



IMAGINE CENTRAL ARKANSAS

Plan Smart. Live Smart.

STATE OF THE REGION:
TRANSPORTATION FACILITIES AND TRAVEL CHARACTERISTICS
WORKING PAPER #1

October 2012



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STATE OF THE REGION: MOBILITY

Prior to engaging in a detailed discussion on future options for central Arkansas, it is first necessary and useful to understand where the region stands today in terms of a number of relevant factors, including current transportation infrastructure, how it has historically received and used financial resources for transportation investments, state of repair of the transportation network and land development patterns. This information will establish a baseline condition and serve as a basis for estimating implications for the region if current trends continue into the future.

This is the first in the series of Working Papers that will serve as background information for Imagine central Arkansas. This paper addresses mobility in the region, including vehicular capacity, system management and operations, transit, cycling and walking, freight movement, average travel times, modal options and cost and fuel/energy and vehicle technology.

Highlights

- There are over 7,000 lane miles of major roads (freeways, arterials and collectors) in the region.
- Over 20.5 million vehicle miles of travel (VMT) occurred on major central Arkansas roads in the average day during 2010, or about 30.5 VMT per capita.
- About two percent (162 miles) of the region's freeways, arterials and collectors experience significant congestion on a recurring basis.
- Congestion "hot spots" occur on several key interstate segments, such as I-40, I-30, I-630 and I-430.
- There are plans to better manage and operate central Arkansas' transportation systems, but many strategies have not yet been fully implemented.
- The private automobile is by far the pre-dominant form of transportation in central Arkansas, accounting for over 94% of all work trips in 2010.
- The average central Arkansas resident spent about 24 hours per year sitting in congestion in 2010, up from 17 hours in 2000.
- The region experiences significant cross-county commuting, particularly from other counties into Pulaski County, which contains three-fourths of the region's employment.
- The average transit work trip takes almost twice as long as driving (38 minutes riding transit compared to 19 minutes driving in Pulaski County), but costs significantly less (\$17 per day to own and operate a car in central Arkansas compared to \$1.20 per day for a transit pass).
- Only about one-fourth of central Arkansas residents have access to fixed-route transit service.
- About 14 percent of the region's streets have sidewalks, with most sidewalks located in Pulaski County.
- There are just over 82 miles of off-road bicycle and pedestrian paths in central Arkansas, and about 21 miles on designated on-street bicycle facilities.
- Very few walkable street networks exist in the region, limited mostly to traditional downtowns and pre-World War II neighborhoods.
- Interstates and freeways in central Arkansas experience heavy freight truck traffic, as high as 15,000 to 16,000 vehicles per day on some sections of I-40.
- Several emerging fuel and vehicle technologies, such as electric/hybrid and biofuels, could provide viable alternatives to fossil fuels in central Arkansas in the future. These should be explored and advanced as part of a regional strategy.

Vehicular Travel and Capacity

Like most places in the United States, the private automobile is the predominate mode of transportation in central Arkansas, accounting for over 94 percent of all work trips in the region. Central Arkansas is situated at the convergence of a number of national and regional highways. Interstate 40 passes through North Little Rock from the east (on its way from North Carolina to California) before making its way west to Conway and beyond. Interstate 30 runs from Interstate 20 west of Fort Worth, Texas, and terminates at I-40 in North Little Rock. A number of interstate connectors serve the central Arkansas region: I-430, I-440, I-530, and I-630 connector routes. North of I-40, Hwy 67 is a freeway grade facility within the CARTS area that connects many parts of the state with Central Arkansas, and connects Central Arkansas with St. Louis, Missouri.

Several major U.S. highways serve the region. Hwy 67, Hwy 167, and Hwy 65 all run north-south through central Arkansas. Hwy 70 and Hwy 64 comprise the major east-west routes, passing through North Little Rock and south-central Faulkner County, respectively.

A significant amount of the vehicle miles traveled (VMT) in the region occurs on the interstate network. Despite comprising 13 percent of the region's total lane miles (excluding local streets), the interstate system carried an estimated 46 percent of the region's traffic in 2010.

THERE ARE OVER 7,000 LANE MILES OF MAJOR ROADS (FREEWAYS, ARTERIALS AND COLLECTORS) IN THE REGION.

Pulaski County, the region's urban center, contains a majority of the region's interstate/freeway infrastructure, accounting for roughly 629 of the total 937 lane miles. Overall, Pulaski County accounts for about 3,066 of the total 7,111 lane miles of interstate/freeway, arterial and collector roads in the region. The County is located at the convergence of several of the region's major highways and contains a majority of the region's population and employment.

Over 20.5 million vehicle miles of travel occurred on the average weekday on the region's interstates/freeways, arterials and collectors in 2010, or about 30.5 VMT per capita. *Note: Daily VMT also includes pass-through traffic, trips that neither begin nor end in central Arkansas.*

A number of road segments in central Arkansas experience recurring congestion, which is attributed to daily traffic volumes and not isolated incidents such as accidents. Significant congestion occurs when the number of vehicles using the facility exceeds the maximum capacity that it is designed to accommodate. A total of 162 lane miles of roads in central Arkansas experience congestion on a regular basis, or about 2.3 percent of the region's non-local road lane miles.

Table 1. Total Lane Miles by Facility Type

	Faulkner		Lonoke		Pulaski		Saline		Grand Total	
Interstate/ Freeway	63	4.1%	129	9.8%	629	20.5%	116	9.8%	937	13.2%
Major Arterial	489	31.6%	304	23.0%	869	28.4%	361	30.8%	2025	28.5%
Minor Arterial	499	32.3%	380	28.8%	764	24.9%	343	29.3%	1988	28.0%
Major Collector	484	31.3%	490	37.1%	693	22.6%	299	25.5%	1967	27.7%
Collector/ Frontage Roads	11	0.7%	18	1.3%	111	3.6%	54	4.6%	194	2.7%
Grand Total	1,547	100%	1,321	100%	3,066	100%	1,174	100%	7,111	100%

Figure 1. Road Network

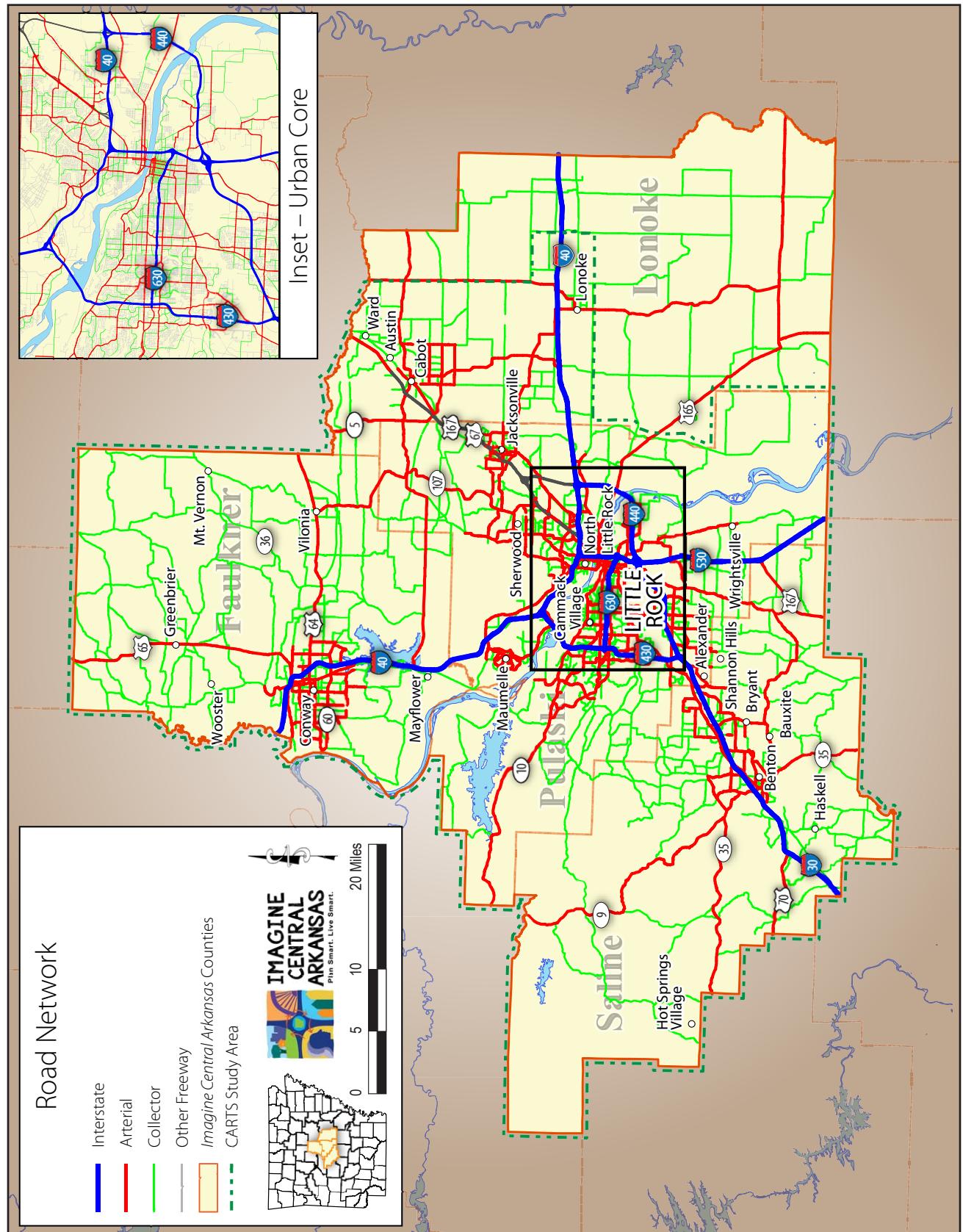


Table 2. Total Vehicle Miles Traveled (VMT) by Facility Type in 2010

	Faulkner		Lonoke		Pulaski		Saline		Grand Total	
Interstate/Freeway	947,940	30.5%	824,570	35.6%	5,746,630	43.2%	1,273,367	47.8%	8,792,507	41.2%
Arterials	1,892,036	60.9%	1,302,635	56.3%	6,567,202	49.5%	1,162,374	43.7%	10,924,247	51.1%
Collectors	67,597	2.2%	36,512	1.6%	36,014	0.3%	55,646	2.1%	195,769	0.9%
Local Roads	197,614	6.4%	151,419	6.5%	929,279	7.0%	170,474	6.4%	1,448,786	6.8%
Grand Total	3,105,187	100%	2,315,136	100%	13,279,125	100%	2,661,861	100%	21,361,309	100%

Source: Highway Performance Monitoring System (HPMS)

The major congestion “hot spot” within the study area occurs on Interstate 40 between North Little Rock and Conway, specifically the segment between the I-40/I-430 junction and Hwy 89. This congestion is likely attributable to both heavy commuter traffic and regional traffic using I-40 to travel through the region. Other congestion “hot spots” occur on I-630, I-30 between I-40 and I-530, I-630/I-430, and Maumelle Boulevard.

Management and Operations

Building new facilities and widening existing ones are ways to augment capacity of the transportation system, but often occur at great cost and potential disruption. Better management and operation of the existing system has the potential to enhance safety, capacity and efficiency at a lower cost and with less disruption.

