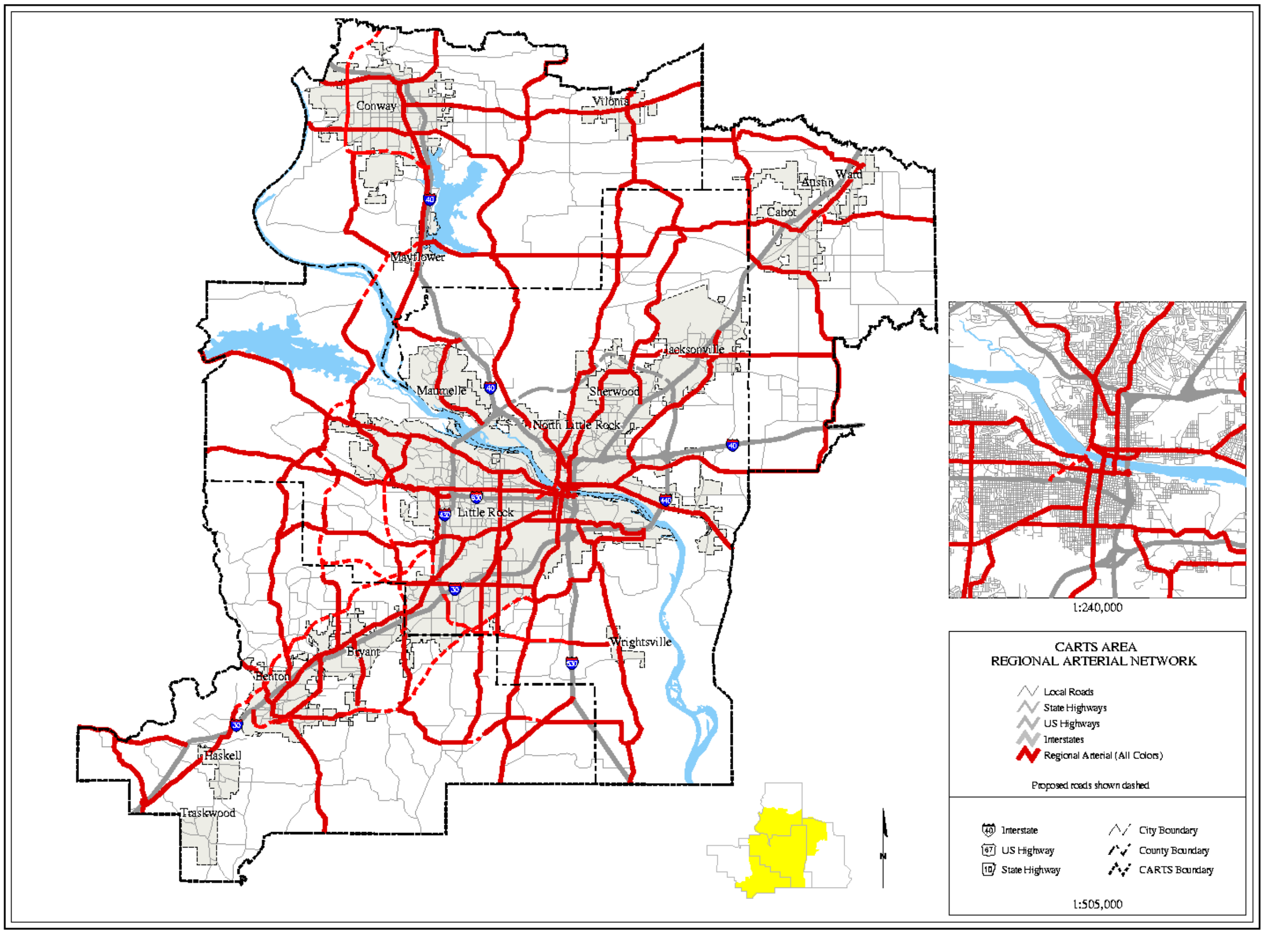
Ideally, a RAN corridor should be a four to six lane median divided, access managed roadway with coordinated traffic signals tied into a traffic management center. They should be designed to carry large volumes of traffic safely for reasonably long distances within the region. They will be ideal corridors for dense mixed-use development and for express bus ways. The precise design of the roadway will, of course, be a local decision and will vary considerably across the network.

RAIL GRADE SEPARATIONS

In 1997, the Metroplan Board adopted an amendment to the METRO 2020 Plan that committed to build a dozen grade separated railroad crossings around the metropolitan area. The crossings were selected based on an extensive technical analysis and spread across the region so that no citizen would be too distant from one.

Table 15-3, presented in Chapter 15 Financially Constrained Plan, shows the Rail Grade Separations, their estimated cost and current status. Map 15-2, also in Chapter 15, locates these rail grade separations. Total funding required to complete the top twelve grade separations is $41 million.

Map 17-3
Regional Arterial Network



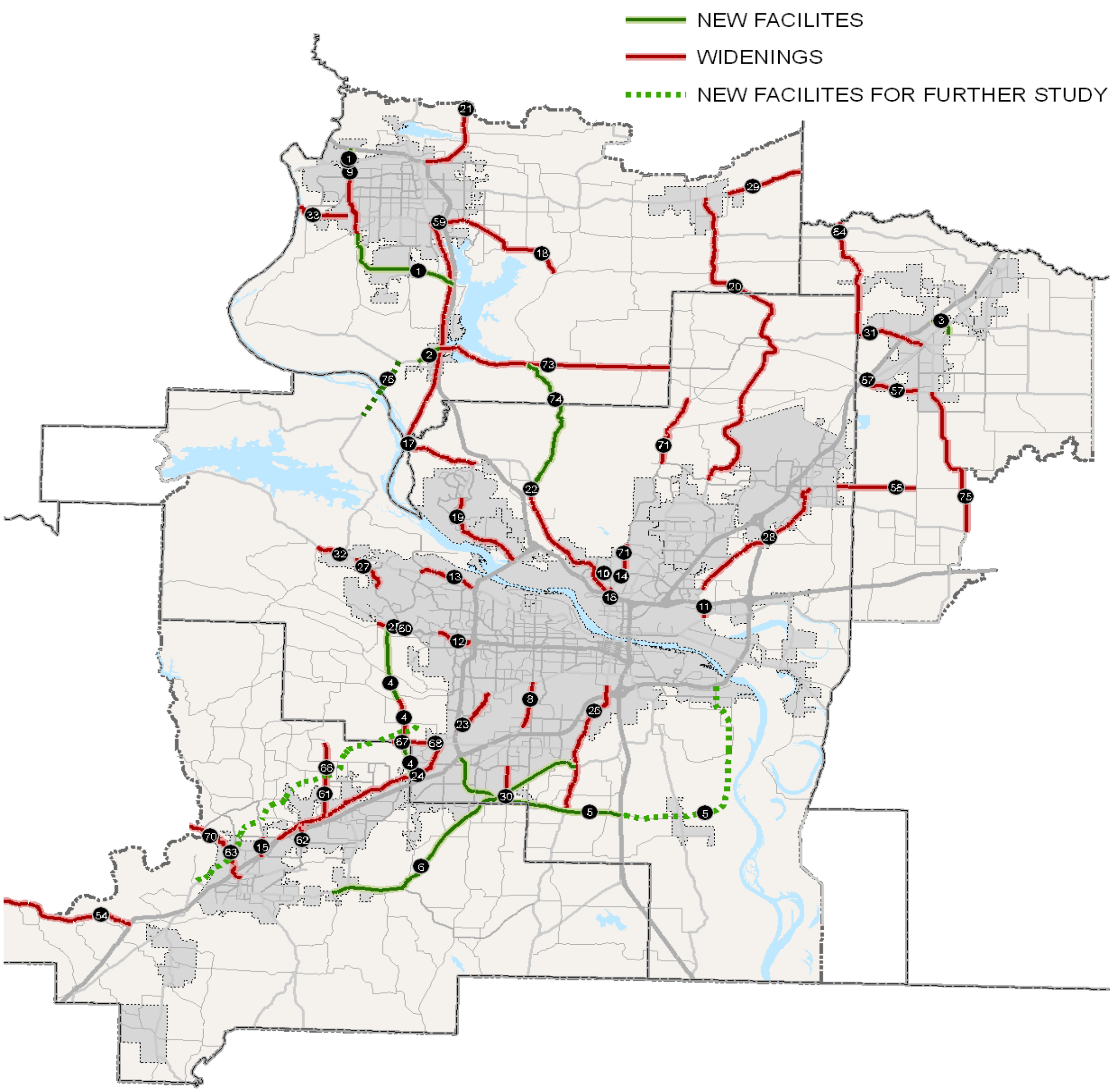
ADDITIONAL ROADWAY IMPROVEMENTS

Besides the roadway capacity improvements identified in the Regional Arterial Network Study and the Areawide Freeway Study, 24 additional roadway projects were included into the Roadway Vision Plan Capacity Improvements. These improvements were identified through technical needs-based analysis and public input.

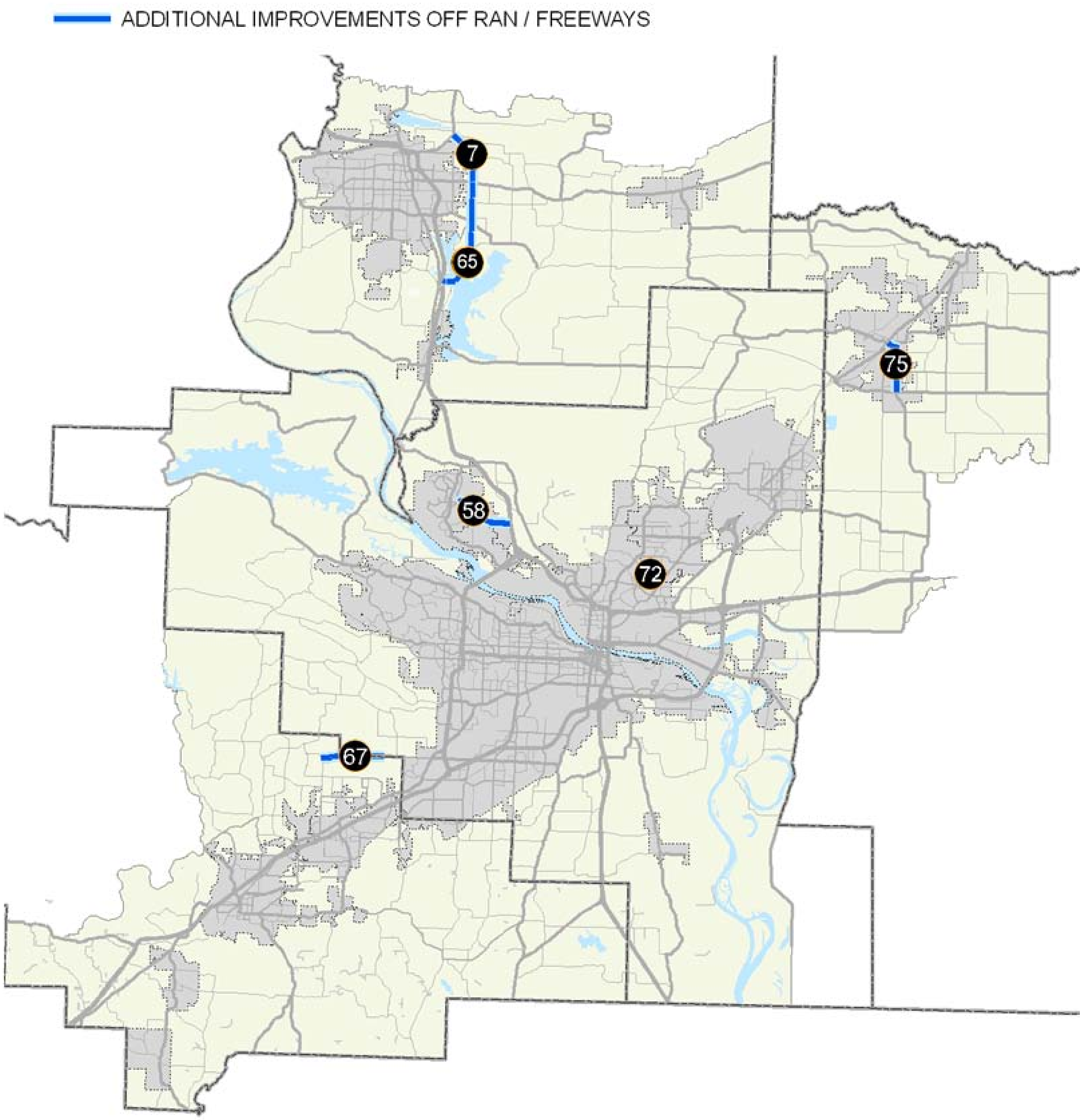
Using the updated regional TransCAD travel forecasting model, tests were conducted using the selected Preferred Growth Concept land use plan. Based on this analysis, 11 corridors would become congested during the plan period and warrant improvements. Therefore, they were included in the Roadway Vision Plan for capacity improvements through 2030.

The revised roadway capacity improvements list, which included both the Regional Arterial Network and Areawide Freeway Study recommendations, plus the improvements identified from the technical analysis of early publicly recommended additions, was collectively presented to the public during Phase 3 of the public involvement effort. Based on further input, 32 additional improvement projects, both on and off the RAN were suggested. To determine which of these 32 projects warranted inclusion in the roadway capacity improvements list, a two-tiered analysis was conducted. The first tier was to determine from a technical traffic volume and level-of-service basis if the project was warranted. For those projects where the volumes warranted consideration, a second tier analysis was then performed based on agreed upon evaluation criteria. Thirteen of the 32 proposed projects passed the second tier analysis and were then included in the additional roadway capacity improvements list on Map 17-4. Roadway capacity improvement projects off the RAN are included on Map 17-5.

Map 17-4
Regional Arterial Network Capacity Improvements



Map 17-5
Additional Roadway Improvements



It should be noted that these additional roadway improvement needs are through 2030 only, since data forecasts by traffic zone for use with the regional travel demand model were not developed for 2050.

Pedestrian and Bicycle Facility Improvements

Although the provision of pedestrian facilities is primarily a local government responsibility, the ubiquitous presence of properly designed sidewalks is important to the success of this plan. All transit riders begin and end their trips as pedestrians. For transit to be successful, sidewalks or other pedestrian paths must be present, must be safe and should be properly designed to attract walkers.

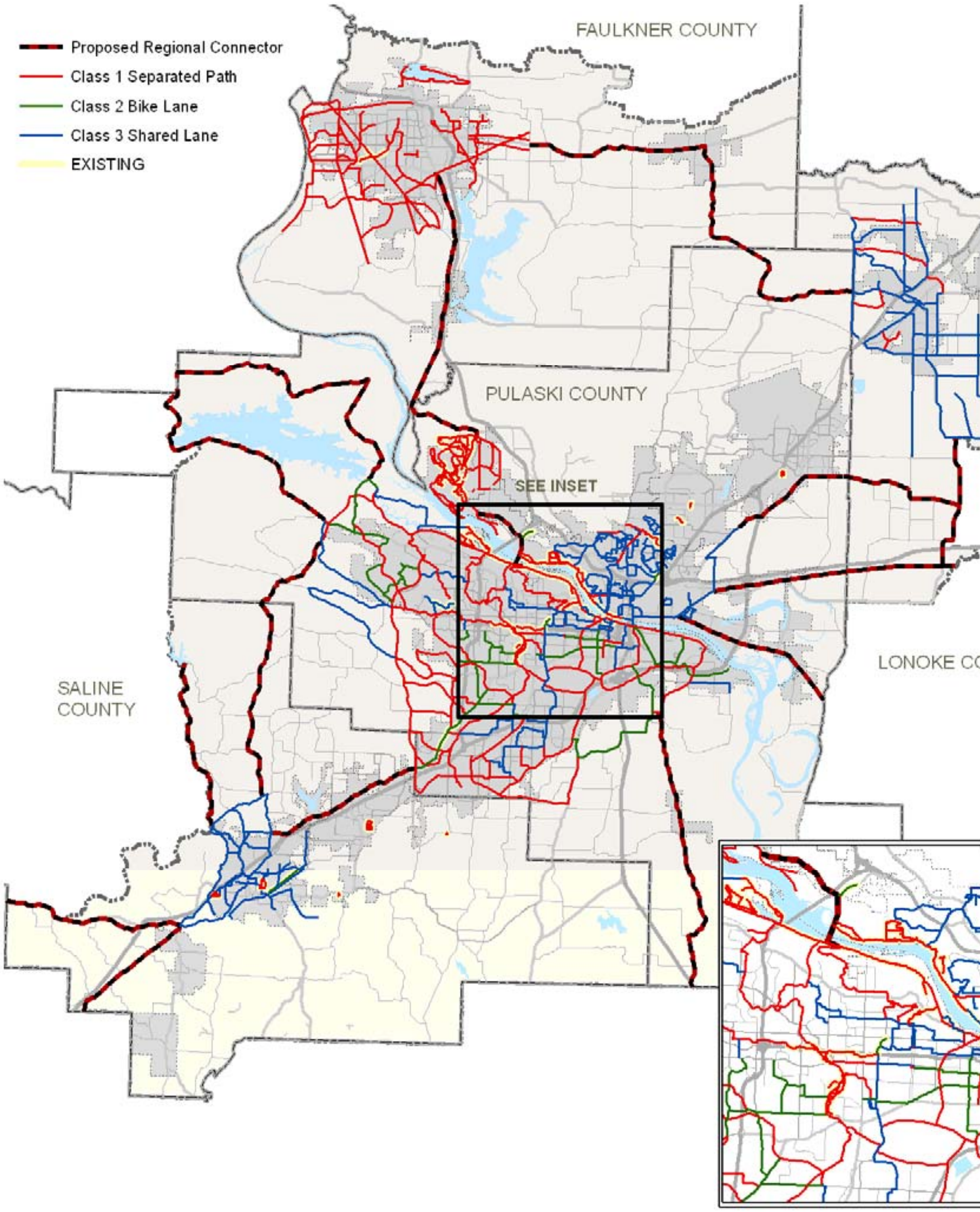
There is also a growing body of evidence that links our auto-centric urban design, including the absence of sidewalks, with the growing obesity epidemic among American young people. Finally, as our population ages, having safe and attractive pedestrian paths will become increasingly important for our older population, both for health and for mobility purposes.

METRO 2030 establishes proper design standards for sidewalks and requires them, through the regional design policies, on roadways built or reconstructed in the urban and suburban portions of the metro area. This plan strongly encourages local governments to require properly designed sidewalks on all of their roadways.

Unlike sidewalks, the regional plan does address strategic bicycle connections between and among local bikeway systems. The key strategic bicycle investment in the region is the fourteen-mile River Trail on both sides of the Arkansas River between the Presidential Bridge linking downtown Little Rock and North Little Rock and the longest dedicated pedestrian/bicycle bridge in the nation over Murray Lock and Dam. Other regional bikeways connect the cities of the metro area along state highways and will be constructed as those roadways are improved. See Map 17-6 for the Regional Bike Plan.

Murray Lock and Dam Bike/Pedestrian Bridge, Little Rock and North Little Rock

Map 17-6
CARTS Regional Bikeways and Bikeplans

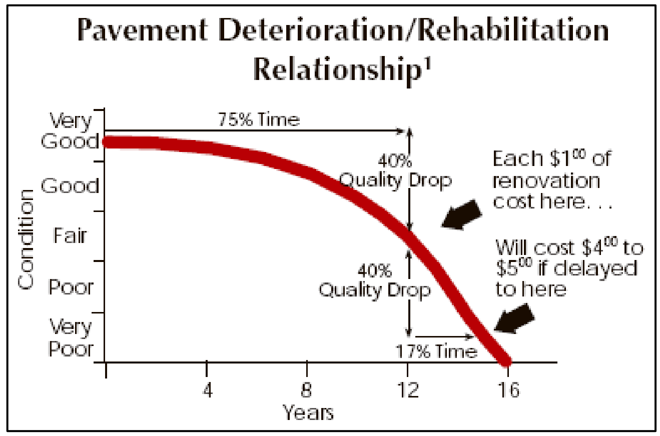


MAINTENANCE AND OPERATIONS

The Appian Way is still in use in Rome today. Once one builds a road, one must maintain it forever.

Tony Nelessen

Although public infrastructure lasts a long time, it does not last forever and must be maintained on a regular basis. This should be the first priority for infrastructure funding. Unfortunately, it is easy to postpone routine or preventive maintenance when times are lean.



It is generally accepted that in order to maximize the life of the transportation infrastructure, it is most cost effective to repair or rehabilitate a roadway before significant deterioration has occurred. Preventive maintenance is the technique of extending the life of roadway pavement and bridges by performing regularly scheduled maintenance.

The total operations and maintenance needs are based on estimated costs for routine maintenance, preventive maintenance and bridge maintenance for all state, county and city public roads in the study area. Estimated needs for investment in this category are over $3 billion through 2030. It is reasonable to assume an equal or greater amount will be needed between 2030 and 2050.

ADVANCED SYSTEMS MANAGEMENT

The federal government has been increasingly emphasizing transportation system operations management, especially in congested metropolitan areas.

It is expected that this metropolitan area will deploy such advanced technologies on our future roadway network. An aggressive freeway incident management system will quickly clear non-recurring incidents from the roadways. Electronic message boards and driver information systems will warn drivers of congestion and direct them to alternative routes. Arterials will have coordinated traffic signals controlled by a regional traffic management center or a coordinated network of centers that can move traffic smoothly across the metro area. Remote cameras will be able to detect congestion and trigger the appropriate responses.

AHTD is currently studying a freeway management system, but no plans or cost projections are yet available. Metroplan has completed the Regional ITS Architecture that will ensure the compatibility of the technological investments.

TOTAL ROADWAY AND BICYCLE/PEDESTRIAN COSTS

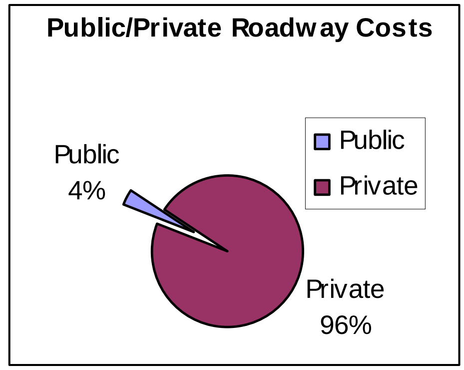
The total Roadway Improvement Maintenance/Operations and Capital Costs for the Vision Plan is estimated at approximately $5.7 billion. With the addition of minor bicycle improvements, the total cost is estimated to increase by $25 million.

TOTAL ROADWAY VISION PLAN COST ESTIMATE

PERSONAL AUTOMOBILE OWNERSHIP, OPERATIONS, AND MAINTENANCE COSTS

The public costs to maintain the existing roadway system, complete previously committed improvements, and construct the Roadway Vision Plan improvements are only a portion of the overall automobile/roadway costs of the region. Personal ownership and operation costs of vehicles are much higher than the costs associated with the public. Historically, these personal costs have not been accounted for in regional MPO long-range transportation planning.

