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Arkansas State Rail Plan

Final Report

Arkansas State Highway and Transportation Department
Transportation Planning and Policy Division

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Arkansas State Rail Plan

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Contents

Executive Summary 1
Purpose of the Arkansas State Rail Plan 1
Arkansas Rail System 1
Railroad Funding in Arkansas 5
Rail Issues and Opportunities/ Initiatives 6

Chapter 1 **The Role of Rail in Arkansas' Transportation System (Overview)** 1-1
Introduction 1-1
Arkansas Goals for the Multimodal Transportation System 1-3
Role of Rail in the Arkansas Transportation System 1-3
Vision, Goals, and Objectives for Rail in Arkansas 1-5
Organizational Structure of Rail Planning in Arkansas 1-6

Chapter 2 **Description and Inventory of Arkansas Freight Rail System** 2-1
Class I Railroads 2-1
Class II and Class III Railroads 2-14
Restrictions of the Arkansas Rail Network 2-42
Abandoned and Inactive Rail Corridors 2-44
Arkansas Multimodal Freight Transportation System 2-45

Chapter 3 **Description and Inventory of Passenger Rail Services in Arkansas** 3-1
Introduction 3-1
High-Speed Rail 3-3
Passenger Rail Ridership 3-4
Modal Comparison of Travel 3-6
Passenger Rail Stations in Arkansas 3-7
Goals and Objectives for Arkansas Passenger Rail Services 3-9
Excursion Rail Operators in Arkansas 3-9

Chapter 4 **Performance Analysis of Arkansas Rail Network** 4-1
Performance of the Arkansas Freight Rail System 4-1
Performance of Arkansas Passenger Rail Services (PRIIA Section 207 Performance Metrics) 4-5

Chapter 5 **Public Financing for Rail Projects and Services in Arkansas** 5-1
Federal Legislation to Fund Passenger Rail 5-1
Arkansas Funding of Rail 5-2
Local Rail Funding 5-2
Federal Programs to Fund Passenger Rail 5-2
Federal Transportation Funding Programs Relevant to Rail 5-3
Other Federal Funding Programs Relevant to Rail 5-5
Federal Financing Programs Relevant to Rail 5-6

Chapter 6 **Ongoing Programs to Improve Safety and Security of Arkansas Rail System** 6-1
Safety 6-1
Security 6-11

Chapter 7 Rail Transportation's Economic and Environmental Impact 7-1
Economic Impact of Rail in Arkansas 7-1
Energy Impact of Rail in Arkansas 7-2
Environmental Impact of Rail in Arkansas 7-4
Safety Impact of Rail in Arkansas 7-5
Community Impact of Rail in Arkansas 7-5

Chapter 8 Trends and Forecasts that Impact Rail in Arkansas 8-1
Demographic and Economic Trends 8-1
Freight Demand and Growth 8-7
Fuel Cost Trends 8-32
Highway and Airport Congestion 8-32
Arkansas Rail and International Trade 8-35

Chapter 9 Arkansas Rail Service Needs and Opportunities 9-1
Passenger Rail Issues and Opportunities 9-1
Freight Rail Issues and Opportunities 9-2

Chapter 10 Proposed Passenger Rail Improvements 10-1
Intercity Passenger Rail Initiatives 10-1
Sunset Limited / Texas Eagle PRIIA Section 210 Performance Improvement Plan 10-3
Amtrak Station Improvements 10-4
Other Passenger Rail Initiatives 10-4

Chapter 11 Proposed Freight Rail Strategies and Initiatives 11-1
Safety/Crossing Initiatives 11-1
Rail Corridor Preservation 11-3
Industrial Access/Economic Development 11-6
Extending or Reactivating the Arkansas Rail Network 11-8
Multimodal Improvements 11-14
Upgrade/Rehabilitation Projects 11-14
Short Line Capability Improvements 11-15
Class I Projects 11-15
Institutional Issues 11-2
Rail Community Impacts 11-4

Chapter 12 The State's Long-Range Rail Service and Investment Program 12-1
Funded Projects 12-1
Funding Scenarios 12-1
Phasing 12-2
State Rail Plan Impacts 12-5