The CARTS Intelligent Transportation Systems (ITS) Plan, revised in 2010, identifies several strategies to better manage and operate the system. Important components of the management and operations strategy include:

- Traffic Control Systems – Traffic signal systems are under the control of local agencies (cities and counties). The agencies have the ability

Road Segments Experiencing Extreme Congestion and Delay

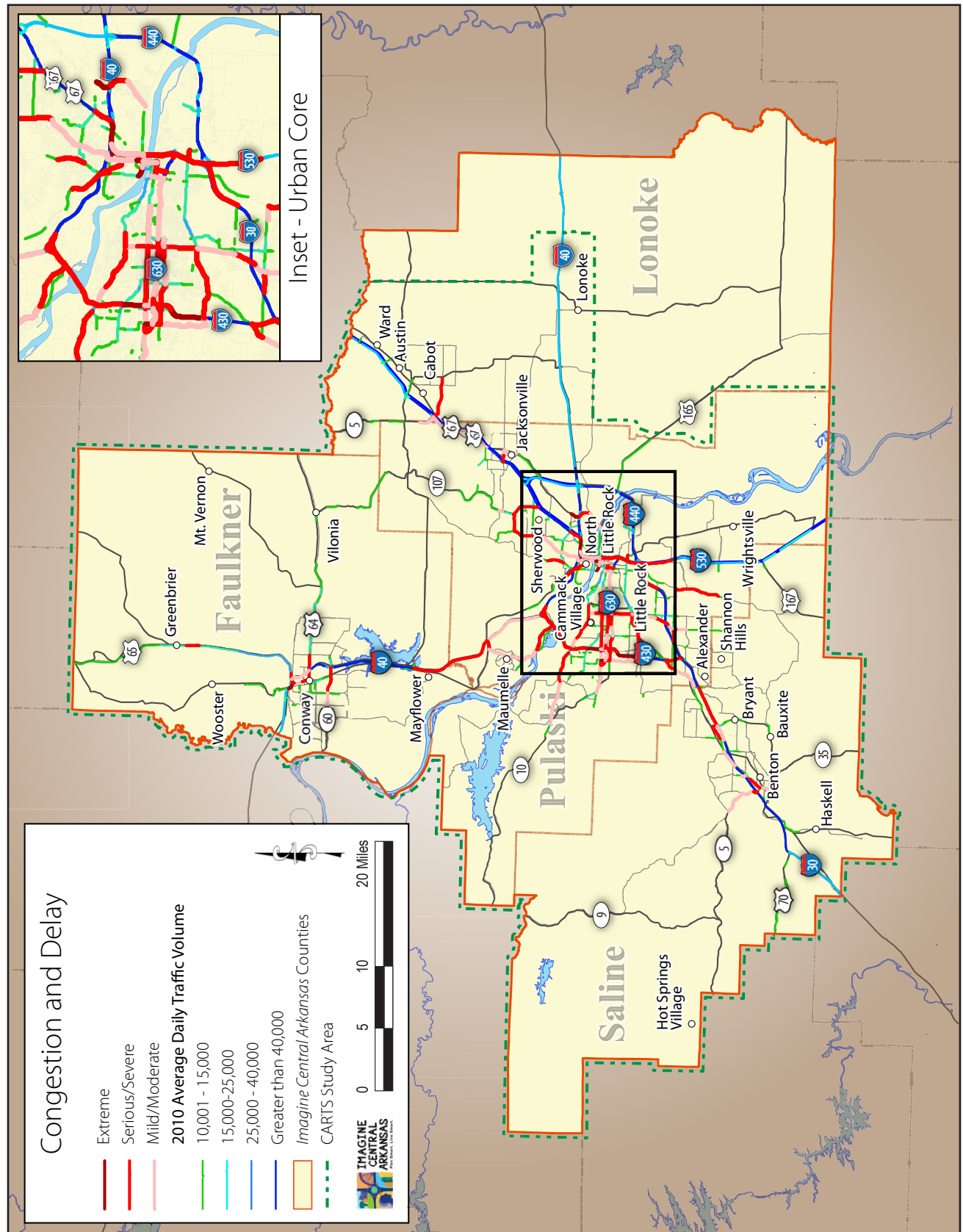
Faulkner County

- Hwy 64 between Hwy 25 and Hwy 65B;

Pulaski County

- I-40 between Hwy 107/Main Street and I-30;
- I-40 between US 67/167 and I-30;
- I-430 between Rodney Parham and I-630;
- I-430 (northbound) between Hwy 300/Colonel Glenn Road and Shackleford Road;
- Bowman Road between Markham Street and Chenal Parkway;
- Main Street from West Broadway to 7th Street;
- Maumelle Boulevard between Crystal Hill Road and Count Massie;
- West Broadway between Pike Avenue and W. 3rd Street.

Figure 2. Traffic Volumes and Congestion



Source: Metroplan Congestion Management Study, 2011

to implement Advance Traffic Control Systems (ATCS) that use technology to coordinate signals on a corridor or systemwide basis to maximize vehicular throughput and reduce delay. Currently, the cities of Little Rock, North Little Rock and Conway have Traffic Operations Centers. These cities and others are currently considering adaptive traffic control systems. Little Rock has already implemented the system on several corridors.

- Freeway and Incident Management Systems – Freeway and incident management systems are intended to improve the function of central Arkansas' freeway facilities through driver communication and improved response capabilities. Elements of such a system include variable message signs, closed-circuit televisions and emergency response. AHTD received a grant from the American Recovery and Reinvestment Act (ARRA) to install a number of message signs and cameras throughout the region. AHTD has worked with the Arkansas Department of Emergency Management and the Chemical Stockpile Emergency Preparedness Program (CSEPP), a federal program, to install additional message boards to improve safety. The message boards are located on Interstates 30, 40, 430, 440 and 630, as well as on Highway 67/167, and have the primary purpose of assisting in the direction of traffic should an evacuation be ordered following a release of chemical agent within the Pine Bluff Arsenal. However, the system lacks the necessary funding for operations (including staffing) and goes largely unused for daily operations.
- Integrated Corridor Management – Communication and coordination among the many jurisdictions along a corridor can improve its function, particularly when incidents occur. Currently, several jurisdictions in central Arkansas have adopted access management plans.
- Transit – CATA has implemented ITS, including advanced fare collection and automated vehicle location (AVL) systems on its paratransit vehicles and River Rail streetcars within its system.

Although the CARTS ITS Plan identifies many of these elements, they have yet to be implemented. This is attributed to a lack of available funding, which is

consistently cited as an obstacle for implementation. Metroplan understands that effective management and operations is an important component of mobility in central Arkansas and remains committed to implementing the recommendations of the CARTS ITS Plan.

Average Travel Times, Modal Options, Cost

The ability of residents to move around central Arkansas is an important component of the region's economic vitality and its livability. The average amount of time a central Arkansas resident spends in travel has steadily increased, attributed to a range of factors, including cross-county commuting, continued suburban out-migration and an increase in congestion-induced delay. The vast majority of residents travel by car, which is the only viable option for most of central Arkansas.

Commuting Patterns

There is a significant amount of cross-county commuting in central Arkansas. A majority of work trips are focused on Pulaski County, which contains almost three-fourths of all employment in the region. According to 2006-2008 American Community Survey estimates, about 44 percent of all work trips originating from Faulkner, Lonoke and Saline counties were destined for Pulaski County, while less than four percent of the work trips from Pulaski County were destined to the adjacent counties. More than 50 percent of workers residing in Lonoke and Saline counties commute to jobs in Pulaski County.

Travel Time and Delay

Over the last two decades, central Arkansas' average commute time lengthened by nearly 3.5 minutes to 23.4 minutes, a 15 percent increase. This increase is attributed in large part to increasing distances between homes and jobs as more residents move further into suburban and exurban locations. Intuitively, average commute times in Faulkner (24.8 minutes), Saline (26.8 minutes) and Lonoke (26.2 minutes) counties are much higher than in Pulaski County (19.2 minutes), indicative that many

Table 3. County Workflow Patterns

		COUNTY OF RESIDENCE								Outside of the 4-County Region	Total Jobs
		Faulkner		Lonoke		Pulaski		Saline			
WORKPLACE COUNTY	Faulkner	33,700	72.5%	200	0.7%	1,900	1.1%	200	0.5%	5,500	41,501
	Lonoke	300	0.6%	11,000	39.6%	1,500	0.9%	100	0.2%	2,100	15,000
	Pulaski	12,400	26.7%	16,500	59.4%	169,400	96.8%	23,700	53.6%	21,500	243,502
	Saline	100	0.2%	100	0.4%	2,200	1.3%	20,200	45.7%	2,600	25,200
Total		46,500	100.0%	27,800	100.0%	175,000	100.0%	44,200	100.0%	31,700	325,204

Source: U.S. Census Bureau, 2006-2008 American Community Survey

commuters from those counties travel to Pulaski County for work.

Another major cause of increased travel times in the region is congestion-induced delay. According to the Texas Transportation Institute's (TTI) 2011 Urban Mobility Report, the average traveler in central Arkansas experiences about 24 total hours per year of delay. This is significantly higher than the national average of 18 hours for similarly sized urban areas. Central Arkansas has experienced steady increases in travel-time delays in the last twenty years. Between

1990 and 2000, average travel-time delay increased from seven hours to 17 hours, a rate of increase of approximately 140 percent. The rate of increase between 2000 and 2010 was approximately 40 percent.

From a fixed-route transit standpoint, the average transit traveler is at a significant comparative disadvantage compared to their driver counterparts. In Pulaski County (the only county in central Arkansas with fixed-route transit service), the average travel

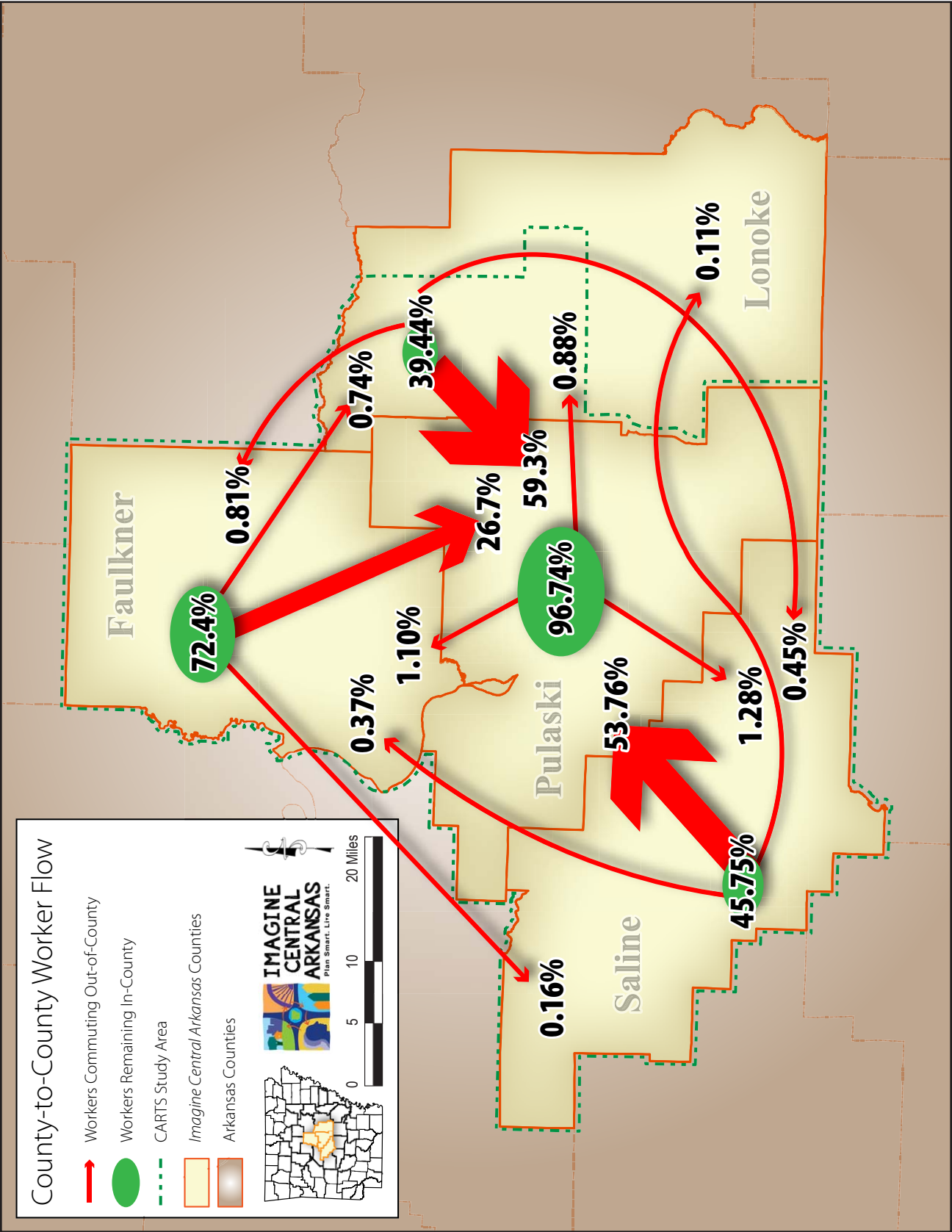
Table 4. Average Travel Time to Work (in Minutes)

Geography	Total # of Workers 16 years of age and older	AVERAGE TRAVEL TIME TO WORK (minutes)			
		All Modes	Drove Alone	Car-pooled	Public Transportation (excluding taxicab)
Faulkner	51,489	24.8	24.5	29.0	29.9
Lonoke	30,544	26.1	25.9	30.2	23.3
Pulaski	181,337	19.2	18.7	21.2	38.0
Saline	47,443	26.2*	n/a	n/a	n/a
Four-County Area	310,813	23.4	23.0	26.8	30.4
Comparisons:					
Tulsa, OK Metro Area	429,530	20.9	20.3	24.3	45.4
Baton-Rouge, LA Metro Area	360,063	26.2	25.8	29.3	41.5
Jackson, MS Metro Area	238,219	23.3	22.9	27.9	40.1
Arkansas	1,230,061	21.1	n/a	n/a	n/a
United States	139,255,035	25.2	n/a	n/a	n/a

Source: U.S. Census Bureau, 2006-2010 American Community Survey, Tables DP03 and S0802

*Average travel time for Saline County was not available for 2006-2010 ACS, thus the data is based on 2006-2008 ACS Estimates

Figure 3. County-to-County Worker Flow



time by public transportation (38 minutes) is nearly twice the travel time of driving.