Based on population growth, auto ownership, and an average vehicle cost of $20,000 with 10-year depreciation, the total personal capital cost of automobile ownership for the region for the next 25 years is estimated at between $25 and $35 billion. It should be noted that these costs do not include finance charges which would suggest a much higher auto ownership cost. Maintaining and operating these vehicles would result in an additional $85 to $100 billion. Total costs of personal automobile ownership, maintenance, and operation for the *METRO 2030* 25-year plan would be between $110 and $135 billion.



Although the private cost of ownership, maintenance and operations is not funded through the publics' revenues, these costs do reflect the total expenditure on the region's roadway system. The public deemed this information important and suggested it be factored into decision making. The objective would be that as transit, bicycle and pedestrian improvements are provided, alternative transportation modes might be considered, which could reduce overall private expenditures on the automobile.

Table 17-2
Roadway Vision Plan Costs

		Cost in $ Millions		
		Maintenance/ Operations	Capital	Total
Roadway Categories	Maintenance and Operations	$3,000		$3,000
	Committed Network		$305	$305
	Rail Grade Separations		$41	$41
	Regional Arterial Network Optimization		$201	$201
	Additional Roadway Capacity Improvements		$2,164	$2,164
	Total Roadway Cost	**$3,000**	**$2,711**	**$5,711**
	Pedestrian and Bicycle	**$0**	**$25+**	**$25+**
	Total Roadway +Pedestrian/Bicycle	**$3,000**	**$2,736+**	**$5,736+**
Private		$25,000 - $35,000	$85,000- $100,000	$110,000 - $135,000
Total Roadway Vision Plan Costs		**$28,000 - $38,000**	**$87,736 - $102,736**	**$115,736 - $140,736**

TRANSIT VISION PLAN

The Transit Vision Plan (Map 16-6) received its initial conception at the Transit Design Charrette conducted for this project in January of 2004. The charrette involved approximately 80 members of the public and elected officials alike. As the charrette progressed, the transit vision that emerged was a system of high quality rapid fixed route transit lines that could include commuter rail, light rail, and bus rapid transit, supported by a system of transit stops and stations that included feeder bus service and park-and-ride lots.

The top two comments and recommendations received from the public during the *METRO 2030* public involvement program regarded: 1) the region's need to change the direction of how we grow (to be more focused around existing communities and corridors which would support transit), and 2) the importance of a high quality transit system to serve our growing and aging population.

Simply maintaining transit services at their current operating levels is not enough to meet the public's transit vision. Creating the kind of future envisioned by central Arkansas citizens and articulated in the plan will require expanding and enhancing existing services and incorporating innovative technologies to meet the demands of the increasingly sophisticated public.

One major objective of the Transit Vision Plan is to make transit service more readily available by extending service hours into the evening to allow work trip returns and the addition of Sunday service to make transit available to more riders for business, religious and recreational activities.

CATA Bus

Throughout the public involvement process, this transit vision was confirmed and refined. The key elements of the Transit Vision Plan are four fixed routes from central Little Rock to Conway, Benton, Cabot and west Little Rock. Although various fixed route transit technologies are possible, the following describes the base Transit Vision Plan. Additional analysis is required for determining technology and specific route alignments.

LINE HAUL SERVICE

- **Central Little Rock to west Little Rock**: Light Rail
- **Central Little Rock to Jacksonville/Cabot**: Light Rail (Option – Diesel Multiple Unit (DMU))
- **Central Little Rock to Conway**: Commuter Rail (Option - Diesel Multiple Unit (DMU))
- **Central Little Rock to Benton**: Bus Rapid Transit (Option - Light Rail/Diesel Multiple Unit)

Conventional Bus

Diesel Multiple Unit

Bus Rapid Transit

Light Rail

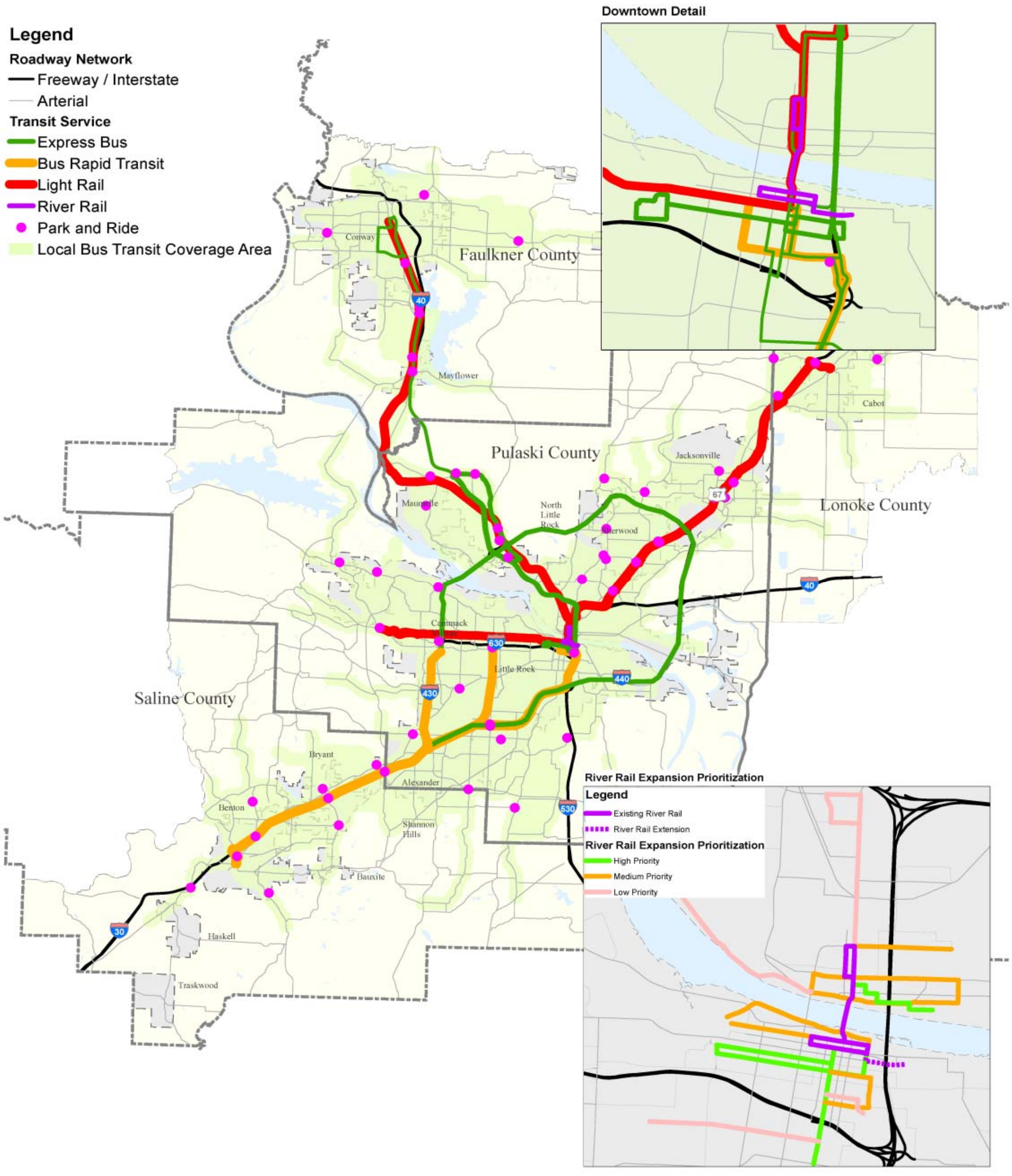
Rail Trolley

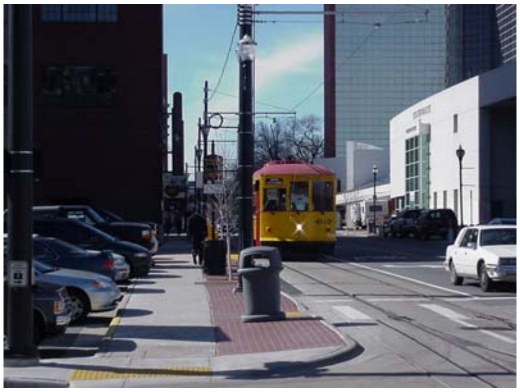
This line haul service will include a series of transfer centers and park-and-ride lots to provide the opportunity for interconnection to local transit service and allow outlying commuters to drive to a park-and-ride location and take transit to their place of work or business. It will also require a high bridge connection over the Arkansas River for regional rail traffic in addition to the Main Street Bridge route used by River Rail. The Transit Vision Plan also includes the expansion of the River Rail to its 19 mile planned network that would serve the greater portion of central Little Rock and North Little Rock.

Supporting the line haul service and River Rail requires a significant increase in local and feeder bus service throughout the region. This service will need to extend into areas currently not served by transit and allow transit connections between all communities within the region (see Map 17-7).

In addition to line haul commuter rail/light rail/bus rapid transit, River Rail and fixed route local and regional bus service, the Transit Vision Plan significantly increases the hours of service of local paratransit service.

Map 17-7
Transit Vision Plan





River Rail, Markham St., Little Rock

The Transit Vision Plan cost estimate includes both capital costs and operating costs. Transit Vision Plan capital costs include construction of line haul service, transit stations, park-and-ride, River Rail, trains, and buses. With an estimated bus operational life of approximately 12 years, some of the buses will need to be replaced and are included in the cost estimates.

The Transit Vision Plan operating costs include hourly operations costs for all transit service. As this service is deployed, the budget assumption was the plan would be implemented proportionally by year.

As presented in Table 17-3, the total Transit Vision Plan capital cost estimate is approximately $2.0 billion, with operating costs estimated at $2.2 billion, for a total Transit Vision Plan cost of $4.2 billion.

Table 17-3
Transit Vision Plan Costs

		Cost in $ Millions		
		Maintenance/ Operations	Capital	Total
Transit Categories	Local Transit Service - Fixed Route*	$1,618	$398	$2,016
	Local Transit – Paratransit	$350	$40	$390
	Light Rail: Central Little Rock to West Little Rock**	$21	$263	$284
	Light Rail: Central Little Rock to Jacksonville/Cabot**	$48	$600	$648
	Commuter Rail: Central Little Rock to Conway**	$64	$310	$374
	Bus Rapid Transit (BRT): Central Little Rock to Benton**	$53	$240	$293
	River Rail	$64	$120	$184
	Total Transit Costs* **	**$2,218**	**$1,971**	**$4,189**

* *The Transit Vision Plan bus transit service includes local, express and feeder transit service which has approximately sixteen times more bus service hours than current CATA service. Capital costs are for a total of 865 buses which includes a 20 percent maintenance/repair buffer. Assumption is existing buses (60) and 1/2 of the future buses will need to be replaced twice.*

** *Transit technologies are based on recommendations from the "Transit Design Charrette." These technologies continue to evolve and may change with detailed study. This would affect costs.*

*** *Operating costs assume that all projects are implemented proportionally over the 25 year planning period. If improvements were to occur at latter phases, operating costs would decrease.*

FREIGHT MOVEMENT & ECONOMIC DEVELOPMENT

Central Arkansas is not a major port of entry, nor a major intermodal hub. Past plans have investigated the issue of intermodal hubs, but the economics of freight railroads currently have them spaced no closer than 500-600 miles, and the Little Rock region is too close to both Memphis and Dallas to be realistically considered. A significant amount of both rail and truck freight does pass through the metropolitan area, however. The required consideration of freight movement in this metropolitan plan is therefore limited to those circumstances.

The Vision Plan does recognize the need to widen metro freeways to accommodate an increasing amount of through traffic. Although truck borne freight is expected to increase significantly in the future, it is impossible to tell the impact on this region of the construction of I-69 and I-49, both of which are expected to route NAFTA truck traffic away from central Arkansas. Ultimately, the urban freeways needed to accommodate through freight traffic will depend largely on the size of the freeways coming into the metro area. The Arkansas State Highway and Transportation Department has no current plans to widen the freeways between Fort Smith and Memphis or Little Rock and Texarkana.

Every effort will be made to ease the movement of rail freight to and through the region with the construction of rail grade separations (overpasses) spaced around the area.

The Metro Little Rock Alliance, a consortium of economic development agencies in eleven counties in central Arkansas, is in the process of selecting a small number of sites suitable for the location of a “super project” that could bring significant jobs and tax base to the region. When those sites are agreed upon, this Vision Plan will be amended to include adequate transportation access to them.

In addition, Metroplan will work closely with the other metro regions (Pine Bluff and Hot Springs) and the other counties within the eleven-county region to develop a super-regional transportation plan for the greater metro area.

Financial Implications - Vision Plan Total Costs

There is no formal budget for this full Vision Plan. Although some costs have been estimated for portions of the Vision (Table 17-4), especially those considered for the *METRO 2030* Financially Constrained Plan and some of the major transit investments (that in reality probably will not occur prior to 2030), full costs associated with operating and maintaining the entire transportation system to 2050 were not estimated.

What is apparent from the public input into the development of this Vision is that there is substantial structural underinvestment in the transportation infrastructure of the metropolitan area in all modes. Unless that underinvestment is corrected over the next fifty years, this region will fall prey to the increased congestion, motor vehicle generated air pollution, increased accidents and reduced mobility that plague other metropolitan areas.

Through 2030, the public roadway needs identified in the Vision Plan are estimated at $5.7 billion. This does not include private costs of developer provided infrastructure or private costs of owning and operating motor vehicles. The currently available funding for roadways is estimated at only $2.7 billion, a shortfall of $3.0 billion through 2030.

The roadway vision from 2030 through 2050 involves the additional costs of building out the 682 mile Regional Arterial Network, as well as freeway improvements beyond six through lanes that the future may require. With more miles of roadways, the maintenance costs will equal or exceed the $3 billion needed between 2005 and 2030.

Table 17-4
Known Vision Plan Costs*

		Cost in $ Millions		
		Maintenance/ Operations	Capital	Total
Roadway Categories	Maintenance and Operations	$3,000		$3,000
Roadway Categories	Committed Network		$305	$305
Roadway Categories	Rail Grade Separations		$41	$41
Roadway Categories	Regional Arterial Network Optimization Improvements		$201	$201
Roadway Categories	Additional Roadway Capacity Improvements		$2,164	$2,164
Roadway Categories	**Total Roadway Cost**	**$3,000**	**$2,711**	**$5,711**
Roadway Categories	**Pedestrian and Bicycle**	**$0**	**$25+**	**$25+**
Roadway Categories	**Total Roadway +Pedestrian/Bicycle**	**$3,000**	**$2,736+**	**$5,736+**
Transit Categories	Local Transit Service - Fixed Route	$1,618	$398	$2,016
Transit Categories	Local Transit – Paratransit	$350	$40	$390
Transit Categories	Light Rail: Central Little Rock to West Little Rock	$21	$263	$284
Transit Categories	Light Rail: Central Little Rock to Jacksonville/Cabot	$48	$600	$648
Transit Categories	Commuter Rail: Central Little Rock to Conway	$64	$310	$374
Transit Categories	Bus Rapid Transit (BRT): Central Little Rock to Benton	$53	$240	$293
Transit Categories	River Rail	$64	$120	$184
Transit Categories	**Total Transit Cost**	**$2,218**	**$1,971**	**$4,189**
Total Vision Plan Costs		**$5,218**	**$4,707**	**$9,925**

* *Costs represent estimates for known improvements through 2030 only*

For transit through 2030, the Vision Plan defines the need to double the bus transit system as the first step in preparing for implementation of line haul systems to the suburban communities. At the time when the urbanized population of the region reaches 800,000, the first fixed guideway corridor should have been deployed. The other three corridors would be deployed sometime between that time and 2050. Just expanding the bus system in Pulaski County will cost an extra $365 million beyond existing revenues. Deploying all fixed guideway corridors by 2050 will cost an additional $1.8 billion. And over the next fifty years the need to develop public transit services will spread to the suburban communities of the region beginning with Conway in Faulkner County.

Metroplan, the UALR Transit Study and the Federal Highway Administration have long advocated that Central Arkansas Transit have a dedicated source of local revenue. Such a source would allow CATA to have a stable funding base around which to plan operations, would define clear responsibilities for delivering transit services and would substantially remove a source of friction with local governments by removing transit funding from the annual operating budgets of CATA members. An additional local tax is required for that dedicated revenue source for existing and any expanded operations.

Where to Get More Money

Several additional revenue sources were not included in the revenue budget for the *METRO 2030* Financially Constrained Plan. There was no increase in federal or state fuel tax revenue projected for future years. History tells that those increases will come, even if irregularly, but rarely cover the rate of inflation in construction and maintenance costs. Over the coming decades, the transportation profession expects the productivity of motor fuel taxes to decline significantly as overall fleet fuel efficiency increases in response to higher long-term oil prices. If that proves to be the case, a supplemental funding source such as tolls or mileage taxes will be needed just to service our existing highway network.

History also tells us that for every dollar of state and federal fuel tax paid by drivers in the central Arkansas metropolitan area, only around 50¢ is returned to the region. One source of additional revenue is to increase the return on taxes already being paid by the metropolitan area.

In terms of additional taxes, the following table shows the local revenue that can be expected from 1 mil of property tax, 1¢ local sales tax and 1¢ in local gasoline tax in each of the four urban counties of central Arkansas.

Table 17-5
Possible New Revenue Sources

	Pulaski	Saline	Faulkner	Lonoke
1 mil Property Tax	$4,535,070	$950,000	$938,000	$549,838
1 cent Local Gas Tax	$1,952,627	$468,941	$493,075	$303,782
1 cent Local Sales Tax	$65,108,000	$7,620,000	$10,025,000	$4,254,000

Regional Mobility Authority

In the 2005 session of the Arkansas General Assembly, the legislature passed the Regional Mobility Authority Act which authorizes a single county or multiple contiguous counties to create Regional Mobility Authorities (RMA) empowered to plan, construct, own and/or operate any surface transportation system.

The initial draft of the RMA legislation granted the organization local option sales tax authority and local option gasoline tax authority. Eventually, the gasoline tax authority was removed because of collection concerns by the Department of Finance and Administration and the sales tax authority was restructured to allow an RMA to borrow unused local government tax authority.

A Regional Mobility Authority, if established and fully empowered, could be a mechanism to raise substantial local funding, with the public's consent, for projects deemed important at the local and regional level.

CONCLUSION

The citizens of central Arkansas have enjoyed a very high level of mobility over the past thirty years, due largely to the fact that Arkansas was the first state in the nation to finish its interstate highway mileage. Over the years, however, as our population and our economy grew, that excess roadway capacity has gradually been filled. The road network in the region is at the point of developing permanent and worsening congestion.

Public transit faces an equally important decision point. Faced with the inexorable aging of the population, the region must decide if it will attempt to provide a reasonable level of mobility to the segment of the population that cannot or should not drive a personal automobile in the future.

Over the next fifty years, the population of the region will grow to near 1 million people. Our economy will also grow and our level of prosperity will increase. Our tax base will grow accordingly, but that natural growth will not keep pace with the needs of our transportation system as defined in this Vision Plan.

Our willingness to tax ourselves for needed transportation improvements will determine how competitive our region will be in the global economy of the future and will play a significant role in the quality of life our citizens will enjoy through the middle of the 21st century.

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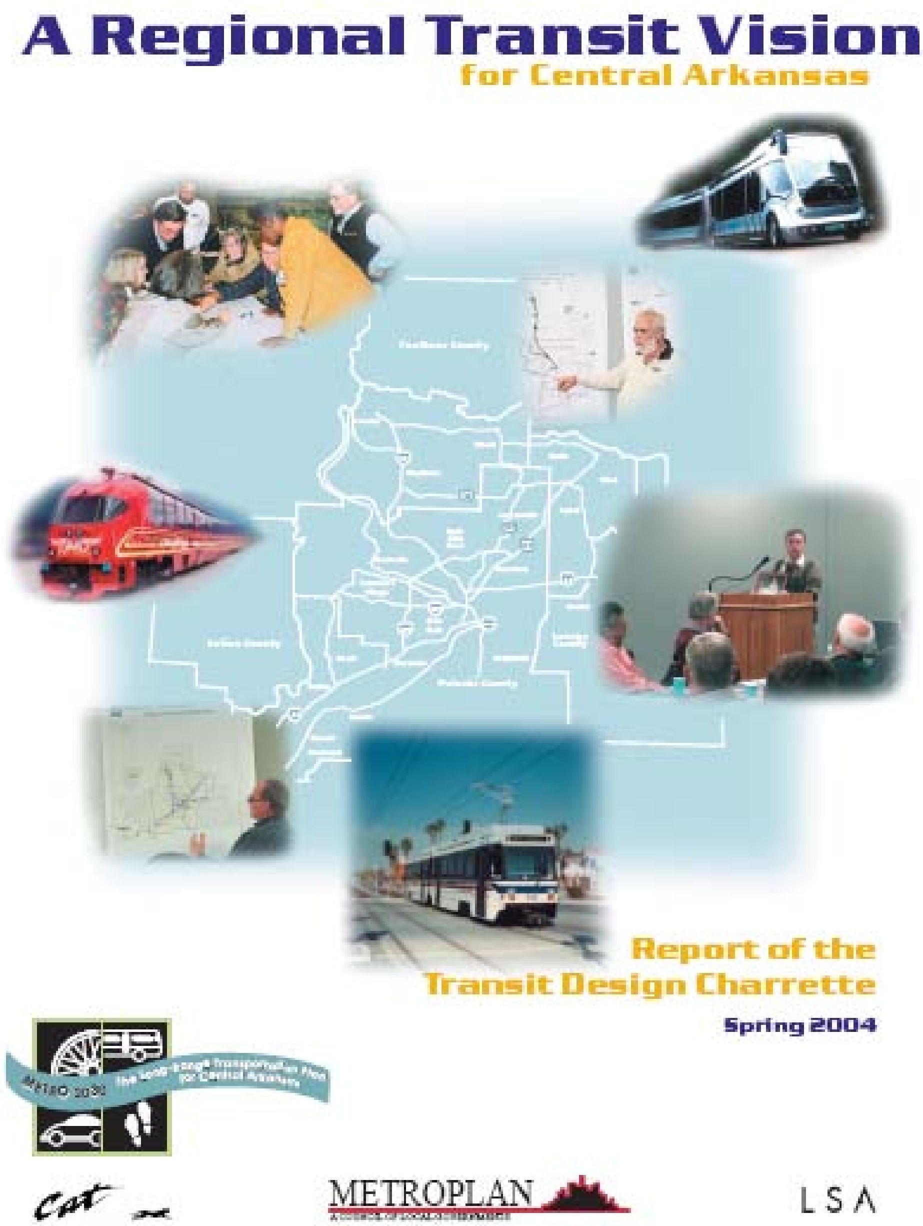
Appendix A - Regional Transit Vision for Central Arkansas



A Regional Transit Vision
for Central Arkansas

Report of the
Transit Design Charrette

Spring 2004

METRO 2030 The Long-Range Transportation Plan for Central Arkansas

METROPLAN

LSA

What is the Regional Transit Vision and Where Did It Come From?

