

# **ARKANSAS STATE RAIL PLAN YEAR 2002**



**MAY 2002**

**Arkansas State Highway and Transportation Department  
Planning and Research Division**

**In cooperation with:**

**U.S. Department of Transportation, Federal Highway Administration**

**U.S. Department of Transportation, Federal Railroad Administration**

**Arkansas Class I and Class III Railroads**

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# Executive Summary

## *Preface*

The Arkansas State Highway and Transportation Department (AHTD) was designated the state's rail planning agency by Act 192 of 1977. This Act delegated to AHTD the responsibility for coordinating the development of statewide transportation plans including preparation of the Arkansas State Rail Plan. The first State Rail Plan was developed in 1979 and updated in 1984. Since the last update Arkansas' railroad system has experienced major changes, including the merger of two Class I railroads which created a north/south directional rail network, expansion of trackage rights agreements that opened new service areas, and the development of communication and equipment technology that enhanced rail operations. Other changes are: (1) rail abandonments that left some rural areas of the state without ready access to rail transportation; (2) alliances with other modes of transportation for more efficient freight deliveries; and (3) service changes in response to shipper demands for lower costs and more shipper options, especially for rail intermodal transportation.

## *Study Authorization*

In recognition of the changes to the state's railroad system and its importance to local and regional economies, the Arkansas State Rail Plan – Year 2002 was prepared pursuant to the issuance of Arkansas Highway Commission Minute Order 98-189. The Plan is divided into the following sections:

- Section I      State Rail System  
Description of the current railroad system serving Arkansas.
  
- Section II     Rail Freight Issues  
Identification of major issues confronting the state's railroads and users of rail transportation.
  
- Section III    Rail Freight Development Strategies  
Presentation of programs and activities to improve railroad operations with suggested funding options and strategies for developing the state's railroads.

## ***Goals and Objectives***

The goals and objectives listed below were developed to provide direction in the preparation of the State Rail Plan.

### Goals

- ✓ *Rail Planning Activities* – Continuation of a program that enables the state to respond to proposed changes in rail service (abandonments), changes in the structure of railroad companies (mergers), and changes in rail transportation needs (intermodal services).
- ✓ *Rail Transportation System* – Development of a totally integrated multimodal rail freight transportation system to yield maximum levels of performance, efficiency and safety.
- ✓ *State Rail Plan* – Preparation of a document in which its contents, analyses, and recommendations reflect and promote the best interest of the State’s railroad companies and the users of rail transportation.

### Objectives

- ✓ Support and encourage efforts to continue service on rail lines subject to abandonment.
- ✓ Continuation of a Class III railroad network within Arkansas that is adequately linked to the national Class I railroad network.
- ✓ To actively pursue available federal funds to help support a State Railroad Rehabilitation Program.
- ✓ Advocate the continuation of a financially solvent, privately owned and operated rail freight system in Arkansas.
- ✓ Increase public awareness of rail service issues as they affect the state of Arkansas and facilitate public involvement in the state rail planning process.
- ✓ Whenever possible, encourage private sector and local area solutions to rail transportation problems.
- ✓ Collect all necessary data, make appropriate analyses, and propose recommendations relative to the maintenance of a viable rail system for the public benefit, shippers, and rail service providers.

## ***Major Findings***

Arkansas railroads are an essential part of the state’s freight transportation system, providing a cost-effective method for shipping bulk products. Many bulk commodities – natural resources, raw materials for processing, and

agricultural and forestry products – are transported by rail. The presence of a viable rail freight system has been a major factor in retaining industries and in attracting new manufacturing firms. Railroads provide an indispensable connection with other freight modes for intermodal shipments.

The state’s Class I and Class III railroads were surveyed to determine changes in the network, to obtain current data on rail operations, and to quantify rail freight issues. There is no Class II railroad service in Arkansas. Specific information was obtained in the following areas:

- Infrastructure, equipment and support facility needs;
- Annual expenditures;
- Rail line conditions; and
- Major commodities hauled.

The following is a summary of the major findings. Unless otherwise stated, the information is for both Class I and Class III railroads. A copy of the railroad questionnaire is included as Appendix C.

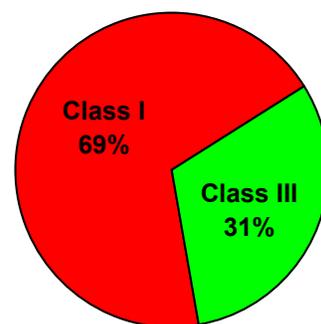
### Rail Network

Railroads are classified based on annual operating revenue:

- Class I – Carriers generating \$261.9 million or more in annual operating revenue.
- Class II – Carriers with over \$21 million and less than \$261.9 million in annual operating revenue.
- Class III – Carriers with less than \$21 million in annual operating revenue.

Arkansas’ railroad network is concentrated in the eastern and southern sections of the state because large quantities of bulk products are shipped and consumed in those areas. Of the twenty-six freight railroad companies in Arkansas, three are Class I railroads that offer national service.

The remainder are Class III railroads that provide local and regional service. The rail freight network consists of approximately



2,750 miles of track. Class I railroads operate most of the lines, with 1,893 miles or 69% of the track mileage. The Class III railroads' share is 857 miles (31%). Unique features of the rail network are listed below.

#### Features

- ✓ Class I directional train traffic – Union Pacific trains routed northbound through Little Rock and southbound through Pine Bluff.
- ✓ Three rail/truck intermodal ramps – all operated by Class I carriers.
- ✓ A system of railroad defense lines.
- ✓ Passenger rail service provided by Amtrak Texas Eagle.

#### Commodities

The major inbound commodities shipped by rail are coal and farm products. Coal trains originating in the Wyoming area and traveling to Arkansas' coal-powered electrical generators account for the high volume. The primary outbound commodities are nonmetallic minerals (e.g., quartz and phosphorus), and lumber or wood products.

#### Top Five Rail Commodities

##### *Inbound*

- Coal or Lignite
- Farm Products
- Chemicals or Allied Products
- Food or Kindred Products
- Lumber or Wood Products

##### *Outbound*

- Nonmetallic Minerals
- Lumber or Wood Products
- Primary Metal Products
- Clay, Concrete, Glass or Stone Products
- Food or Kindred Products

#### Annual Expenditures

The majority of funds spent by the Class III carriers, other than miscellaneous costs, are for administration and payroll. Maintenance-of-way costs and lease and rental fees are major expenditures.

#### Rail Conditions

“Size of rail” relates to the speed at which trains can safely operate and “rail weight” indicates the ability to handle loaded railcars. The following figures

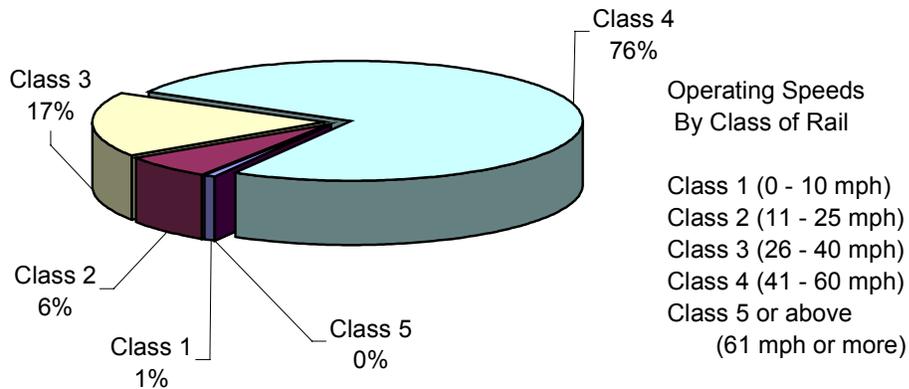
show the mileage of rail by class and size for both Class I and Class III railroads.

A majority of Class I rail mileage is grouped as Class 4 rail with a speed up to 60 m.p.h. as compared to Class III railroads with most rail mileage classified as Class 1 with a top speed of 10 m.p.h. These lower train speeds add cost to the operation of a train. Slightly more than half the Class I railroad mileage has rail that weighs over 132 pounds per yard.

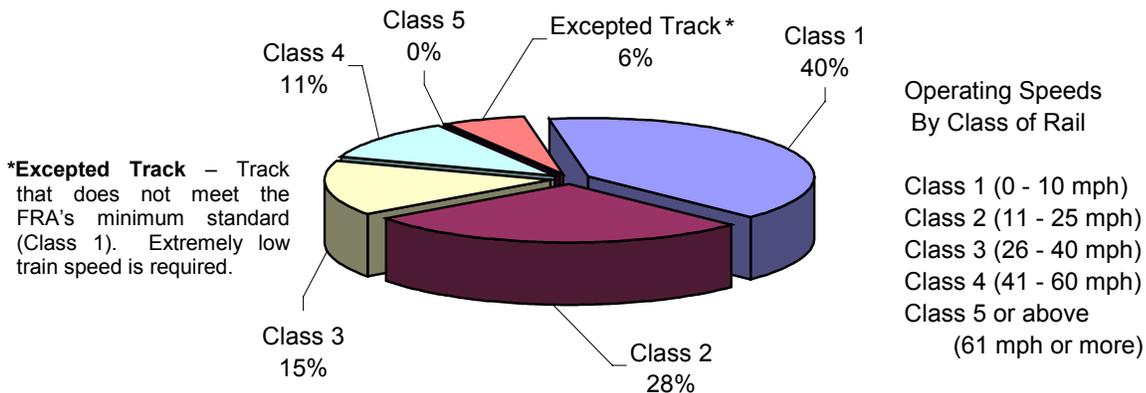
Class I trackage also frequently consists of continuous welded rail, a rail industry method of eliminating joints by welding lengths of rail together. The dominant rail weight for Class III railroads is 85-pounds or less. The use of lightweight rail often results in rail breaks and train derailments.

**Figure E-1  
Railroad Mileage by Class**

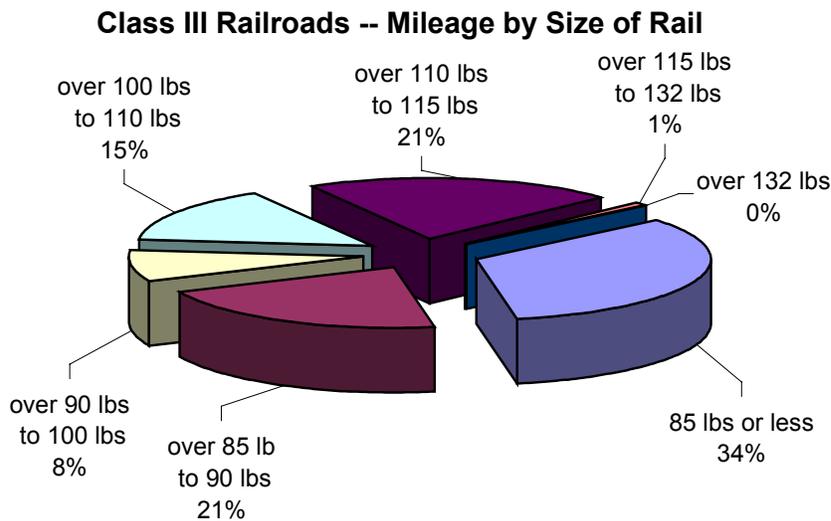
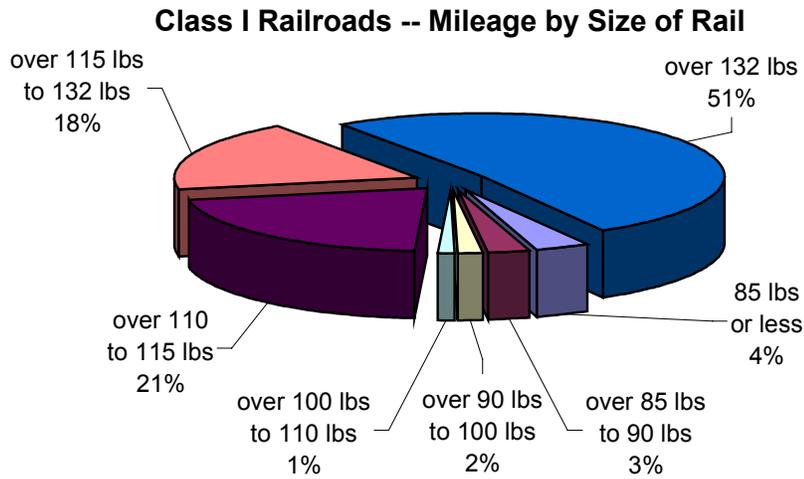
**Class I Railroads -- Mileage by Class of Rail**



**Class III Railroads -- Mileage by Class of Rail**



**Figure E-2  
Railroad Mileage by Size of Rail (pounds per yard of rail)**



**Rail Freight Issues**

Listed below are the principal rail freight transportation issues for both providers and users of rail transportation. The number one issue involves railroad/highway at-grade crossings. Specific problems are safety concerns (potential risk of train/vehicle collisions) and poor surface condition. Lack of monetary resources to properly maintain rail lines and funds for emergency repairs such as track washouts and train derailments is the second most-cited issue. Other concerns are deteriorating equipment and distressed track

infrastructure, especially rail and bridges, lack of ready access to rail freight service, and rail line abandonments.

#### Top Five Rail Freight Transportation Issues

1. Rail/Highway At-Grade Crossings
  - Safety
  - Surface Condition
2. Lack of Funding Resources
3. Poor Condition of Equipment and Infrastructure
4. Access to Rail Freight Transportation
5. Rail Line Abandonments

#### Infrastructure, Equipment and Support Facilities

The Class III railroads provided listings of present and projected infrastructure, equipment and support facility needs. Higher-weight rail, improvements to bridges, and additional crossties and ballast are the chief immediate infrastructure needs. Foremost future requirements include strengthening of all bridges to handle 286,000- and 315,000-pound loaded railcars and construction of new yard track.

The most mentioned equipment needs (both current and anticipated) are transloading equipment, additional railcars, and newer locomotives. The top three support facilities for present and future operations are warehouses, maintenance shops, and bagging facilities.

Some Class III railroads provided an estimate of cost for infrastructure and bridge improvement needs. This information is provided below.