Modal Options

From a modal standpoint, there is very little redundancy in central Arkansas. The private automobile is by far the predominant form of transportation in the region, and for the vast majority of residents it is the only viable form of transportation available to them. More than nine out of ten central Arkansas households own at least one motor vehicle, and almost two-thirds have more than one vehicle. Of the total trips made in the central Arkansas, 94.3 percent are made either as an auto-driver or an auto-passenger. Six percent of the households own no vehicles.

Few central Arkansas residents use public transit, ride a bicycle or walk to work. This could be attributed

MORE THAN 9 OUT OF 10 CENTRAL ARKANSAS HOUSEHOLDS OWN AT LEAST ONE MOTOR VEHICLE, AND ALMOST 2/3 HAVE MORE THAN ONE VEHICLE.

to a number of factors, but a big reason is that those options simply are not available to them:

- Less than one-fourth of central Arkansas residents have access to fixed-route transit service.
- There are only about 82 miles of off-road bicycle and pedestrian paths, and 21 miles of on-road bicycle facilities across the region.
- Less than 14 percent of central Arkansas roads have sidewalks.

Table 5. Percent of Occupied Housing Units with Access to Vehicles

Number of Vehicles Available	United States	Arkansas	Four-County Region	Faulkner County	Lonoke County	Pulaski County	Saline County
No vehicles available	8.9%	6.5%	6.1%	4.5%	4.2%	7.4%	4.2%
1 vehicle available	33.3%	33.9%	35.1%	30.8%	29.1%	39.0%	28.1%
2 vehicles available	37.9%	39.4%	40.7%	42.4%	44.4%	38.2%	46.2%
3+ vehicles available	20.0%	20.2%	18.1%	22.3%	22.3%	15.4%	21.6%

Source: U.S. Census Bureau, 2006-2010 American Community Survey, Table S0802

Table 6. Mode of Travel to Work

Geography	Total # of Workers 16 years of age and older	MODE OF TRAVEL TO WORK (Percent of Workers)				
		Drove Alone	Carpooled	Public Transportation (excluding taxicab)	Bicycle	Walk
Faulkner	51,489	80.3%	12.9%	0.2%	0.2%	2.1%
Lonoke	30,544	82.1%	12.5%	0.1%	0.2%	1.8%
Pulaski	181,337	84.5%	10.7%	1.2%	0.1%	1.5%
Saline	47,443	81.7%	12.2%	0.0%	0.0%	0.8%
Four-County Area	310,813	82.2%	12.1%	0.4%	0.1%	1.6%

Source: U.S. Census Bureau, 2006-2010 American Community Survey, Table DP03

*Average travel time for Saline County was not available for 2006-2010 ACS, thus the data is based on 2006-2008 ACS Estimates

- Most places in the region do not have a walkable street network.

Average Cost

The average cost to own and operate a motor vehicle in central Arkansas is approximately \$17 per day or just over \$6,300 per year, including fuel, maintenance, insurance, depreciation, etc. This is based on an average of 30 daily vehicle miles traveled per capita and an average cost of \$0.566 per mile based on the latest estimates from the American Automobile Association (AAA).

In contrast, the average cost to ride transit is about \$1.20 per day. This is based on the cost to purchase a 31-day ride pass from CATA.

Transit

Transit service in central Arkansas dates back to the 1880s with the introduction of the electric trolley in Little Rock, and by 1918 rubber-tired buses were used to bring riders to streetcar lines. The central Arkansas Transit Authority (CATA), the region's only fixed-route service provider, was created in 1986 and serves the jurisdictions of Little Rock, North Little Rock, Maumelle, Sherwood and portions of Pulaski County.

Existing Fixed-Route Transit Service

Fixed-route transit service is limited to Pulaski County. CATA maintains a fleet of 60 buses on 21 fixed-routes and four express bus service routes. Just under 2.4 million riders used CATA buses in 2010, or about 14.9 trips per capita based on CATA's defined service area.

About one-fourth, or 24 percent, of all residents in central Arkansas have access to fixed-route transit service (defined as living within ¼ mile of a route). Of those, less than half (11 percent of all central

Arkansas residents) have direct access to a major employment center via fixed-route transit.

Headways range from 30 to 60 minutes, averaging 37 minutes across the system as a whole. The system predominantly includes local and line haul routes, but also includes three express/commuter routes. The system is a "hub and spoke" configuration, with routes converging on the River Cities Travel Center at Cumberland Street and Fourth Street in downtown Little Rock.

On most routes, service operates from 4:45 am to 9:30pm during the week with a more limited schedule on the weekend. Weekend hours of service range from 5:00am to 7:30pm on Saturday and 8:30am to 5:30pm on Sunday. An estimated 84% of ridership is on weekdays, 12% on Saturdays and 4% on Sundays.

River Rail Electric Streetcar Line

Central Arkansas was reintroduced to rail transit in 2004 (and second phase in 2007) with the initiation of the River Rail Streetcar Line. The River Rail Line utilizes five replica vintage streetcars that run 346 days of the year along a 3.5-mile route along the Arkansas River through Little Rock and North Little Rock, with service to many destinations, including the Statehouse Convention Center, River Market, Verizon Arena, Riverfront Amphitheater and the Clinton Presidential Library.

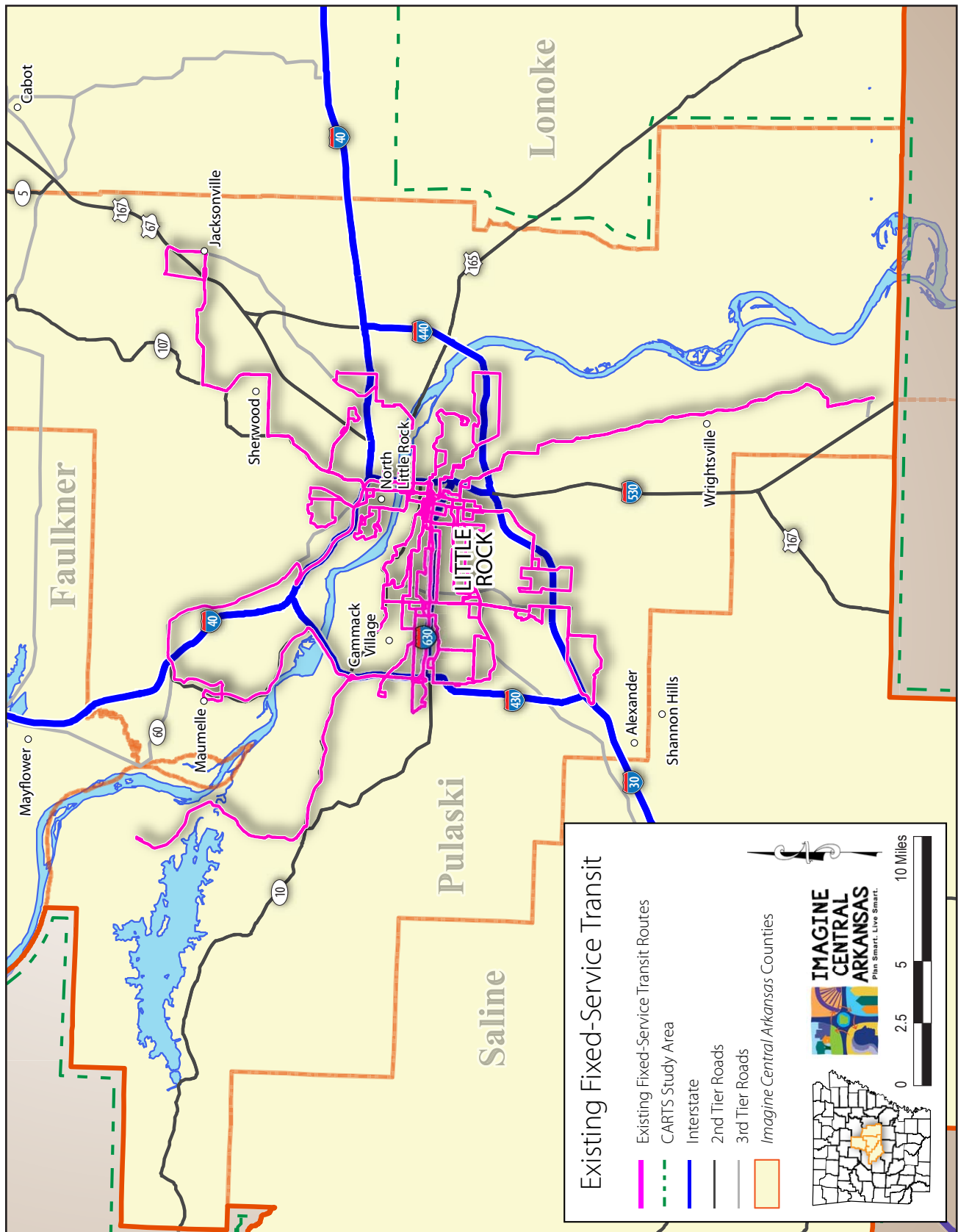
The River Rail provided approximately 130,000 trips in 2010, operating on 25 minute headways from 8:20 AM to 10 PM Monday through Wednesday, extending to midnight on Thursday through Saturday. Limited service (10:45 AM to 5:45 PM) is provided on Sunday. The River Rail has contributed to recent economic development and growth in the riverfront areas of Little Rock and North Little Rock, including a number of new office buildings, and several new residential and retail developments.

Demand Response

In addition to the fixed-route and streetcar service, CATA also provides Links paratransit services to customers who have been certified as paratransit

ONLY 1/4 OF CENTRAL ARKANSAS RESIDENTS
HAVE ACCESS TO FIXED-ROUTE TRANSIT SERVICE.

Figure 4. Existing Fixed-Service Transit Routes



eligible (unable to physically access the fixed-route system) under the Americans with Disabilities Act. The Links door to door paratransit service utilizes 22 vans and travels during the same hours and within the same areas of Pulaski County that are served by the fixed-route buses. The CATA Links Paratransit runs 40,076 hours per year.

Demand response transit service is provided to portions of Saline County by the South Central Arkansas Transit (SCATA) and human service agencies. SCATA is a program of the Central Arkansas Development Council (CADC). According to its website, “through SCATA, 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.” SCATA also provides non-emergency medical transportation.

As a rural transit provider, SCATA is not authorized to offer general public transportation services in the Little Rock-North Little Rock-Conway urbanized area, which includes Benton in Saline County. That function is reserved for CATA, which can only operate in Saline County by consent, meaning that most Benton residents do not have access to any type of public transit service. By consent, SCATA provides limited medical and commuter service to non-residents of Pulaski County.

Demand response service is more convenient than fixed-route transit service in the sense that it provides door-to-door service. However, demand response trips must be scheduled in advance (in some cases up to a week) and have uncertain pickup and delivery times. Additionally, demand response service tends to be more expensive than fixed-route service, both for the user and the provider.