Chapter 13 Coordination and Review 13-1
Approach 13-1
State Rail Plan Review 13-3
Interstate Coordination 13-3
Issues Raised During the Preparation of the Arkansas State Rail Plan 13-4
Coordination between Rail Plan and Other Arkansas Planning Efforts 13-7

Figures

Figure ES–1. Arkansas Freight Rail System 2
Figure ES–2: Summary of Freight Originating and Terminating in Arkansas by Commodity Tonnage 3
Figure ES–3. Texas Eagle Route through Arkansas 4
Figure ES–4. South Central High-Speed Rail Corridor 7
Figure ES–5. Weight Restrictions on Arkansas Rail Corridors 12
Figure ES–6. Funded Arkansas Rail Projects with Public Investment 14
Figure ES–7. Unfunded Arkansas Rail Needs 15
Figure 1-1. Overall Organization of Arkansas State Highway and Transportation Department 1-8
Figure 1-2. Transportation Planning and Policy Division 1-9
Figure 2-1. Arkansas Freight Rail System 2-2
Figure 2-2. Trains per Day of Arkansas Class I Railroad Subdivisions 2-4
Figure 2-3. Union Pacific Railroad in Arkansas 2-5
Figure 2-4. Profile of Union Pacific Railroad in Arkansas 2-7
Figure 2-5. BNSF Railway in Arkansas 2-9
Figure 2-6. Profile of BNSF Railway in Arkansas 2-10
Figure 2-7. Kansas City Southern Railway in Arkansas 2-12
Figure 2-8. Profile of Kansas City Southern Railway Company in Arkansas 2-13
Figure 2-9. Distribution of Arkansas Short Line Mileage by FRA Track Class, 2013 2-16
Figure 2-10. Percentages of Arkansas Short Line Track Mileage by Weight 2-16
Figure 2-11. Arkansas & Missouri Network in Arkansas 2-17
Figure 2-12. Arkansas, Louisiana & Mississippi Network in Arkansas 2-18
Figure 2-13. Arkansas Midland Network 2-21
Figure 2-14. Arkansas Southern Railroad Network in Arkansas 2-22
Figure 2-15. Bauxite & Northern Railroad Network 2-23
Figure 2-16. Dardanelle & Russellville Railroad Network 2-24
Figure 2-17. DeQueen & Eastern Railroad Network 2-25
Figure 2-18. El Dorado & Wesson Network 2-26
Figure 2-19. Fordyce & Princeton Railroad Network 2-27
Figure 2-20. Kiamichi Railroad Network in Arkansas 2-28
Figure 2-21. Little Rock & Western Railroad Network 2-29
Figure 2-22. Little Rock & Northwest Railroad Network in Arkansas 2-30
Figure 2-23. Missouri & Northern Arkansas Railroad Network 2-31
Figure 2-24. North Louisiana & Arkansas Railroad Network in Arkansas 2-32
Figure 2-25. Ouachita Railroad Network in Arkansas 2-33
Figure 2-26. Prescott & Northwestern Railroad Network 2-34
Figure 2-27. Warren & Saline River Railroad Network 2-35
Figure 2-28. Camden & Southern Railroad Network 2-36
Figure 2-29. Delta Valley & Southern Railway Network 2-37