- ✓ \$65 million – Rail line improvements (rail, ballast, switches, crossties)
- ✓ \$35 million – Bridge improvements
- ✓ \$30 million – New rail line, side tracks and marshalling yards

#### Operational Problems

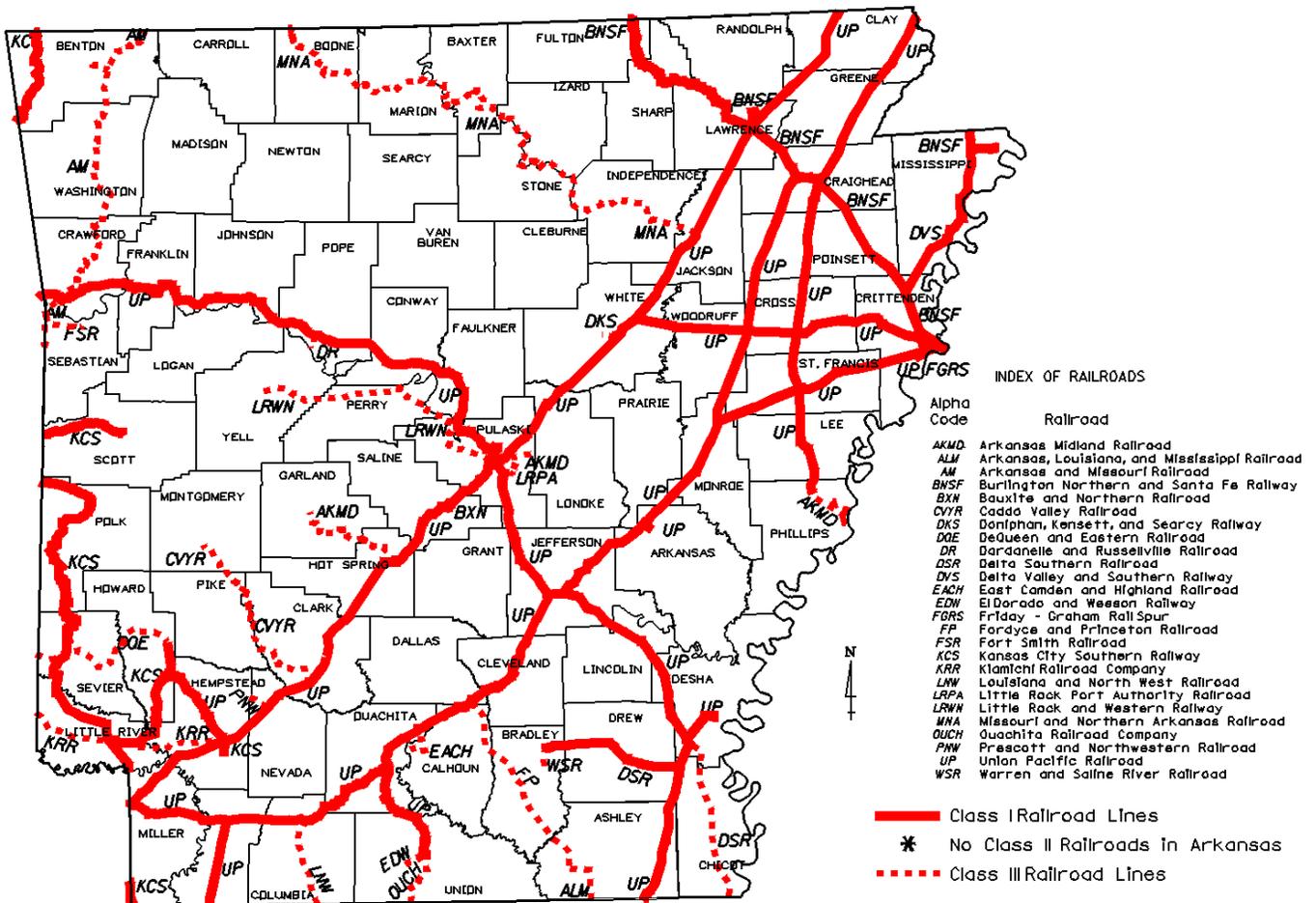
The chief operational problems for Class III railroads are emergencies, derailments, defective rail, and slow orders. The majority of emergencies result from bridge failures and track washouts. Common causes of train

derailments are wide gauge, rail shift and broken rail. Primary reasons for defective rail are bolt hole crack joints, split heads, and broken web joints. Slow orders issued by the Federal Railroad Administration are common because of distressed track and bridge conditions.

# Section I State Rail System

This section profiles the present rail freight and passenger transportation system serving the state of Arkansas, beginning with a brief overview of the history of the railroad system, followed by a discussion of major railroad facilities and how the transportation system operates. Figure 1-1 shows the current railroads in the state.

**Figure 1-1  
Railroad Map of Arkansas**



## *Historical Review*

The Memphis and Little Rock Railroad, chartered in January 1853, was the first rail operation in Arkansas providing service between Memphis, Tennessee and Little Rock. The first railroad with interstate operations (1884) was the St. Louis Southwestern Railroad (commonly called the "Cotton Belt"), now a part of Union Pacific Railroad Company. The St. Louis Southwestern Railroad operated a line from St. Louis, Missouri, through eastern and southern Arkansas to Texarkana, Arkansas/Texas. By the early 1900's trains were providing both freight and passenger services in most parts of the state.

During the Twentieth Century many main line segments and branch lines in Arkansas were abandoned or merged with other companies. This decline in the number of railroads was due in part to the advent of competing transportation modes, changing market areas, and types of products produced in the state. However, the most significant cause was a lack of funds to modernize facilities and properly maintain rail lines which resulted in deteriorated track conditions, leading to increased derailments, reduced operating speeds, and service interruptions. Eventually, rail freight customers either relocated their facilities to other lines with more reliable service or turned to alternate modes of transportation.

Today, the state's rail freight transportation system includes many partnerships and alliances with other transportation modes. An example of a partnership with another freight mode is the railroads' participation with the trucking industry. Railroads and trucking companies have joined together on long-haul shipments by putting truck trailers on railcars. Illustrations of alliances between railroads are trackage rights agreements where railroads may share or interchange lines, and the relationship between the Class I and Class III railroads. Class III's provide daily rail service to shippers by switching and spotting cars, and short-haul service of railcars to interchange

points with Class I lines. At these locations, railcars are transferred to a Class I railroad for long distance delivery.

***Arkansas' Freight Railroad System***

Railroads are one of five modes that comprise Arkansas' freight transportation system. The other freight modes are truck, water and pipeline transportation, and air freight service. Statewide system maps of these freight modes are located in Appendix A.

Railroad Network

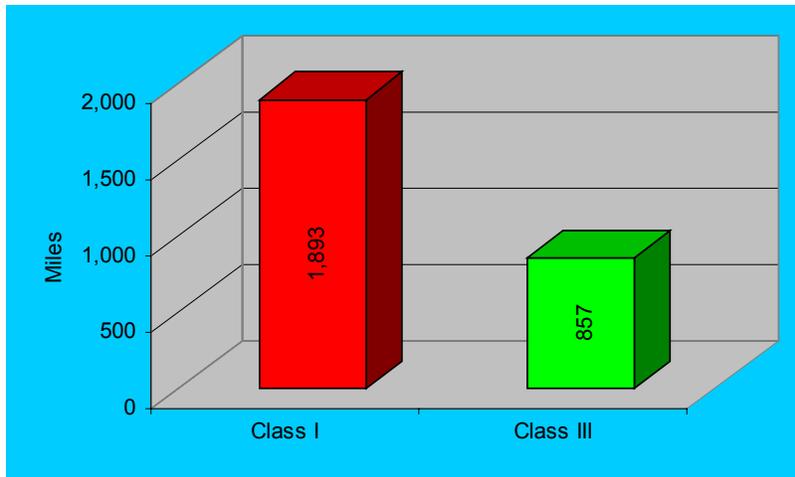
The state of Arkansas is served by twenty-six railroad companies, three Class I (national service) and twenty-three Class III railroads (local and regional service). There is no Class II railroad service in Arkansas. Table 1-1 is a listing by classification based on revenues.

*Class I Railroads* – Carriers generating \$261.9 million or more in annual operating revenues.

*Class III Railroads* – Carriers generating less than \$21.0 million in annual operating revenues.

Arkansas' rail freight network consists of approximately 2,750 miles of track. The Class I railroads own most of the rail miles with 1,893 miles or 69% of the track mileage. The Class III railroads' share is 857 miles (31%).

**Figure 1-2**  
**Mainline Miles of Rail in Arkansas**



**Table 1-1**  
**Index of Railroads**

<b><u>Class I Railroads</u></b>	<b><u>Alpha Code</u></b>
Union Pacific Railroad	UP
Burlington Northern and Santa Fe Railway	BNSF
Kansas City Southern Railway	KCS
 <b><u>Class III Railroads</u></b>	
Arkansas, Louisiana and Mississippi Railroad	ALM
Arkansas Midland Railroad	AKMD
Arkansas and Missouri Railroad	AM
Bauxite and Northern Railway	BXN
Caddo Valley Railroad	CVYR
Dardanelle and Russellville Railroad	DR
Delta Southern Railroad	DSR
Delta Valley and Southern Railway	DVS
DeQueen and Eastern Railroad	DQE
Doniphan, Kensett, and Searcy Railway	DKS
East Camden and Highland Railroad	EACH
El Dorado and Wesson Railway	EDW
Fordyce and Princeton Railroad	FP
Fort Smith Railroad	FSR
Friday-Graham Rail Spur/City of West Memphis	FGRS
Kiamichi Railroad	KRR
Little Rock Port Authority Railroad	LRPA
Little Rock and Western Railway	LRWN
Louisiana and North West Railroad	LNW
Missouri and Northern Arkansas Railroad	MNA
Ouachita Railroad	OUCH
Prescott and Northwestern Railroad	PNW
Warren and Saline River Railroad	WSR

### ***Class I Railroads***

The principal freight transportation services provided by Class I railroads are long-haul deliveries to national market areas, customer support services, and freight exchanges at international ports of entry. They also arrange for overseas shipments and transportation of goods between Canada, Mexico and the United States. Value-added services to customers include single bill of lading, local truck drayage, storage-in-transit facilities, and intermodal rail/truck service.

The chief service area for Union Pacific Railroad is the states west of the Mississippi River with major destination points in the Western States of California and Washington, and the Gulf States of Texas and Louisiana. The Burlington Northern and Santa Fe Railway serves the coal- and grain-producing regions of Wyoming and the Dakotas with ties to Midwestern States and the Gulf Coast region.

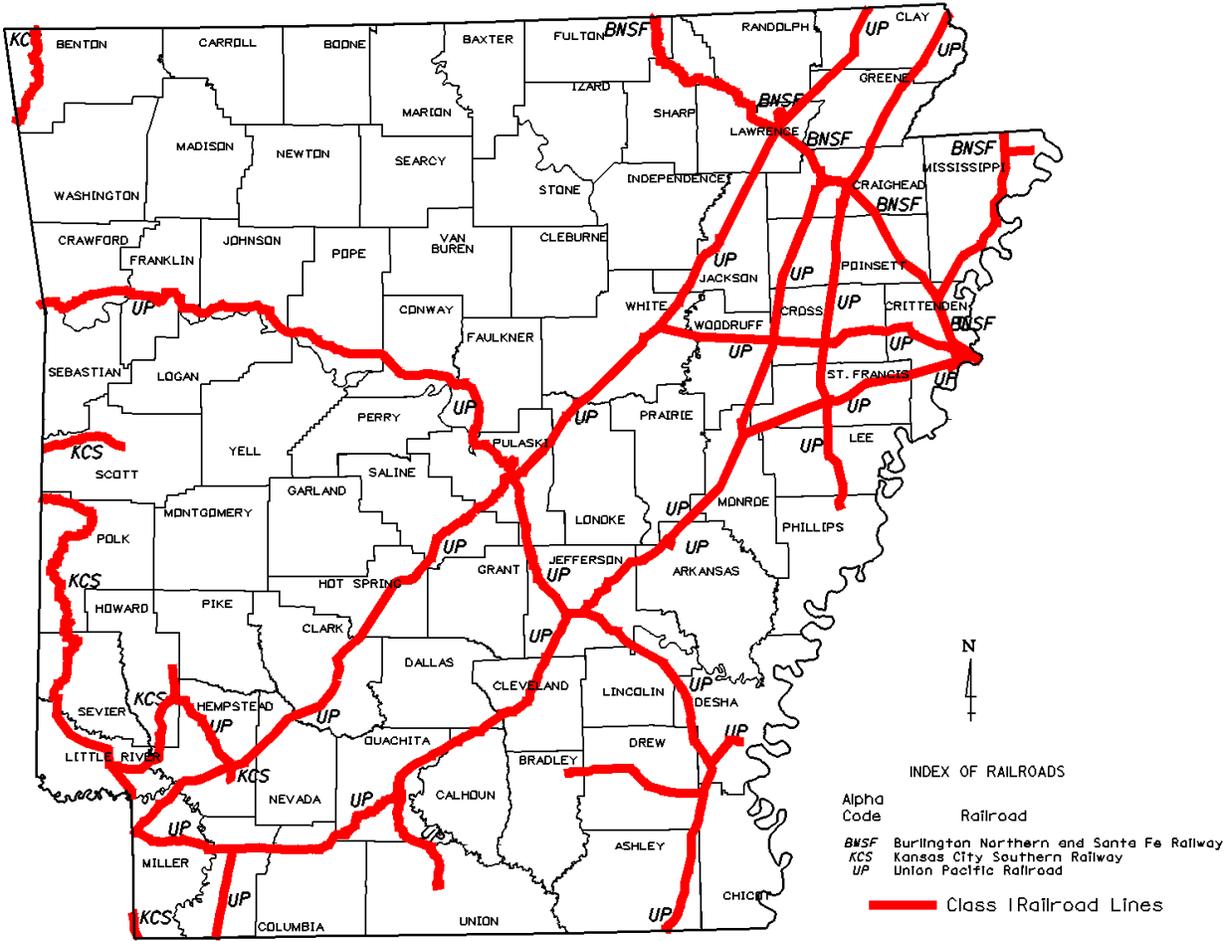
The Kansas City Southern Railway serves the six states of Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas. Their rail lines run primarily north/south, serving the grain-producing regions of Kansas and Oklahoma, and the petrochemical plants of eastern Texas and southern Louisiana. Figure 1-3 shows the Class I railroad lines in Arkansas and Table 1-2 the percentage of track mileage in the state.

The largest Class I railroad in Arkansas, in terms of miles of track, is the Union Pacific Railroad.

**Table 1-2**  
**Class I Mainline Track Mileage**

<i>Railroad</i>	<i>Track Mileage</i>	<i>% of Total</i>
Union Pacific	1,464	77%
Kansas City Southern	221	12%
Burlington Northern and Santa Fe	208	11%

**Figure 1-3  
Class I Railroads**



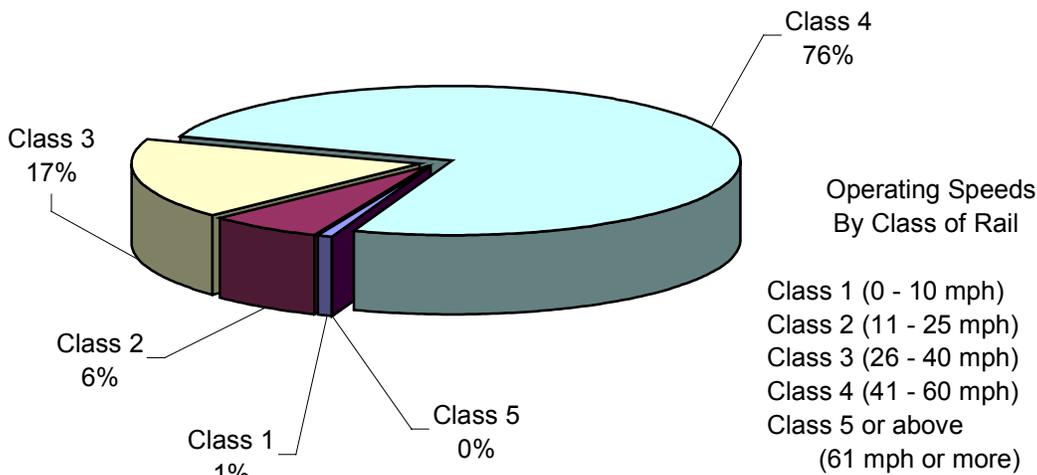
**Rail Classifications**

The majority of rail mileage for Class I railroads is grouped as Class 4 rail with operational speeds up to 60 mph. Most Class I railroads use rail sized as “over 132 lbs. weight”<sup>1</sup> (see Figure 1-4). To lower maintenance-of-way expenses and allow higher train speeds, the Class I railroads have developed the practice of eliminating joints by welding rail bars together (CWR - Continuous Welded Rail).