Transit Studies

Several recent studies have addressed the need for improved transit service in central Arkansas, including:

- **Conway Transit Feasibility Study** – The 2010 Conway Transit Feasibility Study recommended the implementation of a two-route system, with each route running at 30-minute headways and requiring approximately 9,200 revenue-hours

Table 7. Total Ridership in 2010 by CAT Fixed-Route

Route #	Route Name	Total Ridership in 2010	% of Total Ridership
5	West Markham	278,900	11.8%
14	Rosedale	253,600	10.7%
10	McCain Mall	251,200	10.6%
3	Baptist Medical Center	199,700	8.4%
13	Pulaski Tech	183,800	7.8%
16	UALR	158,200	6.7%
18	McAlmont	134,800	5.7%
17/A	Mabelvale-DT/UALR	130,500	5.5%
4	Levy/Amboy	94,100	4.0%
8	Rodney Parham	87,000	3.7%
21	University Ave	81,800	3.5%
2	South Main	80,200	3.4%
15	65th Street	76,700	3.2%
11	MLK	73,700	3.1%
1	Pulaski Heights	65,600	2.8%
6	Granite Mountain	52,700	2.2%
7	East 9th	48,000	2.0%
20	College Station	34,000	1.4%
19	Hensley Express	33,300	1.4%
36	Jacksonville/Sherwood Express	21,600	0.9%
12	East 6th	13,000	0.5%
26	Maumelle/Oak Grove Express	9,300	0.4%
25	Pinnacle Mountain Express	7,100	0.3%
Totals		2,368,800	100%

Source: Central Arkansas Transit Authority

of service annually. The Blue Route is designed to provide more direct service to the University of Central Arkansas (UCA) campus, Conway Regional Hospital, downtown, Hendrix College and the Conway Town Center. The Red Route serves more of the eastern and northern portions of Conway and is intended to serve such destinations as the Conway Human Development Center, Faulkner Plaza, Kroger and Target.

- **I-630 Fixed Guideway Study** – Metroplan is conducting the I-630 Fixed Guideway Study to

Table 8. Peer Comparison of Fixed-Route Service

Fixed-Route Service	CATA	MTTA (Tulsa, OK)	CATS (Baton Rouge, LA)	JATRAM (Jackson, MS)
Service Area Population	160,800	400,000	388,542	196,000
Average Typical Weekday Service Miles	8,050	9,671	6,003	3,420
Annual Vehicle Service Miles	2,421,700	2,678,219	1,836,912	948,745
Annual Vehicle Service Hours	165,100	172,552	144,217	70,997
Annual Vehicle Revenue Miles	2,288,500	2,509,104	1,690,021	931,811
Annual Vehicle Revenue Miles Per Capita	14.2	6.3	4.3	4.8
Annual Passenger Miles	12,890,900	14,405,760	15,526,657	806,995
Annual Passenger Miles Per Capita	80.2	36.0	40.0	4.1
Days Operating	356	307	363	306

Source: National Transit Database 2010 Service Database

identify and preserve a transit right-of-way in the I-630 corridor so that a fixed guideway transit line can be built in the future.

- **River Rail Airport Study Phase II Report** – Phase Two of the River Rail Airport Study (Phase Two Study) was completed in September 2011 and evaluated other viable options for connecting streetcar service to the Airport, primarily along the Main Street corridors in Little Rock and North Little Rock. The study makes recommendations on a preferred alignment to link the airport with the two cities. The study recommended that the cities and CATA develop implementation strategies for two streetcar extensions and to take

steps to build them in logical phases or minimal operable segments (MOS). The first extension would consist of a double-track streetcar line on Main Street (North Little Rock) and is described as beginning at the existing River Rail Streetcar loop at 7th Street and continues north of I-40 along John F. Kennedy Boulevard to H Avenue, where the line would change to a single-track loop along H Avenue and Lookout Road encircling the Lakehill Shopping Center. The other extension would run along Main Street (Little Rock) and would extend from the existing River Rail Streetcar line in the Little Rock CBD, cross I-630 and extend to Roosevelt Road.

Table 9. Peer Comparison of Demand Response Service

Demand Response Service	CATA	MTTA (Tulsa, OK)	CATS (Baton Rouge, LA)	JATRAM (Jackson, MS)
Service Area Population	160,800	400,000	388,542	196,000
Average Typical Weekday Service Miles	2,400	6,673	2,370	1,015
Annual Vehicle Service Miles	687,100	1,847,806	638,351	265,864
Annual Vehicle Service Hours	40,100	109,386	45,635	23,438
Annual Vehicle Revenue Miles	592,800	1,599,629	578,760	226,262
Annual Vehicle Revenue Miles Per Capita	3.7	4.0	1.5	1.2
Annual Passenger Miles	518,300	1,331,232	443,585	222,432
Annual Passenger Miles Per Capita	3.2	3.3	1.1	1.1
Days Operating	358	307	363	306

Source: National Transit Database 2010 Service Database

Bicycles and Pedestrians

In addition to motorized transportation such as automobiles and transit, non-motorized transportation, including walking and cycling, is a viable mode of transportation and has been increasing in use due to recent investments in facilities. Facilities for bicycles and pedestrians include sidewalks, bike lanes and routes and off-road bicycle and pedestrian paths.

Existing Facilities

A majority of streets within central Arkansas lack sidewalks. Just under 14 percent of the region's 10,000+ centerline miles of streets have sidewalks, ranging from a high of about 29 percent in Pulaski County to a low of under three percent in Lonoke County.

Generally speaking, most of the sidewalks in the region are located in traditional downtowns and older neighborhoods, although many newer communities with sidewalk policies have better sidewalk coverage as well. Many of the major thoroughfares do not have sidewalks.

Bicycle and pedestrian travel is facilitated through shared-use facilities, such as sidewalks, bicycle lanes, wide shoulders (bicycle travel is also acceptable on low-speed, low-volume local streets), on-road signed bike routes, and sharrows, as well as shared off-road facilities such as greenways/multi-use trails. Given physical limitations, pedestrian travel is most likely to occur in places where origins and destinations are within one-quarter to one-half mile of each other. Bicycle travel tends to occur where origins and destinations are within two miles, although many cyclists travel greater distances, particularly for commuting and recreation. Every CATA bus is equipped with a bike rack that accommodates two bikes. These racks make it easier for cyclists to ride their bikes to and from work.

In sum, there are about 82 miles of off-road bicycle and pedestrian paths in central Arkansas and another 21 miles of on-road facilities for cyclists. Bicyclists may also share general purpose lanes with automobiles, although the safety risk varies depending on the volume and speed of traffic, among other factors, and many cyclists do not feel comfortable operating in those conditions.

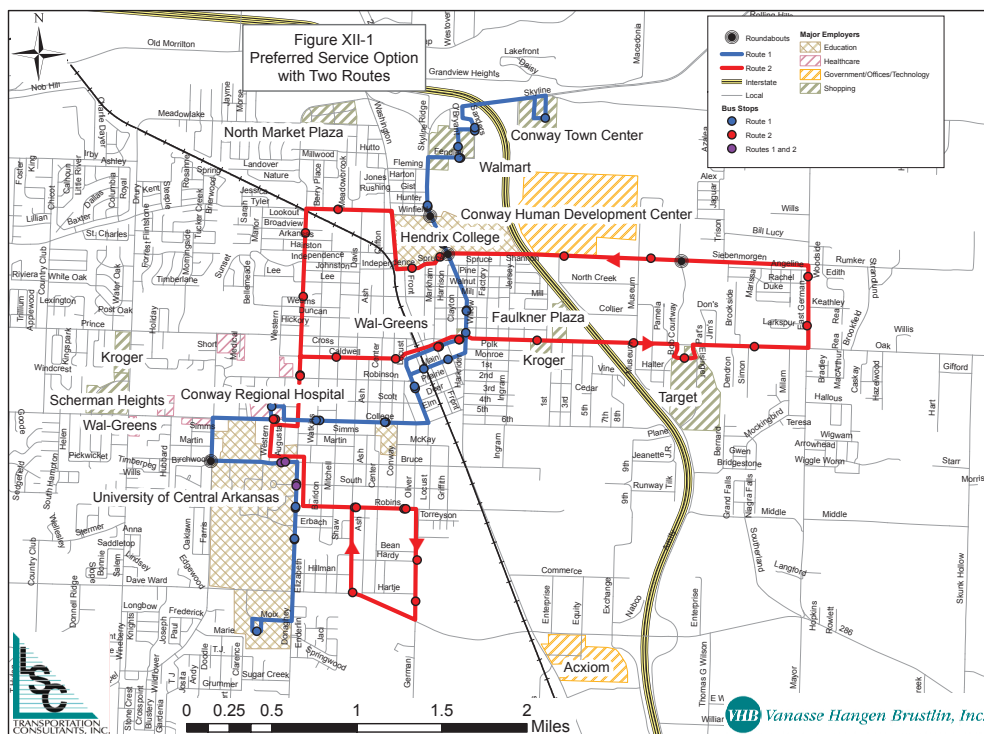


Figure 5.
Conway Transit
Feasibility Study:
Preferred Service
Option with Two
Routes

Source: http://www.metroplan.org/files/53/Conway_Transit_Feasibility_Study.pdf

Table 10. Bicycle and Pedestrian Facilities in Central Arkansas

Location	Street Centerline Miles	Sidewalk Miles	% of Streets with Sidewalks	Miles of Bike Lanes, Routes, Shoulders	Miles of Shared Off-Road Trails
Falkner County	2,054	139	6.8%	0	3.8
Lonoke County	1,903	50	2.6%	0	1.7
Pulaski County	3,837	1,103	28.8%	16.7	71.8
Saline County	2,470	116	4.7%	4.6	5.1
Four-County Region Totals	10,264	1,408	13.7%	21.2	82.4

The region's premier bicycle and pedestrian system is the Arkansas River Trail. The Arkansas River Trail was first envisioned as a fourteen-mile loop in the mid-1990s, to serve as the major east-west bicycle route for the twin cities of Little Rock and North Little Rock, and as the catalyst for the development of bicycle trails in the entire metropolitan region. From its east-ernmost point at the Clinton Bridge adjacent to the Clinton Presidential Library, it travels west on both sides of the Arkansas River to Pinnacle Mountain State Park via the Two Rivers Park Bridge, a 34 mile loop.

In June 2012, federal, state and local leaders signed a Memorandum of Understanding to develop the Arkansas River Trail System, which would extend the trail to make an 88.5 mile loop through Faulkner and Perry counties.

Completed in 2006, the Big Dam Bridge connects the River Trail from Little Rock to North Little Rock and is the longest bicycle/pedestrian bridge in the region.

Bicycle and Pedestrian Safety

- Each year within central Arkansas an average of 140 pedestrians and 50 cyclists are involved in crashes with vehicles, resulting in an average of 100 serious injuries and 11 fatalities.
- Half of the highest pedestrian crash intersections are located in downtown Little Rock.
- North Little Rock has the highest pedestrian and bicyclist crash rates. Whereas Maumelle has the

lowest pedestrian crash rate and Bryant had the lowest bicycle crash rate.

- Central Arkansas's fifteen year average pedestrian fatality rate is lower than the national rate but slightly higher than the state's rate.

Source: CARTS Pedestrian/Bicycle Crash Analysis (January 2012)

Street Network Quality

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

Across central Arkansas, the quality of street networks (as measured by four-way intersection density) varies. Downtown Little Rock, built on a "grid" street system, has the greatest density at about 200 four-way intersections per square mile. Other areas that have relatively dense networks (100-150 four-way intersection per mile) include North Little Rock, west of downtown Little Rock, downtown Conway,

Figure 6a. Existing System of Sidewalks, Bike Lanes and Off-Road Trails - Little Rock