Figure 2-30. East Camden & Highland Railroad Network 2-38
Figure 2-31. Fort Smith Railroad Network 2-39
Figure 2-32. Friday-Graham Rail Spur Network 2-40
Figure 2-33. Little Rock Port Authority Network 2-41
Figure 2-34. Weight Restrictions in the Arkansas Rail Network 2-43
Figure 2-35. Miles of Arkansas Rail Abandonments per Year 2-44
Figure 2-36. 2015 and 2035 Rail Intermodal Drayage to and from Intermodal Ramps by Ramp Location and Tonnage (Originates or Terminates in Arkansas) 2-46
Figure 2-37. Non-Containerized Rail/Truck Facilities in Arkansas 2-47
Figure 2-38. Map of Public Ports in Arkansas 2-49
Figure 3-1. Amtrak Texas Eagle Route 3-1
Figure 3-2. Amtrak's Texas Eagle in Arkansas 3-2
Figure 3-3. South Central High-Speed Rail Corridor 3-3
Figure 3-4. Station Platform in Hope, Arkansas 3-7
Figure 6-1. Arkansas Rail-Related Accident/Incident Trends by Severity 6-2
Figure 6-2. Comparison of Arkansas Rail-Related Fatalities to U.S. Fatalities by Type of Accident/Incident (2012—2014) 6-2
Figure 6-3. Rail-Related Injuries in Arkansas by Type of Accident/Incident (2012—2014) 6-4
Figure 6-4. Rail-Related Injuries in Arkansas by Type of Person (2012—2014) 6-4
Figure 6-5. Roadway/Rail Grade Crossing Incidents/Accidents by Type of Crossing, 2012 - 2014 6-5
Figure 6-6. New USDOT Tank Car Standards 6-9
Figure 6-7. Map of UP Crude Rail Flows, by Rail Trends 6-10
Figure 6-8. Strategic Rail Corridor Network in Arkansas 6-12
Figure 7-1. Railroad Industry Average Ton-Miles per Gallon of Fuel Consumed 7-3
Figure 7-2. 2012 BTU per Passenger Mile 7-3
Figure 7-3. Comparison of Other Emissions Grams per Ton-Mile 2009 7-5
Figure 8-1. Arkansas Population by County, 2012 and Texas Eagle Route 8-2
Figure 8-2. Arkansas Historical Population and Projections 8-3
Figure 8-3. Historical Arkansas Statewide Employment (2003–2012) 8-4
Figure 8-4. Arkansas Employment by Industry, 2011 8-6
Figure 8-5. Arkansas Annual Payroll by Industry, 2011 8-6
Figure 8-6. 2015 Share of Rail Freight Tonnage by Direction 8-8
Figure 8-7. Projected 2015 Rail Tonnage Terminating in Arkansas by Commodity 8-8
Figure 8-8. 2015 Rail Tons Originating from Arkansas by Commodity 8-9
Figure 8-9. 2015 Rail Tons Passing through Arkansas by Commodity 8-9
Figure 8-10. Projected 2015 Rail Tonnage by Terminating State for Freight Originating in Arkansas 8-10
Figure 8-11. Projected 2015 Rail Tonnage by Originating State for Freight Terminating in Arkansas 8-11
Figure 8-12. Projected 2015 Rail Tonnage by Originating County 8-12
Figure 8-13. Projected 2015 Rail Tonnage by Terminating County 8-13