<sup>1</sup> “Size of rail” relates to the speed at which trains can safely operate. “Rail weight” is the ability to handle loaded railcars.

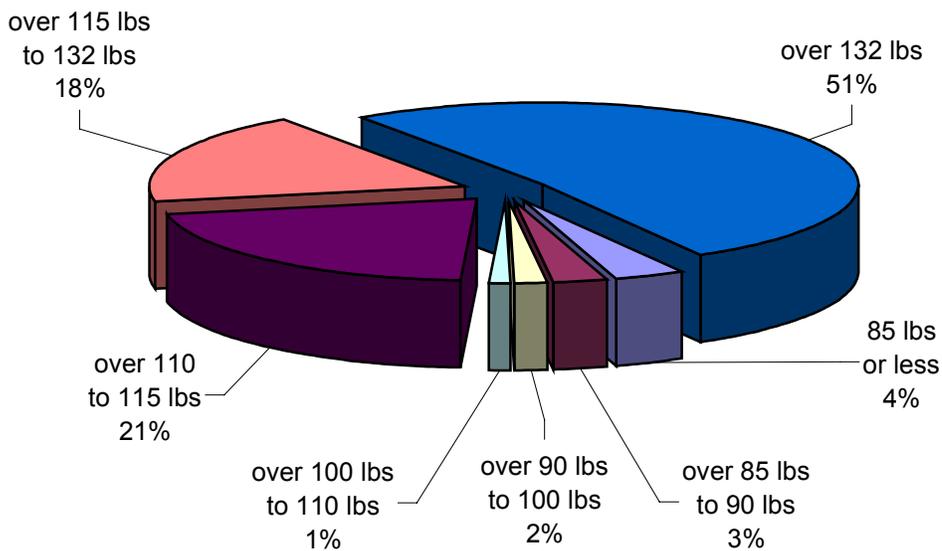
**Figure 1-4**  
**Class I Rail Classifications**

**Class I Railroads -- Mileage by Class of Rail**



Source: Arkansas State Rail Plan Survey

**Class I Railroads -- Mileage by Size of Rail**

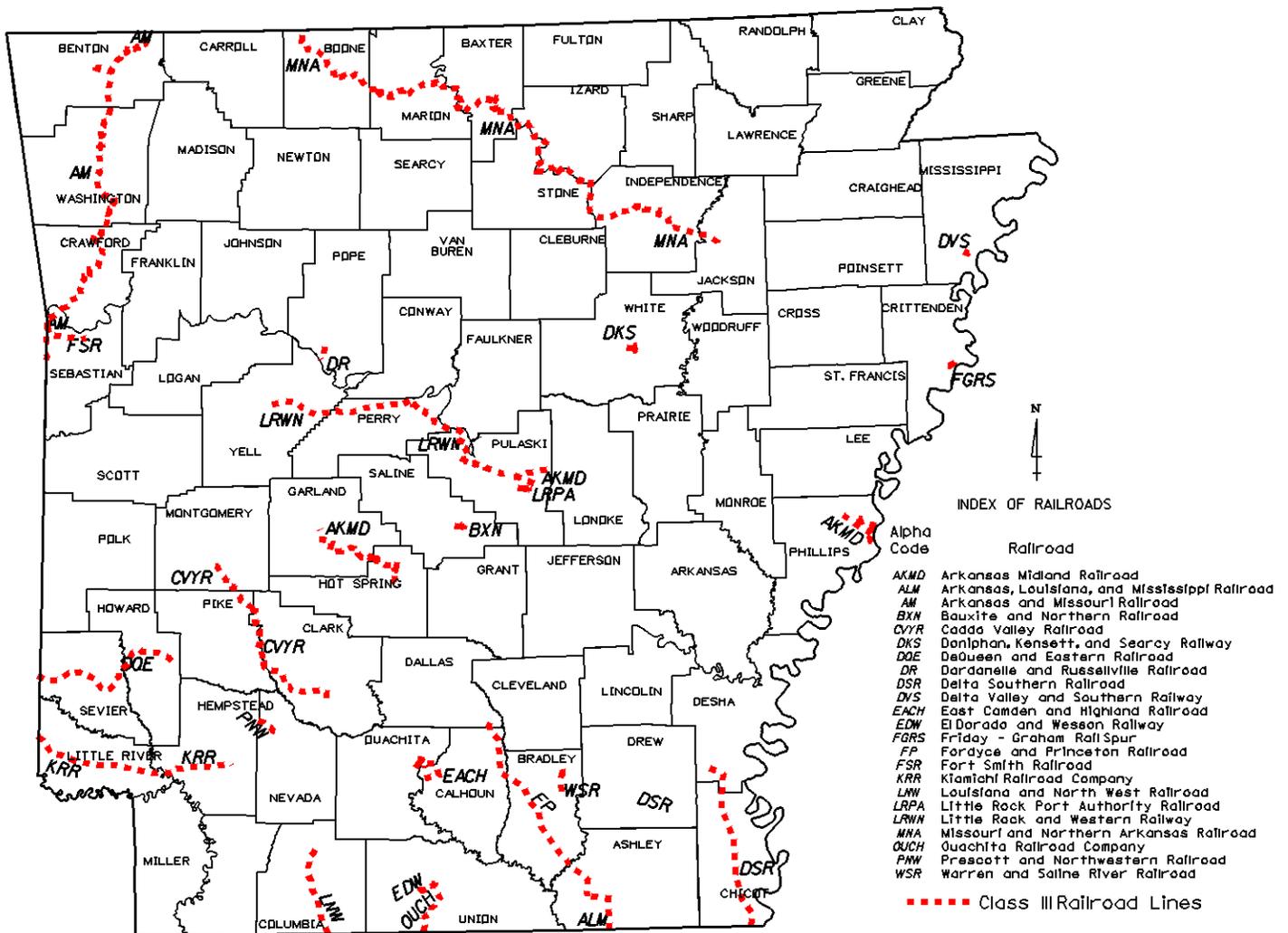


Source: Arkansas State Rail Plan Survey

### Class III Railroads

The Class III railroads, commonly referred to as short line railroads, provide switching service and railcar spotting for industries served, and feeder railcar service to the Class I railroads. They significantly impact the local economy; particularly regions of the state where bulk commodities are produced in large volume.

**Figure 1-5**  
**Class III Railroads**



Many Class III railroads are owned by private companies and haul only that company's products. The other Class III's are for-hire common carriers. Several of the railroad companies operate more than one rail line and some lines cross state borders. Figure 1-5 shows the Class III railroads. Table 1-3 lists the top five railroads by miles of track operated. The Missouri and Northern Arkansas operates the greatest miles of track with 177 miles, followed by the Arkansas and Missouri, with 105 miles.

**Table 1-3**  
**Top Five Class III Railroads**  
**(Based on Miles of Track)**

<i>Railroad</i>	<i>Track Mileage</i>
Missouri and Northern Arkansas	177
Arkansas and Missouri	105
Little Rock and Western	79
Kiamichi	65
Arkansas Midland *	64

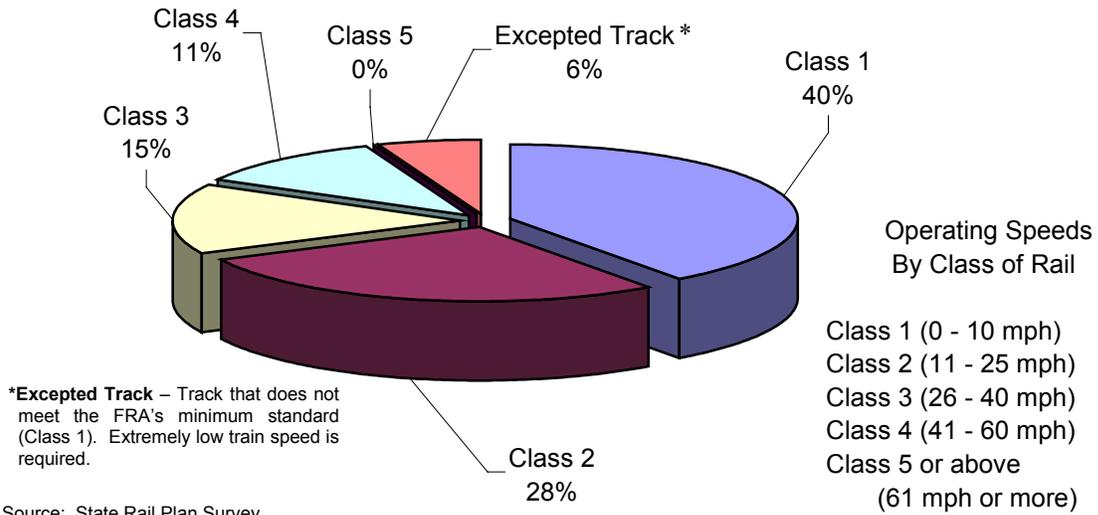
\* - Total includes all branch lines

#### Rail Classifications

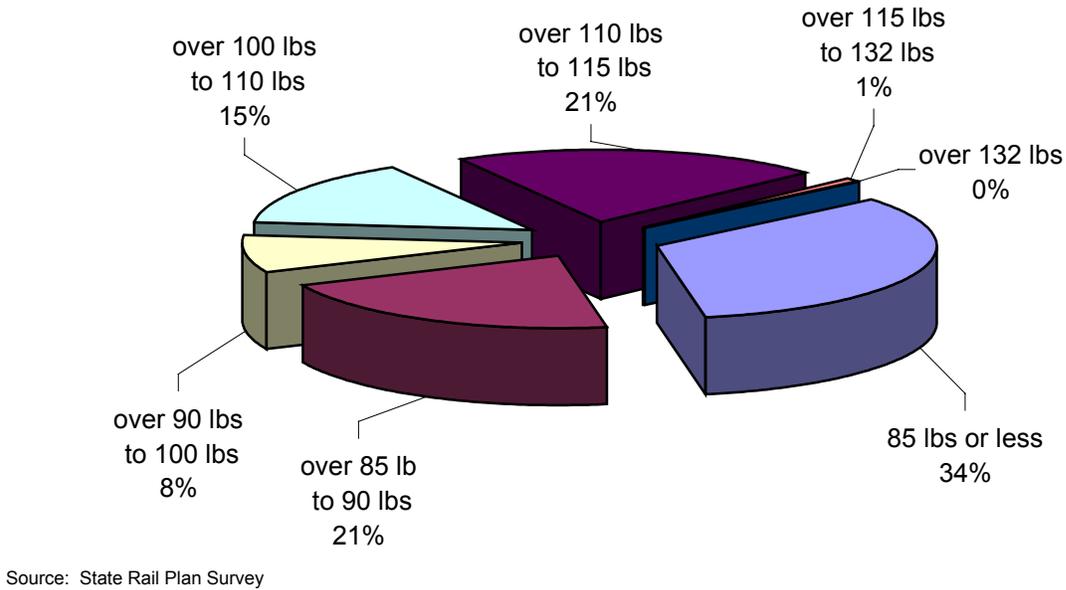
As shown on Figure 1-6, most Class III railroad mileage is classified as Class 1 (40%), with a top speed of 10 mph allowed. The dominant rail size for Class III railroads is 85 pounds or less (34%), followed by over 85 pounds to 90 pounds rail (21%). None of the Class III railroads reported rail that exceeds 132 pounds.

**Figure 1-6  
Class III Rail Classifications**

**Class III Railroads -- Mileage by Class of Rail**



**Class III Railroads -- Mileage by Size of Rail**



## ***Freight Railroad Facilities***

Railroad facilities include interchange points, intermodal rail yards, and support structures such as engine repair shops and fuel depots. These facilities are a significant and essential part of the state's transportation system.

### Interchange Points

An interchange point is a location where two or more rail lines are used to transfer railcars. They may consist of a single sidetrack or several tracks (marshaling yard), where a series of operations, such as switching operations and blocking of trains, may occur.

Switching – Movement of railcars within a defined area from one place to another.

Blocking – Grouping railcars for movement to a distant location.

### Intermodal Rail Yards

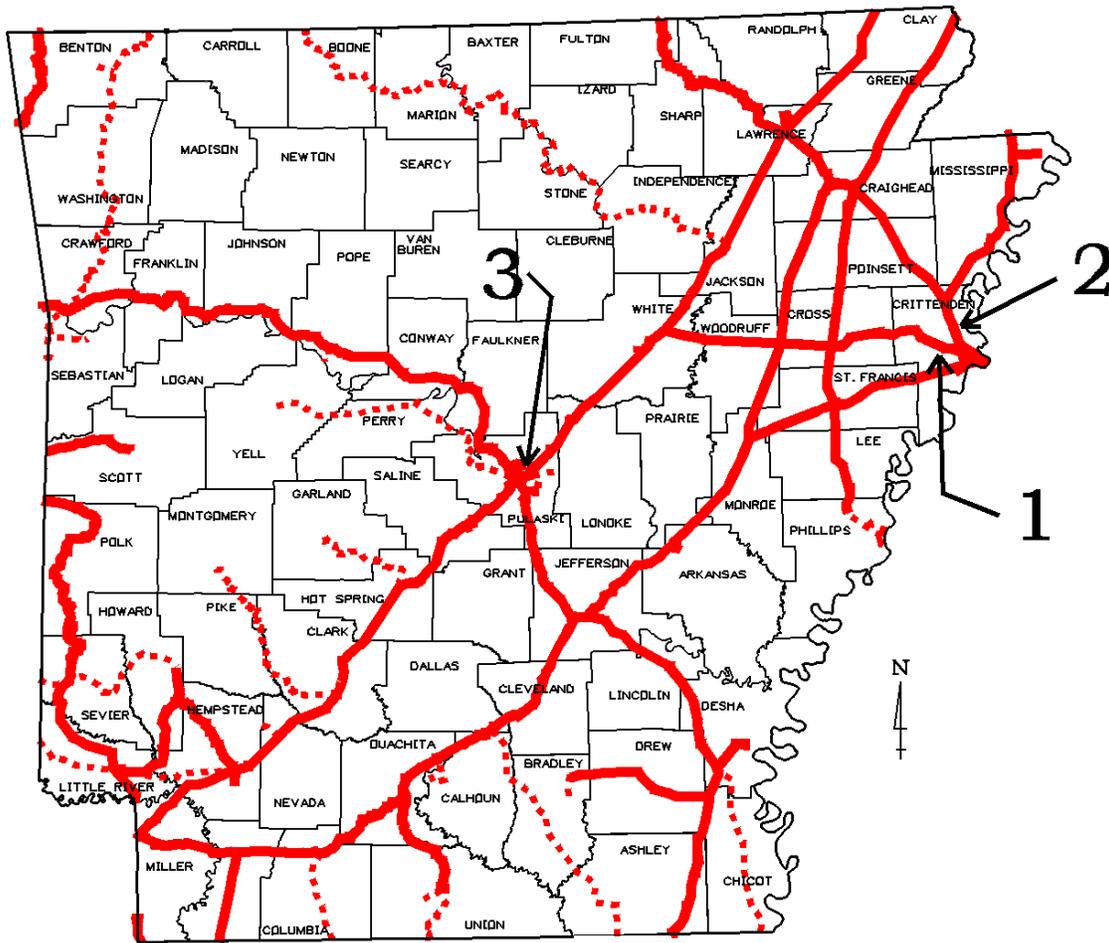
Intermodal rail transportation and logistic support services are anticipated to provide future business growth for railroads. Annual estimates for intermodal rail transportation growth range from 3%-6%. The rapid increase in intermodal rail transportation stems from shippers that demand lower costs and more service options, increasing international shipments, and the need for railroads to better utilize their equipment.