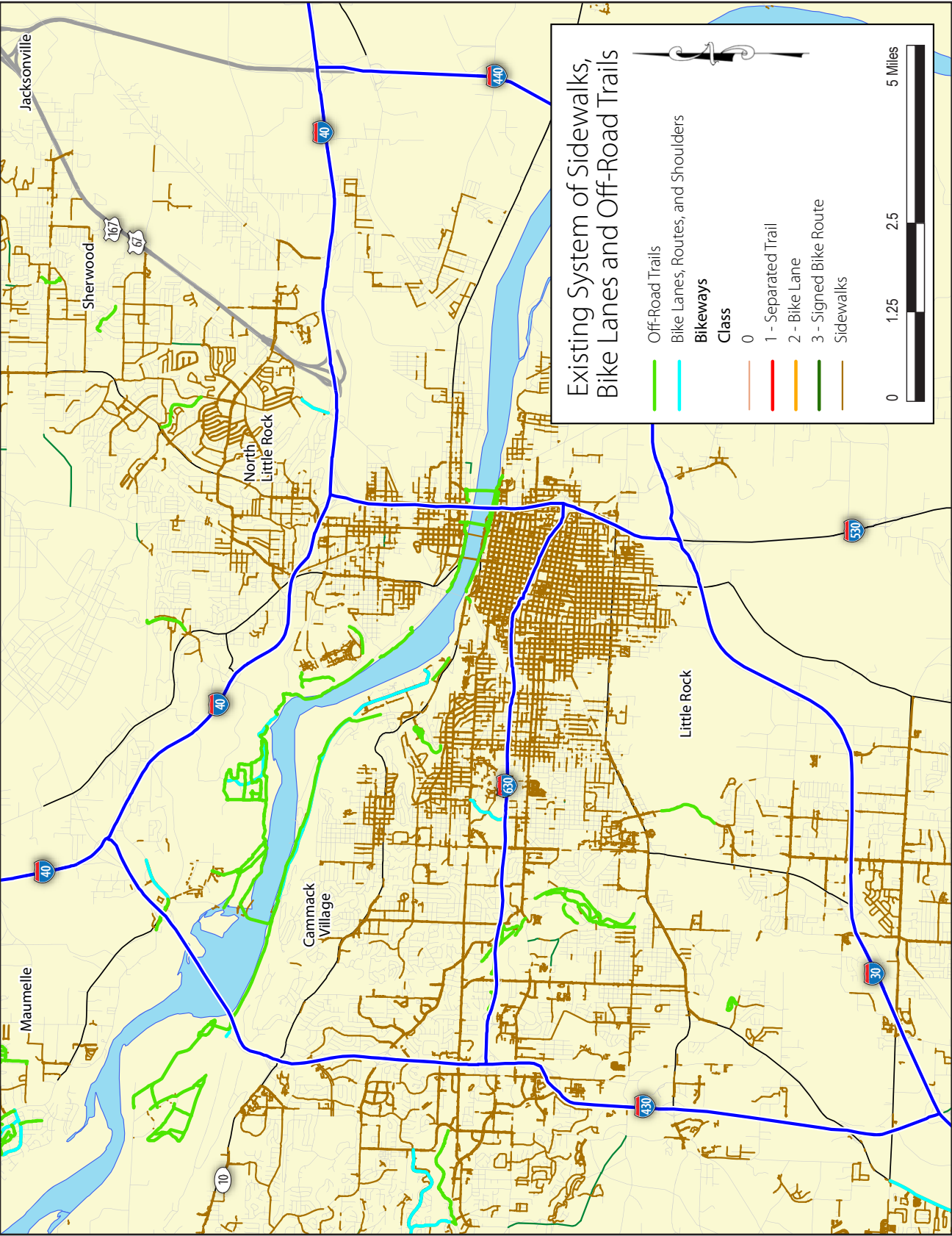


Figure 6b. Existing System of Sidewalks, Bike Lanes and Off-Road Trails Detail

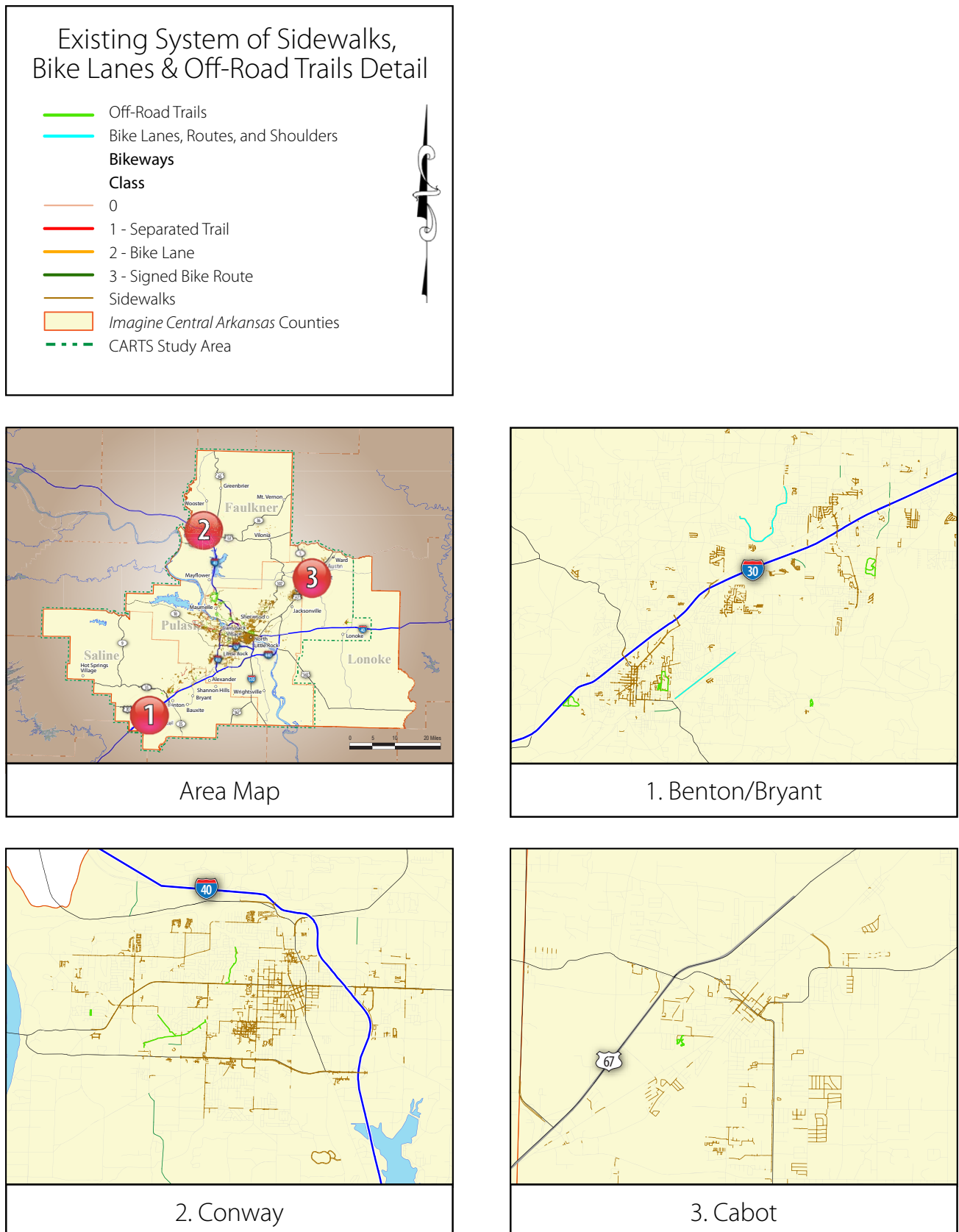
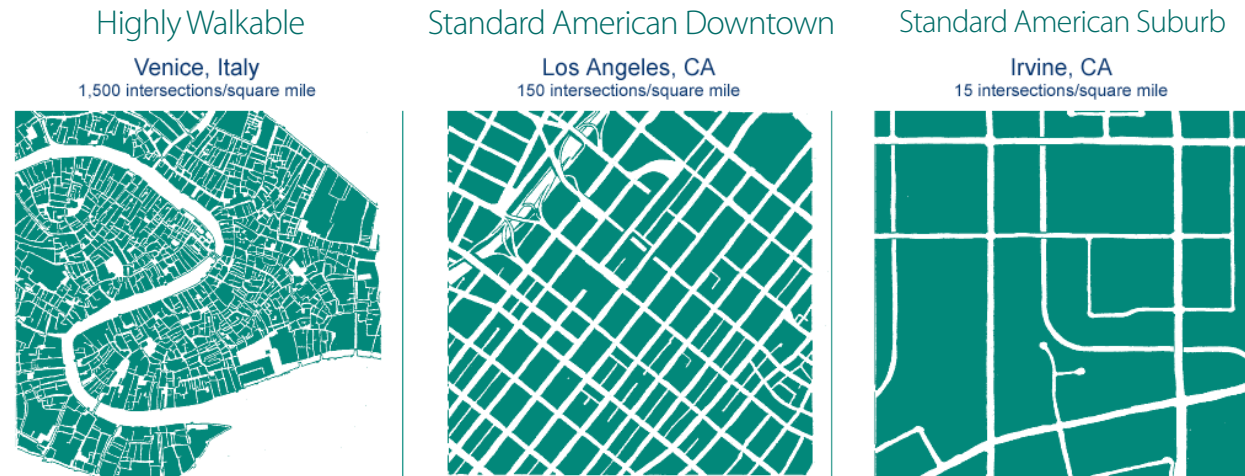


Figure 7. Comparison of Intersection Quantity per Square Mile (Street Maps at Same Scale)



Source: Allan B. Jacobs, *Great Streets*, MIT Press, Cambridge, MA, 1993, pp. 221, 225, 249. Reprinted in Reid Ewing, *Pedestrian and Transit-Friendly Design: A Primer for Smart Growth*, Smart Growth Network, August 1999, p. 4. <http://www.epa.gov/dced/pdf/ptfd_primer.pdf>

downtown Jacksonville, downtown Benton and City of Lonoke. Most other areas in central Arkansas have very few closely spaced intersections that result in any degree of network quality.

Fuel/Energy and Vehicle Technology

Cost, environmental and national security concerns have placed a heightened emphasis on reduced consumption of fossil fuels for domestic energy. There are several emerging technologies to reduce and/or eliminate the use of fossil fuels by motor vehicles.

In order to achieve a reduction in local greenhouse gas emissions, Central Arkansas will need to support the progressive strengthening of federal fuel efficiency standards and should consider adopting standards that require that a certain amount or percentage of transportation motor fuels that are sold in the region be alternative fuels, rather than rely only on conventional fossil fuels.

Average Fuel Efficiency, CAFE standards

In August 2011, the Obama administration and 13 automakers agreed to boost the fuel economy of cars and light-duty trucks sold in the United States to 54.5 miles per gallon by 2025. The new agreement

more than doubles the current Corporate Average Fuel Economy, or CAFE, Standard of 24.1 mpg.

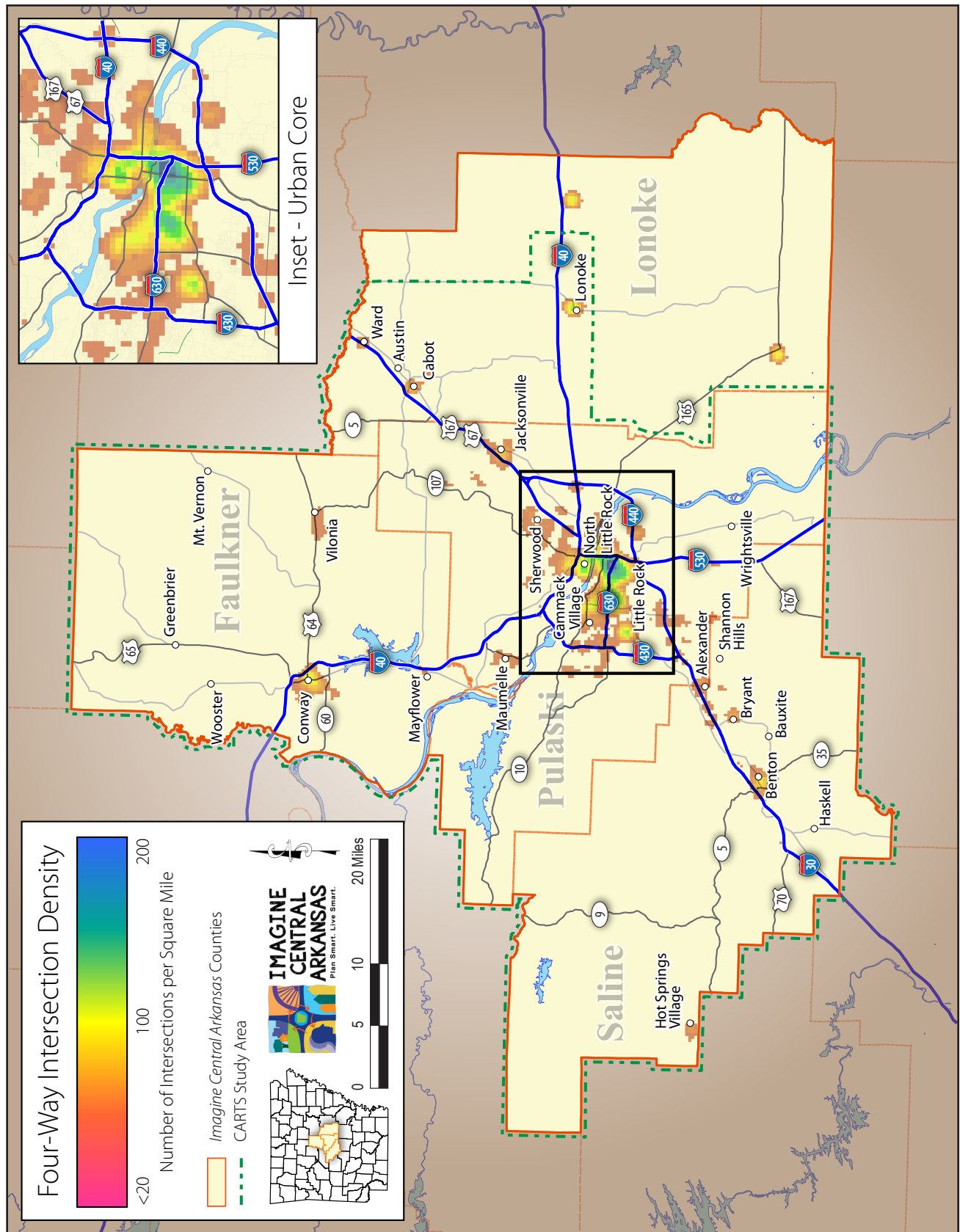
The Environmental Protection Agency (EPA) and National Highway Traffic and Safety Administration (NHTSA) combined standards will achieve an average fleetwide fuel efficiency of 54.5 mpg by 2025, an increase of roughly five percent annually for passenger cars. Light trucks will have a lower target of 44 mpg, and passenger cars will have a higher goal of 62 mpg by 2025. The combined standards will reduce the amount of greenhouse gas emissions by half for model year 2025 light-duty vehicles, compared to model year 2010 vehicles, and EPA estimates that the standards will save four billion barrels of oil over the lifetime of model year 2017-2025 vehicles. CAFE standards are currently set at just over 27 mpg, and are scheduled to reach 35.2 mpg by 2016.