Figure 8-14. Projected 2015 Rail Tonnage by Terminating County (excluding Coal) 8-14
Figure 8-15. Density of Freight Rail Lines in Arkansas in Trains per Day, 2012 8-16
Figure 8-16. Rail Tonnage Originating and Terminating in Arkansas by Year 8-17
Figure 8-17. Cumulative Percentage Change in Rail Tonnage since 2002 8-18
Figure 8-18. Forecast U.S. Production Volumes for Young Chickens and Turkeys, Beef, and Pork (Annual) 8-19
Figure 8-19. U.S. Corn Used for Feed and Residual 8-20
Figure 8-20. Roundwood Equivalent of U.S. Forest Product Output (1965—2010) 8-21
Figure 8-21. U.S. Pulp, Paper, and Paperboard Production Indices (2007—2012) 8-22
Figure 8-22. Long-Term Trends of Arkansas Non-Metallic Mineral Products (Thousands of Metric Tons of Production) 8-23
Figure 8-23. Cumulative Percentage Change in Steel Production (1980–2012) 8-24
Figure 8-24. Arkansas Natural Gas Price Sold to Electric Power Consumers (Dollars per Thousand Cubic Feet) 8-26
Figure 8-25. Natural Gas Wells Completed in Arkansas (by First Production Date) 8-27
Figure 8-26. Forecasted Rail Traffic in Arkansas by Direction (2015–2035) 8-28
Figure 8-27. Forecasted Rail Traffic Terminating in Arkansas by Commodity 8-29
Figure 8-28. Forecasted Rail Traffic Originating in Arkansas by Commodity 8-29
Figure 8-29. Current and Forecasted Rail Freight Overhead to Arkansas by 2015 and 2035 Tonnage 8-30
Figure 8-30. Origin and Destination Region of Intermodal Rail Flows to, from, and through Arkansas by Tonnage (2015 and 2035) 8-31
Figure 8-31. U.S. No 2 Diesel Retail Prices (Dollars per Gallon) 8-32
Figure 8-32. Level of Service—National Highway Planning Network in Arkansas in 2040 without Capacity Expansion 8-33
Figure 8-33. Little Rock, Arkansas, Historical Roadway Hours of Delay (2001–2011) 8-34
Figure 8-34. Minutes of Delay per Flight Arriving/Departing from and to Arkansas (2002–2013) 8-35
Figure 8-35. Rail's Role in Arkansas NAFTA Trade 8-36
Figure 8-36. 2015 and 2035 Trade by Rail between Arkansas and Mexico/Canada 8-36
Figure 8-37. Carload Rail Freight from Arkansas to Port Regions by 2015 Tonnage 8-37
Figure 8-38. Carload Rail Freight to Arkansas from Port Regions by 2015 Tonnage 8-38
Figure 9-1. Segment of Excepted Track in Arkansas 9-2
Figure 10-1. Existing Texas Eagle Service, and SCHSRC with Possible Extensions from Little Rock to Memphis 10-2
Figure 11-1. Highway 18/BNSF Crossing in Jonesboro 11-2
Figure 11-2. Rail-Banked Delta Heritage Trail 11-4
Figure 11-3. West Memphis Rail Plan 11-8
Figure 11-4. Western Arkansas Railroad Reconstruction Map 11-9
Figure 11-5. Rail Line Extension to Yellow Bend 11-10
Figure 11-6. Fayetteville South Industrial Park Rail Connection 11-12
Figure 11-7. Rail Access to Northwest Arkansas Regional Airport 11-13

Tables

Table 1-1. FHWA Freight Analysis Framework—2015 Freight Originating or Terminating in Arkansas, Average Move >500 Miles 1-4
Table 1-2. FHWA Freight Analysis Framework—2015 Freight Originating or Terminating in Arkansas, Average Move <500 Miles 1-4
Table 1-3. Arkansas Population Served by Intercity Passenger Rail 1-5
Table 2-1. Freight Railroads in Arkansas 2-3
Table 2-2. Arkansas Short Line Railroad Mileages 2-14
Table 2-3. Arkansas & Missouri Railroad Mileages 2-17
Table 2-4. Arkansas, Louisiana & Mississippi Railroad Mileages 2-18
Table 2-5. Arkansas Midland—Cypress Bend Branch Mileages 2-19
Table 2-6. Arkansas Midland—Gurdon Branch Mileages 2-19
Table 2-7. Arkansas Midland—Helena Branch Mileages 2-19
Table 2-8. Arkansas Midland—Hot Springs Branch Mileages 2-20
Table 2-9. Arkansas Midland—Jacksonville Branch Mileages 2-20
Table 2-10. Arkansas Midland—North Little Rock/Carlisle Branch Mileages 2-20
Table 2-11. Arkansas Midland—Warren Branch Mileages 2-20
Table 2-12. Arkansas Southern Railroad Mileages 2-22
Table 2-13. Bauxite & Northern Railroad Mileages 2-23
Table 2-14. Dardanelle & Russellville Railroad Mileages 2-24
Table 2-15. DeQueen & Eastern Railroad Mileages 2-25
Table 2-16. El Dorado & Wesson Railway Mileages 2-26
Table 2-17. Fordyce & Princeton Railroad Mileages 2-27
Table 2-18. Kiamichi Railroad Mileages 2-28
Table 2-19. Little Rock & Western Railway Mileages 2-29
Table 2-20. Louisiana & Northwest Railroad Mileages 2-30
Table 2-21. Missouri & Northern Arkansas Railroad Mileages 2-31
Table 2-22. North Louisiana & Arkansas Railroad 2-32
Table 2-23. Ouachita Railroad Mileages 2-33
Table 2-24. Prescott & Northwestern Railroad Mileages 2-34
Table 2-25. Warren & Saline River Railroad Mileages 2-35
Table 2-26. Camden & Southern Railroad Mileages 2-36
Table 2-27. Delta Valley & Southern Railway Mileages 2-37
Table 2-28. East Camden & Highland Railroad Mileages 2-38
Table 2-29. Fort Smith Railroad Mileages 2-39
Table 2-30. Friday-Graham Rail Spur Mileages 2-40
Table 2-31. Little Rock Port Authority Railroad Mileages 2-41
Table 2-32. Public Ports and Harbors in Arkansas 2-48
Table 3-1. Scheduled Amtrak Departures 3-2
Table 3-2. Amtrak Ridership Boardings and Alightings by Station in Arkansas 3-4