Three types of intermodal rail transportation service occur in Arkansas: TOFC (trailer-on-flatcar) shipment, COFC (container-on-flatcar) movement, and transload service. An example of an in-state transload shipment is finished lumber trucked to a warehouse for temporary storage, then loaded into a railcar for shipment to market.

Three intermodal rail/truck yards are operated by Class I railroads in Arkansas. Figure 1-7 shows the location of the yards. Most activity at the UP Ebony terminal is domestic COFC transfer shipments and international COFC shipments to/from deepwater ports. The major operations at BNSF's

Harvard Yard facility involve TOFC shipments in support of their Memphis Gateway activities. The primary function of the Union Pacific-North Little Rock terminal is TOFC shipments for package delivery companies. Kansas City Southern Railway does not offer in-state intermodal service, but the service is available in nearby states. Some of the Class III railroads provide intermodal service. Their activities range from transloading products and limited TOFC service, to specialized freight transfer (rail to river barge).

**Figure 1-7**  
**Arkansas' Intermodal Rail Yards**



- 1 Union Pacific Ebony Intermodal Terminal
- 2 Burlington Northern/Santa Fe Harvard Yard
- 3 Union Pacific North Little Rock Terminal

## Support Facilities

The chief support facilities for Class I railroads are listed below. Support facilities for Class III railroads include railcar shops, fuel depots, locomotive engine repair stations, and rebuild shops.

### *Class I Railroads* *Support Facilities*

UP railcar cleaning facility, Pine Bluff

UP fuel depot, North Little Rock

UP Jenkins Engine Repair Shop, North Little Rock

## ***Freight Railroad Operations***

Factors that affect daily operations of the state's railroads include assignment and types of railcars available to shippers, trackage rights and haulage agreements, and directional train traffic.

## Railcars

The Class I railroads own large fleets of railcars; however, a significant number are privately owned by companies that are major users of rail transportation. Class III railroads own and lease railcars.

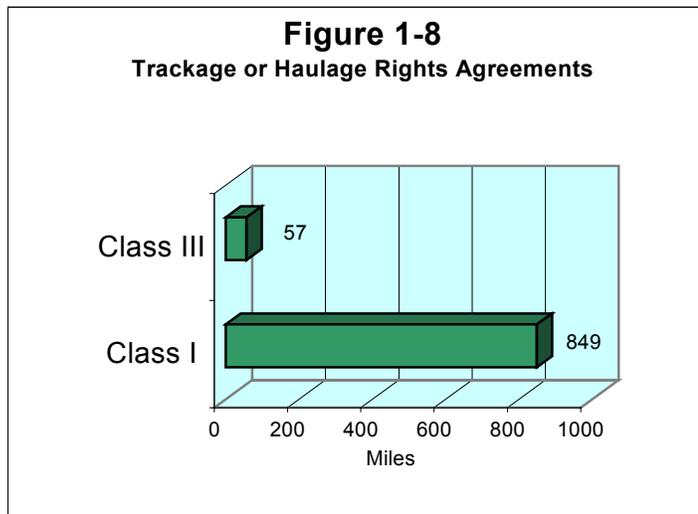
Two principal categories of railcars available to Arkansas shippers are assigned and general service cars. Assigned railcars are designated for sole use by a particular large volume shipper, either for daily usage or for seasonal operations. General service railcars are made available to occasional low volume shippers. Of the several types available, those most commonly used by Arkansas shippers are listed in Table 1-4.

**Table 1-4  
Common Types of Railcars**

Box Car	Closed car for general freight
Compartmentalizer Car	Boxcar equipped with movable bulkheads, which can be used to divide the car into separate compartments.
Tank Car	Car used for transporting liquids
Compartment Tank Car	Tank car, which has compartments, or separate tanks in which different kinds or grades of liquids may be transported.
Flat Car	Car without sides, top or ends, used for machinery, stone, etc.
Gondola	Open-top cars having sides and ends
Hopper Car	Car with floor sloping to one or more hoppers through which contents are unloaded by gravity.

Trackage or Haulage Rights Agreements

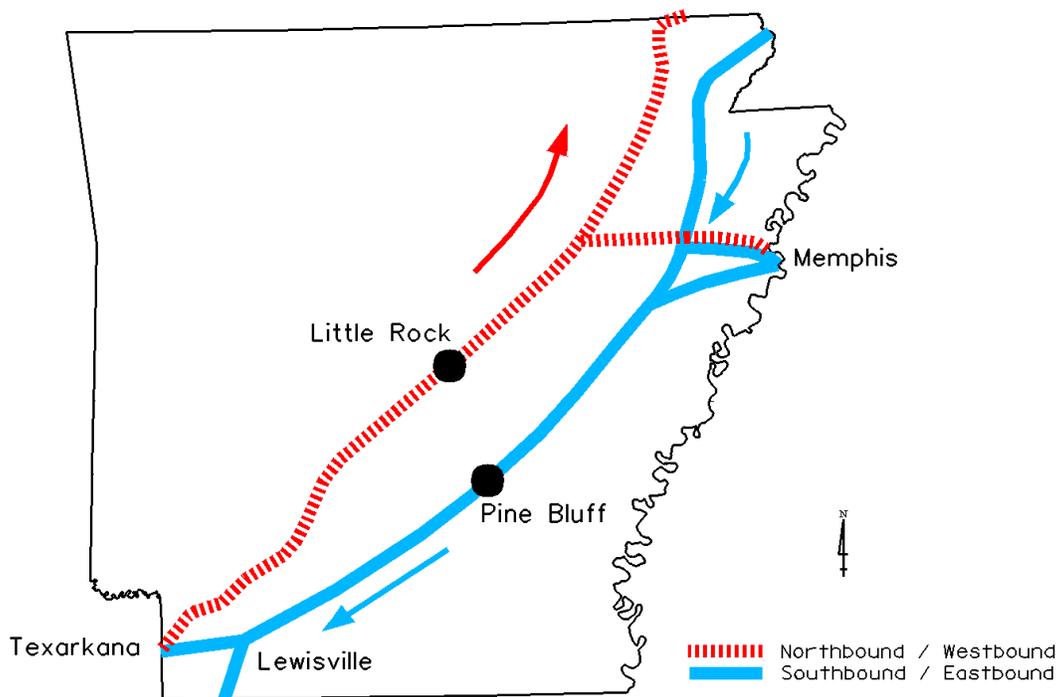
A trackage or haulage rights agreement allows one railroad to use the tracks of a competing railroad to gain access to other portions of their own rail network and/or to serve shippers located on another railroad mainline. These agreements usually occur as a condition of a railroad merger. Figure 1-8 exhibits trackage and haulage rights agreements by number of track miles in Arkansas.



### Directional Train Traffic

In July 1996, Southern Pacific Railroad (SP) merged with Union Pacific Railroad (UP). The merger resulted in a directional rail network for Arkansas with traffic moving northbound on the Union Pacific line through Little Rock, and southbound on the former Southern Pacific line through Pine Bluff (refer to Figure 1-9).

**Figure 1-9**  
**Directional Train Network**



### ***Commodity Movements***

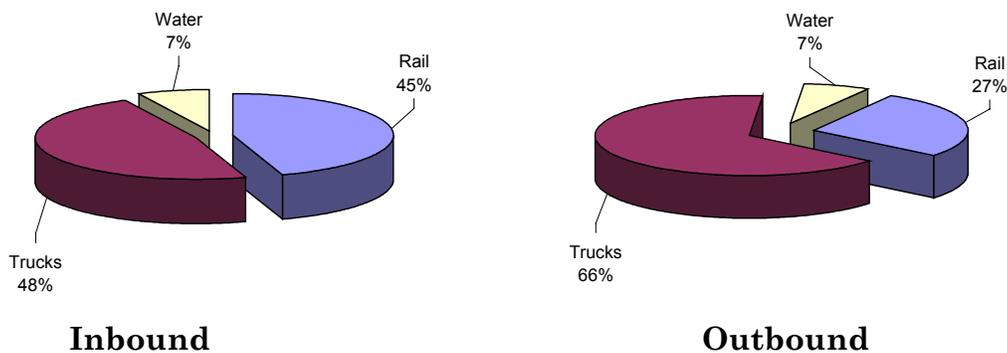
Rail freight shipments are influenced by the types of goods and commodities that are locally produced, where they are consumed, and other transportation options available to the shipper. There are three broad categories of rail freight: **basic raw materials** (e.g., coal and mineral ores); **intermediate goods** (e.g., fertilizer, bar steel, soybeans, poultry meal, and wood chips); and **finished products** (e.g., automobiles and parts). Most of the rail freight from/to Arkansas is classified as intermediate goods.

A freight goods movement database, along with survey data, was used to determine the primary inbound/outbound commodity shipments by rail. The freight database contains information on freight flows within, into, from, and through all 75 counties by freight mode to Business Economic Areas (BEAs), all states, and groups of states by geographic regions.

As a state total, the foremost inbound commodities shipped by rail are coal and farm products. The high tonnage of coal can be attributed to trains originating in the Wyoming area and traveling to the coal-powered electrical generators in the state. Dominant outbound commodities by rail are nonmetallic minerals and lumber or wood products.

When compared to the freight modes of truck and water, rail transportation is the second most-often used mode for inbound/outbound shipments.

**Figure 1-10**  
**Shipments by Freight Modes**  
**(All Commodities Based on Tonnage)**



Source: Freight Goods Movement Database

**Table 1-5**  
**Top Five Commodities Shipped/Received by Rail**

**Inbound Commodities**

1. Bituminous Coal or Lignite
2. Farm Product
3. Chemical or Allied Products
4. Food and Kindred Products
5. Waste or Scrap Materials

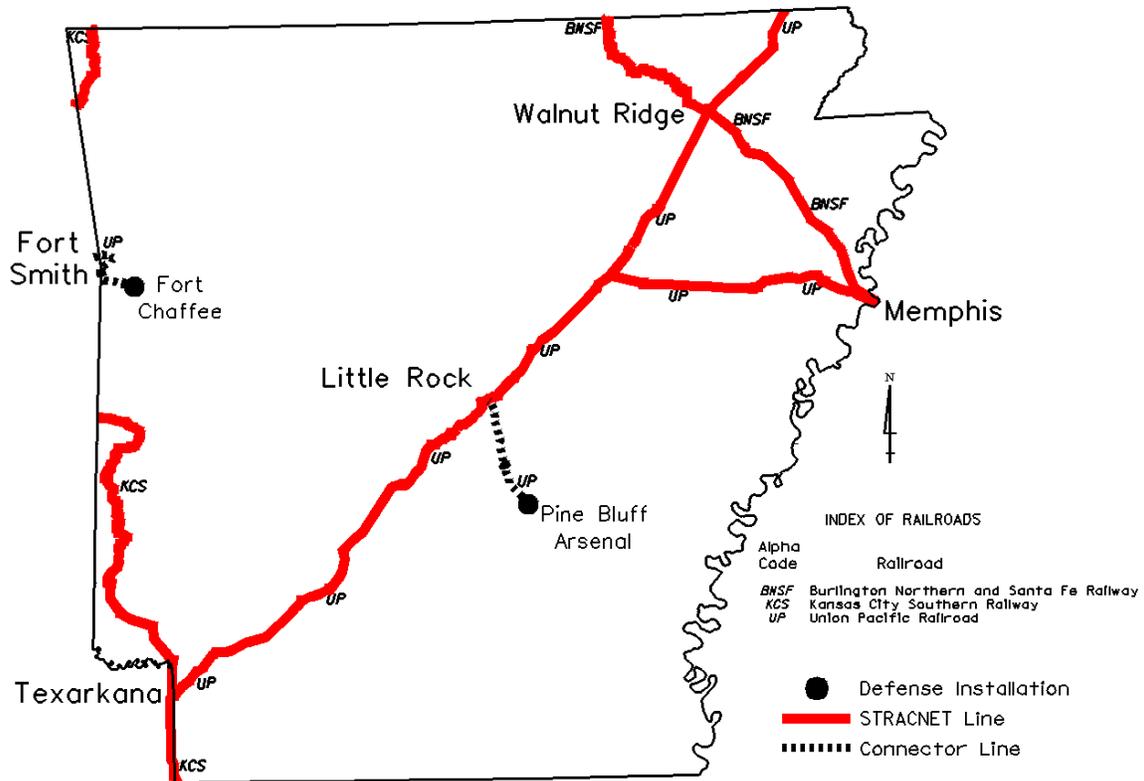
**Outbound Commodities**

1. Nonmetallic Minerals
2. Lumber or Wood Products
3. Primary Metal Products
4. Clay, Concrete, Glass or Stone Products
5. Food or Kindred Products

### ***Railroad Defense Lines***

A nationwide system of railroad defense lines has been defined by the U.S. Department of Defense. This system is named Strategic Rail Corridor Network (STRACNET). The network provides access to important military bases and support installations, and for the deployment of equipment during emergencies. The figure below shows the STRACNET System in Arkansas.