This *Regional Transit Vision* is a long-range transportation concept plan that identifies a network of rail and bus corridors that together form the backbone of a region-wide mass transit system. The Vision is not constrained in terms of dollars or time. Implementing it will require strong regional leadership and a commitment by the public to establish a long-term, dedicated funding mechanism and transit-supportive land development policies.

A group of local elected officials, business leaders, developers, planners, and members of the public developed the *Regional Transit Vision* during a Transit Design Charrette held on Saturday, January 10, 2004. Metroplan and the Central Arkansas Transit Authority (CATA) co-sponsored the Charrette as part of the development of *Metro 2030: The Long-Range Transportation Plan for Central Arkansas.*

In the charrette process, participants were led through a series of presentations and workshops to identify the future role of transit in the region, select transit corridors, and define possible transit technologies for each corridor. In doing this, they considered the intrinsic relationship between land use and transportation and the operating characteristics of the various transit technologies. As a regional transit system began to emerge, the Charrette participants refined the network by identifying connections between the various rail and bus modes and locating transfer points, Park-n-Ride lots, and a downtown transfer center.

Imagine this.....

...It's 7:25, Monday morning. You walk out of the house and down the street to the coffee shop to get your morning fix. Glancing at your PDA, you notice that the 630 train is right on time. Ten minutes later, you're walking up to the platform as the sleek light rail vehicle glides silently to a stop. As you board, the train operator says "hi" while you flash your pass at the electronic reader. The train pulls away sharply with you reading the paper and chatting about your weekend. You smile as the train whisks past the cars on the freeway, waiting their turn to crawl into downtown. Approaching your stop, the train slows quickly and silently. You walk the few remaining blocks to your building and load onto the elevator, coffee still warm. Another great start to the work week.

Far fetched? Maybe - or maybe not. Light rail and other efficient forms of rail and bus transit could in fact be a reality in central Arkansas. The *Regional Transit Vision* lays the foundation for developing a transit system that will be truly regional in nature, connecting the people and places of central Arkansas, providing multiple means of travel and traffic congestion relief, linking neighborhoods with employment and activity centers, and enhancing the image and vitality of our region.

This *Regional Transit Vision,* as developed by the participants of the Transit Design Charrette, is one interpretation of the future for central Arkansas. It is an important first step in identifying constrained and unconstrained transit systems for Metro 2030. The Vision will be fed into the Metro 2030 development process and will likely be adjusted based on comments from the public and the Metroplan Board and committees.

The Role of Transit in Central Arkansas

- ***Who Should Transit Serve?***
- ***Where Should It Go?***
- ***What Level of Technology is Appropriate?***
- ***What is the Overall Role of Transit in the Future of Central Arkansas?***

These are a few of the questions asked of Charrette participants in order to establish a general foundation for the *Regional Transit Vision*. Responses indicated enthusiasm for a quality regional transit system that will serve the needs of the transit-dependent, as well as offer competitive service to lure drivers out of their personal automobiles.

Regional Vitality/Economy: A regional transit system should enhance the economic vitality of the region by stimulating economic development and strengthening the connections between workers and employment opportunities. Area-wide service should link people and places of central Arkansas, including neighborhoods, schools, downtown, the suburbs, Little Rock Airport, and other locations.

Traffic Congestion: As roadway capacity struggles to keep up with the growing demands of the traveling public, traffic congestion will continue to increase. Although it won't by itself solve the growing congestion problem, a regional transit system will provide some congestion relief and is particularly effective at serving commuters and reducing congestion during the morning and afternoon peak periods. More importantly, transit provides an additional travel option and allows some commuters to avoid roadway congestion.

Land Development: In order to support a regional, rail-based transit system, strong leadership and a commitment to transit-oriented land development policies will be necessary. A regional transit system can influence transit-supportive land uses by stimulating higher density developments and focusing growth along corridors. This will result in more efficient land consumption and increased property values.

Ridership: A regional transit system should serve the needs of both the transit-dependent and choice riders. As a basic public service, transit must provide service to the elderly, disabled, student, young, and low-income populations of central Arkansas. A viable regional service will also attract new riders such as suburban commuters by providing competitive cost and reliable service.

Operations/Technology: Charrette participants overwhelmingly desired rail technology for the *Regional Transit Vision's* foundation, supported by a network of regional bus routes. Intermodal connections will be important in establishing a seamless system of transportation modes incorporating rail, bus, air, auto, bicycle, and pedestrian networks. A regional transit authority will facilitate dedicated funding and coordination among jurisdictions and agencies.

Quality of Life: As part of a multi-modal transportation system, transit offers another travel choice for the region's citizens. It is clean, safe, reliable, and low in pollution. In addition, parking and right-of-way needs for a rail line are smaller than a comparable roadway, so land consumption is reduced. With proper planning and design, transit can be integrated into the natural environment so that scenic beauty and open spaces are preserved. It can also be designed to be neighborhood and downtown-friendly.

Light Rail, Commuter Rail, or Bus Rapid Transit: What's the Difference?

As the map indicates on Page 9, the *Regional Transit Vision* is made up of several travel corridors earmarked with different transit technologies, including light rail, commuter rail, and bus rapid transit (BRT). While all of these provide line-haul transit service, their operating characteristics and costs help to define the typical applications associated with each.

- **Light Rail:** These are 2 to 3 car trainsets that operate in exclusive right-of-way or in mixed-flow traffic. Power is supplied by overhead catenaries providing good start/stop performance and speeds up to 55 miles per hour. Station spacing is shorter, between ½ and 2 miles, so light rail is most suitable for denser urban and downtown areas. Service to close-in suburbs can be provided, but longer distances make light rail less competitive in terms of cost and travel time.

Example of Light Rail

- **Rail Trolley:** This technology is similar to light rail, but with smaller cars and slower operating speeds. They often incorporate historic vehicles or design themes. Their smaller speeds and vehicle size makes them most suitable for neighborhood and central business district applications. The River Rail Streetcar system is an example of rail trolley.

Example of Rail Trolley

- **Commuter Rail:** Typically a locomotive pulling 2 to 3 coach cars, commuter rail vehicles operate in exclusive right-of-way or on shared track with freight railroads. These vehicles must be FRA-compatible, meaning that they must meet safety standards of the Federal Railroad Administration to operate on the same track as freight locomotives. Diesel-electric power is the common propulsion technology, providing poor start/stop characteristics. As a result, station spacing is lower at 2 to 10 mile intervals, and the typical commuter rail application is commuter (peak-period) service between metropolitan and suburban areas.

Example of Commuter Rail

- **Diesel Multiple Unit (DMU):** DMU is a special category of purpose-built commuter rail vehicle. They are lighter and faster than typical commuter rail vehicles, yet still retain the FRA-compliance designation so they can operate on shared freight tracks. Newer models have diesel engines transmitting power to the wheels through hydrodynamic transmissions. By eliminating electric power conversion losses, fuel consumption and noise are significantly reduced.

Example of a Diesel Multiple Unit

- **Bus Rapid Transit (BRT):** Although BRTs are self-propelled rubber tire transit vehicles operating in an exclusive right-of-way, their operation and performance is similar to light rail. As a result, BRT can be a cost-effective solution in denser urban and central business district corridors. When appropriate, the buses can operate in mixed-flow traffic, although this removes any travel time advantage over automobiles.

Example of Bus Rapid Transit

Several transit technologies beyond those selected for the *Regional Transit Vision* were considered by the charrette participants. For a full list of these transit technologies, along with operating characteristics, visit the website at **www.metroplan-metro2030.org.**

METRO 2030 The Long-Range Transportation Plan for Central Arkansas

The Regional Transit Vision for Central Arkansas

The *Regional Transit Vision* was developed through the dedication and effort of participants of the Transit Design Charrette held on January 10, 2004. Although it was prepared in only one day, a combination of thoughtful discussion, hard work, and intelligent debate provided a harvest of good ideas backed up by technical detail.

Transportation planners from Metroplan, CATA, and their consultants compiled the maps and notes from the Charrette into this *Regional Transit Vision*. The map on page 9 shows the corridors, technologies, and connections identified by Charrette participants. The following section provides additional detail for each corridor segment. Discussion has been added by the planners who interpreted the Charrette maps and notes for additional clarification.

Primary Corridors - Light Rail, Commuter Rail, and Bus Rapid Transit

1 Northeast Corridor: US 67 from Little Rock to Jacksonville

Charrette Recommendation: This corridor is identified as light rail transit running in the highway right-of-way to affect development patterns toward the corridor. The Union Pacific Railroad corridor was determined to be too far away from areas of activity and desired development intensification. Furthermore, the railroad is a heavily used NAFTA route with limited opportunity for track-sharing, so the freeway corridor became the selected alignment. This will have the effect of reducing impacts from sprawl and creating higher corridor densities that will help support the transit system.

Planner's Response: For light rail to be sustainable, the corridor will need to develop and intensify so that a maximum station spacing of about 2 miles can be maintained.

Planning and Design Details:

- Development intensification around Park-n-Ride lots and stations
- Park-n-Ride lot in Jacksonville
- Station spacing of ½ to 2 miles in built areas; relaxed spacing requirements across river and into downtown
- Feeder bus, bicycle, and pedestrian networks will be necessary to support transit-oriented developments at nodes and provide alternative mode access along and across the corridor
- As the highway is reconstructed and widened, right-of-way should be preserved and bridges designed to accommodate light rail
- Approaching downtown, the alignment may migrate to the Rock Island Railroad corridor, through the Presidential Library area, and into the central business district
- Possible integration with downtown rail trolley system

2 Northeast Corridor: US 67 from Jacksonville to Austin/Ward

Charrette Recommendation: Extend light rail transit northwest along the US 67 corridor.

Planner's Response: Typical light rail lines that emanate from a core downtown area are no more than 20 miles in length. The extension would create a line almost 30 miles in length. With maximum station spacing of about 2 miles, it seems unlikely that the area between Jacksonville and the cities to the northeast will intensify to the magnitude necessary to support light rail. Furthermore, station spacing requirements would result in a high number of stops, thus reducing the light rail's travel time advantage. This corridor should be preserved for future consideration of light rail, although a regional feeder bus connection may make more sense.

Planning and Design Details: If light rail is ultimately selected for this section, a Park-n-Ride lot in the Cabot area would collect passengers from Cabot, Ward, Austin, and possibly Vilonia via a feeder bus.

3 Northwest Corridor: I-40/UPRR from Conway to Downtown

Charrette Recommendation: Either a commuter rail line in the Union Pacific Railroad (UPRR) right-of-way or using the Little Rock Western (LRW) class III track that runs south of the river. For the freeway/UPRR option, the railroad was selected over the freeway alignment due to right-of-way and environmental constraints along the freeway and the possible cost savings of integrating commuter rail service with the railroad operations through the use of a Federal Railroad Administration (FRA)-compliant trainset. If negotiations with the railroad do not allow shared operations, there may still be cost savings associated with using the railroad right-of-way. Because of wetland and other environmental issues in the corridor, it was determined that the area had limited development potential to support rail transit, so line-haul commuter rail technology was selected due to longer station spacing requirements associated with its longer distance operation as compared to light rail. A gridded bus network for the City of Conway was recommended to serve local residents, students, and commuters accessing the rail line. In addition, the Charrette participants recommended a possible bus rapid transit service between Maumelle and downtown.

Planner's Response: Agree that commuter rail may be more feasible than light rail in this corridor. Among the options, the Union Pacific Railroad alignment seems more feasible than either the I-40 or the LRW railroad corridors. The long distance of about 30 miles and a lack of development potential makes this corridor unsuitable for light rail. The Charrette recommendation of bus rapid transit between downtown and Maumelle may make sense in the short-term, but should not be used as a competitive service to commuter rail.

Planning and Design Details:

- Consider using FRA-compliant Diesel Multiple Unit (DMU) technology
- Environmental concerns will be a significant focus of future planning efforts in this corridor
- Park-n-Ride lots at Conway, Mayflower, and Maumelle
- Development intensification around Park-n-Ride lots and stations
- Minimum station spacing of 2 miles
- Feeder bus, bicycle, and pedestrian networks will be necessary to support transit-oriented developments at nodes
- Approaching downtown, the alignment may migrate to the Rock Island Railroad corridor, through the Presidential Library area, and into the central business district

3a Northwest Corridor (Option): Little Rock Western (LRW) Railroad from Conway to Downtown

Charrette Recommendation: Commuter rail in either this corridor or the I-40/Union Pacific Railroad corridor north and east of the river. The Little Rock Western (LRW) corridor is viable because the railroad is seldom used and it has potential to serve northern areas of west Little Rock closer to downtown. However, it does not go all the way to Conway, so expensive new right-of-way would be required. In addition, an expensive new river crossing would be necessary on the LRW route.

Planner's Response: The Union Pacific Railroad/I-40 corridor may be a better option for service to Conway because it is a more direct route and is in closer proximity to the suburban cities of Mayflower and Maumelle.

Planning and Design Details:
- Difficult and expensive river crossing and extension into Conway
- Expensive right-of-way acquisition to extend rail into Conway

4 West Corridor: I-630/Chenal/Kanis from Downtown to Ferndale Cutoff

Charrette Recommendation: Light rail service in the I-630 corridor connecting west Little Rock with the downtown transit center and the Little Rock Airport. The Markham corridor may offer an alternative alignment if I-630 does not work out, but this facility occurs in a built environment in which adequate right-of-way may not exist for a rail line. The Chenal/Kanis alignment west of I-430 is common to both options.

Planner's Response: This is probably the most suitable corridor in the region to support light rail transit. This is particularly true inside the I-430 loop. Parallel arterial streets immediately north or south of I-630, including Markham, may be viable options for this alignment and should be included in subsequent studies.

Planning and Design Details:
- Consider integration with the downtown rail trolley system
- Station spacings may approach the maximum of 2 miles west of I-430 but will be much closer in the more dense section east of I-430
- Park-n-Ride lot at western terminus
- Major transfer station at interchange of I-430 and I-630

5 Southwest Corridor (Short-term): I-30 from Downtown to Benton

Charrette Recommendation: Bus rapid transit in the short-term by redesignating the two lanes added during the corridors' ongoing reconstruction as high-occupancy vehicle (HOV)/bus rapid transit (BRT). Separate buses serving Benton would provide service up I-430, as well as continuation along I-30 south and east of downtown into the transit center. The I-30/I-430 bus could be integrated with the routes along the Northbelt. Once the Rock Island corridor becomes viable for light rail, the BRT service on I-30 would be discontinued. Charrette participants did not feel that the Highway 5 corridor was viable.

Planner's Response: Although a desirable short-term solution, BRT along I-30 will not be possible if it assumes converting two lanes of the reconstructed facility to HOV/BRT. This would be inconsistent with the planning and environmental processes through which the current reconstruction was designed and implemented. Furthermore, once constructed, it is virtually impossible to convert a general purpose freeway lane to HOV, and may conflict with federal statutes. On the other hand, I-30 is being reconstructed to accommodate additional infrastructure outside of the six-lane cross-section. It may be possible to implement a relatively low-cost, shorter-term BRT solution by building to the outside.

Planning and Design Details:
- Possible Park-n-Ride opportunities in Benton and Bryant
- Design and construction of BRT in I-30 right-of-way will be difficult, but not impossible
- Once the BRT vehicles hit the I-30/I-430 interchange, they will be forced to integrate with mixed-flow vehicles in general purpose lanes, thus reducing the BRT's travel time advantage.
- For a short-term solution, building a separate BRT facility may not be practical.

6 Southwest Corridor (Short-term): I-30 from Benton to Haskell

Charrette Recommendation: Continuation of the BRT facility along I-30 to Haskell.

Planner's Response: If BRT is implemented to Benton, then an extension to Haskell may be a logical choice for further study. Although BRT may not be warranted, it may still be desirable to have the buses continue to Haskell using the general purpose lanes on I-30.

7 Southwest Corridor (Long-term): Rock Island from Downtown to Benton

Charrette Recommendation: Light rail transit along the Rock Island Railroad. Right-of-way in this abandoned rail corridor is currently being acquired by local governments with federal assistance through Metroplan's project planning and programming efforts. Park-n-Ride lots along the corridor could be served by local fixed route, shuttle, or demand response service. The Rock Island line was judged as superior to other alignments due to the availability of right-of-way in the corridor and the lack of track-sharing opportunities on the Union Pacific Railroad given its high use as a NAFTA route between Canada and Mexico.

Planner's Response: Although light rail may be desirable in this corridor, its location outside the activity corridor of I-30 may make it difficult to attract ridership to support a light rail investment. The Rock Island corridor misses the urban and suburban areas to the north and west, and the 25-mile distance between Benton and downtown is longer than typical light rail lines across the country. Station spacing requirements for light rail do not appear to be applicable in this corridor at this time. However, with a solid commitment by local governments to develop the Rock Island corridor in a high-density, transit-supportive fashion, light rail may be viable. Commuter rail, with its longer distance operational characteristics and station spacing requirements, also provides a viable transit opportunity in this corridor. Bus rapid transit should be studied as well.

Planning and Design Details:
- Consideration of commuter rail and bus rapid transit as alternatives to light rail
- Connect Benton and Bryant with the Little Rock Airport and the downtown transit center
- Consideration for the Alcoa site redevelopment and a new Saline County airport in the transit planning process
- Requires a firm commitment from local jurisdictions to develop the Rock Island corridor with high-density, transit-supportive developments with transit-oriented designs

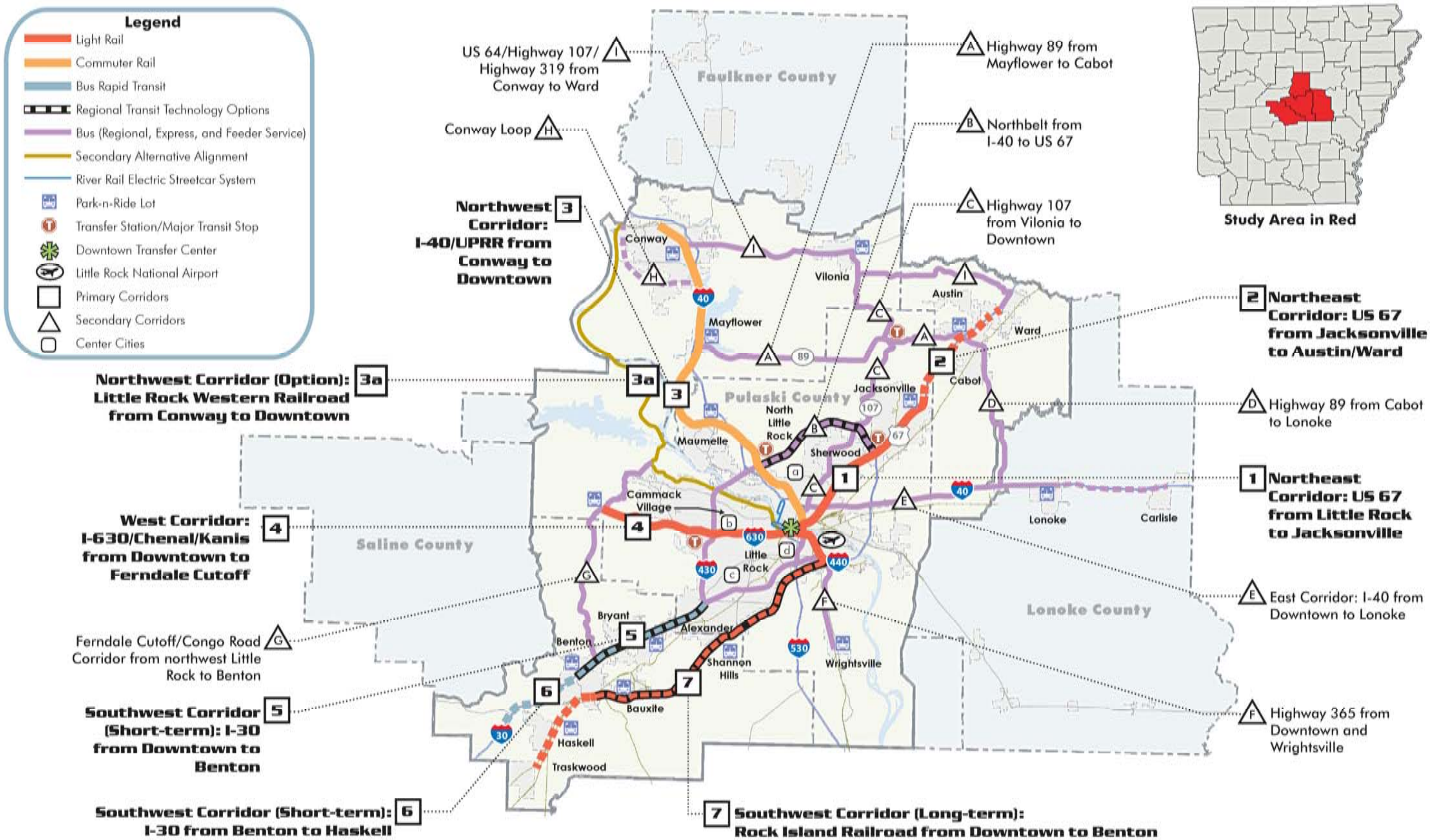
Secondary Corridors - Regional Bus

A Highway 89 from Mayflower to Cabot

This corridor's strategic location and east-west orientation provide a good opportunity for a bus route that can feed commuters to the line-haul transit services along I-40, US 67, and Highway 107.

Planning and Design Details:
- Two-way commuter service during the morning and evening peak periods
- Some off-peak service possible
- Major transfer stations/Park-n-Ride lots at US 67 and I-40 with a major stop at the intersection of Highways 89 and 107

The Regional Transit Vision Plan for Central Arkansas



METRO 2030 The Long-Range Transportation Plan for Central Arkansas

B Northbelt from I-40 to US 67

The current medium-density residential developments that are occurring in the corridor will not support a long-term rail investment. The corridor has been placed on the regional bus network and should continue as part of a longer cross-town route that continues along I-430 west and south to the I-30 interchange. Since this section of freeway has not yet been constructed, there is an opportunity to provide accommodation for a higher technology transit system in the corridor, such as BRT operating in its own guideway for more competitive operations.

Planning and Design Details:
- Two-way commuter service during the morning and evening peak periods
- Some off-peak service possible
- Major transfer stations at US 67 and I-40

C Highway 107 from Vilonia to Downtown

Charrette Recommendation: Light rail

Planner's Response: This corridor will not likely develop enough ridership potential to support rail transit. However, the roadway is strategically placed to serve mobility needs of Vilonia commuters and military personnel.