Table 3-3. FY 2012 Ridership between Top Five Origins/Destinations to and from Arkansas Stations 3-5
Table 3-4. Highway and Amtrak travel from Arkansas 3-6
Table 3-5. Amtrak Stations in Arkansas 3-8
Table 4-1. Potential Performance Measures for Freight Rail in Arkansas 4-2
Table 4-2. Sample Performance Measures with Data and Performance Targets 4-3
Table 4-3. PRIIA Section 207 Performance—Texas Eagle (3rd Quarter FFY 2015) 4-6
Table 6-1. Inventory of Public Roadway/Rail Grade Crossings in Arkansas, July 2013 6-5
Table 6-2. State-Sponsored Crossing Improvement and Enforcement in States Surrounding Arkansas 6-7
Table 7-1. Direct Economic Impact of Railroads in Arkansas, 2012 7-1
Table 8-1. Forecasted Arkansas Employment by Industry 8-5
Table 8-2. Percentage Change in Arkansas Employment and Annual Payroll by Industry, 2007-2011 8-7
Table 8-3. U.S. Construction Starts, Annual 2007—2014 (billions USD) 8-22
Table 8-4. Estimated Total 2015 Intermodal Volumes from California Port Regions to the Memphis, Atlanta and Birmingham Regions 8-39
Table 8-5. Potential Shifts to Gulf Coast Ports as a Result of Panama Canal Expansion by Major Crop and Production Area 8-42
Table 8-6. 2015 Rail Grain Traffic Passing through Arkansas between Locations in the Midwest and the Central Gulf Region by Tonnage 8-43
Table 9-1. Percentage Change of U.S. Railroad Network 9-4
Table 9-2. Comparison of Rail Percentage of Combined Truck and Rail Tonnage to, from, within Arkansas to Rail Percentage of Combined Truck and Rail Tonnage Nationwide by Commodity, 2007 9-9
Table 9-3. Comparison of Rail Percentage of Truck and Rail Tonnage to, from, within Arkansas with Rail Percentage of Truck and Rail Tonnage Nationwide by Mileage, 2007 9-9
Table 9-4. Largest Potential Shift if Rail in Arkansas Had National Modal Share by Commodity and Mileage Range, 2007 9-11
Table 11-1. Organization and Responsibilities of Rail Programs in Adjoining States 11-3
Table 12-1. Funded Rail Project in Arkansas (Short-Term Investment Program) 12-1
Table 12-2. Arkansas Rail Funding Scenarios—Average Annual over Next Five Years 12-2
Table 12-3. Proposed Investments for Freight Rail in Arkansas 12-6
Table 13-1. Outreach Approaches 13-1
Table 13-2. Workshops and Public Meetings Held in September and October 2014 13-3