**Figure 1-11  
Strategic Rail Corridor Network (STRACNET)**

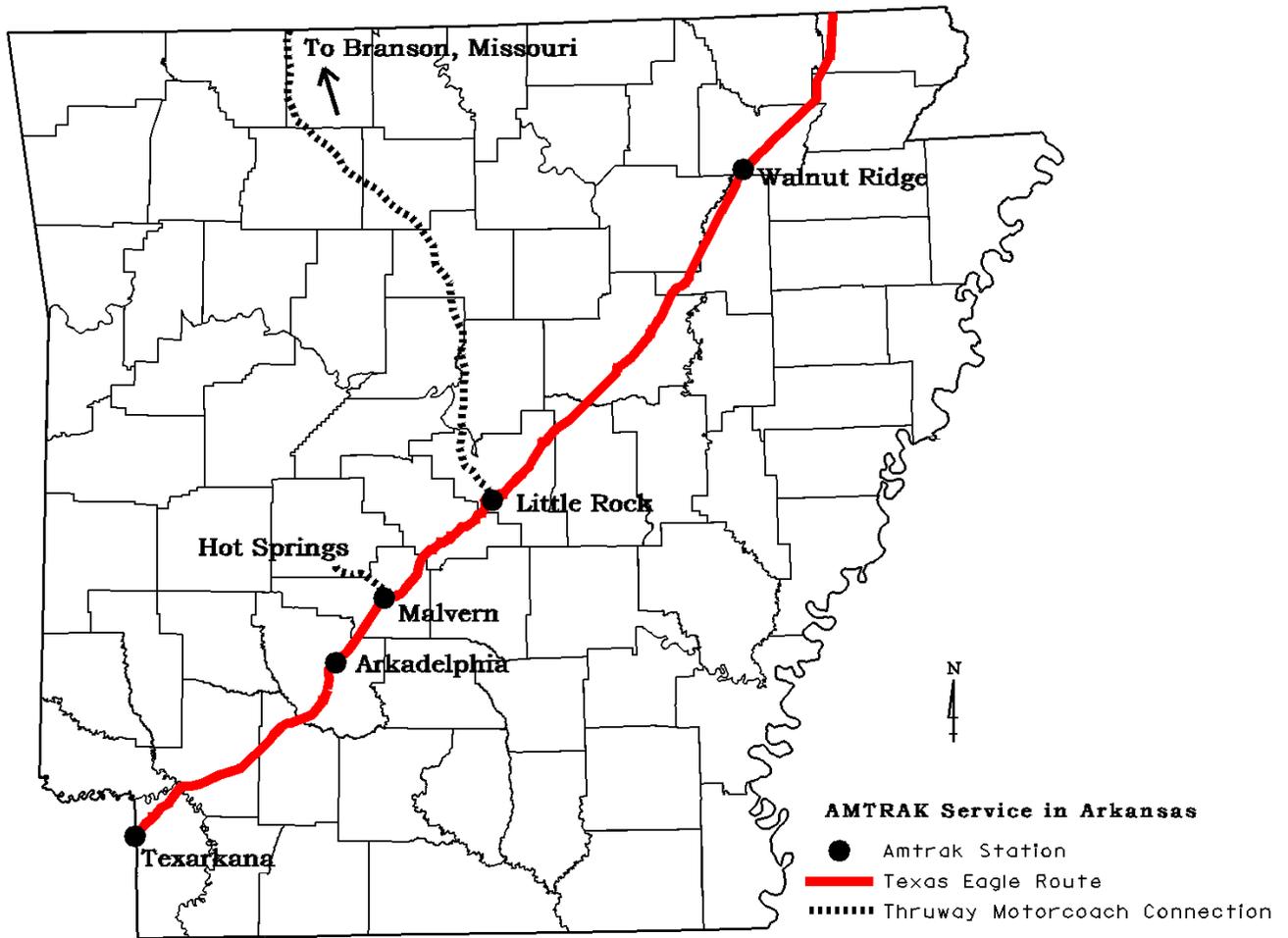


### ***Arkansas' Passenger Railroad System***

Amtrak's Texas Eagle, operating on a daily schedule with service to five Arkansas cities, provides the state with rail passenger service as shown in Figure 1-12. The Texas Eagle route serves the major cities of Chicago, Illinois; St. Louis, Missouri; Dallas and San Antonio, Texas. Connecting service to Hot Springs, Arkansas and Branson, Missouri is available.

Passenger accommodations include coach seating, sleeping cars and dining/lounge cars.

**Figure 1-12  
Passenger Rail Service**



## **Section II**

### **Rail Freight Issues**

Arkansas' rail freight companies have been impacted by deregulation and from intense competition from other freight modes, especially the trucking industry. As a result rail lines have been abandoned, services reduced, and scheduled maintenance of equipment and facilities deferred. This section will examine these issues and other concerns confronting the providers and users of rail freight transportation. Also discussed are infrastructure, equipment, and support facility needs of the state's Class III railroads.

#### ***Rail Abandonment***

Rail freight service is an indispensable transportation mode in many rural areas of Arkansas. Rail transportation is often the only economical freight mode for transporting natural resources, raw materials, and other bulk commodities. Discontinuance of service can have a detrimental effect on a region, particularly areas with extensive agriculture and forestry operations.

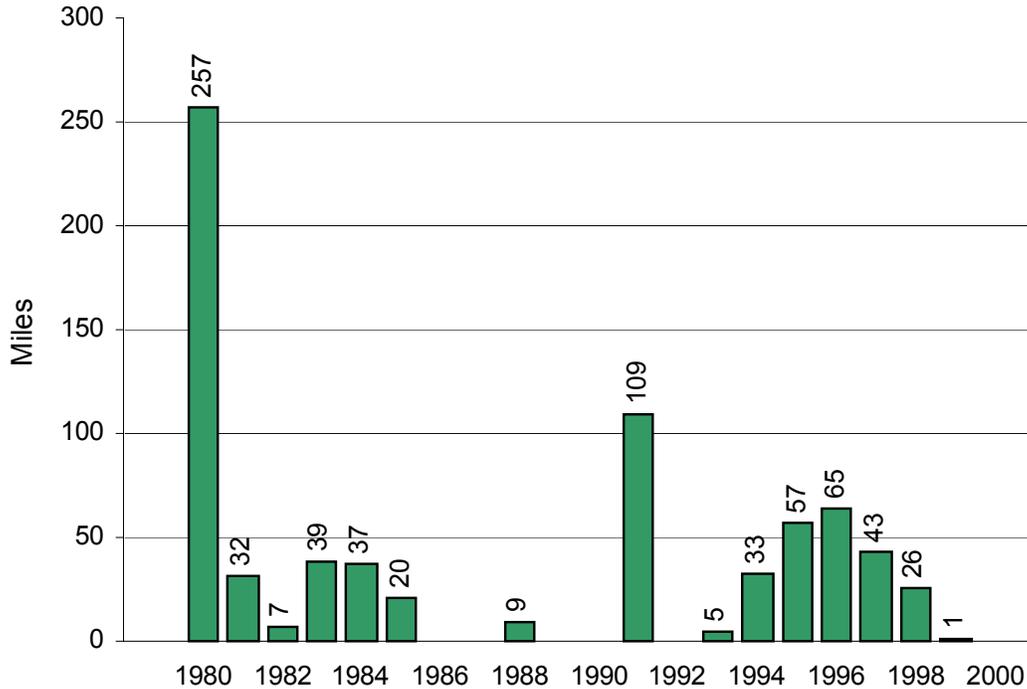
Studies conducted on the consequences of rail abandonment found: a) higher freight rates for bulk commodities, b) less tax revenue, c) wage and salary loss, d) greater energy consumption, and e) more air pollution.

Lines may be abandoned for several reasons including increased operating costs, competition with other freight modes, shifts in product demand, changes in inventory practices, and industry relocation.

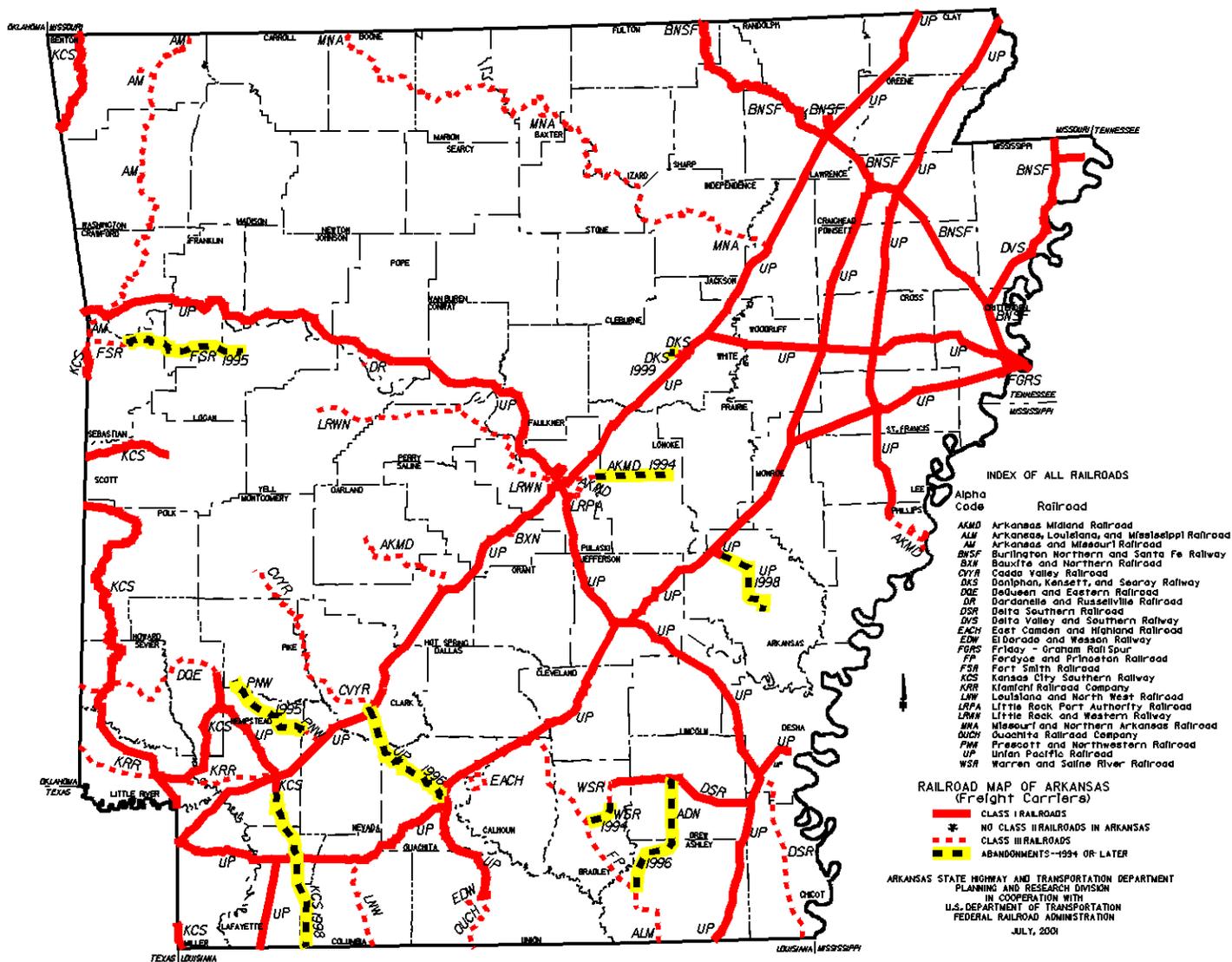
A major cause of railroad abandonment in Arkansas can be attributed to shortage of funds for needed maintenance-of-ways (e.g., replacing crushed crossties and worn ballast). The end result is often a rail line subject to rail breaks, costly derailments, and other operational problems. An effect of a poorly maintained rail line is service delays, which can cause shippers to switch to other modes of transportation. If this occurs, a railroad may experience revenue losses from which they may not be able to recover, the outcome being abandonment.

Since 1980, over 700 miles of rail line have been abandoned in Arkansas, as shown in Figure 2-1. The large volume in 1980 resulted from the final resolution of the Chicago, Rock Island, and Pacific (Rock Island) Railroad's bankruptcy case and reflects portions of that system that were not purchased by other railroads. Figure 2-2 shows the lines that have been abandoned since 1994.

**Figure 2-1**  
**Miles of Railroad Abandoned in Arkansas**  
**Since 1980**



**Figure 2-2  
Abandoned Railroads  
1994 and Later**



## ***Railroad Viability***

Several issues, listed below, threaten the viability of Class III railroads.

- ✓ Finances
- ✓ Condition of infrastructure and equipment, and lack of support facilities
- ✓ Inability to participate in intermodal transportation

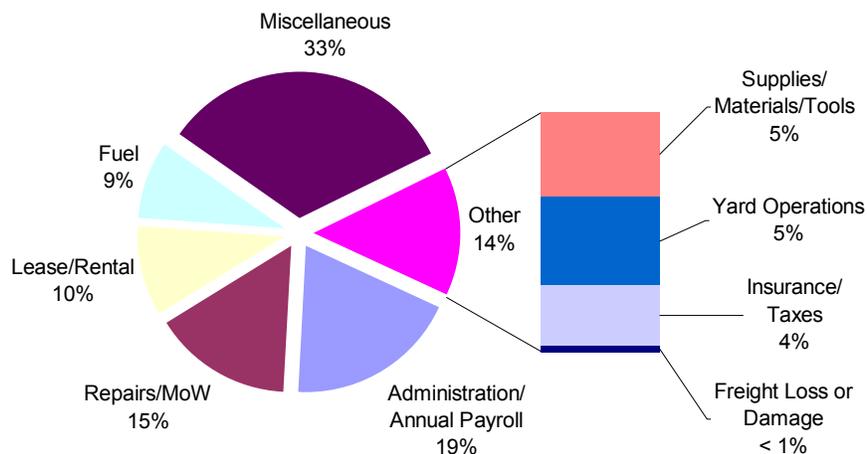
### Finances

Many of the rail lines owned by the state's Class III railroads were acquired from Class I companies. In most cases, maintenance-of-way was deferred on these lines prior to sale, resulting in distressed track and bridge conditions.

Significant expenditures were needed to bring a rail line to a usable condition, resulting in heavy indebtedness. Adding to the financial burden are costs for emergency repairs like bridge washouts and train derailments, and the inability to obtain low interest, long-term loans.

Information was obtained from the Class III railroads on annual expenditures. This data, summarized in Figure 2-3, reveals that, excluding miscellaneous costs, the leading expenditures are administration and payroll, repairs and maintenance-of-way expenses such as adding ballast and replacing broken crossties, lease and rental fees, and fuel.

**Figure 2-3  
Annual Expenditures  
Class III Railroads**



## Infrastructure/Equipment/Support Facilities

The Class III railroads operate in a tight financial environment with budget constraints that limit infrastructure improvements, equipment purchases, and the construction of new support facilities. The consequences can be the loss of current shippers and inability to attract new business.

Infrastructure needs for Class III railroads include improvements to main line tracks (e.g., heavier weight rail, new crossties and switches, and additional ballast), and rehabilitation of spur lines, side tracks and bridges. The major equipment needs are better diesel locomotives and railcars of all types. Locomotives presently in use are rebuilt power units (second- and third-generation). Since it is not uncommon for these power units to be more than 40 years old, they require constant attention and may be out of service for long periods of time due to the unavailability of parts.