Planning and Design Details:
- Bus transfer station at the intersection of Highways 107 and 89

D Highway 89 from Cabot to Lonoke

Charrette Recommendation: Light rail

Planner's Response: This corridor will not develop enough ridership potential to support rail transit. The corridor has the potential as a bus route to serve some rural employment locations, but will primarily be used to connect commuters in low-density residential developments to the US 67 and I-40 line-haul transit lines.

Planning and Design Details:
- Two-way commuter service during the morning and evening peak periods

E East Corridor: I-40 from Downtown to Lonoke

Charrette Recommendation: Light rail

Planner's Response: It seems unlikely that the I-40 east corridor will develop enough ridership potential to support a light rail line. Regional bus service may be a more viable option to serve commuters from Lonoke. An extension to Carlisle should be studied in the future, but may be difficult to justify.

Planning and Design Details :
- Park-n-Ride lot in Lonoke
- Primarily peak period commuter service
- Possible service extension to Carlisle

F Highway 365 from Downtown and Wrightsville

This corridor should be considered as part of the regional bus network to provide service to residents and commuters of Wrightsville to downtown and beyond.

Planning and Design Details:
- Park-n-Ride lot in Wrightsville
- Two-way bus route should provide all-day service along this route

G Ferndale Cutoff/Congo Road Corridor from Northwest Little Rock to Benton

Charrette Recommendation: Light rail

Planner's Response: The orientation and location of this corridor may not be suitable for light rail. Although development is moving west out of Little Rock, the medium-density residential development occurring in this area will not generate sufficient ridership to support light rail.

Planning and Design Details:
- Service between Park-n-Ride lots in Benton and far west Little Rock
- Primarily a commuter route operating in the peak periods, but an opportunity for off-peak service may exist

H Conway Loop

Anticipating the eventual need and construction of a bypass around the west and south of Conway, Charrette participants wanted to recognize the opportunity to provide feeder bus service along this route, which is envisioned as a parkway.

I US 64/ Highway 107/ Highway 319 from Conway to Ward

A cross-town light rail line would not be feasible in an area so far north of the developed areas of the region. However, the corridor's strategic location and east-west orientation provides a good opportunity for a bus route that can feed commuters to the line-haul transit services along I-40, US 67, and Highway 107.

Planning and Design Details:

- Two-way commuter service during the morning and evening peak periods
- Some off-peak service possible
- Major transfer stations/Park-n-Ride lots at I-40, Highway 107, and US 67. Depending on the service recommendations along US 67, the location of the Park-n-Ride lot may move south to Cabot

Center Cities

a North Little Rock

The radial, line-haul rail and bus routes through this area should be served by a local feeder bus system that covers residential and commercial areas, as well as major employers (e.g., McCain Mall) and activity centers (e.g., Alltel Arena). Local bicycle and pedestrian facilities should also be planned to complement the line-haul routes of the regional system.

b West Little Rock

Complementary feeder buses, as well as bicycle and pedestrian facilities, should provide access to and from the regional line-haul routes along I-630 and I-430. Given the modest densities of current developments in the area, a demand-response feeder bus system should be considered.

(c) Southwest Little Rock

Complementary feeder buses, as well as bicycle and pedestrian facilities, should provide access to and from the regional line-haul routes along I-630, I-30/Rock Island Railroad, and I-430. Given the higher densities of current developments in the area, a gridded bus network may be desirable for supporting the regional rail investments.

(d) General

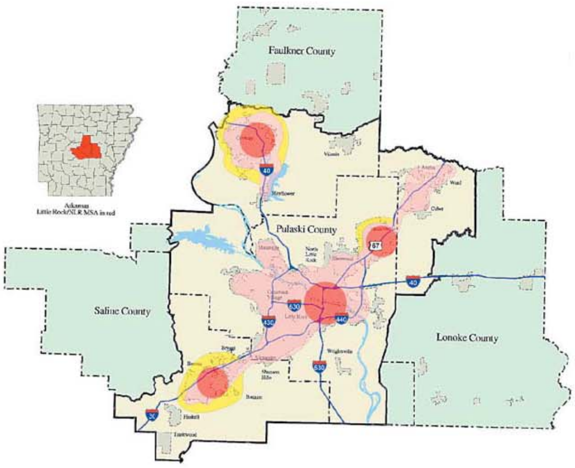
- Additional vehicle and rail access across the river will be necessary in the future with or without a regional transit system.
- The downtown transit center and the Little Rock Airport are critical destinations that must be served by virtually every radial bus and rail route. Integration of air, rail, car, and bus modes is imperative to establishing a seamless multi-modal transportation system in central Arkansas. Other important destinations should be considered as well, including the State Capitol and the Presidential Library.
- Integration with the rail trolley system should be considered, especially for the radial light rail lines.

Regional

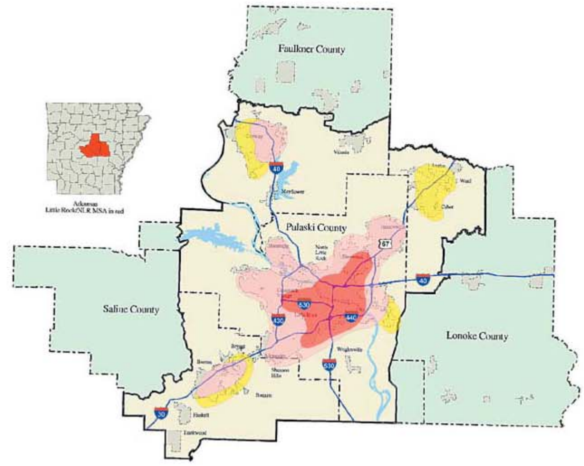
- *Motorist Assistance or Incident Detection and Response Programs* should be implemented on congested freeways in the urban core and throughout the region. These programs can be particularly effective in reducing nonrecurring congestion due to incidents and accidents, which in turn has a positive impact on air quality.
- A *Regional Traffic Operations Center* or a network of local centers should be implemented to address congestion problems by adjusting signal timing and progression plans on a real-time basis.
- A *Regional Transit Authority* should be established to plan and implement long-term, regional solutions to traffic congestion. The transit authority should run the downtown parking program so that logically planned parking and transit operations can be implemented with little redundancy and competition.

Land Use and Transportation

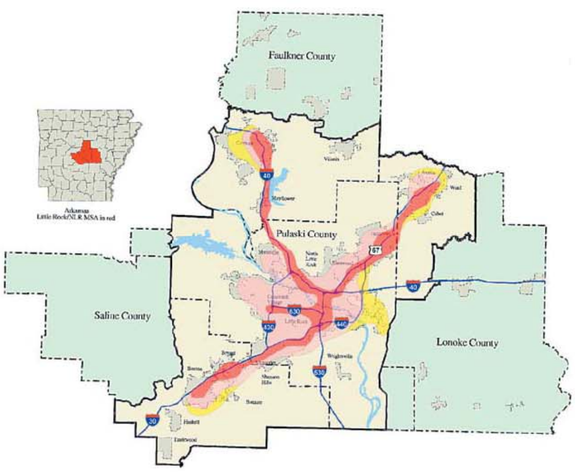
The relationship between land use and transportation works both ways - changes in land use produce impacts on the transportation system in terms of traffic volumes, patterns, and congestion levels; while changes to the transportation system can have a profound effect on land development and use patterns.



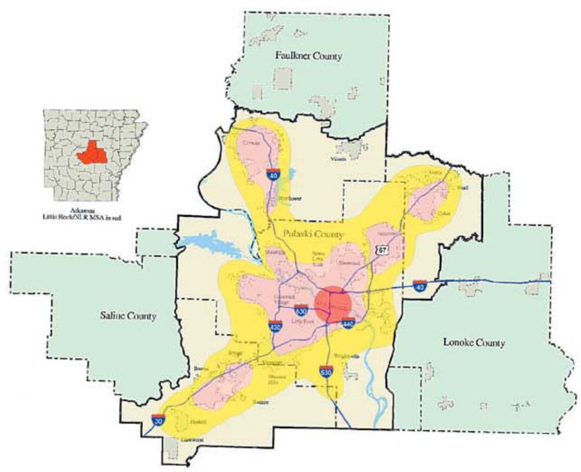
Satellite Cities: *Focuses development in and around established urban and suburban cities. Communities are separated by open spaces and natural areas. Can support commuter rail to suburbs and light rail in urban core.*



Compact Development: *Growth is directed to the center cities with less growth in suburban areas. Can support an extensive light rail system in the urban core and regional bus to suburban locations.*



Corridor Development: *Growth corridors along existing freeways will receive most new growth. Various light rail and commuter rail options exist.*



Dispersed Development: *A developer-driven approach with limited regional policy influence in which past land development practices continue into the future. Can support local bus options but not regional bus or rail.*

History provides valuable lessons. In the 1800's, the railroads opened up new territory, ensuring prosperity for towns along the line and economic struggle for those passed by. No doubt cities also formed along rivers, which were and still are used as transportation routes. In the mid-1900's, suburban communities thrived as modern freeways connected them with the economic core of metro areas. Today, new freeway expansions open up new corridors for development.

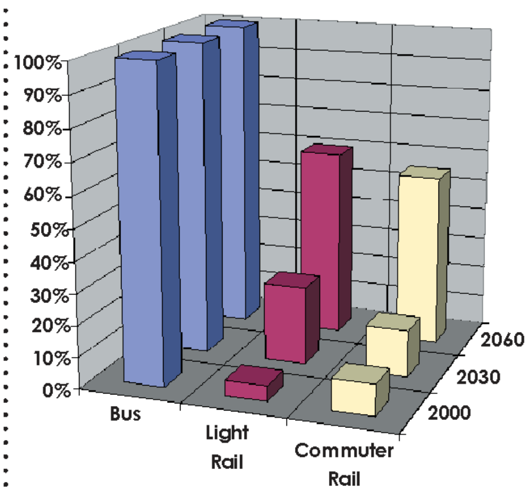
Land development and use policies have likewise had a profound effect on the ongoing development of transportation systems, particularly mass transit systems. More and more areas around the country are engaging in the discussion and implementation of policies that direct land development in a more sustainable fashion. By focusing development and encouraging transit-supportive developments and designs, these communities have been able to provide a foundation for supporting a regional transit system.

For a regional, rail-based system to work in central Arkansas, changes in land development practices and policies will be necessary. The region is growing, but the developer-driven approach with limited regional policy influence that has occurred in the past and continues today will not by itself lead the way to regional transit. Densities are too low and activities too spread out. A regional approach to land development policies can adjust these trends, while still maintaining the values of a market-based system and personal property rights. It can be done because it has been done, but it takes strong regional leadership and public support.

When Might the Transit Vision be Implemented?

There's no way to tell for sure when the *Regional Transit Vision* will be implemented. However, several regions across the nation are already operating viable rail-based transit systems. They provide good indications of the regional size and character necessary to support such a system.

Using information from the U.S. Census and the American Public Transportation Association (APTA), the chart below shows the types of transit systems typical of metropolitan areas the size of central Arkansas today and in the future.



As central Arkansas grows into the future, regional rail may become viable based on this comparison of peer cities across the country.

The chart shows that there are rail transit systems operating in some communities with a population similar to central Arkansas today, which is about 585,000 people. In the year 2030, our population is projected to be about 834,000 people. A higher number of communities around the country of a similar size have rail transit. For 2060, the percentage is even higher. What this means is that as the region grows, we will reach a critical mass of people and activities through which regional rail could be supported.

Many factors beyond simple population comparisons must be considered before rail transit makes sense, such as density, proximity to other urban areas, political and public priorities, and many others. However, the chart demonstrates that rail transit is not an "out-of-this-world" idea for our region.

Creating Community Centers Using Transit Oriented Development

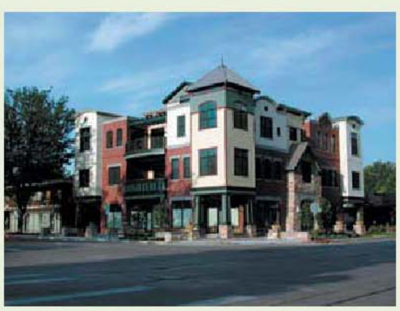
The *Regional Transit Vision* identifies transit corridors that connect the various areas and activity centers of central Arkansas. Transit-supportive development practices can strengthen these connections, and transit oriented development (TOD) is one method to do so. TOD's can include entertainment centers, housing, workplaces, retail stores, and parks. TOD's foster attractive and sustainable communities that appeal to a variety of lifestyles.

Fundamental elements of TOD's consists of safe pedestrian oriented development, a rich mix of land uses, and a number of urban services. Specific elements could include lively public plazas, interactive public art, hotels, theaters, and health and child care facilities.

The underlying theme to creating a thriving TOD is ***people***. From the arrangement of the buildings, to architecture and placement of benches and art, the development must be designed for the people that live, work, shop, play, and bring life to the center.

TOD's Help Communities...

1. Create community focal points and gathering places.
2. Increase housing affordability and housing stock variety.
3. Generate economic development.



Transit Oriented Development Principles

- A mix and integration of supportive land uses around the rail stations.
- Higher densities for new development in the station areas.
- Compact, walkable villages located at and around transit stations.
- Bicycle connections to the transit stops and "bikeway" system, which includes off-street bike trails and on-street bike lanes.
- An interconnected street network that disperses traffic and eases walking.
- Reduced parking integrated into shared structures and lots.
- Feeder, local, and regional bus service to the stations and stops.
- Built around civic plazas and cultural places.
- Quality architecture and design that promote aesthetics and human comfort.

Where Do We Go From Here?

The *Regional Transit Vision* will describe a future transit system plan that is unconstrained by time or dollars. As such, it has intrinsic value for influencing future land use and transportation policies and planning efforts. As a "vision," it lays the foundation for refinement so that a financially-constrained transit system can be identified for intervening years.

As part of the development of *Metro 2030: The Long-Range Transportation Plan for Central Arkansas*, the Metroplan Transportation Advisory Council (TAC) and Board of Directors will utilize this *Regional Transit Vision* as a starting point for specifying the transit component of the regional transportation system for the year 2030.

Charrette Co-Sponsors—Metroplan and CATA

Metroplan is a regional council of local governments made up of five counties, 19 cities, and other agencies. As a regional planning agency responsible for long-range transportation planning in the region, Metroplan is also the federally-designated metropolitan planning organization (MPO) charged with developing *Metro 2030: The Long-Range Transportation Plan for Central Arkansas.* For more information on Metroplan or the Metro 2030 plan, log on to **www.metroplan.org.**

METROPLAN
A COUNCIL OF LOCAL GOVERNMENTS


"It was pleasing to me to have the broad base of involvement. Different people with different interests."
– Tommy Swaim, Jacksonville Mayor

Commuter rail likely in future

Central Arkansas visionaries meet to share their ideas for mass-transit system


Workshop on mass transit asks for focus on big ideas, not cash

Participants use crayons to sketch out rail systems, lanes

The Central Arkansas Transit Authority, or CATA, was created in 1986 to provide transit service for parts of Pulaski County. They currently operate 21 regular fixed routes, 8 express bus routes, and the Links paratransit service. For more information about CATA, check out **www.cat.org.**

Transit Design Charrette Participants

Almost 80 individuals spent their entire Saturday on January 10, 2004 to develop the *Regional Transit Vision*. Participants included local elected officials, business leaders, developers, planners, and members of the public. Their dedication and contribution in support of regional transit planning objectives is substantial. As is often said…

Arkansas State Highway and Transportation Department (AHTD)
Danny Chidester
Steve Mitchell

Arkansas Democrat-Gazette
Andy Davis

Benton Chamber of Commerce
Rae Ann Fields
Mark Gillis
Gary Hunnicutt

Cabot City Council
James Moore

Central Arkansas Transit Authority (CATA)
Keith Jones
Bob Lane, Board
Bob Major, Board
Eric Meyerson
Alfreta Richardson, Board
Betty Wineland

City of Benton
Ed Albares
Rick Holland, Mayor
Frank Large

City of Bryant
Paul Halley, Mayor

City of Cabot
David Polantz
"Stubby" Stumbaugh, Mayor

City of Jacksonville
Tommy Swaim, Mayor

City of Little Rock
George Campbell
Barbara Graves
Bruce Moore, City Manager
Bob Turner
Doris Wright

City of Maumelle
Burch Johnson, Mayor

City of Mayflower
Lee Elliott
Dean Edwards
Judy Manley

City of North Little Rock
Michael Drake
Patrick Hays, Mayor
Tim Marvin
Joe McCall
Steve Nawojczyk
Joe Smith
Mike Smith
Robert Voyles

Coulson Oil Company
Mike Coulson

Downtown Partnership
Terri Hollingsworth Davis
Sharon Priest

Dupree Brothers, Jacksonville
Judith Beale
Larry Dupree
Tommy Dupree

Federal Highway Administration (FWHA)
Gary Dalporto

Heifer International
Tom Peterson

Jacksonville Planning Commission
Mark Stroud

Leader News
John Hofheimer

Lonoke County Judge
Charlie Troutman

Little Rock Air Force Base (LRAFB)
Gary Farrow

Pulaski County Judge
FG "Buddy" Villines

Pulaski County Quorum Court
Pat Dicker

Pulaski Technical College
Dan Bakke, President
Patty Davis
Johnny Dollar
Stine Gilmore
Pernell Henderson

Saline County Judge
Lanny Fite

Transportation Advisory Council (TAC)
Bill Asti
Bob Brave
Tom Easterly
Jay Hartman
David Henze
Owain Hughes
Todd Larson
Jimmy Morgan
John Mass
Mizan Rahman
Patrick Stair

University of Arkansas at Little Rock (UALR)
Marsha Guffey
Jim Lynch
Clay Robinson
Trent Shaskin
Rolf Wigand

University of Central Arkansas (UCA), Conway
Jeff Allender

Other
Thomas Dickinson
Hank Kelley
Julie McSpadden

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Appendix B - Land Use & Transportation Conceptual Analysis

As part of the development of *Metro 2030 – The Long-Range Transportation Plan for Central Arkansas*, the Metroplan Transportation Advisory Council (TAC) and Board of Directors were asked to establish a forecasted land use scenario to be used as the basis for evaluating future transportation alternatives. In order to do so, the TAC developed and refined a number of future land use and transportation conceptual scenarios, evaluated the scenarios using system and conceptual-level evaluation criteria, and presented this information to the public in a series of public meetings and events in September 2004. In the same timeframe, elected officials from around the region met in a Local Government Summit meeting to discuss these topics and offer their recommendations. The TAC and Board established a future land use scenario based on the information, data, and comment from the public and elected officials.

The Land Use-Transportation Connection

The relationship between land use and transportation works both ways - changes in land use produce impacts on the transportation system in terms of traffic volumes, patterns, and congestion levels; while changes to the transportation system can have a profound effect on land development and use patterns.

History provides valuable lessons. In the 1800's the railroads opened up new territory, ensuring prosperity for towns along the line and economic struggle for those less fortunate towns. No doubt cities also formed along rivers, which were and still are used as transportation routes. In the mid-1900's, suburban communities thrived as modern freeways connected them with the economic core of metro areas. Today, new freeway expansions open up new corridors for development.

Land development and use policies have likewise had a profound effect on the ongoing development of transportation systems. More and more areas around the country are engaging in the discussion and implementation of policies that direct land development in a more sustainable fashion.

Roadway congestion is increasing and will likely get worse in the future. This is confirmed by the experiences of other growing metropolitan areas around the country and is reflected in the public comments already received as part of the plan's development. In effect, it is becoming impossible to build our way out of congestion. New thinking will be necessary to manage future congestion problems. The region is growing, but the market-based approach to land development that has occurred in the past and continues today will not by itself lead the way to an efficient, viable regional transit system. Densities are too low and activities too spread out. A regional approach to land development policies can adjust these trends while still maintaining the values of a market-based system and personal property rights. It can be done because it has been done in other areas. But it takes strong regional leadership and public support.

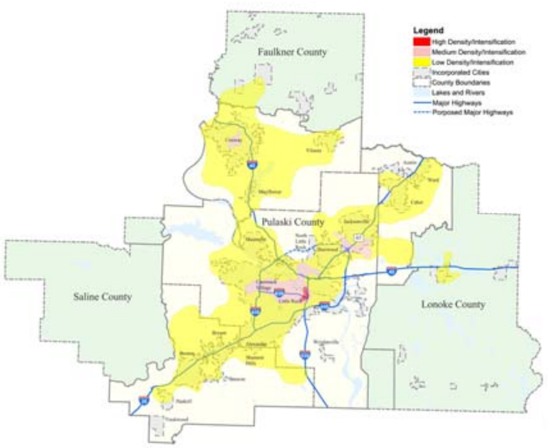
LAND USE AND TRANSPORTATION CONCEPTS

To support the analysis of land use and transportation for the plan's development, a series of land development concepts were defined. They are augmented with descriptions of conceptual transportation systems that would likely or possibly correspond to each land use concept. Some of the land use concepts present scenarios that, in themselves, are not very realistic. However, it is important to consider them because they may offer some viable ideas for the future. When the TAC and Board established the future land use scenario at the conclusion of this work phase, it contained elements from each of the land development concepts.