Appendices

Appendix A—Minute Orders

Appendix B—Railroad Glossary

Appendix C—Process to Establish a New Railroad in Arkansas

Appendix D—Rail Plan Survey

Abbreviations

AASHTO ..... American Association of State Highway and Transportation Officials
AAR ..... Association of American Railroads
AEDC ..... Arkansas Economic Development Commission
AHTD ..... Arkansas State Highway and Transportation Department
AKMD ..... Arkansas Midland Railroad
ALM ..... Arkansas Louisiana & Mississippi Railroad
AM..... Arkansas & Missouri Railroad
ARS ..... Arkansas Southern Railroad
ASR ..... Arkansas Short Line Railroads, Inc.
ASLRRA ..... American Short Line and Regional Railroad Association
AVO ..... Average Vehicle Occupancy
AWC ..... Arkansas Waterways Commission
BCG ..... Boston Consulting Group
BNSF ..... BNSF Railway
BTU..... British Thermal Unit
BXN ..... Bauxite & Northern Railroad
C&S..... Camden & Southern Railroad
CTC ..... Centralized Traffic Control
CAIDC ..... Camden Area Industrial Development Corporation
COFC..... Container-on-Flatcar
DoD ..... U.S. Department of Defense
DQE ..... DeQueen & Eastern Railroad
DR..... Dardanelle & Russellville Railroad
DVS..... Delta Valley & Southern Railway
EACH ..... East Camden & Highland Railroad
EDW ..... El Dorado & Wesson Railway
EIA ..... U.S. Energy Information Administration
FAF ..... Freight Analysis Framework
FAF3 ..... Freight Analysis Framework-3
FAK ..... Freight-All-Kinds
FGRS ..... Friday-Graham Rail Spur
FHWA ..... Federal Highway Administration
FP .....Fordyce & Princeton Railroad
FRA.....Federal Railroad Administration
FSR .....Fort Smith Railroad
HSIPR .....High-Speed Intercity Passenger Rail
HSR.....High-Speed Rail
IRPLP .....International Rail Port Logistics Park Project
ITTS .....Institute for Trade and Transportation Studies
KCS .....Kansas City Southern Railway
KRR.....Kiamichi Railroad
LNW .....Louisiana & North West Railroad
LRPA.....Little Rock Port Authority Railroad
LRWN .....Little Rock & Western Railway
LOS.....Level of Service
M&LR .....Memphis & Little Rock Railroad
MNA.....Missouri & Northern Arkansas Railroad
MPO.....Metropolitan Planning Organizations
MPP .....Multimodal and Project Planning Section
NAAQS .....National Ambient Air Quality Standards
NEARIFA.....Northeast Arkansas Regional Intermodal Facilities Authority
NHPN .....National Highway Planning Network
NLA .....North Louisiana & Arkansas Railroad
OUCH .....Ouachita Railroad
PNW.....Prescott & Northwestern Railroad
PIP.....Performance Improvement Plan
PRIIA .....Passenger Rail Investment and Improvement Act
PTC.....Positive Train Control
RITA.....Regional Intermodal Transportation Authority of Western Arkansas
RRIF.....Railroad Rehabilitation and Improvement Financing Program

RSIA ..... Rail Safety Improvement Act
SAEDD ..... Southeast Arkansas Economic Development District
SCHSRC..... South Central High-Speed Rail Corridor
SCORT..... Standing Committee on Rail Transportation
STB ..... Surface Transportation Board
STRACNET ... Strategic Rail Corridor Network
TC ..... Transport Canada
TIFIA ..... Transportation Infrastructure Finance and Innovation Act
TIGER..... Transportation Investment Generating Economic Recovery
TIH ..... Toxic Inhalation Hazards
TIP ..... Transportation Improvement Program
TOE ..... Texas, Oklahoma & Eastern Railroad
TPP ..... Transportation Planning and Policy Division
TSA ..... Transportation Security Administration
UP..... Union Pacific Railroad
USDOT..... U.S. Department of Transportation
VMT..... Vehicle Miles Traveled
WSR..... Warren & Saline River Railroad

Executive Summary

Purpose of the Arkansas State Rail Plan

Arkansas Act 192 of 1977 designated the Arkansas Highway and Transportation Department (Department) to serve as the State's multimodal transportation planning agency responsible for coordinating the development of statewide transportation plans, including the Arkansas State Rail Plan. In 2008, the United States Congress passed the Passenger Rail Investment and Improvement Act (PRIIA), which requires each state to have an approved rail plan as a condition of receiving future federal rail funding for either passenger or freight improvements.

In 2011, the Arkansas Highway Commission authorized the Department to initiate the update of the 2002 Arkansas State Rail Plan through Minute Order 2011-173. This Plan has been prepared to conform to the requirements of PRIIA. It has also been prepared to reflect changes that have occurred to the Arkansas rail network since the last state rail plan in 2002.