Types of support facilities needed are repair shops, car-cleaning facilities, marshaling yards, warehouses, and transit sheds. Table 2-1 lists the infrastructure, equipment and support facilities needs for the state's Class III railroads, as identified through the railroad survey.

**Table 2-1  
Infrastructure, Equipment and Support Facility Needs**

<b><i>Infrastructure</i></b>	<b><i>Support Facilities</i></b>
✓ Heavier weight rail	✓ Warehouses and transit sheds
✓ Crossties	✓ Maintenance shops
✓ Switches	✓ Bagging facilities
✓ Ballast	✓ Marshaling yards
✓ Bridge upgrades – 286,000- to 315,000-pound strength rating	✓ Car-cleaning facilities
<b><i>Equipment</i></b>	
✓ Railcars	✓ Locomotives

### Intermodal Transportation

Intermodal transportation is not a new concept to Class III railroads; however, most do not participate due to lack of equipment to transfer cargo to other freight modes and from the absence of a location for their transportation service.

### ***Grade Crossings***

Railroad/highway grade crossings are a leading area of concern for both Class I and Class III railroads. The major aspects of this issue include:

1. Safety Practices
2. Surface Condition at Crossings
3. Obstructions and Visibility

### Safety Practices

The general public's lack of perception for the potential risk of train and motor vehicle collisions is considered a significant issue. Various efforts are in process to help reduce the risk. Through Operation Lifesaver, a program to educate individuals, information is provided to school and civic groups. Crossing safety has also been pursued through reductions in the number of at-grade crossings and improved protection at the remaining crossings. Railroads in the state have implemented programs designed to reduce collisions. The use of cameras to record license plates from vehicles that ignore crossing signals, with the resulting pictures delivered to law enforcement agencies, has been used effectively. Regular contact between railroad companies and law enforcement individuals and judges has also proved to be important.

### Surface Condition

The poor surface condition of some rail/highway grade crossings is a major concern for both railroads and motorists. Poor surface quality of crossings has resulted in damaged vehicle tires and train derailments. It has been

suggested by Class III railroads that consideration be given to a state program to aid with maintenance of the at-grade crossings.

### Obstructions and Visibility

Sight obstructions such as trees, bushes and buildings are common at rail/highway crossings. Impediments are sometimes outside the railroad right-of-way.

### ***Access to Rail Freight Transportation***

Arkansas industries, natural resource firms, forestry-based companies, and agri-businesses depend upon rail transportation for low shipping rates. When rail transportation is unavailable or offered by only one railroad, higher shipping rates can occur.

Companies can experience harsh financial impacts when rail transportation is absent. Companies that cannot easily absorb additional costs for truckload shipments or cannot readily access waterways for barge transportation are particularly impacted. Shippers who have access to only one rail carrier are subject to non-competitive pricing and practices.

Construction of new railroad lines, expanded trackage rights, and reciprocal switching agreements are options available to rectify the loss of rail service and provide for competition between railroads.

### ***Operational Problems***

Table 2-2 lists the most significant existing and anticipated operational problems for the state's Class III railroads, as determined by the railroad survey. The chief emergencies are bridge failures, track washouts, and train derailments. The major causes for derailments are wide gauge, rail spread at joints, and broken (defective) rail. Primary reasons for defective rail are bolt hole crack joints, split heads, and failed head and web joints.

When asked to name the most anticipated operational problem for the future, the ability to handle 286,000- to 315,000-pound railcar loads was cited.

Based on a study conducted for the American Shortline Railroad Association, Class III railroads could experience problems in the following areas:

Potential Problem Areas  
Heavy Axle Loads

- |  |  |
|--|--|
| ✓ Bridges with strength rating of 263,000 pounds or less | ✓ Track sections with 100 pounds or less rail size |
| ✓ Turnouts   | ✓ Rail joints                                      |

**Table 2-2**  
**Operational Problems**  
**Class III Railroads**

Chief Emergencies

- ❑ Bridge failure
- ❑ Track washout
- ❑ Train derailment
- ❑ Other
  - ✓ Sun kink
  - ✓ At-grade crossing removed or added by county or private individual
  - ✓ Failed rail bed

Top Three Causes of Derailments

- ❑ Wide gauge
- ❑ Rail spread at joints
- ❑ Broken rail (defective rail)

Top Three Causes of Defective Rail

- ❑ Bolt hole crack joints
- ❑ Split heads
- ❑ Failed head and web joints

Future

- ❑ Heavy axle loads – 286,000- to 315,000-pound railcar
  - ✓ Track
  - ✓ Bridges

## **Section III**

### **Rail Freight Development Strategies**

This section describes planning assistance available to railroads at the state level and Federal programs to improve railroad operations. Rail freight development strategies, which are designed to aid the state's railroads with infrastructure projects and service improvements, are offered.

Included with the development strategies are suggested rail line rehabilitation guidelines for Class III railroads to accommodate higher weight railcars (286,000- and 315,000-pounds loaded) and general recommendations for improving track and bridge conditions.

#### ***State Rail Assistance Program***

The Planning and Research Division of AHTD is responsible for conducting rail-planning activities. These activities, conducted in cooperation with railroad companies, include documenting changes in the railroad system and managing databases on railroad operations. Other duties are the preparation of rail line and railroad bridge studies, track and bridge rehabilitation projects, conducting shipper surveys, maintaining records on rail line abandonments, and participating in the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Rail Transportation (SCORT) activities.

Assistance is provided in three major areas: 1) prepare studies to qualify railroads for federal funding assistance; 2) provide data on the state's railroads for potential rail transportation users; and 3) facilitate railroad issues and interests.

#### **Studies**

Rail line and railroad bridge studies are prepared for the Class III railroads in order to qualify the railroad for possible federal funding assistance. Studies are conducted at no expense to the railroad.

### Data Source

Maps showing the state's Class I and Class III railroads are prepared and maintained for general distribution. A directory of railroads is published periodically and provides operating data, such as contacts, service area and status of equipment on each railroad.

### Facilitator

An example of how the state's railroad interests are represented is the Department's membership on the Standing Committee on Rail Transportation of the American Association of State Highway and Transportation Officials. This committee reviews, evaluates, and recommends national rail transportation legislation; exchanges technical information and policy positions on railroad matters; provides comment on possible revisions to Federal regulations; gathers information and investigates railroad concerns; and coordinates activities with rail transportation users and the railroad industry.

### ***FRA Rail Program***

The Federal Railroad Administration (FRA) monitors three rail assistance programs, all established by the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21). Two programs, the Railroad Rehabilitation and Improvement Financing (RRIF) and the Railroad Track Modernization Act of 2001, are relevant to Arkansas' freight railroads. Another program, High Speed Rail, is intended to improve intercity rail passenger service.

### Railroad Rehabilitation and Improvement Financing (RRIF)

This program provides credit assistance in the form of direct loans and loan guarantees to state and local governments, government-sponsored authorities and corporations, railroads and joint ventures that include at least one railroad for projects benefiting freight and passenger railroads. Eligible projects include the development and establishment of new intermodal or railroad facilities. Additional qualified projects are the

acquisition, improvement or rehabilitation of intermodal or rail equipment or facilities, including track and component of track, bridges, rail yards, buildings, maintenance and repair shops. RRIF funds can also be used to refinance outstanding debt that was incurred for any of the eligible purposes.

The RRIF program is especially helpful for Class III railroads that often experience difficulty in obtaining conventional loans at favorable interest rates for needed infrastructure improvements and repairs. The ability to use this funding source to develop new facilities is another important feature.

Department staff is available to provide information about the RRIF program and to assist railroads in preparation of loan applications. Assistance includes the identification of consultants that can provide environmental or financial assistance.

#### Railroad Track Modernization Act of 2001

This program provides potential funding for capital improvements and rehabilitation of publicly- and privately-owned rail lines. The Federal Railroad Administration, as a prerequisite for eligibility, requires a rail line study. Acceptable expenses could include:

1. Materials (e.g., rail, switches, joint bars, tie plates, crossties, ballast)
2. Equipment rental (i.e., cranes, trucks, spike driver)
3. Labor costs
4. Bridge work, and
5. Other related items

#### High Speed Rail

A South Central High Speed Rail Corridor was designated in late year 2000. A part of this corridor extends from Dallas/Fort Worth, Texas through Texarkana to Little Rock. Designation of the corridor makes Arkansas eligible for funds under Section 1103(c) of TEA-21. In conjunction with the corridor's designation, a review was made of crossings along the proposed

route, with five grade crossings identified for installation of active crossing protection. An application has been submitted for project funding.

### ***Development Strategies***

The following are rail freight development programs that could potentially benefit the state's Class I and Class III railroads and rail shippers. These strategies for improving rail service consist of rail track rehabilitation options, alternative methods for assisting with financing infrastructure improvements and equipment needs, and choices for saving rail lines for future use.

### ***Proposed Programs***

#### **State Rail Bank Program**

If funds were available, this program could be used to acquire abandoned rail lines for future transportation use.

#### **Demonstration Program**

This rail development program would be to support innovative rail service improvement projects.

#### **Operating Assistance Program**

This program could help new rail freight companies to successfully begin first-year operations. The program could be expanded to include existing companies needing short-term operating assistance.

#### **Equipment Program**

Under this program, funding assistance could be offered to purchase equipment necessary for railroad operations.

### ***Rehabilitation Guidelines***

#### **286,000- and 315,000-pound railcar**

The following guidelines are based on Federal Railroad Administration industry standards for Class III railroads using criteria for heavy axle loads. The higher load-bearing capacity guidelines are for rehabilitating track and bridges capable of handling the new 286,000- or 315,000-pound loaded

railcars. To adequately accommodate the heavier railcars would require the weight of rail and track components to be 132 pounds, with bridges constructed to the 315,000-pound strength rating.

Weight of rail is a per-yard unit measurement. The higher weight of 132 pounds allows:

- ✓ Greater load bearing capacity;
- ✓ Higher train speeds;
- ✓ Reduced wear on curved sections of track;
- ✓ Less rail failures like compound fissures and fractures;
- ✓ Less equipment damage; and
- ✓ Lower operating costs.

#### Track Guidelines

- Weight of rail 132 pounds/yard
- Track components (e.g., joint bars, tie plates, rail anchors) appropriate material for 132 pound rail
- Top ballast depth 12 inches
- Crossties per mile 3,168
  - ✓ Grade of crosstie Grade 3/end plated

#### Bridge Guideline

- Bridge strength Rating of 315,000 pounds

#### General Recommendations

- Rehabilitate all Class III railroad lines to at least FRA Class 2 operating speed (11-25 miles per hour)
- Replace all rail less than 112 pound weight
- Improve all bridges rated as a Priority\* 1 or 2 bridge

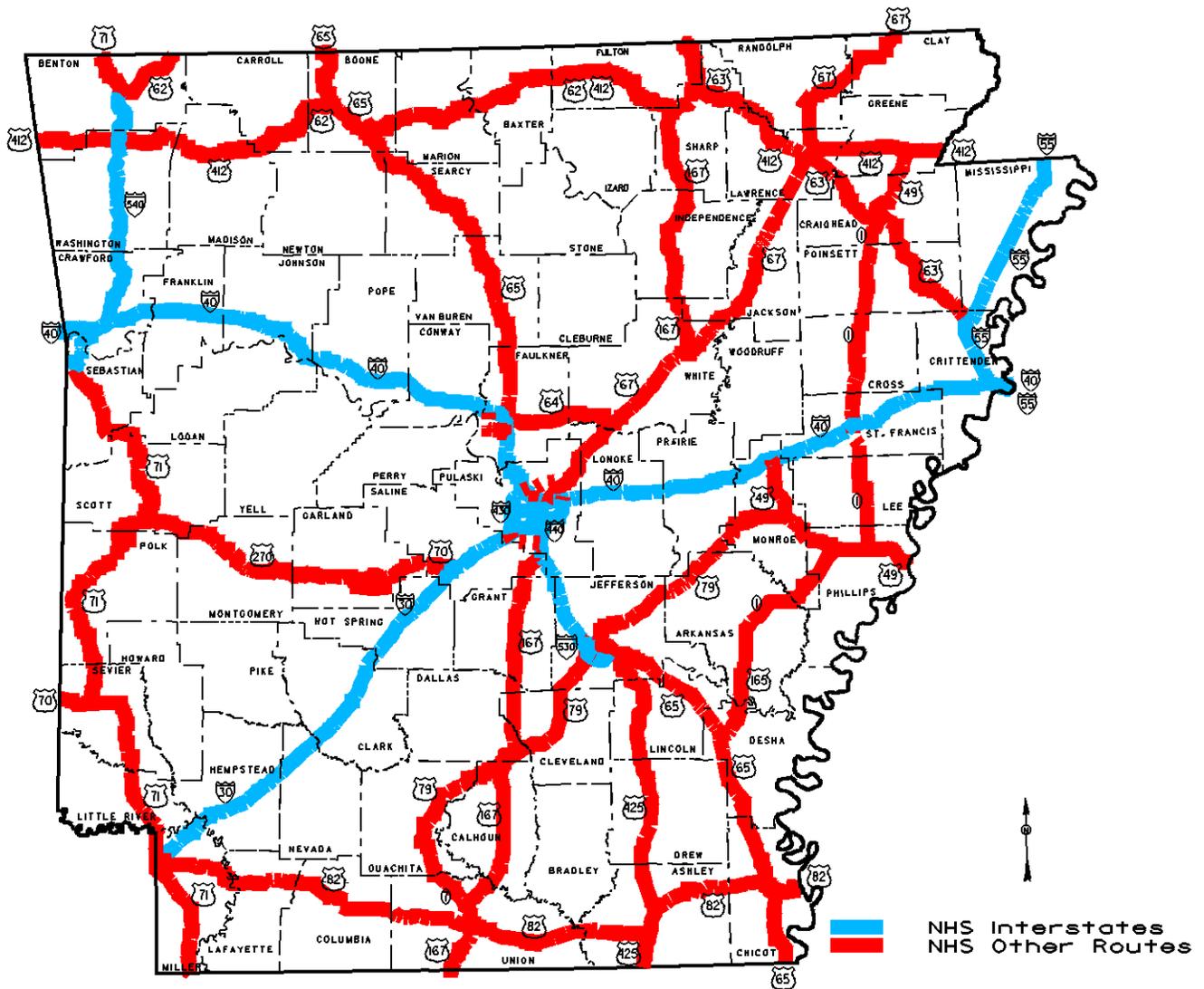
\* A priority system is used to determine those bridges most in need of repair based on superstructure and substructure conditions.