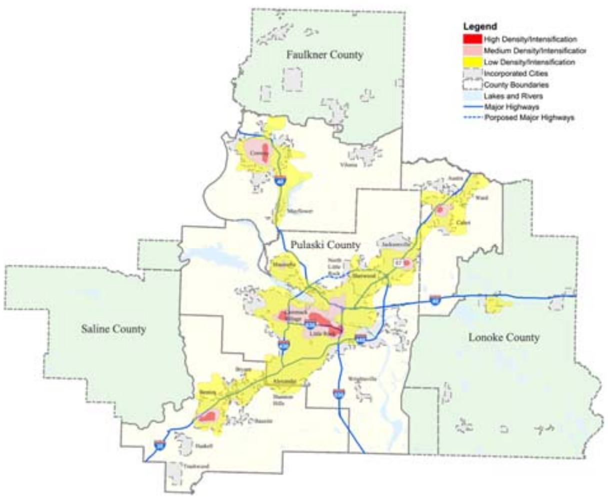
The conceptual analysis assumed similar amounts of total regional growth will occur in each land use concept. The four (4) alternative land development and transportation concepts have been arranged into three primary types: expansion, concentration of expansion, and concentration. The following graphic shows the general relationship and attributes of the concepts:

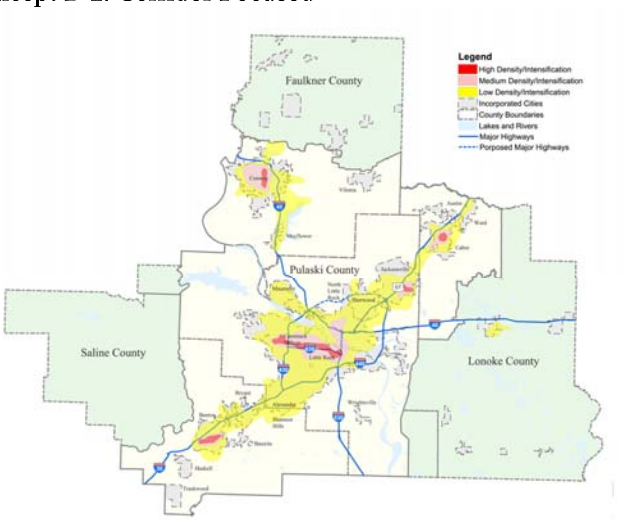
	A-1: Trends/ Dispersed Development (6-Lane Freeways)	B-1: Satellite Cities B-2: Corridor Focused	C-1: Compact Cities
Land Use Policy	Limited regional/ local control (developer-driven)	Regional policy/ local control (flexible)	Regional policy/ local control (rigid)
Land Consumption	No limit	Efficient	Minimal
New Residential Density	Low-Medium (3 - 7 units per acre)	Medium-High (7 - 20 units per acre)	High (20+ units per acre)
Intensification	Developer-driven	Priority development areas	Focused infill and redevelopment in urban services area
Transportation Focus	Highway	Mixed	Transit
Regional Rail Transit	No	Possible/Yes	Yes

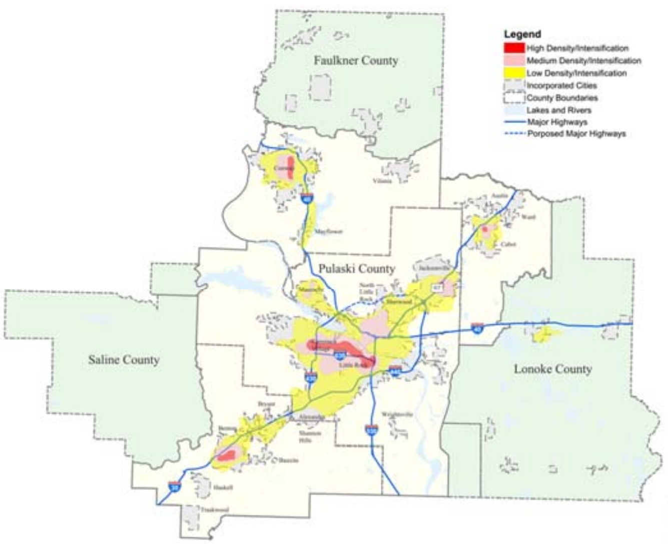
Basic land use and transportation information about each concept appears in the following charts.

	Land Use and Growth		Transportation			
A: Expansion Alternative	**Growth Boundaries**	**Land Development Patterns**	**Roadway System***	**Transit System**	**Bicycle and Pedestrian Networks**	**Funding**
Concept A-1: Trends/Dispersed Development  *(Graphic for illustrative purposes only)*	none	• Continue past practices • Some infill and redevelopment as market dictates • Continued emphasis on downtown vitality • Developments can extend into rural and agricultural areas • Land consumption is not limited • New single-family homes on urban and suburban fringes • Job movement toward the fringes but urban core still contains major employment areas • No real focus on increased densities or intensification of uses • Results in sprawl	The transportation system will be oriented to freeway and arterial expansion. Toll roads should be considered to help finance improvements. This scenario has the highest increase in roadway lane-miles.	This concept will not support a regional rail system. Regional or express buses may have application in some corridors.	Continued implementation of bicycle and pedestrian networks. Isolated pedestrian-friendly neighborhoods.	Mobility needs are greater than available funding. Funding allocations continue as usual. Significant funding for freeway and arterials street construction. Limited funding for local transit networks.

**Note:* *Concept A-1a retains the Metro 2025 policy of a 6-lane maximum cross-section for freeways. Concept A-1b allows freeways up to 8-lanes.*

	Land Use and Growth		Transportation			
B: Concentration of Expansion Alternatives	**Growth Boundaries**	**Land Development Patterns**	**Roadway System**	**Transit System**	**Bicycle and Pedestrian Networks**	**Funding**
Concept B-1: Satellite Cities  *(Graphic for illustrative purposes only)*	Priority Development Areas with flexible boundaries around urban core and suburbs.	• Growth within Priority Development Areas (PDA) surrounding urban and suburban areas • Development oriented to suburbs with some in urban core • More intensive uses of land in urban areas • Some development on fringes • Very limited development in rural and agricultural areas • More multi-family uses • Smaller lots • Significant infill and redevelopment with modest land consumption • Formation of large urban sub-centers and mixed use developments • Better balance of jobs and housing within each suburb • Opportunity areas • Protection of open space and agricultural lands outside growth areas • Physical separation of communities with open space and some residential estate development • Roadway capacity and local community development potential will be used to determine new growth areas • Sprawl is mostly contained	Some new or expanded radial freeway corridors done on a strategic basis with consideration of transit support needs. Freeway improvements in the urban core will be done on a strategic basis so as to accommodate and support rail transit. Arterial improvements in urban and suburban areas.	Light rail in the urban core. Expansion or integration of River Rail trolley system. Feeder bus network (gridded) in urban core. Commuter rail or regional bus to suburbs. Regional bus network.	Continued implementation of bicycle and pedestrian networks. Bicycle connections to close-in suburbs. Inter-connected pedestrian-friendly neighborhoods.	Mobility needs are greater than available funding. Funding shift from roads to transit. New funding mechanisms will be necessary to construct transit. Regional transit authority for implementation and operation.

	Land Use and Growth		Transportation			
B: Concentration of Expansion Alternatives	**Growth Boundaries**	**Land Development Patterns**	**Roadway System**	**Transit System**	**Bicycle and Pedestrian Networks**	**Funding**
Concept B-2: Corridor Focused  *(Graphic for illustrative purposes only)*	Priority Development Areas with flexible boundaries around urban core, corridors, and suburbs.	• Growth within Priority Development Areas (PDA) surrounding urban, suburban, and corridor areas • Development oriented to corridors, the urban core, and suburbs • More intensive uses of land in urban areas, suburbs, and corridors • Some development on fringes • Very limited development in rural and agricultural areas • More multi-family uses • Smaller lots • Significant infill and redevelopment with modest land consumption • Formation of large urban sub-centers and mixed use developments • Opportunity areas • Protection of open space and agricultural lands outside growth areas • Physical separation of communities with open space and some residential estate development • Roadway capacity and local community development potential will be used to determine new growth areas • Sprawl is mostly contained	Some new or expanded radial freeway corridors done on a strategic basis with consideration of transit support needs. Freeway improvements in the urban core will be done on a strategic basis so as to accommodate and support rail transit. Some arterial improvements in urban and suburban areas.	▪ Possible light rail in the urban core. ▪ Expansion or integration of River Rail trolley system. ▪ Feeder bus network (gridded) in urban core. ▪ Northeast - Light rail along US67 corridor. ▪ Southwest – Bus rapid transit along I-30 in short term; light rail along Rock Island RR corridor in long-term. ▪ Northwest – Commuter rail along I-40 corridor. ▪ Feeder bus connections at primary nodes along transit corridors. ▪ Regional bus network.	Continued implementation of bicycle and pedestrian networks. Bicycle connections along corridors to close-in suburbs. Pedestrian-friendly neighborhoods	Mobility needs are greater than available funding. Funding shift from roads to transit. New funding mechanisms will be necessary to construct transit. Regional transit authority for implementation and operation.

	Land Use and Growth		Transportation			
C: Concentration Alternatives	**Growth Boundaries**	**Land Development Patterns**	**Roadway System**	**Transit System**	**Bicycle and Pedestrian Networks**	**Funding**
Concept C-1: Compact Cities  *(Graphic for illustrative purposes only)*	Urban Growth Boundary strictly enforced.	• Growth concentrated in Urban Growth Boundary (UGB) around the existing urban core and suburbs • Some growth in suburbs • Some growth in urban core • No growth in open space, rural, or agricultural lands • More intensive uses of land – "growing up rather than growing out" • More multi-family uses • Smaller lots • Mostly infill and redevelopment with limited new land consumption • Formation of large urban sub-centers and mixed use developments • Opportunity areas • Protection of open space and agricultural lands outside urban areas • Sprawl is contained	No new radial freeway corridors but some limited radial freeway corridor expansion. Freeway improvements in the urban core will be done on a strategic basis so as to accommodate and support rail transit. Arterial improvements in urban areas.	High-capacity light rail in the urban core. Expansion or integration of River Rail trolley system. High-frequency feeder bus network (gridded) in urban core. Regional bus routes or possibility for commuter rail to suburbs.	Continued implementation of bicycle and pedestrian networks. Inter-connected pedestrian-friendly neighborhoods.	Mobility needs are greater than available funding. Funding shift from roads to transit and bicycle modes. New funding mechanisms will be necessary to construct transit. Regional transit authority for implementation and operation.

BICYCLE, PEDESTRIAN, AND PARATRANSIT SERVICE

This conceptual analysis of Buildout land use and transportation scenarios considered alternative futures that vary quite substantially. One fundamental aspect of each concept is its ability (or inability) to support some sort of regional rail transit system.

The bicycle and pedestrian systems and paratransit service assumptions were not developed in detail like the highway and transit systems. These alternative modes were assumed to have relatively similar investment levels among the Buildout concepts. They are considered to a degree in some of the criteria, but were not judged to be determining factors in the analysis like the highway and transit modes were.

With regard to the bicycle network, a regional network of bicycle lanes, routes, and off-street facilities was assumed for each Buildout concept. Although alignments, design details, and other aspects of the system will be affected by the land uses and densities that accompany each concept, overall investment levels and user access to the bicycle facilities are assumed to be similar.

Accordingly, the sidewalks and off-street facilities that make up the pedestrian system are assumed to have similar investment levels for each concept. The more compact alternatives will focus investment in the more dense urban areas.

In the same manner, paratransit services were not assumed to be a determining factor in the conceptual analysis. The provision of this important service will be affected by the amount of land area and/or roadway miles that must be covered by the service, thus raising costs. This was considered in the cost criteria in the analysis.

BUILDOUT ASSUMPTIONS

Defining a Buildout scenario for central Arkansas can be an arduous task due to the many uncertainties of forecasting socioeconomic data and because Buildout itself is such a nebulous term. It means different things to different people. The core, four-county area of central Arkansas has sufficient land availability to accommodate over 5 million people depending on use, density, intensification, and other factors. The areas beyond the four-county core could accommodate even more. So Buildout for central Arkansas could be many decades, even centuries into the future.

In order to develop a Buildout scenario for the purpose of evaluating and comparing land use/transportation concepts, a multi-step exercise was conducted and some basic assumptions were made, as follows:

- The Buildout scenario should include at least 1,000,000 people in the metropolitan area. This figure has been cited as a critical mass of demographic activity that could support a regional transit system, such as light rail or commuter rail. Since one of the tasks of Metro 2030 is to consider and evaluate a regional rail system, the Buildout scenario should exceed 1 million persons.

- The Buildout scenario should represent a reasonable, understandable date in the future, such as 2050 or 2075. Trying to conduct planning too far in the future results in reduced interest. If it's "not in my lifetime," it may be too far in the future for practical planning purposes.

- Using a trendline analysis and forecasts by Metroplan, the 2050 population projection for the four-county area would be 0.97 million people. The year 2070 would include 1.09 million persons.

- The land use and transportation conceptual analysis should not extend beyond the four-county geography, or alternatively the CARTS area. Availability of data, technical tools (e.g., travel model), and coordination capability is limited outside the four-county area.

The stepwise process of developing the Buildout scenarios used by the TAC included the following activities:

1. Use a trendline analysis and other available demographic patters to estimate county-level control totals for each socioeconomic category for each decade through 2080. Determine which of these represents a reasonable amount of demographic "critical mass" to simulate a reasonably built-out metropolitan area.

2. Conduct an analysis of developable lands and areas of intensification based on existing development and lands that cannot or will not be developed in the future (e.g., wetlands, national forests, water features, parks, cemeteries, military bases, golf courses, utility and transportation rights-of-way, etc.). The land use dataset (map) available for this effort is based on existing land uses and aerial photography. It contains seven categories: Commercial, Industrial, Residential, Other, Right-of-Way, Undevelopable, and Developable.

3. Based on the county-level population and household control totals for Buildout, estimate the amount of developable lands in each county that would be consumed under the Trends scenario. Evaluate whether or not the area of consumed land represents a reasonable amount of area for a Buildout condition. If not, go back to step 1 and adjust the four-county control totals.

4. Allocate household and employment data to traffic analysis zones (TAZ) for the Trends/Dispersed Development concept based on past and current development patterns.

5. Develop the other concepts using higher densities and smaller land consumption areas.

The TAC considered several iterations and refinements of the projected Buildout data. Based on the criteria and process developed to establish the Buildout scenario, the year 2060 was chosen to represent a reasonable Buildout of the region. The following graphic summarizes the population, household, and employment projections by decade that were used to establish Buildout.

	2000	2030	2050	2060	2070	2080
Population	583,845	834,000	970,042	1,043,882	1,093,827	1,157,951
Households	230,864	348,701	404,895	435,332	456,123	482,528
Persons/Household	2.53	2.39	2.40	2.40	2.40	2.40
Employment	314,061	420,561	492,491	524,815	560,780	591,980
Jobs/Person	0.54	0.50	0.51	0.50	0.51	0.51
Jobs/Household	1.36	1.21	1.22	1.21	1.23	1.23

DEVELOPABLE LANDS ANALYSIS

Allocation patterns and densities will vary among the concepts based on the assumptions identified in the following charts. The land use categories (e.g., Residential, Commercial, etc.) are based on existing conditions as represented on the developable lands map.

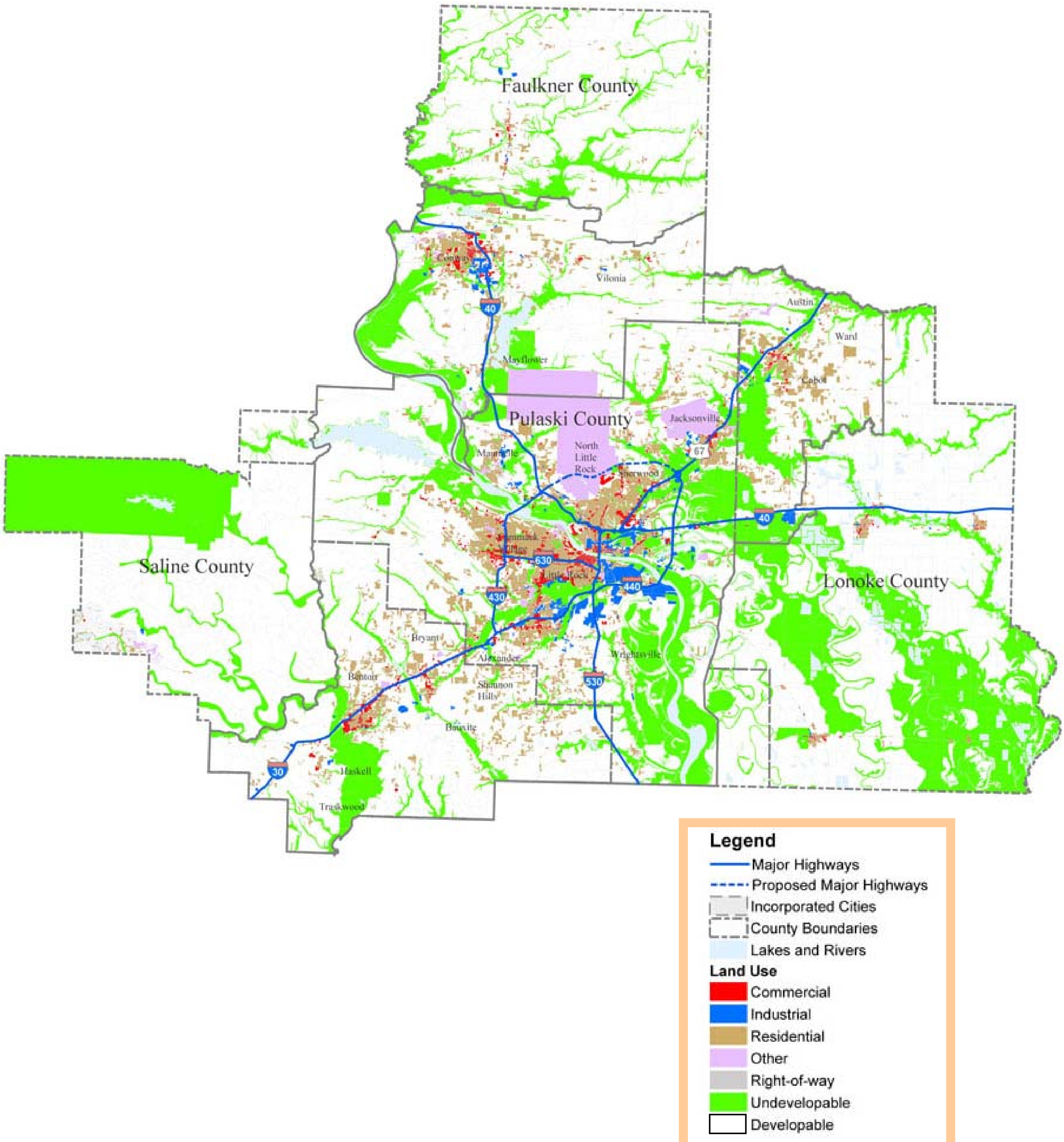


Table B-1
Allocation and Density Assumptions for Developed and Developable Lands

Land Use	General Description and Treatment	A-1(a, b): Trends/Dispersed Development	B-1: Satellite Cities	B-2: Regional Transit Vision	C-1: Compact Cities
Residential	Includes both developed lands with no potential intensification and developed lands with potential intensification.	Minimal residential redevelopment or intensification in built areas.	Modest residential redevelopment and intensification in built areas based on Priority Development Area definitions. Urban and suburban core areas will intensify the most, followed by fringe areas. Intensification at nodes, such as freeway interchanges and arterial street intersections, will occur. Since this concept is intended to be supportive of a regional transit system, areas within ½ mile of transit nodes (20% intensification) and ¼ mile of potential light rail corridors (10% intensification) receive the most intensification.	Modest residential redevelopment and intensification in built areas based on Priority Development Area definitions. Urban and suburban core areas and freeway corridors will intensify the most, followed by fringe areas. Intensification at nodes, such as freeway interchanges and arterial street intersections, will occur. Since this concept is intended to be supportive of a regional transit system, areas within ½ mile of transit nodes (20% intensification) and ¼ mile of potential light rail corridors (10% intensification) receive the most intensification.	Significant residential redevelopment and intensification in built areas based on Urban Growth Boundary. Urban and suburban core areas will intensify to a significant degree (20% intensification). Intensification at nodes, such as freeway interchanges and arterial street intersections, will occur. Since this concept is intended to be supportive of a regional transit system, areas within ½ mile of transit nodes (30% intensification) and ¼ mile of potential light rail corridors (20% intensification) receive the most intensification. Minimal development along freeway corridors outside of the urbanized areas.

Land Use	General Description and Treatment	A-1(a, b): Trends/Dispersed Development	B-1: Satellite Cities	B-2: Regional Transit Vision	C-1: Compact Cities
Commercial	Includes both developed lands with no potential intensification and developed lands with potential intensification.	Minimal commercial/ retail redevelopment or intensification of built areas.	Modest commercial/ retail redevelopment or intensification of built areas. Most intensification will occur at nodes and along freeway, transit, and arterial corridors. Areas of commercial redevelopment and intensification should be reasonably consistent with residential intensification.	Modest commercial/ retail redevelopment or intensification of built areas. Most intensification will occur at nodes and along freeway, transit and arterial corridors. Areas of commercial redevelopment and intensification should be reasonably consistent with residential intensification.	Significant commercial/ retail redevelopment or intensification of built areas. Most intensification will occur at nodes and along freeway, transit and arterial corridors. Areas of commercial redevelopment and intensification should be reasonably consistent with residential intensification.
Industrial	Includes both developed lands with no potential intensification and developed lands with potential intensification.	Minimal redevelopment or intensification. Loss of manufacturing jobs locally and nationally affects redevelopment potential.	Modest redevelopment or intensification. Loss of manufacturing jobs locally and nationally affects redevelopment potential.	Modest redevelopment or intensification. Loss of manufacturing jobs locally and nationally affects redevelopment potential.	Modest redevelopment or intensification. Loss of manufacturing jobs locally and nationally affects redevelopment potential.
Other	Includes undeveloped lands with little development potential, such as golf courses, military bases, and cemeteries. These lands are not likely to develop anytime soon and are considered not developable for this analysis.	No development in the future.	No development in the future.	No development in the future.	No development in the future.
Right-of-Way	Includes transportation and other rights-of-way that are not considered developable.	No development in the future.	No development in the future.	No development in the future.	No development in the future.

Land Use	General Description and Treatment	A-1(a, b): Trends/Dispersed Development	B-1: Satellite Cities	B-2: Regional Transit Vision	C-1: Compact Cities
Undevelopable	Includes parks, flood plains, and wildlife management areas. These lands are not developable.	No development in the future.	No development in the future.	No development in the future.	No development in the future.

Land Use	General Description and Treatment	A-1(a, b): Trends/Dispersed Development	B-1: Satellite Cities	B-2: Regional Transit Vision	C-1: Compact Cities
Developable	Includes undeveloped lands for which no physical or political constraint to development has been identified.	Medium density residential growth on urban and suburban fringes. Low and very low density residential development in rural and agricultural lands. Direction of growth based on historical patterns, with Saline and Faulkner Counties receiving more residential development. Less residential development in Lonoke County due to existing agricultural uses and historical patterns. Commercial and retail development should generally follow residential development, but with a focus on arterial and freeway corridors for transportation access. New industrial development to be oriented toward existing industrial areas.	Minimal residential development in rural and agricultural outside of Priority Development Areas. Any residential development outside of Priority Development Areas will be very low density. Low, medium, and high density residential developments will occur in developable lands within Priority Development Areas. Direction of growth based on historical patterns and mostly contained by Priority Development Areas. Areas within ½ mile of transit nodes and ¼ mile of potential light rail corridors receive higher density developments. Commercial and retail development should generally follow residential development, but with a focus on transit, arterial and freeway corridors for transportation access. New industrial development to be oriented toward existing industrial areas.	Minimal residential development in rural and agricultural outside of Priority Development Areas. Any residential development outside of Priority Development Areas will be very low density. Low, medium, and high density residential developments will occur in developable lands within Priority Development Areas. Direction of growth based on historical patterns and mostly contained by Priority Development Areas. Areas within ½ mile of transit nodes and ¼ mile of potential light rail corridors receive higher density developments. Commercial and retail development should generally follow residential development, but with a focus on transit, arterial and freeway corridors for transportation access. New industrial development to be oriented toward existing industrial areas.	No development outside of Urban Growth Boundary. Medium and high density residential developments will occur within Urban Growth Boundary. Consideration should be given to historical growth patterns, but growth should be completely contained by the Urban Growth Boundary, which is similar to the existing urbanized and incorporated areas. Areas within ½ mile of transit nodes and ¼ mile of potential light rail corridors receive higher density developments. Commercial and retail development should generally follow residential development, but with a focus on transit, arterial and freeway corridors for transportation access. New industrial development to be oriented toward existing industrial areas.