Because a key element of the CAFE program is reducing the use of petroleum and other carbon-based fuels, consumers also can expect to see more alternative and flex-fuel vehicles and more non-petroleum fuels.

Alternative Fuel Vehicle Technologies

An Alternative Fuel Vehicle (AFV) is any dedicated, flexible-fuel, or dual-fuel vehicle designed to operate on at least one alternative fuel. There are a number

Figure 8. Four-Way Intersection Density



of the alternative fuel vehicle technologies both on the market and in development.

- Electric vehicles (EV) – designed to run entirely on electricity, and can be charged at home or from charging stations on the go.
- Hybrid Gas-Electric Vehicles (HEV) – combine the internal combustion engine of a conventional vehicle with the battery and electric motor of an electric vehicle. Manufacturers like Toyota and Honda have made them popular. HEVs can be used in heavy-duty applications such as transit buses and forklift trucks.
- Plug-in Hybrid Electric Vehicles (PHEV) – this hybrid vehicle shares the characteristics of both a conventional HEV and EV, powered by both an internal combustion engine and batteries. It's distinguishing characteristic from a regular HEV is that it has a plug to connect to an electrical grid, and it has an all-electric range of at least 10 miles.
- Bi-fuel or Dual-Fuel Vehicles – designed with two separate fueling systems that enable the vehicle to use either natural gas or conventional fuel (gasoline or diesel). The vehicle can switch between the two fuels.
- Flex-Fuel Vehicles – designed to be fueled with gasoline or, depending on the vehicle, with either methanol or ethanol. The vehicles have one tank and can accept mixtures of gasoline and the alternative fuel.

While these emerging technologies can reduce pollutants emissions and our reliance on fossil fuels, there are still a number of challenges to overcome, including cost and the availability of infrastructure for the distribution, storage and refueling.

Alternative Transportation Fuels

Alternative fuels are materials or substances, such as biodiesel, ethanol, hydrogen, methane, natural gas, and vegetable oil, that can be used for fuel. Biodiesel and ethanol are known as biofuels, and they are currently available in Pulaski, Faulkner and Lonoke Counties in at least one alternative fueling station.

According to the U.S. Department of Energy, Arkansas currently has 43 alternative fuel stations that offer biodiesel, compressed natural gas, electric,

or ethanol fuels. Among the 43 in the state, 18 are available in central Arkansas.

In January 2012, the Arkansas Energy Office (AEO) announced grants totaling \$470,000 for the development of two Compressed Natural Gas (CNG) fueling stations in Arkansas. Satterfield Oil Company will receive \$235,000 to add CNG to an existing station on Oak Street in Conway and the City of Little Rock will receive \$235,000 to add CNG to an existing fueling station at 9th St. and I-30.

Policies, Coalitions and Incentives Related to Alternative Fuels and Alternative Vehicles for Arkansas

Several recent initiatives have been undertaken to promote the use of alternative fuels and alternative fuel vehicles in Arkansas:

- Arkansas Governor's Commission on Global Warming – in 2008 this group completed a study to reduce global warming pollutants. The Transportation and Land Use Sector of the study included the following policy recommendations related to energy solutions for transportation:
 1. Study the feasibility of Plug-in Hybrid Electric Vehicles (PHEVs)
 2. Assist in the research and development of Renewable Transportation Fuels
 3. Adopt standards that advance biofuels development and expansion (create an Arkansas Alternative Energy Institute).
 4. Enact the procurement policies for efficiency of state fleet vehicles and join the EPA's SmartWay program
 5. Adopt a "clear car incentive" system to increase the percentage of new high-efficiency vehicles
- Arkansas Clean Cities Coalition - It's primary mission is to advance the energy, economic and environmental security of Arkansas through government-industry partnerships that contribute to the reduction of petroleum consumption in the transportation sector. In particular, the Coalition educates citizens on the importance of

Table 11. Central Arkansas Alternative Fuel Stations

Type of Alternative Fuel	# of Stations	Provider	Address	County	Type of Access (Public/Private)
Biodiesel (B20 and above)	2	Central Arkansas Veterans Healthcare System	2000 Fort Roots Drive	Pulaski	Private
		Little Rock Air Force Base	450 3rd Street	Pulaski	Private
Compressed Natural Gas (CNG)	3	City of North Little Rock	320 Curtis Sykes Drive	Pulaski	Public
		Little Rock National Airport	1 Airport Drive	Pulaski	Private
		Southwestern Energy Damascus Station	16038 Highway 65 S.	Faulkner	Public
Electric	4	Little Rock	900 W. Capitol Ave	Pulaski	Public
		North Little Rock Charging Station	120 N. Main Street	Pulaski	Public
		University of Arkansas for Medical Science – Entergy	4101-4449 Shuffield Drive	Pulaski	Public
		Clinton Presidential Center - Entergy	1200 President Clinton Ave	Pulaski	Public
Ethanol (E85)	9	Central Arkansas Veterans Healthcare System	2000 Fort Roots Drive	Pulaski	Private
		Phillips 66 - Sherwood	2428 Wildwood Ave	Pulaski	Public
		Shell Superstop	11401 Cantrell Rd	Pulaski	Public
		Shell Superstop	12524 Chenal Pkwy	Pulaski	Public
		Shell – Max Mart	1527 W. Main Street	Pulaski	Public
		Little Rock Air Force Base	450 3rd Street	Pulaski	Private
		Max Mart	3185 Highway 367 S.	Lonoke	Public
		MFA Oil Petro – Card 24	1399 W. 3rd Street	Lonoke	Public
		MFA Oil Petro _ Card 24	820 E. Park Street	Lonoke	Public

Source: U.S. Department of Energy Alternative Fuels and Advanced Vehicles Data Center, <http://www.afdc.energy.gov/afdc/locator/stations>

alternative fuels and vehicles and idle reduction technologies.

- Arkansas Alternative Fuels Development Program (Program) provides grants to alternative fuel producers, feedstock processors, and alternative fuel distributors. The Program also provides rebates for the cost of converting diesel or gasoline school buses to dedicated or bi-fuel compressed natural gas school buses.
- All diesel-powered motor vehicles, light trucks, and equipment owned or leased by a state agency must operate using diesel fuel that contains a minimum of 2% biodiesel (B2).
- Little Rock Region Freight Facility Analysis

Freight Movement

Freight movement is an important feature of the central Arkansas economy. Freight-related indus-

tries are close to one-third of the regional economy, and freight traffic is a significant component of the overall traffic stream with up to 50 percent trucks on some interstate segments. Central Arkansas also has a relatively high percentage of bulk commodities which emphasizes the importance of the rail and inland water modes for the region. While output from freight-related sectors declined as part of the recent recession, volumes are increasing and will soon be back above pre-recession levels. Identifying and addressing freight needs and deficiencies is

THERE ARE SEVERAL EMERGING FUEL AND VEHICLE TECHNOLOGIES, SUCH AS ELECTRIC/HYBRID AND BIOFUELS, THAT COULD PROVIDE VIABLE ALTERNATIVES TO FOSSIL FUELS IN CENTRAL ARKANSAS IN THE FUTURE.

an important part of the long range transportation planning process for the region.

Little Rock Regional Freight Economy

In 2010, there were nearly 37,000 people in the region employed in goods-producing industries. These industries include construction and manufacturing. Over 64,000 people were employed in goods-dependent industries of wholesale trade, retail trade and transportation/utilities. These two goods-related sectors combined represent one-quarter of all employment in the region.

Goods-producing industries in central Arkansas delivered almost \$3.5 billion of economic output in 2010. Goods-dependent industries produced approximately \$6.5 billion of economic output for the region. These two sectors combine to approximately 26 percent of the total economic output for central Arkansas.

From 2001 to 2010, the compound annual growth rate (CAGR) for goods-producing industries was 2.5 percent. The output of the goods-producing sector decreased by roughly 10 percent from 2008

to 2009 as a result of the recent recession, and it only grew slightly in 2010. The current output of the goods-producing sector is roughly equivalent to where it was in 2006.

The effectiveness and competitiveness of the goods-related sectors in central Arkansas is significantly impacted by the operational characteristics of the region's freight transportation network. Therefore, the performance of the regional transportation network also has a significant impact on the region's economy.

Little Rock Regional Truck Commodity Flow Data

Commodity flow data can be used to understand the amount of trucks moving in, out, and around the region. Overall, there is a large percentage of bulk commodities that move in central Arkansas by truck. Nonmetallic ores (which includes sand and gravel) comprise over 30 percent of the truck tonnage moving in the region. These commodities are used in road and building construction. Clay, concrete, glass or stone products, which are also

Table 12. Employment by Industry for Little Rock Region, 2010

Sector	Industry	Number of Employees	Percent Total
Goods-Producing Industries	Agriculture, forestry, fishing and hunting	n/a	n/a
	Mining	n/a	n/a
	Construction	16,800	4.2%
	Manufacturing	20,200	5.0%
	Total	37,000	9.2%
Goods-Dependent Industries	Wholesale trade	16,700	4.2%
	Retail trade	35,400	8.8%
	Transportation and Utilities	12,000	3.0%
	Total	64,100	16.0%
Service-Providing Industries Total		229,500	57.1%
Government		71,100	17.7%
Total All Industries		401,700	100.0%

Table 13. Economic Output by Sectors for Little Rock Region, 2010

Sector	Industry	Output (\$ millions)	Percent Total
Goods-Producing Industries	Agriculture, forestry, fishing and hunting	n/a	n/a
	Mining	n/a	n/a
	Construction	1,160	3.0%
	Manufacturing	2,327	6.0%
	Total	\$3,487	9.0%
Goods-Dependent Industries	Wholesale trade	2,596	6.7%
	Retail trade	2,208	5.7%
	Transportation and Utilities	1,670	4.3%
	Total	\$6,474	16.7%
Service-Providing Industries Total		\$22,932	59.0%
Government		\$5,962	15.3%
Total All Industries		\$38,855	100.0%

Source: Bureau of Labor Statistics Quarterly Census of Employment and Wages

used in construction of both buildings and smaller durable goods, is the second largest commodity with 11 percent of the total truck tonnage. Other high tonnage bulk products in the region include primary metal products (10 percent) and lumber/wood products (10 percent).

Little Rock Regional Truck Travel Behavior

Truck count data can be used to identify locations in the region with heavy truck activity. Truck activity in central Arkansas is concentrated on the interstates. High truck count locations are indications of where major freight bottlenecks and safety issues are likely to occur.