## **Appendices**

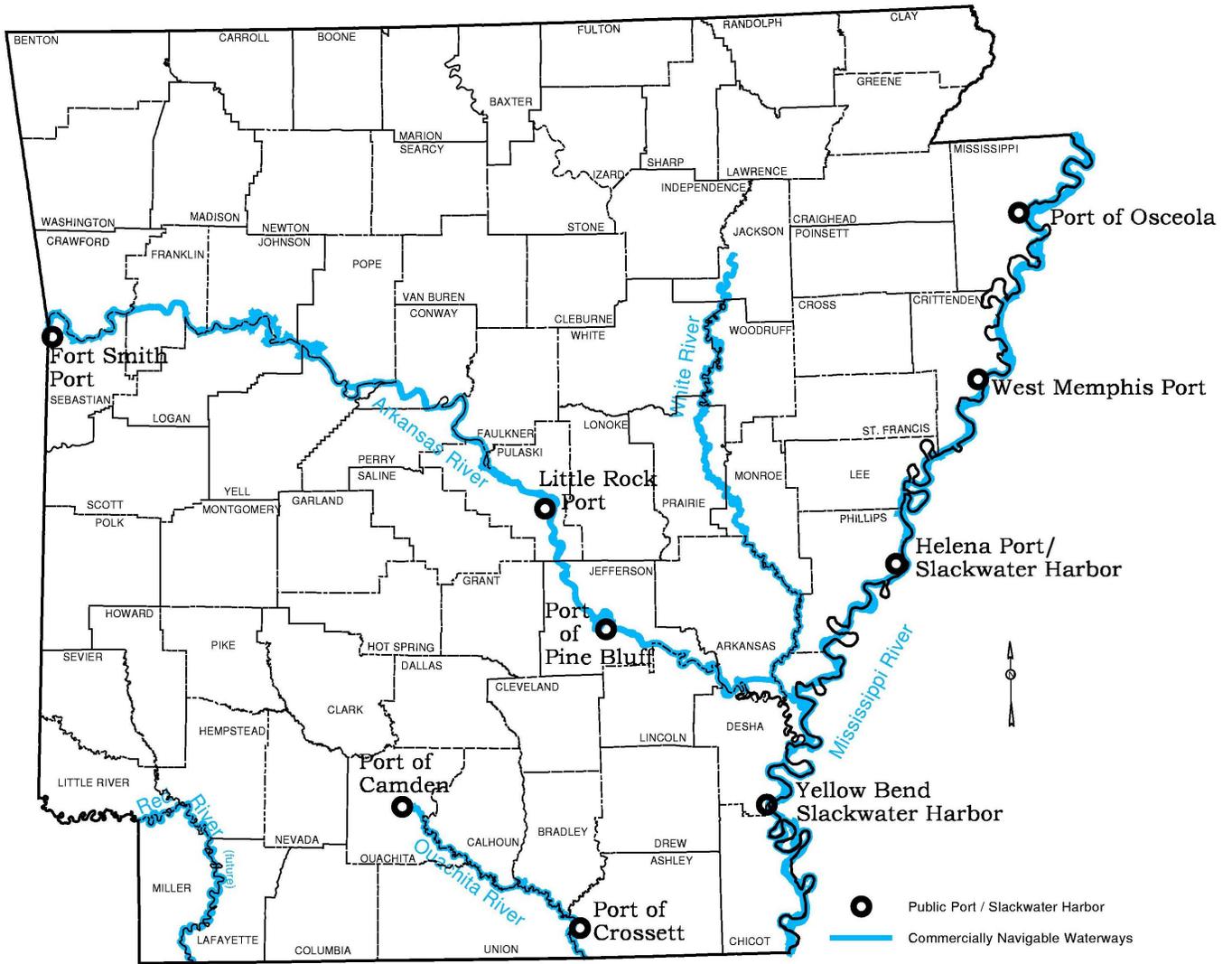
- Appendix A**    **Arkansas' Freight Transportation Modes**
- Appendix B**    **Transportation Glossary**
- Appendix C**    **Railroad Questionnaire**
- Appendix D**    **Rail Line Studies, Railroad Bridge Assessment and  
Regional Freight Transportation Studies**

*Appendix A*  
*Arkansas' Freight Transportation Modes*

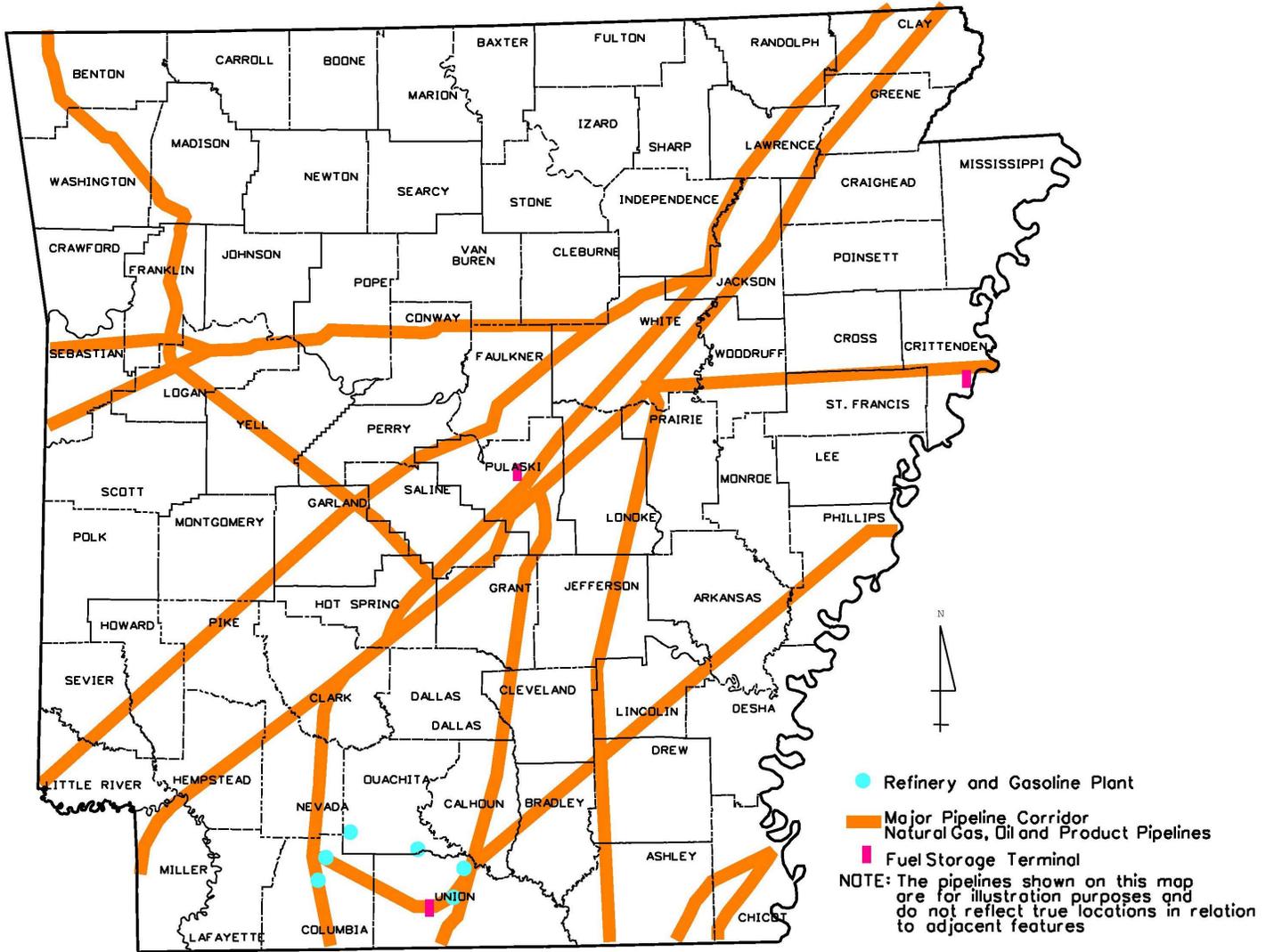
Figure A-1  
National Highway System



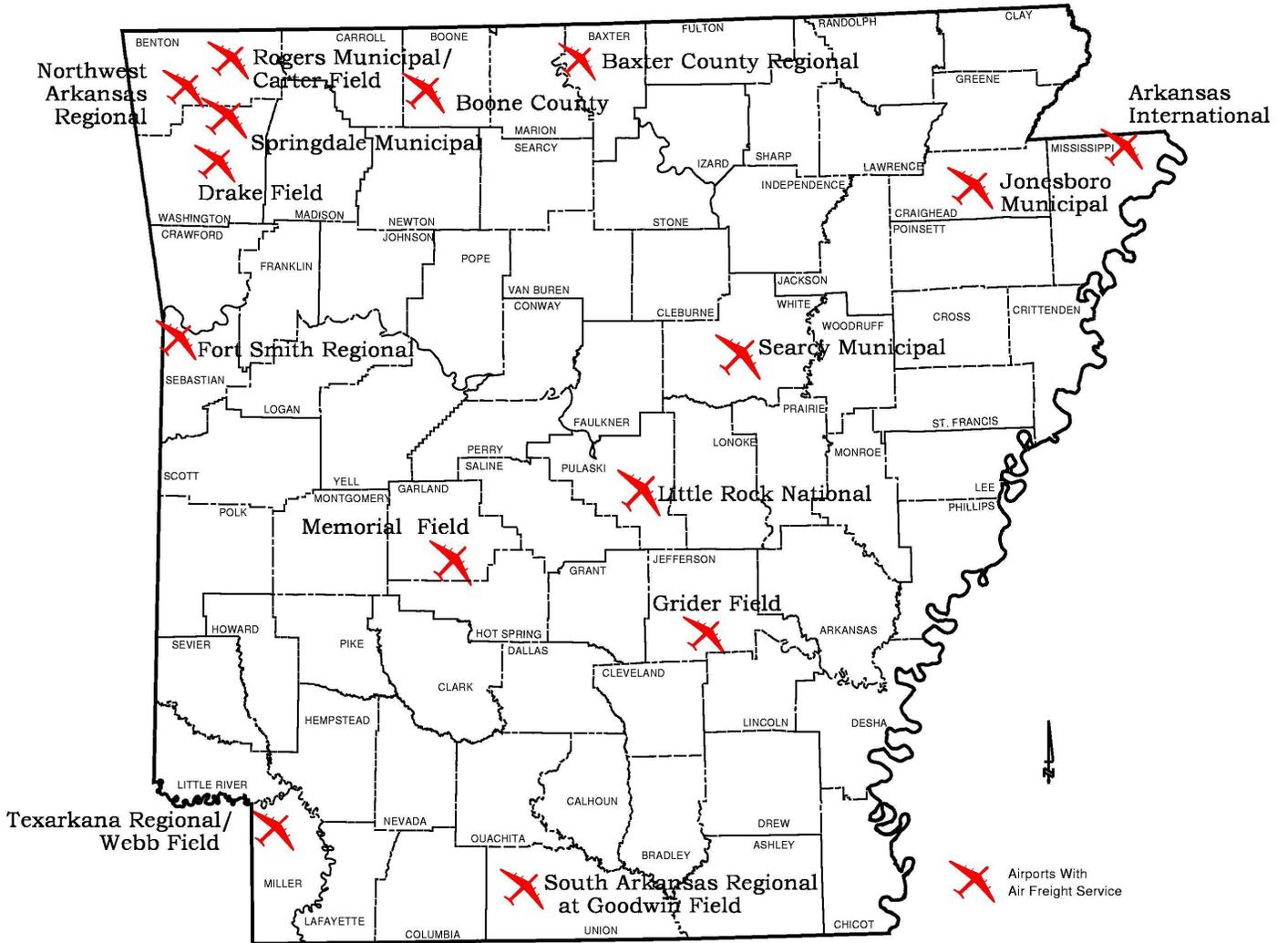
**Figure A-2**  
**Commercially Navigable Waterways, Public Riverports**  
**And Slackwater Harbors**



**Figure A-3  
Pipeline/Refinery/Fuel Storage Terminals**



**Figure A-4**  
**Airports with Air Freight Service**



***Appendix B***  
***Transportation Glossary***

## Transportation Glossary

**AAR** – The Association of American Railroads

**AASHTO** – American Association of State Highway and Transportation Officials

**abandonment** – decision of a carrier to discontinue service over a route (Surface Transportation Board permission is required).

**accessorial service** – service rendered by a carrier, other than a transportation service, such as warehousing service

**ADT** – Average Daily Traffic

**air cargo** – Freight, mail, and express packages transported by air

**AMTRAK** – the nation’s rail passenger service

**back haul** – the return movement of a vehicle from the shipment’s destination to its origin

**barges** – four types

- open hopper – a barge with an open cargo area used to carry materials like coal, crushed rock, scrap metal or any material that does not need to be protected from the weather
- covered hopper – a barge like an open hopper except with a watertight cover to protect the cargo in the hold from the weather, commonly used to carry commodities such as grains and dry chemicals
- deck – a barge with no cargo hold, but with a heavily plated, well supported deck to which cargo is tied, commonly used to move machinery, construction materials, or heavy equipment
- tank – a barge used to transport liquids like petroleum products and liquid chemicals

**barge fleeting area** – temporary mooring area used to make up multi-barge tows

**benefit/cost ratio** – an analytical tool used in transportation planning that compares the total measurable benefits to the capital cost

**bill of lading** – a contract document between carrier and shipper

**broker** – an intermediary between the shipper and the carrier

***breakbulk*** – the separation of a bulk load into smaller shipments

***cargo*** – four types

- bulk cargo – basic commodities in an unpacked condition (grains, coals, or other materials that are voluminous and loose)
- general cargo – large units of semi- or manufactured commodities which are packaged (boxes, drums) or self packaged
- neo-bulk cargo – a limited number of commodities such as scrap metal, lumber, automobiles, or paper
- outside cargo – general cargo that is so heavy or large it cannot be accommodated or handled by normal means, and requires use of special loading and/or transportation equipment

***cargo movements*** – three types

- online movements – cargo is transported by a single carrier
- single mode movements – cargo is transported by one or more carriers of a single mode
- intermodal movements – cargo is transported by two or more modes, involving the transfer of cargo between modes

***circuitous route*** – indirect freight route

***CL*** – carload or container load

***Class I Railroad*** – railroad that provides national rail service

***Class II Railroad*** – railroad that provides regional rail service (none in Arkansas)

***Class III Railroad*** – railroad that provides local rail service

***COFC*** - container on (rail) flatcar

***consignee*** – party to whom articles are shipped

***common carrier*** – for-hire carrier that serves the general public

***consignor*** – party by whom articles are shipped

***container terminal*** – area designated for storage of containerized freight

***contract carrier*** – for-hire carrier that serves shippers through contract arrangements

**Customs duties** – amount payable to the government on goods imported or exported

**dead head** – one leg of a freight movement on which the trailer or container is empty

**distribution warehouse** – a warehouse used to store finished goods and to assemble customer orders

**double stack** – stacking containers, frequently of differing lengths, on a rail car

**drayage** – freight hauled by a motor carrier

**exclusive use** – carrier vehicles assigned to a specific shipper for its sole use

**FHWA** – Federal Highway Administration

**Foreign Trade Zone** – designated area where imported goods or products for export can be stored, displayed, sold, and/or manufactured without being subject to certain quota restrictions and some Customs formalities