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Appendix C - Diversity in Central Arkansas

Diversity in Central Arkansas

The central Arkansas region is rapidly becoming a racially and culturally diverse area. This report gives details about Blacks, Whites, Hispanics, Asians and American Indians in central Arkansas. Some of the topics covered in this report are, age, household income, educational attainment, household type. All of the topics are categorized by race. Not only does this document provide data for all races, it also shows where the different races reside in central Arkansas.

All data used in this report come from Census 2000. Some of the data come from the long form data (sent to randomly selected people), while others come from the Census short form (the one that everyone receives). For example, the age and income data come from the short form and the transportation to work data comes from the long form.

HOW Diverse Are We?

Pulaski County is the most diverse county in central Arkansas and Saline County is the least diverse. The map on page 3 shows diversity by census block for the LR Metropolitan Statistical Area (MSA). The diversity index was used to determine the level of diversity in an area.

The diversity index is based on block-level population data from Census 2000. It gives the highest score to areas which show the greatest diversity, and

The map at right is an enlarged view of central Arkansas which includes downtown Little Rock.

Diversity in Central Arkansas

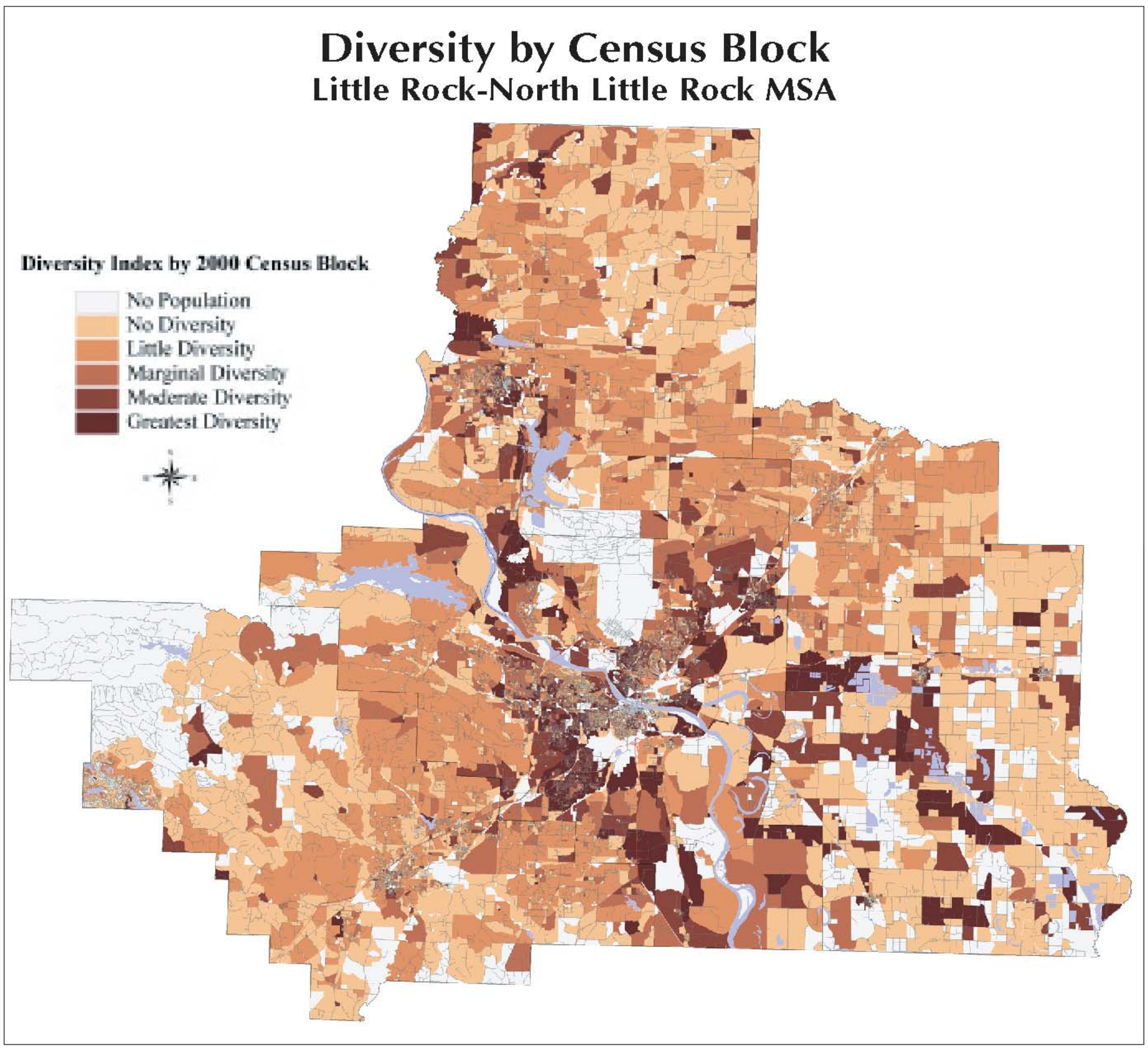
the lowest scores for those with the least diversity.

The index is developed by subtracting the largest ethnic group's portion of population for each block from one. Thus, if the largest ethic group accounted for seventy-eight percent of the population block total, the formula is: 1-.78=.22. The result is then multiplied by 100 to yield a score of 22.

Ethnic groups are defined in five categories: (1) White; (2) Black; (3) Other; (4) Hispanic and (5) Native American/Asian. These are terms the Census Bureau uses to describe race.

Ethnic Groups. . .
were defined in these five categories:

- White
- Black
- Hispanic
- Asian/Native American
- Other

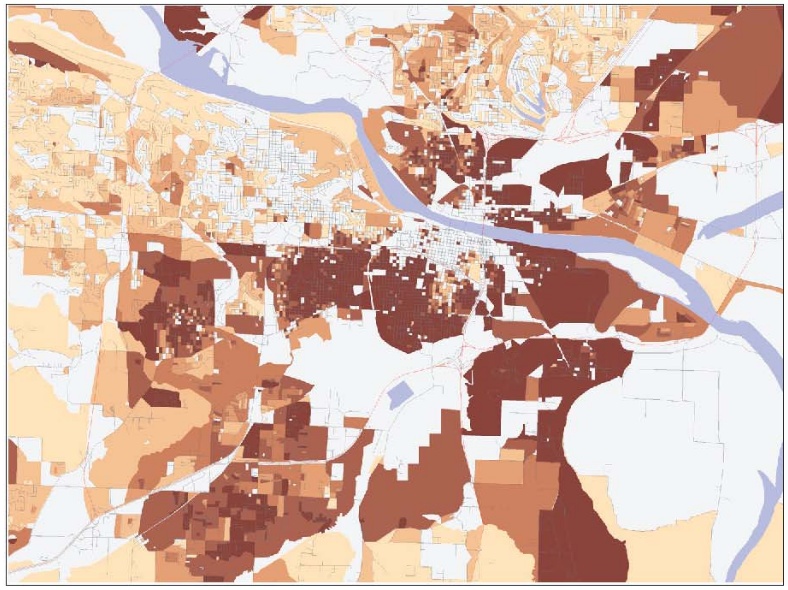


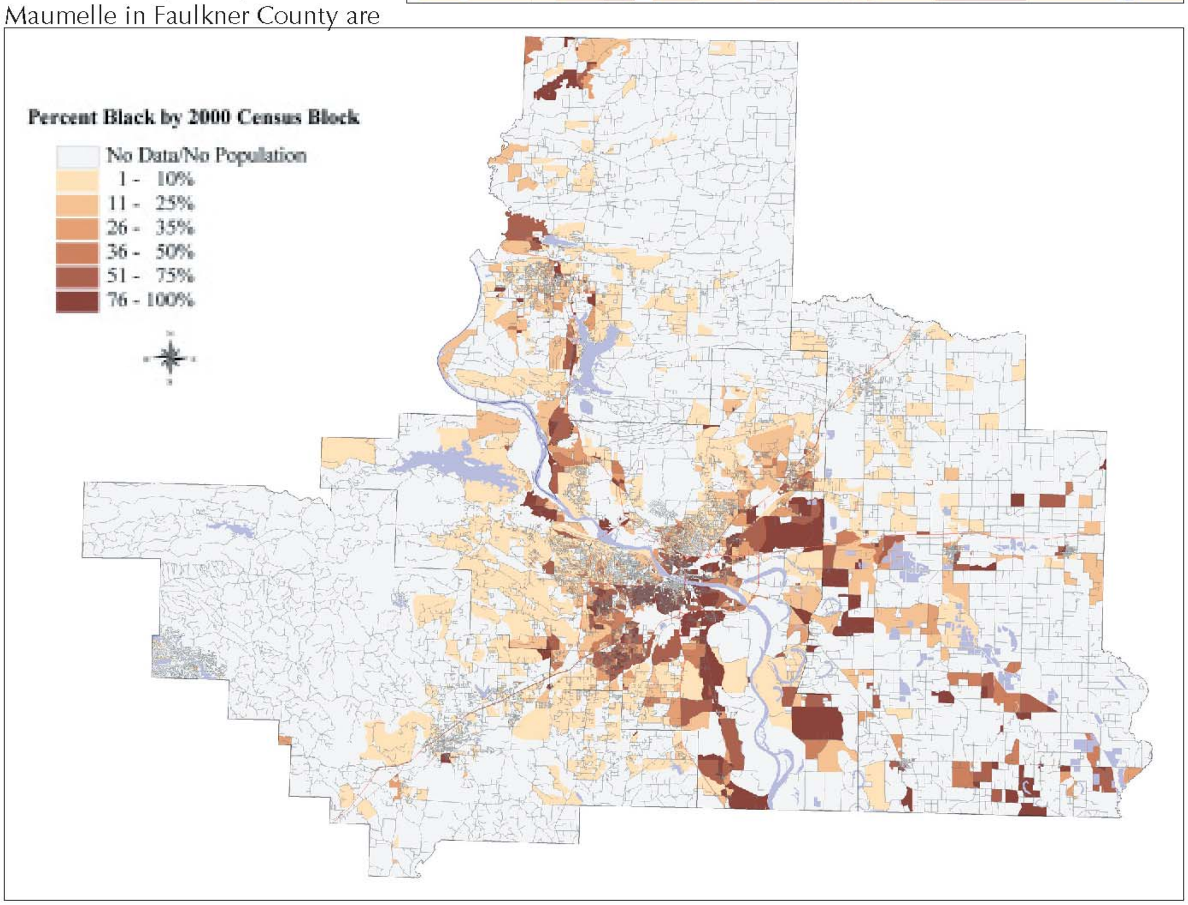
Diversity in Central Arkansas

BLACKS

Where Are We?

The map at right, depicts where Blacks are living in central Arkansas. In Pulaski County, Blacks reside primarily south of I-630 between I-430 and I-30. An area just to the east of I-440, south of the Little Rock National Airport, is also an area where Blacks reside. In North Little Rock, Blacks reside north of I-40, east of I-440 (the McAlmont and Galloway area) and in downtown (Argenta). The southern area of Lonoke County and north of Conway , the Town of Twin Groves, Mayflower and near the county line, just north of Maumelle in Faulkner County are

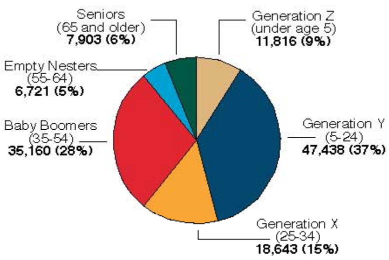




Diversity in Central Arkansas

BLACKS

areas containing predominately Black residents. The southwest side of Benton south of I-30 is an area where a large number of Blacks live.



Young Tilt

The Black population in central Arkansas is young. Generation Y (ages 5-24) make up thirty-seven percent of the black population. The Baby Boomers (ages 35-54) make up the second largest share.

Educational Attainment

Blacks lag just slightly behind in educational attainment, but it is on the rise. Fifteen percent of Blacks hold a bachelors degree or higher. High school graduate percentages are about equal between Blacks and the general population.

Educational Attainment for the Population 25 Years and Over

Black or African American	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	3,436	1,981	61,901	1,109	68,427	100.00
Less than 9th grade	173	344	3,694	115	4,326	6.32
9th to 12th grade, no diploma	683	538	11,151	259	12,631	18.46
High school graduate (includes equivalency)	988	592	18,547	263	20,390	29.80
Some college, no degree	957	314	15,710	280	17,261	25.23
Associate degree	122	64	3,184	60	3,430	5.01
Bachelor's degree	377	64	6,548	95	7,084	10.35
Graduate or professional degree	136	65	3,067	37	3,305	4.83

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	50,849	33,468	235,921	55,796	376,034	100.00
Less than 9th grade	2,418	2,639	10,206	2,866	18,129	4.82
9th to 12th grade, no diploma	6,050	4,844	26,667	6,992	44,553	11.85
High school graduate (includes equivalency)	15,914	11,944	63,911	21,027	112,796	30.00
Some college, no degree	11,539	7,394	57,753	12,950	89,636	23.84
Associate degree	2,108	1,773	11,060	2,831	17,772	4.73
Bachelor's degree	8,434	3,354	42,461	6,352	60,601	16.12
Graduate or professional degree	4,336	1,520	23,863	2,778	32,497	8.64

Source: U.S. Census Bureau

Diversity in Central Arkansas

BLACKS

What Do We Mean by "Black"?

"Blacks" have origins in any of the black racial groups of Africa. It includes people who indicated their race or races as "black, African American or Negro", or who wrote in entries such as African American, Afro-American, Nigerian or Haitian. It also includes some people of Hispanic origin, who can be of any race.

For the first time in 2000, the bureau allowed people to identify with more than one race. The vast majority of the population (98 percent) did not take advantage of this opportunity, and identified with just one race. Therefore, this report includes people who selected "black alone" on their Census forms.

Living Arrangements

Black households are less likely to consist of a married-couple than the entire population. Fourty-five percent of black households consist of a female householder with no husband present, 74 percent of these households have children. Only 47 percent of black households consist of a married-couple, while 75 percent of the entire population consists of married-couple households.

Off to Work

Blacks, like the rest of the overall population, are most likely to drive their own vehicle to work every day. Seventy-nine percent of Blacks drive alone to work compared to 86% for the entire population.

Household Type

Black or African American	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	1,528	788	25,993	333	28,642	100.00
Married-couple family	802	409	12,138	180	13,529	47.23
With own children under 18 years	525	270	7,352	106	8,253	
Male householder, no wife present	135	90	1,847	6	2,078	7.26
With own children under 18 years	76	55	1,056	6	1,193	
Female householder, no husband present	591	289	12,008	147	13,035	45.51
With own children under 18 years	461	184	8,999	120	9764	

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	19,661	13,219	81,995	20,629	135,504	100.00
Married-couple family	15,609	10,905	58,314	17,185	102,013	75.28
With own children under 18 years	8,839	6,345	29,634	8,915	53,733	
Male householder, no wife present	1,137	701	4,552	1,011	7,401	5.46
With own children under 18 years	761	411	2,473	647	4,292	
Female householder, no husband present	2,915	1,613	19,129	2,433	26,090	19.25
With own children under 18 years	2,026	1,169	13,856	1,703	18,754	

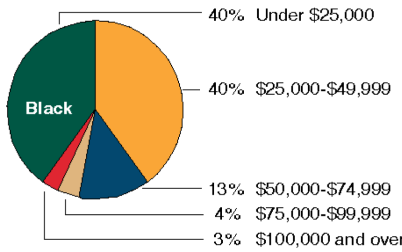
Source: U.S. Census Bureau

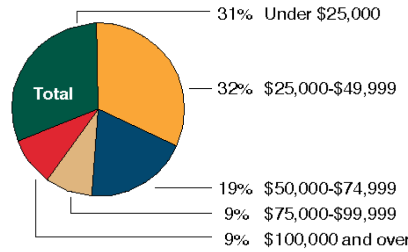
Diversity in Central Arkansas

BLACKS

The Middle Class

Over half of Black families (52%) in central Arkansas earn between $25,000 and $74,999 (middle income range). Blacks have a slightly higher percentage of households earning under $25,000 as compared to the households overall in the MSA.





Means of Transportation to Work

Workers 16 Years and Over

Black or African American	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total:	3,197	1,261	45,601	559	50,618	
Car, truck, or van:	2,963	1,164	42,470	543	47,140	93.13
Drove alone	2,435	969	33,697	441	37,542	74.17
Carpooled	528	195	8,773	102	9,598	18.96
Public transportation	4	0	1,427	0	1,431	2.83
Bus or trolley bus	4	0	1,188	0	1,192	2.35
Subway or elevated	0	0	9	0	9	0.02
Railroad	0	0	9	0	9	0.02
Taxicab	0	0	221	0	221	0.44
Motorcycle	0	0	10	0	10	0.02
Bicycle	3	0	76	0	79	0.16
Walked	116	44	839	0	999	1.97
Other means	12	41	378	11	442	0.87
Worked at home	99	12	401	5	517	1.02

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	41,855	25,006	174,066	39,456	280,383	
Car, Truck or Van	39,347	23,930	164,393	37,899	265,569	94.72
Drove alone	32,942	20,495	141,975	33,280	228,692	81.56
Carpooled	6,405	3,435	22,418	4,619	36,877	13.89
Public Transportation	70	39	2,207	76	2,392	0.85
Bus/trolley	48	39	1,833	56	1,976	0.70
Streetcar	0	0	22	0	22	0.01
Subway or elevated	0	0	9	0	9	0.03
Railroad	22	0	36	0	58	0.02
Taxicab	0	0	307	18	325	0.12
Motorcycle	22	32	255	59	368	0.13
Bicycle	133	17	253	18	421	0.15
Walked	845	277	2,137	349	3,608	1.29
Other means	271	2,204	1,045	164	3,684	1.31
Worked at home	1,167	507	3,776	891	6,341	2.26

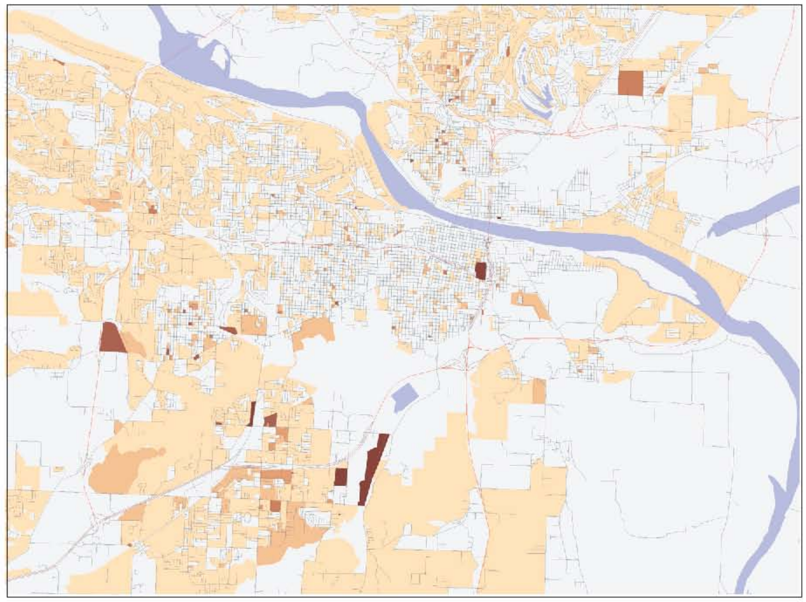
Source: U.S. Census Bureau

Diversity in Central Arkansas

HISPANICS

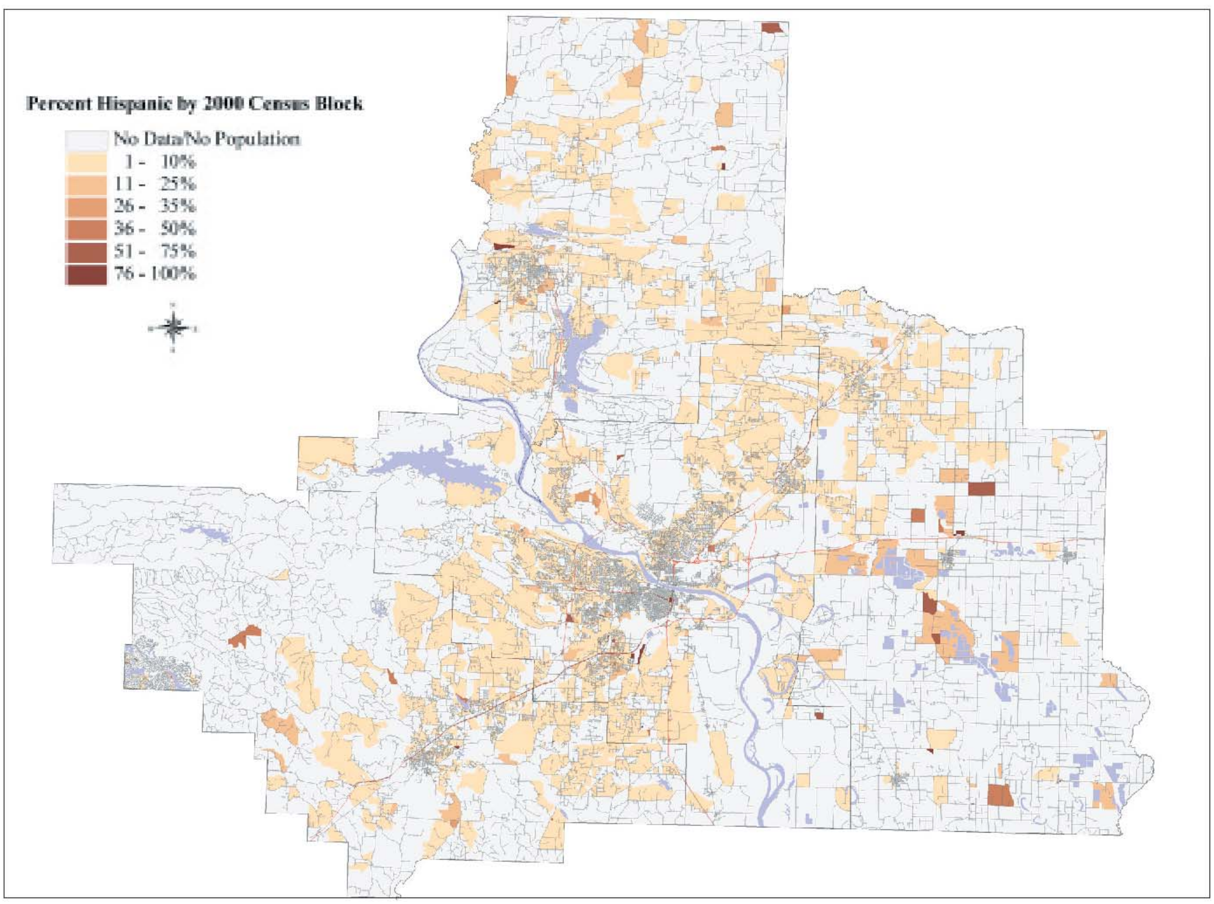
Adonde estamos? (Where are we?)