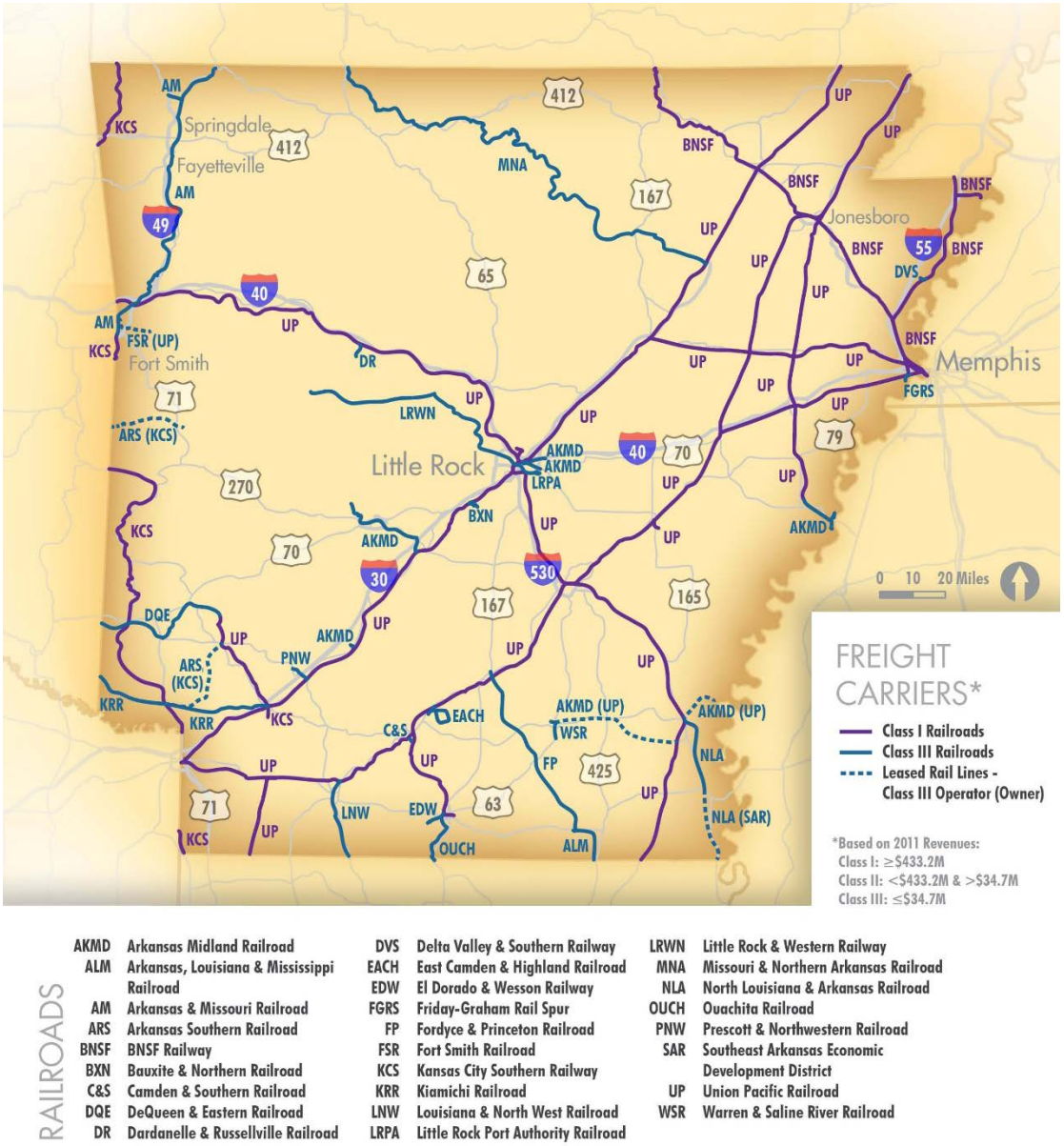
The Plan focuses on freight rail, intercity passenger rail, and commuter rail. Freight rail focuses on the movement of goods. "Intercity passenger rail" refers to passenger rail transportation between metropolitan areas. "Commuter rail" refers to passenger rail transportation in a metropolitan area, between a central city and its suburbs, with morning and evening peak period operations and running on a railroad right of way. "Commuter rail" is usually considered mass transit service.