**FRA** – Federal Railroad Administration

**freight forwarder** – a person engaged in consolidating small shipments of goods for transport as a single shipment

**gateway** – point where freight moving between territories is interchanged

**interchange** – transfer of cargo between carriers

**interchange track** – section of track where rail cars are exchanged between two or more railroads

**intermodal transfer** – transfer of commodities between two modes

**intermodal transportation facility** – freight exchange terminal that also provides warehousing and transfer loading

**JIT (just-in-time)** – inventory system used by manufacturers and distributors to minimize levels of inventories, for which reliable transportation is essential

**LCL** – shipments of less than rail carload volume

**lead time** – total time that elapses from placement of an order until goods are received

**line haul** – movement of freight from one point to another

**logistics channel** – network of intermediaries engaged in transfer, storage, handling, and communication functions that contribute to the efficient flow of goods

**LTL** – less than truckload (shipment)

**multimodal** – moving cargo from origin to destination by more than one freight transportation mode

**outsourcing** – contracting with an outside firm for services (e.g., shipping, packaging, storage, billing and/or inventory control)

**piggyback** – shipment of truck trailers and containers on railroad flatcars; also called TOFC (trailer on flat car)

**rail cars** – seven types:

- box car – closed car used for hauling freight
- compartmentizer car – box car equipped with movable bulkheads which can be used to divide the car into separate compartments
- compartment tank car – tank car which has compartments or separate tanks in which different kinds or grades of liquids may be transported
- flat car – car without sides, top or ends, used for machinery, stone, etc.
- gondola – open top car having sides and ends
- hopper car – car with floor sloping to one or more hoppers through which contents may be unloaded by gravity
- tank car – car used for transporting bulk liquids

**relay terminal** – motor carrier terminal where a fresh driver is substituted for a driver who has driven the maximum hours permitted

**seamless service** – level of cooperation among intermodal carriers that makes the modal transfer smooth and effortless with no shipment delay

**side tracks** – rail tracks used for storage, loading or unloading which connect with other railroad tracks

***spur tracks*** – rail tracks extending from and connected at only one end with another track

***team track*** – rail tracks on which rail cars are placed for the use of the public in loading and unloading freight

***TEU*** – Twenty Foot Equivalent Unit. A TEU is equivalent to a 20-foot container

***through movement*** – shipment of a container inspected and sealed by Customs at the factory site and then transported without the need of further inspection until arrival at the destination

***TL*** – truckload (shipment)

***tramp loading site*** – loading site that allows for transfers of bulk commodities and containers between trucks and trains

***TOFC*** – trailer on flatcar (also called piggyback service)

***tow*** – barges and a towboat tied together, acting as a single vessel with the towboat as the power unit

***transit time*** – total time that elapses from pickup to delivery of a shipment

***unit trains*** – large shipments treated as a single unit (e.g., a multi-car train where all cars carry wood chips to a paper mill).

*Appendix C*  
*Railroad Questionnaire*

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT**  
**Arkansas State Rail Plan – Year 2000**  
**Class I and Class III Railroad Questionnaire**

**Name of Railroad:** \_\_\_\_\_

**Subsidiary of (if applicable):** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Rail Freight Issues:** Please rate the importance of the following rail freight issues for Arkansas. 5 (very important) to 3 (moderately important) to 1 (unimportant)

<u>Issue</u> (not listed in any order)	<u>Importance</u>
A) Rail/Highway Crossings	
• Safety	_____
• Surface condition	_____
• Number of crossings	_____
• Sight obstructions (i.e., trees, bushes, etc. outside railroad r.o.w.)	_____
• Advance approach warnings (train horn)	_____
B) Rail Car Supply	_____
C) Trespassers	_____
D) Rail Abandonment	_____
E) Ability to Handle 315,000-Pound Loaded Railcars	_____
F) Availability of Funds for Emergency Repairs	_____
G) Condition of Infrastructure/Equipment	_____
H) Ability to Participate in Intermodal Transportation	_____
I) Monetary Resources to Maintain Rail Line	_____
J) Lack of Support Facilities (warehouses, etc.)	_____
K) Other Issues: _____	_____

**What do you consider to be the number one rail freight issue?** \_\_\_\_\_

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**General Information:**

Mileage in Arkansas

Main Line

Branch Line

A) Total Miles of Track Operated in Arkansas \_\_\_\_\_

(Please circle one)

Are any of these miles operated under Trackage Rights or Haulage Agreements? **Yes / No**

If yes:

- How many miles operated under Trackage Rights in Arkansas? \_\_\_\_\_

- How many miles operated under Haulage Agreements in Arkansas? \_\_\_\_\_

B) Miles of Track in Arkansas Owned but not Operated: \_\_\_\_\_

(Please circle one)

C) Do you have any Rail Car Transfer Agreements? (Neutral, Reciprocal, or Compulsory Interchange Points) **Yes / No**

**Mileage by FRA Class of Track (Main Line Only):**

Class of Track	Mileage
Class 1 (0 – 10 mph)	
Class 2 (11 – 25 mph)	
Class 3 (26 – 40 mph)	
Class 4 (41 – 60 mph)	
Class 5 or above (61 mph or more)	

**Percent of Defects by Rail Size:**

Track Weight Range	Miles of Track	Percent Defects
85 lbs or Less		
Over 85 lbs to 90 lbs		
Over 90 lbs to 100 lbs		
Over 100 lbs to 110 lbs		
Over 110 lbs to 115 lbs		
Over 115 lbs to 132 lbs		
132 lbs and Over		

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**Number of Slow Orders Issued:**

1997 \_\_\_\_\_ 1998 \_\_\_\_\_ 1999 \_\_\_\_\_

**Track Related Operational Problems:**

	<b>Cost (3-Year Average)</b>	<b>Number (3-Year Average)</b>
<b>A) Derailments</b>	\$	
Top Three Causes for Derailments:		
1) _____		
2) _____		
3) _____		

**Examples of Causes for Derailments:**

- |                            |                             |                         |
|----------------------------|-----------------------------|-------------------------|
| • <i>Wide Gauge</i>        | • <i>Defective Crosstie</i> | • <i>Defective Frog</i> |
| • <i>Conductor Failure</i> | • <i>Broken Rail</i>        | • <i>Rail Spread</i>    |
| • <i>Pick Switch</i>       | • <i>Broken Weld</i>        | • <i>Sun Kinks</i>      |

	<b>Cost (3-Year Average)</b>	<b>Number (3-Year Average)</b>
<b>B) Defective Rail (Including Breaks)</b>	\$	
Top Three Causes for Rail Defects:		
1) _____		
2) _____		
3) _____		

**Examples of Causes for Rail Defects:**

- |                              |                                |                                 |
|------------------------------|--------------------------------|---------------------------------|
| • <i>Transverse Fissures</i> | • <i>Detail Fractures</i>      | • <i>Bolt Hole Crack Joints</i> |
| • <i>Compound Fissures</i>   | • <i>Engine Burn Fractures</i> | • <i>Split Heads</i>            |
| • <i>Split Webs</i>          | • <i>Defective Weld Fields</i> | • <i>Head and Web Joints</i>    |

	<b>Cost (3-Year Average)</b>	<b>Number (3-Year Average)</b>
<b>C) Emergencies</b>		
• <i>Track Washouts</i>	\$	
• <i>Bridge Failures</i>	\$	
• <i>Other</i> _____	\$	

(Continue below or on an additional sheet, if necessary)

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**Annual Carloads (Excluding Hazardous Carloads):**

<b>Year</b>	<b>Outbound<sup>1</sup></b>	<b>Inbound<sup>2</sup></b>	<b>Intrastate<sup>3</sup></b>	<b>Thru or Bridged<sup>4</sup></b>
1997				
1998				
1999				

**Annual Hazardous Carloads:**

<b>Year</b>	<b>Outbound<sup>1</sup></b>	<b>Inbound<sup>2</sup></b>	<b>Intrastate<sup>3</sup></b>	<b>Thru or Bridged<sup>4</sup></b>
1997				
1998				
1999				

<sup>1</sup>**Outbound:** Origination in Arkansas with Final Destination Outside of Arkansas

<sup>2</sup>**Inbound:** Origination Outside of Arkansas with Final Destination in Arkansas

<sup>3</sup>**Intrastate:** Origination and Final Destination both in Arkansas

<sup>4</sup>**Thru or Bridged:** Origination and Final Destination Outside of Arkansas

**CommoditiesHandled:**

<b>A) Top Commodities with Origination in Arkansas</b>	<b>Annual Carloads</b>
1.	
2.	
3.	
4.	
5.	

<b>B) Top Commodities with Final Destination in Arkansas</b>	<b>Annual Carloads</b>
1.	
2.	
3.	
4.	
5.	

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**Infrastructure, Equipment, and Support Facility Needs:**

Infrastructure	Current Needs		5-Year Projected Needs	
	Number	Estimated Cost (material cost only)	Number	Estimated Cost (material cost only)
<b>Existing Rail Line</b>				
Rails, 112-132 pound (Tons)				
* Bridges:				
• (Number)				
• (Track Feet)				
Switches (Number)				
Track Crosstie (Number)				
Bridge Crossties (Number)				
Switch Crossties (Number)				
Ballast (Tons)				
<b>Construction of New Rail Line</b>				
Rail Line (Miles)				
Side Track (Track Feet)				
Yard Track (Track Feet)				

\* Include Priority 1 & 2 bridges **or** bridges that need to be improved to handle 315,000-Pound loaded railcars.

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**Infrastructure, Equipment, and Support Facility Needs (Continued):**

Equipment	Currently Owned	Current Needs		5-Year Projected Needs	
	Number	Number	Estimated Cost (material cost only)	Number	Estimated Cost (material cost only)
Locomotive					
Lift Equipment					
Railcars:					
• Boxcars					
• Gondolas					
• Tankcars					
• Compartmentizer Cars					
• Flatcars					
• Covered Hoppers					
• Hopper Cars					
• Refrigerated Cars					
Other Equipment*					

Support Facilities	Currently Owned	Current Needs		5-Year Projected Needs	
	Number	Number	Estimated Cost (material cost only)	Number	Estimated Cost (material cost only)
Warehouse					
Transload Facility					
Maintenance Shop					
Bagging Facility					
Other Facilities*					

\* List additional facility and equipment needs on an attached sheet.

**Arkansas State Rail Plan – Year 2000  
Class I and Class III Railroad Questionnaire**

**(Note: Please provide Arkansas data only)**

**Please provide this information for use in estimating the impact that your railroad has on the Arkansas economy:**

**A) Railroad Employees**

Full Time (Number)	_____
Part Time (Number)	_____
Annual Payroll	\$ _____

**B) Annual Expenditures**

Supplies/Materials/Tools	\$ _____
Fuel	\$ _____
Yard Operations	\$ _____
Repairs/Maintenance-of-Way (MoW)	\$ _____
Lease/Rentals	\$ _____
Insurance/Taxes	\$ _____
Administration	\$ _____
Cost of Freight Loss or Damage	\$ _____
Other	\$ _____
Total Annual Expenditures	\$ _____

**C) Arkansas Shippers**

Number of Shippers	_____
Rail Service Related Jobs (Number)	_____

**Thank you for taking time to complete this survey. Your participation enables us to better plan for the state's railroad needs. Please return in postage-paid envelope to:**

**Cliff McKinney  
Planning and Research Division  
Arkansas State Highway and Transportation Department  
P.O. Box 2261  
Little Rock, AR 72203  
Phone: (501) 569-2592  
Fax: (501) 569-2597**

*Appendix D*  
*Rail Line Studies, Railroad Bridge Assessments and*  
*Regional Freight Transportation Studies*

**Appendix D**  
**Rail Line Studies,**  
**Railroad Bridge Assessments and**  
**Regional Freight Transportation Studies**

Rail line studies and railroad bridge assessments are conducted for the state's Class III railroads to determine possible improvements that could provide for safer train operations and better service for rail freight customers. The railroad studies, prepared under the auspices of the State Rail Plan, generally consist of an evaluation of current track and bridge conditions, a description of service provided (i.e., annual carloads and switching operations), and identification of alternatives (shipping, no-build, project). Other study elements are an estimation of construction costs, a review of potential economic impacts, and the calculation of the cost-effectiveness (b/c analysis) of an improved, versus a non-rehabilitated, rail line or railroad bridge.

The b/c analysis is based upon Federal Railroad Administration guidelines for evaluating possible railroad improvement projects. The analysis takes into consideration potential maintenance-of-way savings, expense savings of avoiding derailments and rail breaks, and possible new revenues from a rehabilitated railroad line or railroad bridge.

*Elements of a Rail Line Study/Bridge Assessment*

1. Current track and bridge conditions
2. Description of services
3. Identification of alternatives
4. Construction cost estimates
5. Potential economic impacts
6. Benefit/cost analyses

The following is a listing of completed rail line and bridge assessment reports, and studies in progress.

*Rail Line Studies/Bridge Assessments*

*Completed Reports*

Arkansas and Missouri Railroad  
Milepost 314.6 to Milepost 422.0

Ouachita Railroad  
Milepost 100.0 to Milepost 116.7

Ciba Chemical Plant Rail Line  
Milepost 0.00 to Milepost 1.16

Arkansas Midland Railroad  
Shady Grove Railroad Bridge at Milepost 410.7

*Studies in Progress*

Missouri and Northern Arkansas Railroad  
Milepost 312.0 to Milepost 416.0

Little Rock and Western Railway  
Milepost 141.0 to Milepost 220.0

Caddo Valley Railroad  
Milepost 426.8 to Milepost 479.2

Delta Southern Railroad – Lake Providence Branch  
Milepost 408.9 to Milepost 454.2

Delta Southern Railroad – Warren Branch  
Milepost 422.3 to Milepost 461.7

Louisiana and North West Railroad  
Milepost 00.0 to Milepost 25.0

Little Rock Port Authority Railroad  
Milepost 0.57 to Milepost 3.17

Regional freight transportation studies have been prepared to assist local governments in gaining a better understanding of their current freight transportation system and possible freight service needs. The analysis includes a profile of the regional freight modes (rail, truck, water and pipeline transportation, and air freight service) serving the study area. The rail component consists of an assessment of railroad operations and facilities, review of services provided and identification of possible rail transportation service enhancements. Completed studies are listed below.

### ***Regional Freight Transportation Studies***

Southeast Arkansas Freight Transportation Study

Osceola Transportation Improvement/Economic Development Study

Russellville/Arkansas River Valley Intermodal Transportation  
Needs/Economic Development Study

Blytheville/North Arkansas Intermodal Transportation Needs and Freight  
Shipping Study

Fordyce/South Central Arkansas Freight Transportation and Services Study

Ark-La-Tex Area Freight Transportation Study

Golden Triangle Freight Transportation Study

General Assessment – Potential Rail Line Connection to the Yellow Bend  
Slackwater Harbor

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**ARKANSAS STATE RAIL PLAN**  
**Year 2002**



**Arkansas State Highway and Transportation Department**  
**Planning and Research Division**