The Hispanic population in Arkansas continues to grow and reside in many locations around central Arkansas. The map below shows the percentages of Hispanics by Census block. There is no one specific area where Hispanics have located, although they do seem to reside in more rural areas.



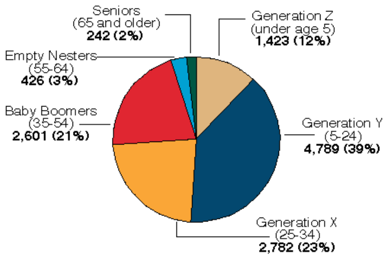
Los ninos son el futuro (Children Are The Future)

Hispanics, like Blacks are young. Thirty-nine percent of the Hispanic population is between the



Diversity in Central Arkansas

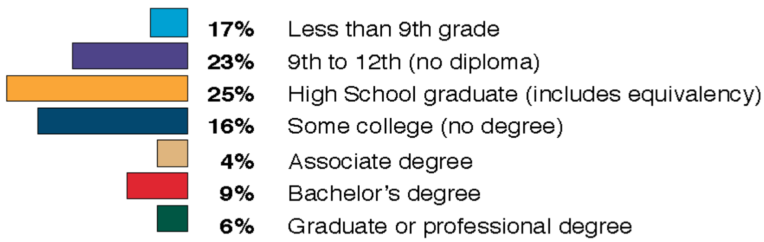
HISPANICS



ages of 5 and 24 (generation Y). Central Arkansas has very few (less than two percent) senior citizens that are Hispanic. As this young population ages and have children of their own, this will create a large increase in the Hispanic population.

Las diferencias de la educacion (Education Differences)

Hispanics are increasing in higher education attainment, but are still behind the population as a whole. Fifteen percent of Hispanics hold a bachelors degree or higher. Many of the issues with educational attainment among Hispanics deal with language barriers. More schools are beginning to include Spanish speaking teachers to assist the students that are still working on their English language skills. As the language barrier breaks down we will see an increase in educational attainment.



Educational Attainment for the Population 25 Years and Over

Hispanics	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	761	399	4,413	478	6051	100.00
Less than 9th grade	130	28	753	102	1013	16.74
9th to 12th grade, no diploma	171	147	982	87	1387	22.92
High school graduate (includes equivalency)	260	55	1008	185	1508	24.92
Some college, no degree	77	108	765	46	996	16.46
Associate degree	6	8	191	12	217	3.59
Bachelor's degree	79	14	444	31	568	9.39
Graduate or professional degree	38	39	270	15	362	5.98

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	50,849	33,468	235,921	55,796	376,034	100.00
Less than 9th grade	2,418	2,639	10,206	2,866	18,129	4.82
9th to 12th grade, no diploma	6,050	4,844	26,667	6,992	44,553	11.85
High school graduate (includes equivalency)	15,914	11,944	63,911	21,027	112,796	30.00
Some college, no degree	11,539	7,394	57,753	12,950	89,636	23.84
Associate degree	2,108	1,773	11,060	2,831	17,772	4.73
Bachelor's degree	8,434	3,354	42,461	6,352	60,601	16.12
Graduate or professional degree	4,336	1,520	23,863	2,778	32,497	8.64

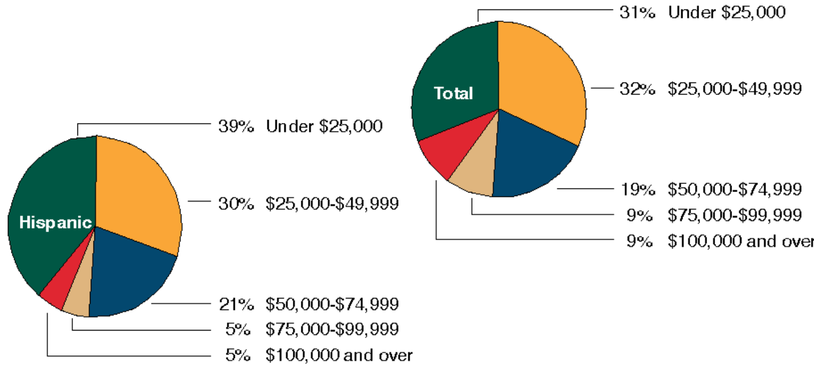
Source: U.S. Census Bureau

Diversity in Central Arkansas

HISPANICS

Tenemos dinero (We Have Money)

Hispanic households are holding their own when it comes to income. Over fifty percent of Hispanic households earn between $25,000 and $74,999. Hispanics do lag behind in the upper income bracket ($75,000 and over). Only ten percent of the Hispanic households earn



Mi familia (My Family)

Married-couple families are the typical Hispanic household. Seventy-three percent of Hispanic households consist of a married-couple family. Hispanics families have more households with children living at home than any other race. Fifty-two percent of Hispanic households have children under 18 living at home compared with 40 percent of all households with children under 18 living at home.

Transporte (Transportation)

The majority of Hispanics, like the rest of the MSA, drive their own vehicles to work. However, Hispanics do carpool more, twenty-six percent of Hispanic households carpool compared to the 13 percent for the population as a whole. Hispanics are also less likely to work from home.

Household Type

Hispanics	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	276	220	1,883	214	2,593	100.00
Married-couple family	230	168	1,333	158	1,889	72.85
With own children under 18 years	144	153	930	118	1,345	
Male householder, no wife present	17	16	236	29	298	11.49
With own children under 18 years	14	13	104	20	151	
Female householder, no husband present	29	36	314	27	406	15.66
With own children under 18 years	10	24	241	22	297	

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	19,661	13,219	81,995	20,629	135,504	100.00
Married-couple family	15,609	10,905	58,314	17,185	102,013	75.28
With own children under 18 years	8,839	6,345	29,634	8,915	53,733	
Male householder, no wife present	1,137	701	4,552	1,011	7,401	5.46
With own children under 18 years	761	411	2,473	647	4,292	
Female householder, no husband present	2,915	1,613	19,129	2,433	26,090	19.25
With own children under 18 years	2,026	1,169	13,856	1,703	18,754	

Source: U.S. Census Bureau

Diversity in Central Arkansas

HISPANICS

Que hace significamos por "Hispanic"?
(What Do We Mean by "Hispanic"?)

Hispanics are people who indicate that they were born in a Hispanic country or area, or they have a heritage tracing back to a Hispanic country or area. Hispanic countries or areas include Mexico, Puerto Rico, Cuba, Central America and South America. Hispanics may be of any race, but most Hispanics identify themselves as white.

Means of Transportation to Work
Workers 16 Years and Over

Hispanics	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	660	303	4,224	384	5,571	
Car, truck, or van:	643	269	3,972	344	5,228	93.84
Drove alone	368	229	2,944	257	3,798	68.17
Carpooled	275	40	1,028	87	1,430	25.67
Public transportation	0	0	70	0	70	1.26
Bus or trolley bus	0	0	42	0	42	0.75
Taxicab	0	0	28	0	28	0.50
Motorcycle	0	0	0	0	0	0.00
Bicycle	0	0	6	5	11	0.20
Walked	9	8	91	13	121	2.17
Other means	0	23	44	22	89	1.60
Worked at home	8	3	41	0	52	0.93

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	41,855	25,006	174,066	39,456	280,383	
Car, Truck or Van	39,347	23,930	164,393	37,899	265,569	94.72
Drove alone	32,942	20,495	141,975	33,280	228,692	81.56
Carpooled	6,405	3,435	22,418	4,619	36,877	13.89
Public Transportation	70	39	2,207	76	2,392	0.85
Bus/trolley	48	39	1,833	56	1,976	0.70
Streetcar	0	0	22	0	22	0.01
Subway or elevated	0	0	9	0	9	0.03
Railroad	22	0	36	0	58	0.02
Taxicab	0	0	307	18	325	0.12
Motorcycle	22	32	255	59	368	0.13
Bicycle	133	17	253	18	421	0.15
Walked	845	277	2,137	349	3,608	1.29
Other means	271	2,204	1,045	164	3,684	1.31
Worked at home	1,167	507	3,776	891	6,341	2.26

Source: U.S. Census Bureau

Diversity in Central Arkansas

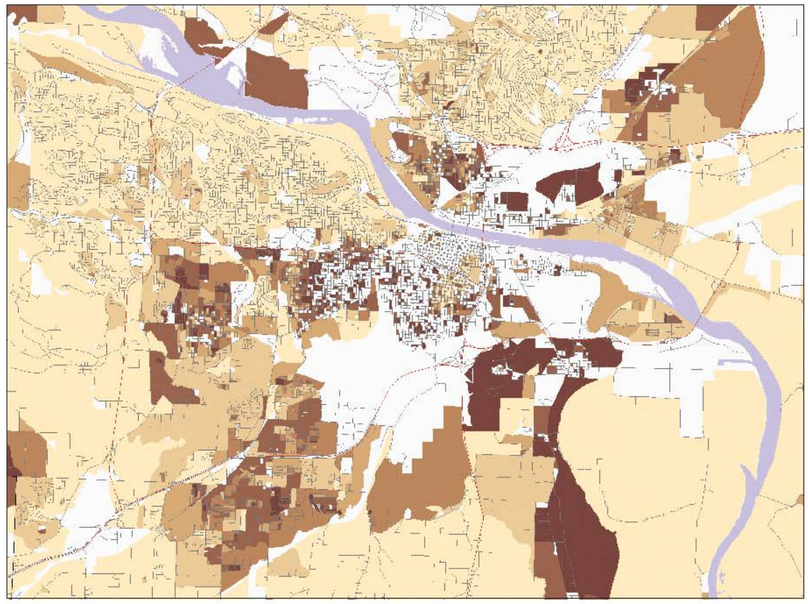
WHITES

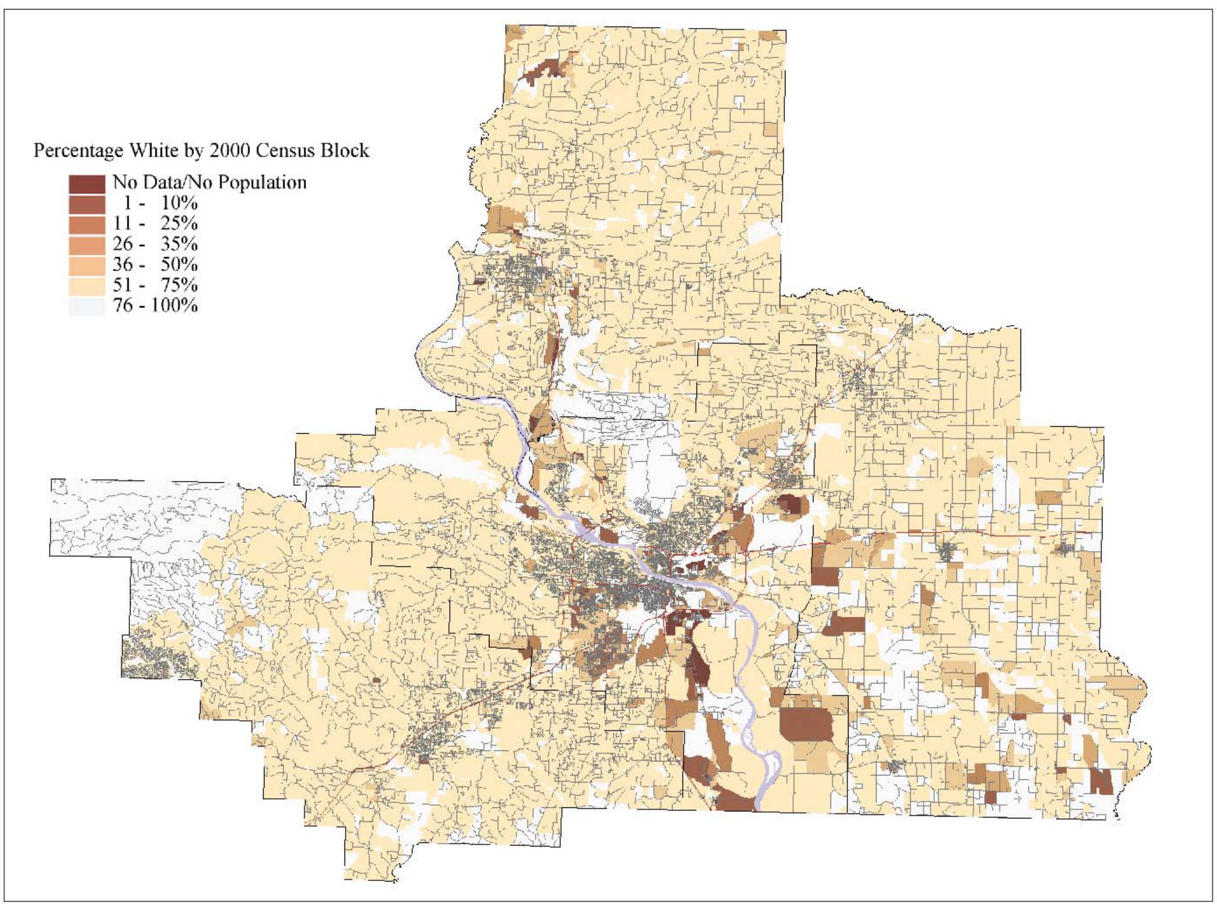
Where are we?

Unlike the previous maps, the darker shading these two maps denotes census blocks with lower percentages of Whites. Whites live in almost every census block in central Arkansas and are also the majority in all but a few.

The Boomers

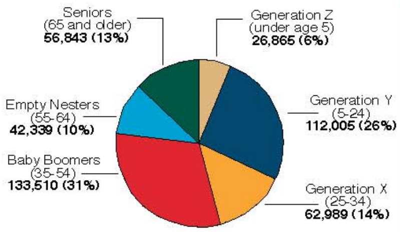
The White population is one of the oldest populations with thirty-one percent being in the Baby boomer generation (ages 35-54) and thirteen percent being senior citizens (ages 65 and older). Whites have the largest number





Diversity in Central Arkansas

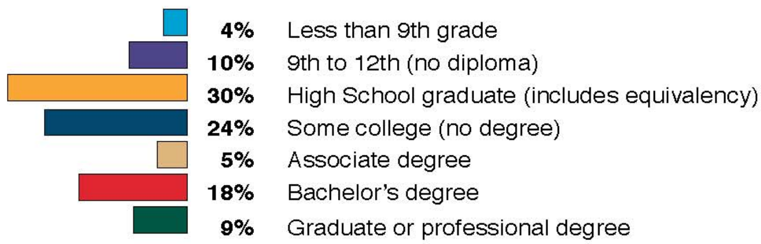
WHITES



of senior citizens as compared to the other races. The second largest age group is the Y generation (ages 5-24) which comprises twenty-six percent. This is also known as the Echo Boom, meaning they are the children of the baby boomers.

Educational Attainment

Whites and the population as a whole in central Arkansas are very similar in educational attainment. Twenty-seven percent of Whites hold a bachelors degree or higher. Eighteen percent hold a graduate or professional degree. Eighty-six percent of Whites have a high school education or higher, which is just slightly higher than the population as a whole, at eighty-three percent.



Educational Attainment for the Population 25 Years and Over

Whites	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	45,939	30,837	165,645	53,260	295,681	100.00
Less than 9th grade	2,155	2,216	5,555	2,566	12,492	4.23
9th to 12th grade, no diploma	5,085	4,157	14,332	6,532	30,106	10.18
High school graduate (includes equivalency)	14,547	11,217	43,582	20,341	89,687	30.33
Some college, no degree	10,248	6,898	40,431	12,359	69,936	23.66
Associate degree	1924	1657	7,408	2,712	13,701	4.63
Bachelor's degree	7,891	3,256	34,671	6,113	51,931	17.56
Graduate or professional degree	4,089	1436	19,666	2,637	27,828	9.41

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	50,849	33,468	235,921	55,796	376,034	100.00
Less than 9th grade	2,418	2,639	10,206	2,866	18,129	4.82
9th to 12th grade, no diploma	6,050	4,844	26,667	6,992	44,553	11.85
High school graduate (includes equivalency)	15,914	11,944	63,911	21,027	112,796	30.00
Some college, no degree	11,539	7,394	57,753	12,950	89,636	23.84
Associate degree	2,108	1,773	11,060	2,831	17,772	4.73
Bachelor's degree	8,434	3,354	42,461	6,352	60,601	16.12
Graduate or professional degree	4,336	1,520	23,863	2,778	32,497	8.64

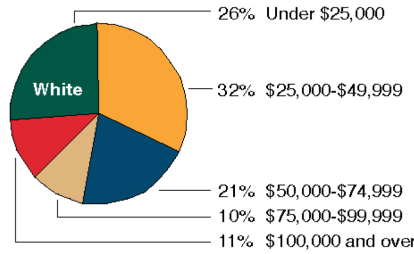
Source: U.S. Census Bureau

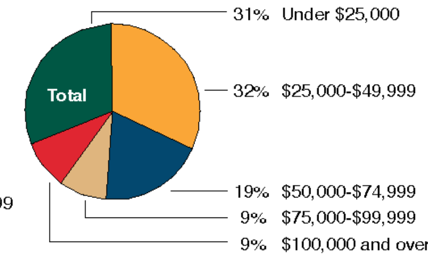
Diversity in Central Arkansas

WHITES

We're In The Money

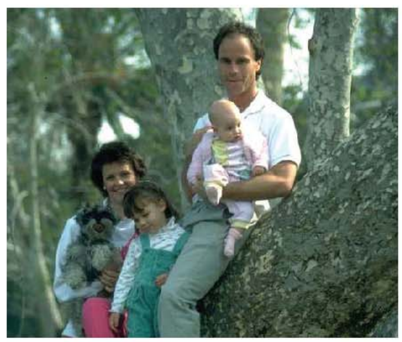
Over fifty-three percent of White households fall in the middle income bracket ($25,000 to $74,999), three percent higher than the population. Twenty-one percent of the households earn over $75,000.





Family Life

Eighty-three percent of all White households consist of a married-couple family. And like Hispanics, Whites are more likely to have children living at home.



The Daily Commute

The vast majority of Whites, like the other racial groups, are driving their own vehicle to work, and are less likely to carpool.

Household Type

Whites	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	17,548	12,192	53,018	19,682	102,440	100.00
Married-couple family	14,312	10,335	43,920	16,519	85,086	83.06
With own children under 18 years	8,076	5,972	20,925	8,496	43,469	
Male householder, no wife present	967	565	2,426	952	4,910	4.79
With own children under 18 years	654	341	1,297	603	2,895	
Female householder, no husband present	2,269	1,292	6,672	2,211	12,444	12.15
With own children under 18 years	1,527	955	4,519	1,544	8,545	

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	19,661	13,219	81,995	20,629	135,504	100.00
Married-couple family	15,609	10,905	58,314	17,185	102,013	75.28
With own children under 18 years	8,839	6,345	29,634	8,915	53,733	
Male householder, no wife present	1,137	701	4,552	1,011	7,401	5.46
With own children under 18 years	761	411	2,473	647	4,292	
Female householder, no husband present	2,915	1,613	19,129	2,433	26,090	19.25
With own children under 18 years	2,026	1,169	13,856	1,703	18,754	

Source: U.S. Census Bureau

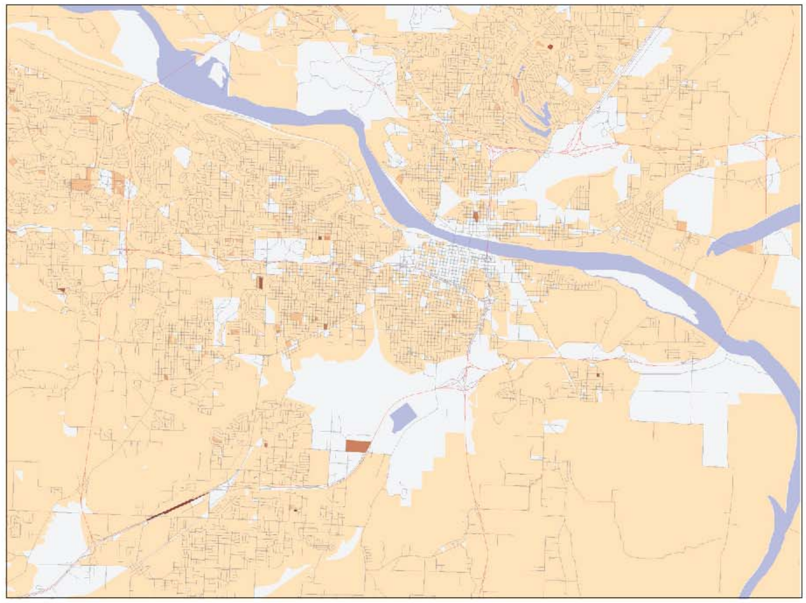
Diversity in Central Arkansas

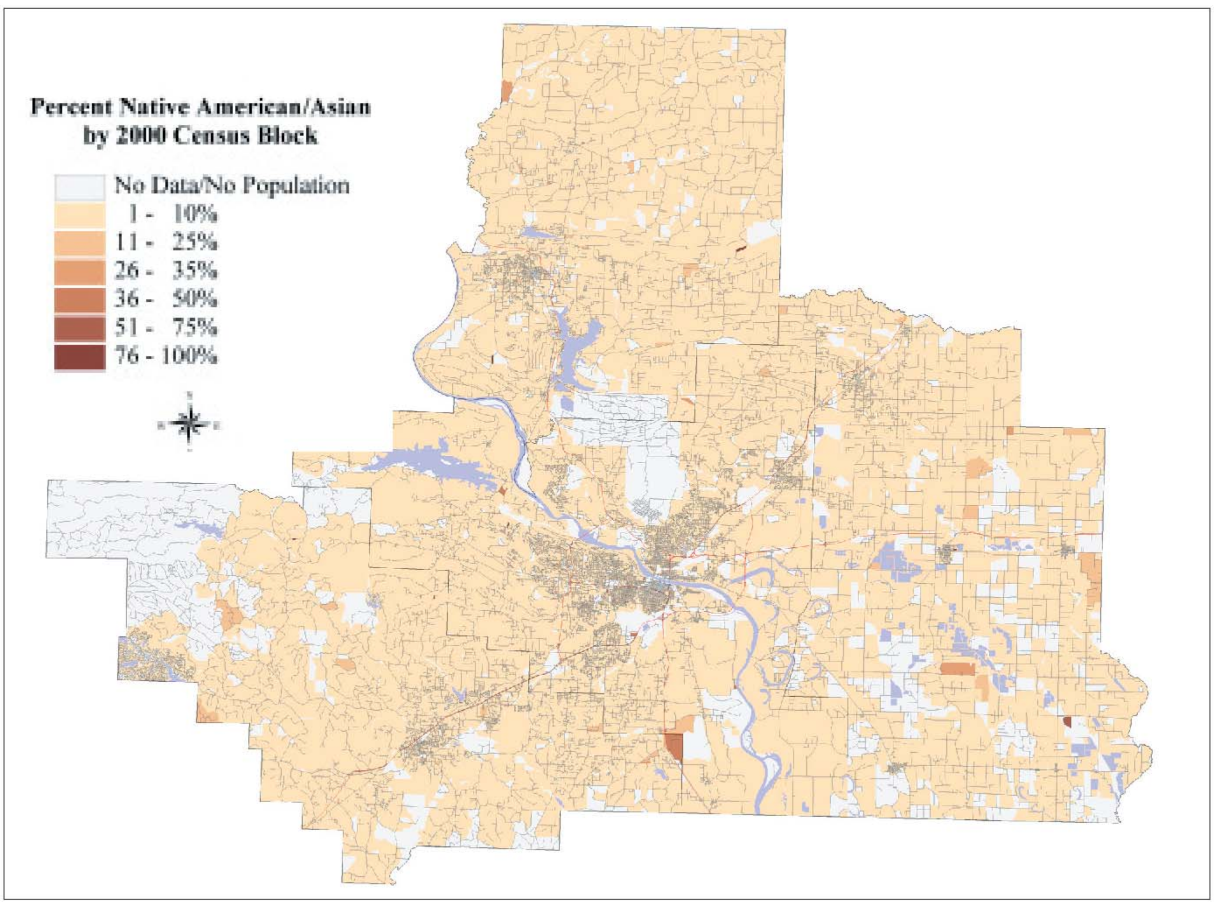
ASIANS/NATIVE AMERICANS

Where are we?