In particular, the highest truck volumes are on I-40 east of I-440 in Little Rock (three of the top four locations) and I-30 southwest of downtown Little Rock (most of the remaining top 20 locations). These interstates have several locations where the truck volumes are above 10,000 trucks per day. Truck percentages range from 20 percent to as high as 50

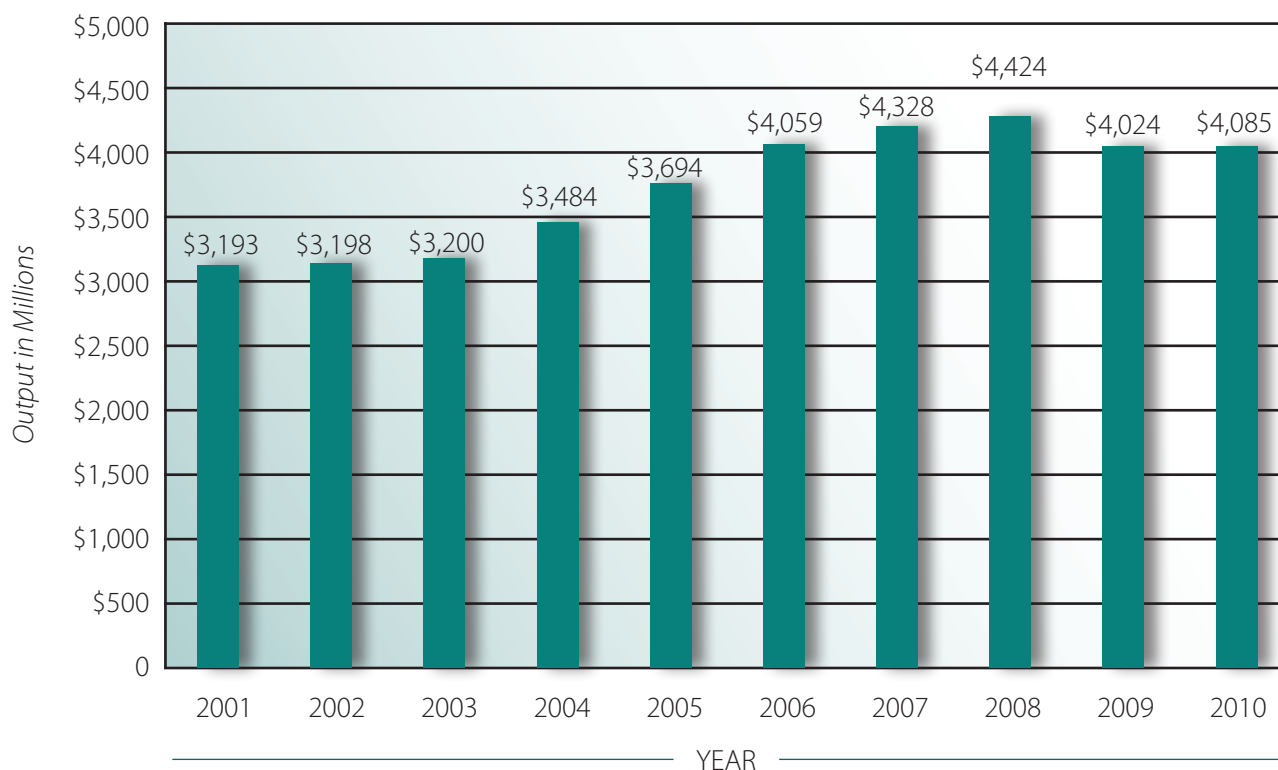
percent on these facilities. I-40 north and west of I-530 has between 7,000 and 10,000 trucks per day. This is the third largest interstate segment in terms of truck volumes. I-440 southeast of downtown also has between 7,000 and 10,000 trucks per day.

For non-interstate facilities, the high truck volume locations are located close to the urban core. These are locations that may feature truck-auto operational conflicts, roadway geometry issues, truck access management issues, and potential safety issues as well. In particular, Hwy 67/167 is a notable high truck volume corridor off of the interstate system. Hwy 64 is also a common route used by trucks to travel between Hwy67/Hwy 167 and I-40.

Freight Facility System Inventory

The Little Rock region has a network of freight facilities that support the movement of goods across all of the modes. The freight facilities include a system of river ports along the Arkansas River, a rail classification yard, a rail locomotive repair facility, and the Little Rock National Airport near downtown Little

Figure 9. Annual Economic Output for Little Rock Metropolitan Region, 2001-2010



Source: BEA Regional Output Accounts

Table 14. Little Rock Regional Truck Commodity Distribution, 2008

Description	Outbound	Inbound	Internal	Total	Percent of Total
Nonmetallic ores, minerals, excluding fuels	12.0	1.4	1.6	15.1	31%
Clay, concrete, glass, or stone products	2.4	1.9	1.3	5.5	11%
Primary metal products	4.6	0.5	0.0	5.1	10%
Lumber or wood products, excluding furniture	1.7	2.9	0.2	4.8	10%
Mixed Secondary Traffic	3.0	1.4	0.2	4.6	10%
Food and kindred products	1.9	1.6	0.1	3.6	7%
Petroleum or coal products	0.9	1.9	0.6	3.4	7%
Fabricated metal products	0.3	1.0	< 0.1	1.4	3%
Chemicals or allied products	0.3	0.7	< 0.1	1.1	2%
Farm products	0.0	0.5	< 0.1	1.0	2%
Pulp, paper, or allied products	0.2	0.4	< 0.1	0.6	1%
Machinery, excluding electrical	0.1	0.4	< 0.1	0.4	1%
Transportation equipment	0.1	0.3	< 0.1	0.4	1%
Rubber or miscellaneous plastics products	0.1	0.3	< 0.1	0.4	1%
Printed matter	0.1	0.2	< 0.1	0.3	1%
Electrical machinery, equipment, or supplies	0.1	0.2	< 0.1	0.2	1%
Furniture or fixtures	0.1	0.1	< 0.1	0.2	0.3%
Miscellaneous products of manufacturing	0.1	0.1	< 0.1	< 0.1	0.3%
Apparel or other finished textile products or knit apparel	< 0.1	0.1	< 0.1	< 0.1	0.2%
Instruments, photographic goods, optical goods, watches, or clocks	< 0.1	< 0.1	< 0.1	< 0.1	0.1%
Textile mill products	< 0.1	< 0.1	< 0.1	< 0.1	0.1%
Totals	27.8	16.1	4.6	48.4	100%

Source: Arkansas Highway Transportation Department Global Insight Transearch database, 2008

Rock (Figure 11). The urban core of the Little Rock area is served by five interstates. Two of these, I-30 and I-40, are major commercial routes from the east coast to the west coast. I-430 and I-630 are spurs that link these two together. I-440 serves the Port of Little Rock, Little Rock National Airport and through vehicles traveling between I-30 and I-40. Six major U.S. highways and over twenty state routes serve the region. (Source: <http://www.lrport.dina.org/intermodal/highways.html>)

Over 58 million tons of freight has been estimated to have moved in, out, and around the Little Rock region in 2008. Trucks dominate freight movement

in the region making up about 82 percent of total freight movement. Inland waterways make up approximately 11 percent of the total flows. This is much higher than what occurs in most metropolitan regions. Carload rail is 7 percent of the total freight flows. There are no intermodal rail flows originating or terminating in the region, as there are no intermodal rail terminals in the region. However, there are several intermodal railyards located in the nearby Memphis region. Air cargo is a small percentage of the total tons at well under 1 percent of the total. Table 17 shows the TRANSEARCH tonnages for each mode by direction of movement.

Figure 10. Little Rock Regional Truck Count Map, 2009

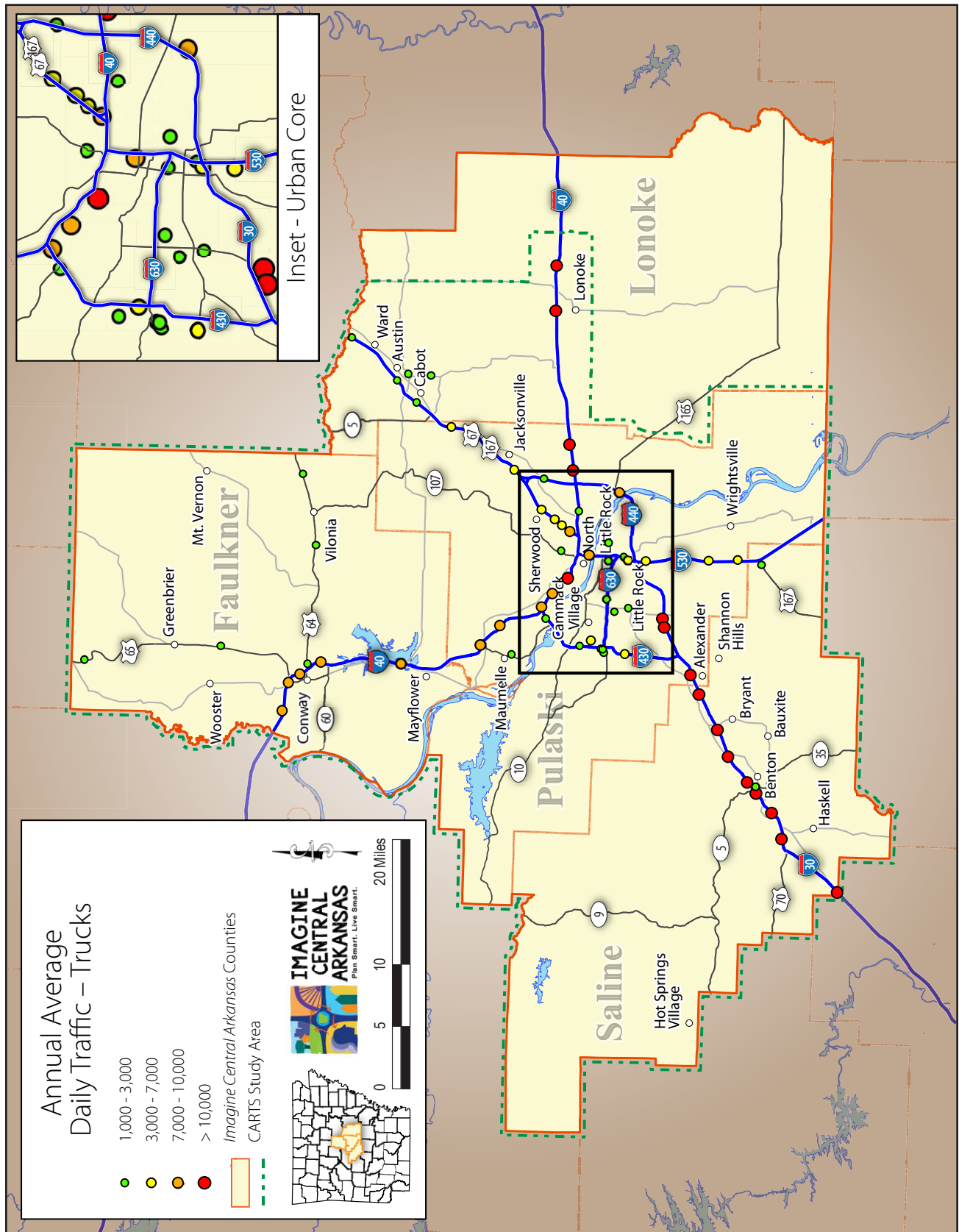


Table 15. Top 20 Truck AADT Locations, 2009

Rank	Location	AADT	Truck AADT	Truck %
1	I-40: east of I-440 (NLR)	39,000	15,990	41%
2	I-30: west of Alcoa Road	61,000	15,860	26%
3	I-40 east of Hwy 31	30,000	15,000	50%
4	I-40: east of Hwy 15	34,000	14,620	43%
5	I-30: west of Otter Creek	68,000	14,280	21%
6	I-30: west of Geyer Springs Rd. U.P. RR	50,000	12,500	25%
7	I-30: east of Hwy. 70	46,000	11,500	25%
8	I-40: east of Hwy. 391 Interchange	31,000	11,470	37%
9	I-30: east of Alcoa Road	60,000	11,400	19%
10	I-30: between Hwy 5 and Congo Road	54,000	11,340	21%
11	I-30: west of County Line Interchange	61,000	10,980	18%
12	I-30: west of Sevier Interchange	52,000	10,920	21%
13	I-30: @ Hot Spring County Line	28,000	10,920	39%
14	I-30: south of University Ave. (Hwy. 67/70)	60,000	10,800	18%
15	I-30: between Sevier St. & Hwy 5	49,000	10,290	21%
16	I-40: west of Levy Interchange	57,000	10,260	18%
17	I-40: east of Morgan Interchange	51,000	9,690	19%
18	I-40: north of Morgan	51,000	9,690	19%
19	I-30 west of Crystal Hill	37,000	9,620	26%
20	I-40: east of Crystal Hill Interchange	55,000	9,350	17%

Table 16. Top 20 Non-Interstate Truck AADT Locations, 2009

Rank	Location	AADT	Truck AADT	Truck %
1	Hwy. 67/167: north of I-40	65,000	7,150	11%
2	Hwy. 67/167: north of McCain Interchange	59,000	5,310	9%
3	Rodney Parham Rd.: south of Old Forge Dr.	23,000	5,060	22%
4	Hwy. 67/167: south of Wildwood	59,000	4,720	8%
5	Hwy. 67: north of Rixie Interchange	58,000	4,640	8%
6	Hwy. 67: north of Wildwood	49,000	4,410	9%
7	Hwy. 67/167: north of Airbase Interchange	39,000	3,120	8%
8	Hwy. 67: @White County Line	20,000	3,000	15%
9	Hwy. 67: north of Hwy. 89	22,000	2,860	13%
10	Financial Center Parkway: east of Autumn	38,000	2,660	7%
11	Hwy. 67: south of Hwy 89	25,000	2,500	10%
12	I-440 south Hwy 161	15,000	2,400	16%
13	Hwy 65 north of Becky Ln.	22,000	2,200	10%
14	Hwy. 161: south of I-40	17,000	2,040	12%
15	Shackleford Rd.: north of I-630	34,000	2,040	6%
16	Financial Parkway: west of I-430	36,000	1,800	5%
17	University: south of 19th	42,000	1,680	4%
18	Asher Ave. (Hwy. 70): @ Coleman Creek	32,000	1,600	5%
19	Roosevelt Rd. (Hwy 365): east of I-30	13,000	1,560	12%
20	6th St.: west of Calhoun	4,900	1,470	30%

Source: Arkansas Highway Transportation Department 2009 Traffic Counts

Rail

Union Pacific (UPRR) and Burlington Northern (BNSF) both serve the Little Rock region. UPRR owns all Class I trackage in the area. In addition, four shortline railroads also serve the area: the Arkansas Midland Railroad (AMR), The Bauxite and Northern Railway (BXN), the Little Rock Port Authority (LRPA) and the Little Rock and Western Railway (LRWR).

Based on conversations with UPRR staff, the railroad primarily serves the food processing, forest products and poultry industries in Arkansas. Major commodities hauled include soybeans, cotton, rice, bauxite, manganese and glass. The railroad also hauls coal for electrical generating plants. The operational hub of UPRR in Arkansas is in North Little Rock and includes a \$40 million Jenks locomotive repair shop and a large freight car classification yard. The Jenks repair shop is the largest of its kind for UPRR. It employs more than 1,100 workers who perform maintenance on 7,000 locomotives that pull more than 2,000 trains each day. (Source: <http://www.uprr.com>)

Port

The Port of Little Rock is a diverse community that consists of an industrial park, various docks and terminals as well as a railroad. Situated along the McClellan-Kerr Arkansas River Navigation System, the inland waterway transports barges along the river, carrying dry and liquid bulk commodities. The main Little Rock Port handles forest products, bagged goods, steel, aluminum, and bulk products, and it hosts an industrial facility that has both rail and truck access. Major industries located at the Port of Little Rock include Ryerson, Unilever Best Foods, Con-Way

INTERSTATES AND FREEWAYS IN CENTRAL ARKANSAS CARRY HEAVY FREIGHT TRUCK TRAFFIC, AS HIGH AS 15,000 TO 16,000 VEHICLES PER DAY ON SOME SECTIONS OF I-40.

Freight, Democrat Printing & Lithographing, Inc., GF, Inc., Interstate Highway Sign Corp., Schueck Steel, and Wheatland Tube.

In addition, many private terminal and ports are located on the Arkansas River in the Little Rock region. As shown in Table 18, more than a dozen terminals operate along the river, with various storage facilities for dry bulk as well as for liquid bulk, such as oil. Some of the terminals are for receipt of commodities, while others are for both shipping and receiving of commodities. These commodities include sand, gravel, fertilizer, grain, oil, wood chips, soda and other miscellaneous bulk material. To receive oil and other liquid products, pipelines are installed and used to transfer the products to storage tanks, and then shipped off either on trucks or on rail.

As Table 19 shows, all of these terminals have highway access, and a few also have rail access. Close proximity to major highways and interstate I-440 means that goods can be moved quickly to/from destinations on highways. In addition to the Port of Little Rock Railroad, the Oakley terminal also has direct connections to the Union Pacific railroad.

Air Cargo

In 2006, the Arkansas Airport Systems Masterplan was developed. It included an inventory of 91

Table 17. Tonnages by Mode and Direction, 2008

Mode	Inbound	Outbound	Internal	Total	% Total
Truck	16,096,844	27,688,117	4,610,059	48,395,020	82%
Water	3,530,336	2,639,111	340,829	6,510,276	11%
Carload Rail	1,190,151	2,774,690	16,080	3,980,921	7%
Air	2,957	10,000	0	12,957	< 1%
Total	20,820,288	33,111,918	4,966,968	58,899,174	100%

Source: Arkansas Highway Transportation Department Global Insight TRANSEARCH Database, 2008

Intermodal System

Legend:

- Ports
- Airport
- Rail Yard
- Rail Line - Union Pacific
- Rail Line - Other
- NHS Connectors
- Interstate/Freeway
- Imagine Central Arkansas Counties
- CARTS Study Area

Scale: 0 5 10 20 Miles

Inset - Urban Core

Map Labels: Sherwood, Cammack Village, Little Rock, Ward, Austin, Cabot, Jacksonville, Vilonia, Mt. Vernon, Greenbrier, Wooster, Conway, Mayflower, Maumelle, Pulaski, Saline, Hot Springs Village, Alexander, Shannon Hills, Wrightsville, Bryant, Bauxite, Benton, Haskell.

Map Features: The map shows a network of rail lines (black and red) and highways (blue and red) connecting various intermodal facilities (green squares) across Central Arkansas. The Arkansas River and Mississippi River are shown in blue. The map is titled 'Intermodal System' and 'IMAGINE CENTRAL ARKANSAS'.

airports in Arkansas. Out of these, eight existing and one planned airport offer commercial service. The Little Rock National Airport is the major commercial airport serving the Little Rock area as well as the state of Arkansas.

The Little Rock National Airport offers a limited amount of air cargo service. According to airport staff, currently, the only all air cargo carrier within the Airport is UPS, which performs approximately one

flight per day and transports cargo in and out of the airport on trucks. In addition, Delta and Southwest Airlines also carries a limited amount of belly cargo at the airport. The Little Rock National Airport is located less than one mile from the port, thus allowing for transfer of cargo between air, truck and water.

The cargo facilities at the Little Rock National Airport consists of two warehouse buildings that occupies approximately 49,000 square feet of space, of

Table 18. River Ports/Terminals Facts

Terminal Name	City	Purpose and Commodity	Storage	Capacity	Depth (feet)
Arkansas Valley Dredging Co. Dock	North Little Rock	Maintenance and Repair	Drydock	260 Tons	9
Bruce Oakley North Little Rock Terminal Wharves	North Little Rock	n/a	n/a	n/a	n/a
Bruce Oakley, North Little Rock Terminal, Cargo Dock	North Little Rock	Receipt of sand, gravel, and dry-bulk materials	n/a	n/a	10
Bruce Oakley, North Little Rock Terminal, Lower Dock	North Little Rock	Receipt of fertilizer; and shipment of grain	Grain Elevator	800,000 bushels	10
Bruce Oakley, North Little Rock Terminal, Upper Fertilizer Dock	North Little Rock	Receipt of dry-bulk fertilizer	Open Storage	26,000 tons	10
Entergy Cecil Lynch Plant Oil Dock	North Little Rock	Not operated	Pipeline And Tanks	490,000 barrels	12
Evergreen Packaging, Inc., Cadron Creek Chip Mill Dock	Menifee	Shipment of wood chips	Open Storage	9,000 tons	12
Helm Fertilizer Corp. North Little Rock	North Little Rock	Receipt of liquid- and dry-bulk fertilizer	Pipeline and Tanks; Open Storage	30,500 tons	15
Jeffrey Sand Co. Dock No. 3	Conway	Receipt of sand, gravel, and dry-bulk materials	Open Storage	50,000 tons	14
Jeffrey Sand Co., Lincoln Avenue Lower Dock	North Little Rock	Receipt of sand, gravel, and dry-bulk materials	Open Storage	100,000 tons	14
Jeffrey Sand Co., Lincoln Avenue Upper Dock	North Little Rock	Receipt of sand, gravel, and dry-bulk materials	Open Storage	n/a	14
Little Rock Port Authority Dock	Little Rock	Receipt and shipment of general cargo and dry-bulk, fertilizer, grain, scrap metal	Open Storage; Storage Warehouse; Pipeline	n/a	10
Little Rock Port Authority Oil Pier	Little Rock	Receipt of fuel oil and bulk cement	Pipeline and Tanks	198,000 barrels	12
North Little Rock Port Dock	North Little Rock	Receipt and shipment of dry bulk	n/a	n/a	10
Petroleum Fuel and Terminal Co.	North Little Rock	Receipt of caustic soda	Pipelines and Tank	10,050,000 gallons; 10,400 tons; 68,000 barrels	14

Source: U.S. Army Corps of Engineers

which 20,000 square feet is vacant. This is a small area compared to the total footprint occupied by the airport. Tenants in the warehouses include US Airways, Delta, Southwest, UPS as well as other non-cargo related tenants, including a U.S. Postal Service space that is facing closure.

The relative under-utilization of the air cargo facilities, as well as the relatively low levels of air cargo service is likely due to low demand, especially due to the competition from the Memphis International Airport nearby, which serves as a major freight hub. With such strong competition, low demand and increased airline savings and consolidation, it is unlikely that air cargo activities in the future will expand significantly. However, new investments as well as new opportunities are possible, such as the emerging Asian markets.

A lot of the decisions on investment will hinge on the planned terminal redevelopment that will happen in 2013.

CONCLUSION

The private automobile is the sole means of transportation for the vast majority of central Arkansas residents. This, along with inexpensive energy has provided individuals the ability to live throughout the region without regard to job location or other destinations, as evidenced by significant patterns of cross-county commuting and travel times/distances that exceed the national average. As a result, residents

Table 19. River Ports/Terminals Access

Terminal Name	Highway Access	Railway Access
Arkansas Valley Dredging Co. Dock	Baucom Pike (SR 165), I-440	None
Bruce Oakley North Little Rock Terminal Wharves	n/a	n/a
Bruce Oakley, North Little Rock Terminal, Cargo Dock	Oakley Drive, from Lincoln Avenue	1 track connecting to UP Railroad
Bruce Oakley, North Little Rock Terminal, Lower Dock	Oakley Drive, from Lincoln Avenue	1 track connecting to UP Railroad
Bruce Oakley, North Little Rock Terminal, Upper Fertilizer Dock	Oakley Drive, from Lincoln Avenue	1 track connecting to UP Railroad
Entergy Cecil Lynch Plant Oil Dock	Baucom Pike (SR 165), I-440	None
Evergreen Packaging, Inc., Cadron Creek Chip Mill Dock	Canal Road, US 64	None
Helm Fertilizer Corp. North Little Rock	Oakley Drive, from Lincoln Avenue	None
Jeffrey Sand Co. Dock No. 3	SR 319, US 64	None
Jeffrey Sand Co., Lincoln Avenue Lower Dock	Lincoln Avenue	None
Jeffrey Sand Co., Lincoln Avenue Upper Dock	Lincoln Avenue	None
Little Rock Port Authority Dock	Lindsey Road, Fourche Dam Pike, I-440	4 track connecting to Little Rock Port Terminal Railroad
Little Rock Port Authority Oil Pier	Lindsey Road, Fourche Dam Pike, I-441	None
North Little Rock Port Dock	Cedar Street, River- front Drive	None
Petroleum Fuel and Terminal Co.	Gribble Street, Clover Street	None

Source: U.S. Army Corps of Engineers

have become very dependent on the automobile as a means of travel.

In contrast, access to other modes of transportation, including walking, cycling and riding transit, is very difficult or non-existent for most of central Arkansas. Relatively limited transit service and coverage area, an absence of sidewalks and trails and lack of a walkable block system all contribute to this condition. Within the central Arkansas region, the residents of Pulaski County have the most modal options to choose from.

While congestion and travel delays aren't necessarily major concerns at the moment, the number of congested facilities and time spent sitting in traffic is growing. Thinking long term, if the region wants to maintain high levels of motor vehicle mobility for its residents, it must consider the construction of new and improved roadway facilities, along with associated costs, among other strategies, as a way to make this happen. Alternatively, if access to a robust set of affordable transportation choices is desired, the region must become proactive in developing the infrastructure for walking, cycling and transit.

The movement of freight is a significant component of the regional economy. Trucks dominate freight movement in central Arkansas, and make up a significant portion of total traffic on many of the region's major road facilities. Long term planning of the region's infrastructure must give due consideration to how freight will move, whether by truck or through a balance of modes, including water and rail.