Asians & Native Americans

Due to the small populations of Asians and Native Americans in central Arkansas, both races are considered together. By looking at the map below, one can see that these groups are scattered throughout the MSA. There is no one particular area that stands out as an area of concentration for either race.





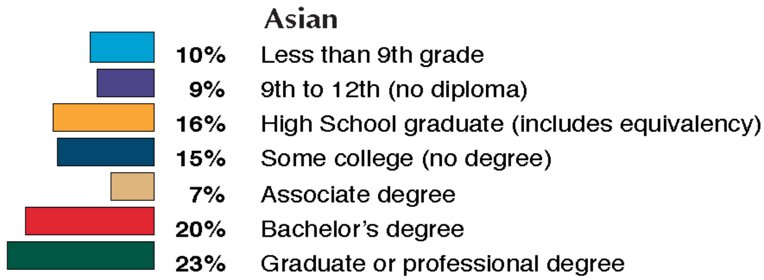
Diversity in Central Arkansas

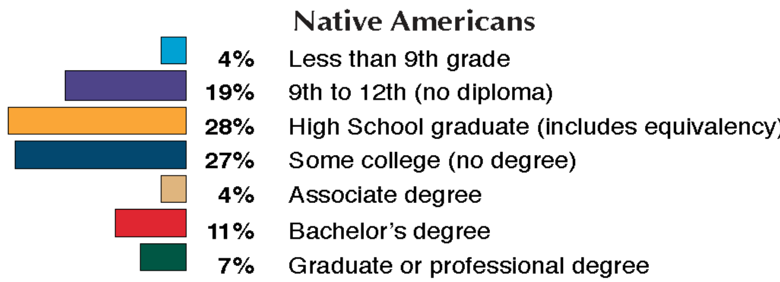
ASIANS/NATIVE AMERICANS

Education

Asians - Twenty-four percent of the Asian population holds a graduate degree. This is the highest percentage for any race in the MSA. Forty-four percent of Asians hold a bachelors degree or higher. The high percentage of Asians with a higher education also explains why they have the highest number of households earning over $100,000.

Native Americans - Native Americans lag a little behind the population overall in education, but not by much. Twenty-two percent of Native Americans hold an associates degree or higher. Almost eighty percent have completed high school, gone on to college or joined the work force.





Education Attainment for the Population 25 Years and Over

Asian	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	261	144	2,966	275	3646	100.00
Less than 9th grade	4	22	282	39	347	9.52
9th to 12th grade, no diploma	30	14	243	30	317	8.69
High school graduate (includes equivalency)	41	28	428	90	587	16.10
Some college, no degree	57	46	402	34	539	14.78
Associate degree	22	32	190	16	260	7.13
Bachelor's degree	64	2	636	37	739	20.27
Graduate or professional degree	43	0	785	29	857	23.51

Native Americans	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	290	91	921	296	1598	100.00
Less than 9th grade	11	0	38	20	69	4.32
9th to 12th grade, no diploma	46	36	172	50	304	19.02
High school graduate (includes equivalency)	85	15	250	98	448	28.04
Some college, no degree	94	28	224	82	428	26.78
Associate degree	1	10	41	5	57	3.57
Bachelor's degree	47	2	112	13	174	10.89
Graduate or professional degree	6	0	84	28	118	7.38

Source: U.S. Census Bureau

Diversity in Central Arkansas

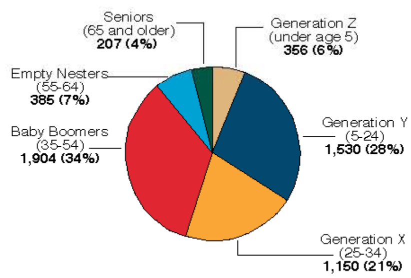
ASIANS/NATIVE AMERICANS

What Do We Mean by "Asian"?

"Asians" have origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent. This includes people who indicated their races as Asian Indian, Chinese, Filipino, Korean, Japanese, Vietnamese or "other Asian", as well as people who wrote in entries such as Burmese, Hmong, Pakistani or Thai. It also includes some people of Hispanic origin, who may be of any race.

Baby Boomers Rule

Asians, like Whites, are a baby boomer generation. Thirty-four percent of Asians are between the ages of 35 and 54. Seniors (65 and older) are the smallest percentage of the Asian population in central Arkansas. Only 4 percent of Asians are 65 and older.



The Traditional Home (Asian)

The Asian population in central Arkansas resides primarily in married-couple households with children. Eighty-six percent live in a married-couple household.

Home Sweet Home (Native American)

Like the Asians, Native Americans reside in primarily married-couple households with children. Of interesting note, four percent of male Native Americans live alone with their children.

Household Type

Asian	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	111	54	907	83	1,155	100.00
Married-couple family	89	38	781	83	991	85.80
With own children under 18 years	49	38	480	65	632	
Male householder, no wife present	0	14	34	0	48	4.16
With own children under 18 years	0	5	5	0	10	
Female householder, no husband present	22	2	92	0	116	10.04
With own children under 18 years	15	0	64	0	79	

Native American	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	142	19	333	175	669	100.00
Married-couple family	113	17	251	129	510	76.23
With own children under 18 years	58	5	112	80	255	
Male householder, no wife present	21	0	6	14	41	6.13
With own children under 18 years	21	0	6	14	41	
Female householder, no husband present	8	2	76	32	118	17.64
With own children under 18 years	7	2	46	13	68	

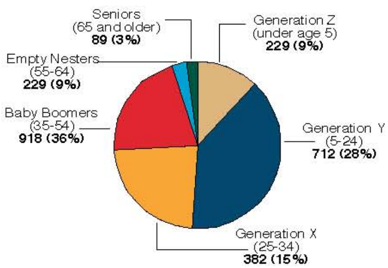
Source: U.S. Census Bureau

Diversity in Central Arkansas

ASIANS/NATIVE AMERICANS

Baby Boomers Top the List

The baby boomer generation is also the largest age group for Native Americans in central Arkansas. Like the Whites and Asians, Native Americans are dominated by baby boomers and generation Y. Native Americans have very few senior citizens. Only 4 percent of the population is over the age of 65.

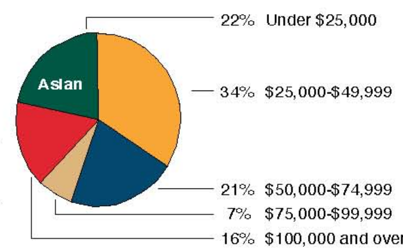


What Do We Mean by "Native American"?

The term "American Indian and Alaska Native", refers to people whose ancestors were any of the original inhabitants of North America, Central America and South America, and who maintain tribal affiliation or community attachment. The group includes people who indicated their race by marking this category, or by writing in their principal or enrolled tribe, such as Chippewa or Navajo. It also includes some people of Hispanic origin, who can be of any race.

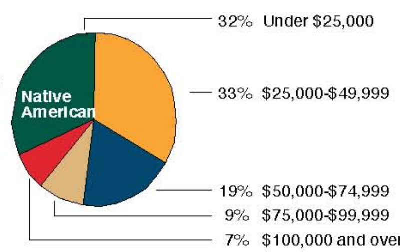
The $100,000+ Club

Asians - have the highest (16%) percentage of households earning $100,000 and over. Asians also have the lowest percentage of households earning under $25,000. Only 22 percent of the Asian households earn less than $25,000.



Money Matters

Native Americans - over half of Native American households are middle class. Native American households have very similar incomes to the entire MSA.



The Way to Work

Asians - At four percent, Asians are more likely to walk to work, than the population as a whole. Additionally, twenty-two percent of Asians carpool compared to only 13 percent for the MSA.

Native Americans - Like the MSA as a whole, Native Americans drive to work alone in their vehicles. Less than one percent of Native Americans work from home, while two percent of the MSA work from home.

Means of Transportation to Work
Workers 16 Years and Over

Asians	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	212	130	2,363	220	2925	
Car, truck, or van:	177	130	2,171	213	2691	92.00
Drove alone	166	96	1,641	186	2089	71.42
Carpooled	11	34	530	27	602	20.58
Public transportation:	0	0	40	0	40	1.37
Bus or trolley bus	0	0	40	0	40	1.37
Bicycle	0	0	8	0	8	0.27
Walked	33	0	90	0	123	4.21
Other means	2	0	19	0	21	0.72
Worked at home	0	0	35	7	42	1.44

Native Americans	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	247	68	652	233	1,200	
Car, truck, or van	215	66	617	233	1,131	94.25
Drove alone	180	60	510	205	955	79.58
Carpooled	35	6	107	28	176	14.67
Public transportation:	0	0	16	0	16	1.33
Bus or trolley bus	0	0	16	0	16	1.33
Motorcycle	0	0	6	0	6	0.50
Bicycle	0	0	0	0	0	0.00
Walked	21	0	0	0	21	1.75
Other means	6	0	13	0	19	1.58
Worked at home	5	2	0	0	7	0.58

Source: U. S. Census Bureau

Diversity in Central Arkansas

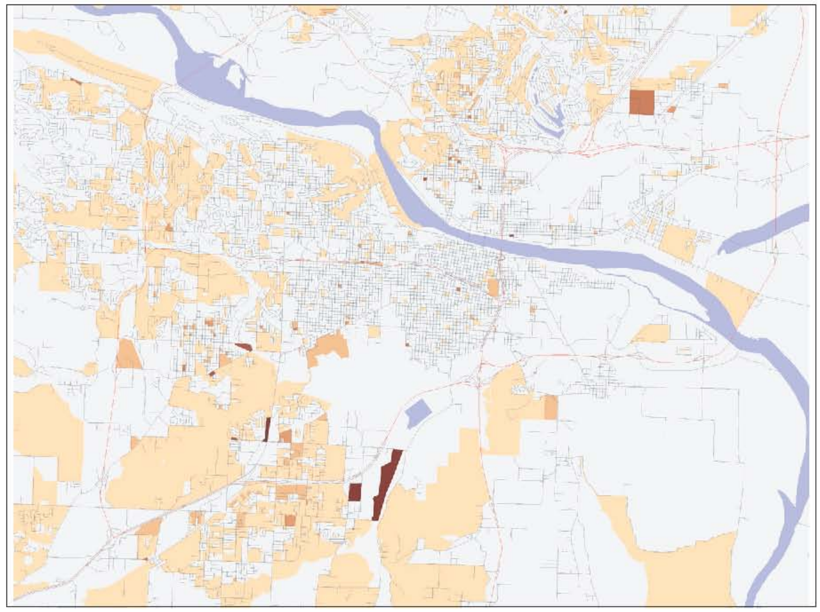
OTHERS

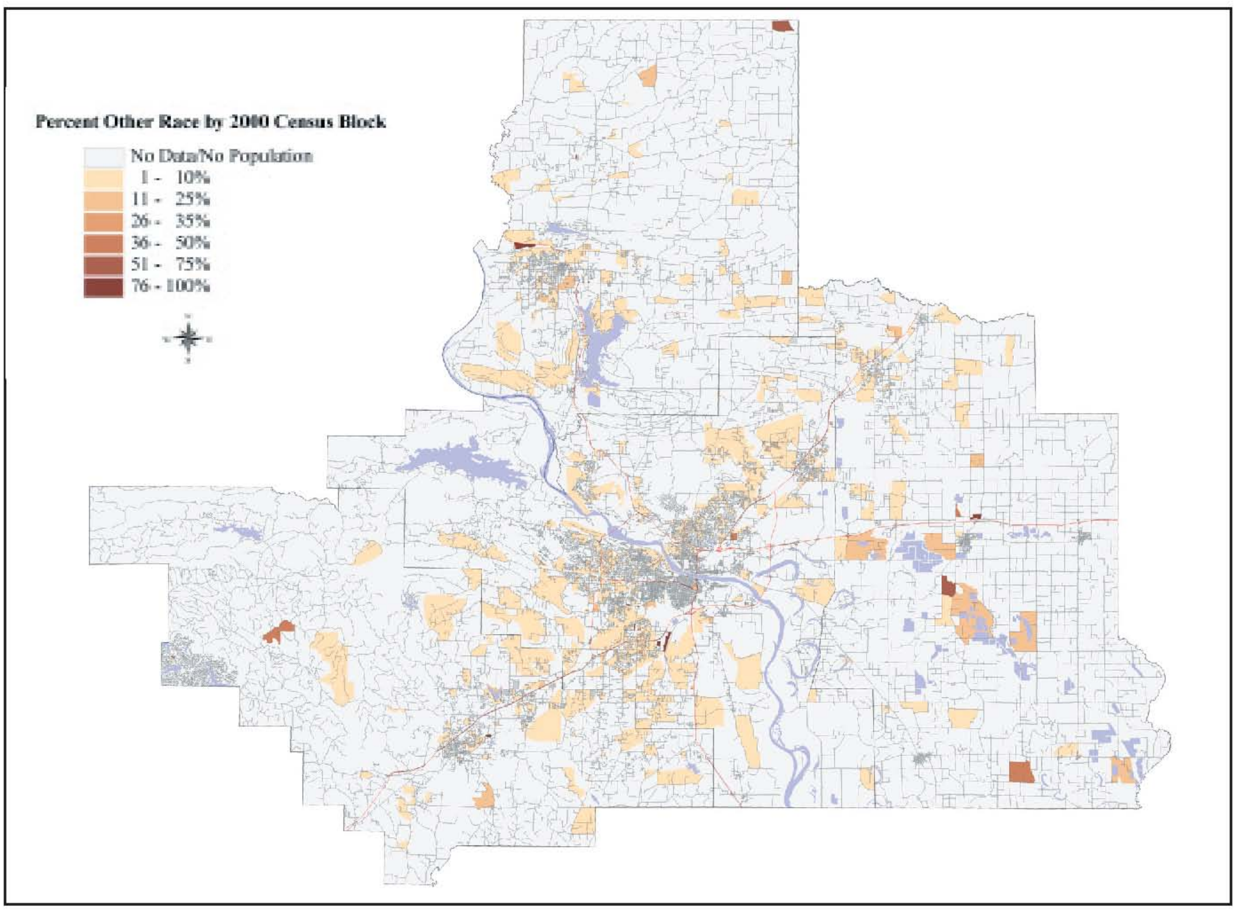
Where Are We?

The population of Other races are located in only a few census blocks in central Arkansas. The largest concentrations are located north of Conway, southeast Little Rock, western Saline County and southern Lonoke County.

The Y Generation

Thirty-eight percent of Other races are of the Y generation (ages 5-24). They also have one of the largest populations of children under the age of five (11%). As this population ages, the number of people in central Arkansas identifying them-

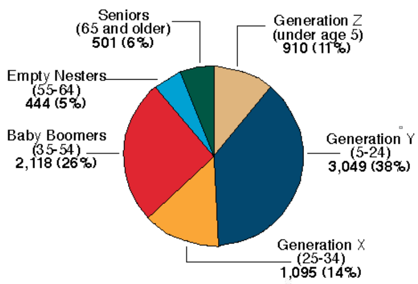




Diversity in Central Arkansas

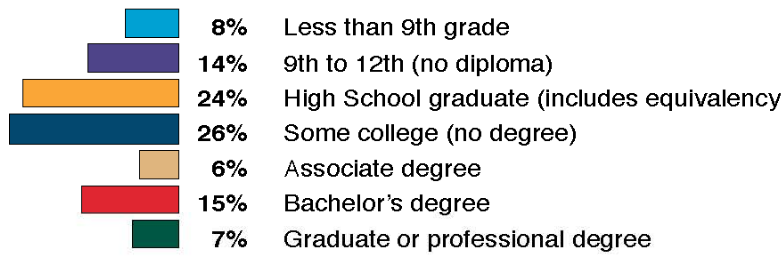
OTHERS

selves as Other will likely increase as these young people get married and have their own children.



Educational Attainment

Considering the fact that Other races has a very large percentage of the population under 25, it is somewhat surprising that twenty-two percent of the population has a bachelors degree or higher.



Educational Attainment for the Population 25 Years and Over

Other	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	685	334	2,527	612	4,158	100.00
Less than 9th grade	63	40	151	72	326	7.84
9th to 12th grade, no diploma	157	66	282	72	577	13.88
High school graduate (includes equivalency)	144	91	633	148	1,016	24.43
Some college, no degree	143	97	675	173	1,088	26.17
Associate degree	35	0	189	30	254	6.11
Bachelor's degree	91	28	417	77	613	14.74
Graduate or professional degree	52	12	180	40	284	6.83

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total MSA	Percent
Population over 25	50,849	33,468	235,921	55,796	376,034	100.00
Less than 9th grade	2,418	2,639	10,206	2,866	18,129	4.82
9th to 12th grade, no diploma	6,050	4,844	26,667	6,992	44,553	11.85
High school graduate (includes equivalency)	15,914	11,944	63,911	21,027	112,796	30.00
Some college, no degree	11,539	7,394	57,753	12,950	89,636	23.84
Associate degree	2,108	1,773	11,060	2,831	17,772	4.73
Bachelor's degree	8,434	3,354	42,461	6,352	60,601	16.12
Graduate or professional degree	4,336	1,520	23,863	2,778	32,497	8.64

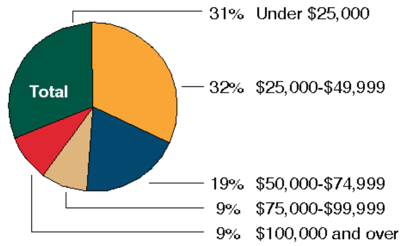
Source: U.S. Census Bureau

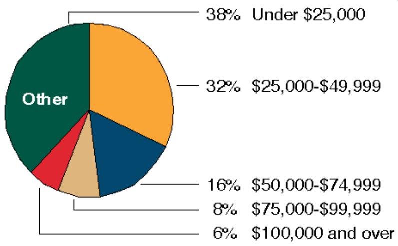
Diversity in Central Arkansas

OTHERS

Middle-Class

Forty-eight percent of Other race households are middle income. This is a little lower than the fifty-one percent for the population as a whole. The Other race group is also younger and have fewer people established in the workforce for a long period of time. As the younger generations age, incomes will increase.





Single Fathers

Other race households are more likely to consist of a father and child than the population as a whole. Six percent of Other households have no wife present while only 4 percent of the population overall has no wife present.

The Ride to Work

The Other race group, like the population overall, drive their own vehicle to work everyday yet they do carpool a (4 percent) little more than the entire population.

Household Type

Other	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	347	188	1,676	374	2,585	100.00
Married-couple family	212	71	629	184	1,096	72.78
With own children under 18 years	75	32	302	99	508	
Male householder, no wife present	6	30	107	17	160	10.62
With own children under 18 years	2	10	63	11	86	
Female householder, no husband present	7	28	179	36	250	16.60
With own children under 18 years	7	28	139	19	193	

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	19,661	13,219	81,995	20,629	135,504	100.00
Married-couple family	15,609	10,905	58,314	17,185	102,013	75.28
With own children under 18 years	8,839	6,345	29,634	8,915	53,733	
Male householder, no wife present	1,137	701	4,552	1,011	7,401	5.46
With own children under 18 years	761	411	2,473	647	4,292	
Female householder, no husband present	2,915	1,613	19,129	2,433	26,090	19.25
With own children under 18 years	2,026	1,169	13,856	1,703	18,754	

Source: U.S. Census Bureau

Diversity in Central Arkansas

OTHERS

What Do We Mean by “Other”?

This category covers people who reported to be more than one race, Pacific Islander, or anything that did not fall into the previous categories. Again, this category includes people of Hispanic origin, who may be of any race

Means of Transportation to Work

Workers 16 Years and Over

Other	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	514	201	2,157	483	3,355	
Car, truck, or van:	493	201	2,008	466	3,168	94.43
Drove alone	385	147	1,652	408	2,592	
Carpooled	108	54	356	58	576	
Public transportation:	3	0	59	5	67	2.00
Bus or trolley bus	3	0	55	0	58	
Taxicab	0	0	4	5	9	
Motorcycle	0	0	0	0	0	0.00
Bicycle	11	0	0	0	11	0.33
Walked	0	0	23	5	28	0.83
Other means	7	0	34	0	41	1.22
Worked at home	0	0	33	7	40	1.19

All Races	Faulkner County	Lonoke County	Pulaski County	Saline County	Total	Percent
Total	41,855	25,006	174,066	39,456	280,383	
Car, Truck or Van	39,347	23,930	164,393	37,899	265,569	94.72
Drove alone	32,942	20,495	141,975	33,280	228,692	
Carpooled	6,405	3,435	22,418	4,619	36,877	
Public Transportation	70	39	2,207	76	2,392	0.85
Bus/trolley	48	39	1,833	56	1,976	
Streetcar	0	0	22	0	22	
Subway or elevated	0	0	9	0	9	
Railroad	22	0	36	0	58	
Taxicab	0	0	307	18	325	
Motorcycle	22	32	255	59	368	0.13
Bicycle	133	17	253	18	421	0.15
Walked	845	277	2,137	349	3,608	1.29
Other means	271	2,204	1,045	164	3,684	1.31
Worked at home	1,167	507	3,776	891	6,341	2.26

Source: U.S. Census Bureau