Arkansas Rail System

Arkansas has 2,662 miles of active rail lines, predominantly owned by private companies. The few exceptions are several industrial spurs that are owned by port authorities or municipalities, as well as a segment of rail line owned by the Southeast Arkansas Economic Development District (SEAEDD). Rail lines in Arkansas are primarily used for hauling freight. There are no dedicated passenger rail corridors within Arkansas. The single passenger rail service that operates within Arkansas, the Amtrak Texas Eagle Service, operates over rail lines owned by a freight railroad company, the Union Pacific Railroad.

There are three classifications of railroads: Class I, II, and III. Per definition by the United States Surface Transportation Board (STB), Class III or short line railroads are those with annual operating revenues of $37.4 million or less. Railroads with revenues be4tween $37.4 and $467.0 million are classified as Class II railroads and are considered regional operators. Class I railroads are those with revenues of $467.0 million or more. Currently, no Class II railroads operate in Arkansas. Short line railroads usually play a gathering role in the freight rail system. They originate and terminate individual or groups of railcars and then make railcars available to Class I rail carriers. The Class I carriers then provide long-distance transportation, carrying cars between regional markets across North America.

Figure ES–1. Arkansas Freight Rail System



RAILROADS

AKMD	Arkansas Midland Railroad	DVS	Delta Valley & Southern Railway	LRWN	Little Rock & Western Railway
ALM	Arkansas, Louisiana & Mississippi Railroad	EACH	East Camden & Highland Railroad	MNA	Missouri & Northern Arkansas Railroad
AM	Arkansas & Missouri Railroad	EDW	El Dorado & Wesson Railway	NLA	North Louisiana & Arkansas Railroad
ARS	Arkansas Southern Railroad	FGRS	Friday-Graham Rail Spur	OUCH	Ouachita Railroad
BNSF	BNSF Railway	FP	Fordyce & Princeton Railroad	PNW	Prescott & Northwestern Railroad
BXN	Bauxite & Northern Railroad	FSR	Fort Smith Railroad	SAR	Southeast Arkansas Economic Development District
C&S	Camden & Southern Railroad	KCS	Kansas City Southern Railway	UP	Union Pacific Railroad
DQE	DeQueen & Eastern Railroad	KRR	Kiamichi Railroad	WSR	Warren & Saline River Railroad
DR	Dardanelle & Russellville Railroad	LNW	Louisiana & North West Railroad		
		LRPA	Little Rock Port Authority Railroad		

Of the 2,662 miles of active rail lines in Arkansas, the breakdown of rail operations are as follows:

- 1,327 miles operated by the Union Pacific Railroad (UP), a Class I railroad
- 198 miles operated by the Burlington Northern – Santa Fe Railroad (BNSF), a Class I railroad
- 158 miles operated by the Kansas City Southern Railroad (KCS), a Class I railroad
- 979 miles operated by 23 short line railroads

The Arkansas rail network is projected to carry 167 million tons of freight in 2015, of which 70 percent will be passing through the state moving between other states. Rail transportation is primarily used to carry heavy, bulky products long distances, in contrast to trucking which

dominates the transportation of high value goods and freight moving over short distances. Coal has traditionally been by far the highest tonnage commodity carried on the Arkansas rail network, and is projected to account for 57 percent of tons terminating in the state in 2015 and 36 percent of the tons passing through the state. However, strict new environmental regulations on coal-fired power plants have created uncertainty as to future volumes of coal movements.

The largest destinations of rail freight originating in Arkansas are Texas, Louisiana, and California. Much of the freight shipped to California is containerized freight from the UP intermodal ramp in Marion, while much of the freight shipped to Texas and Louisiana consists of gravel. The largest origins of freight shipped to Arkansas are Wyoming (primarily coal), California (intermodal containers to Marion), Iowa, Nebraska and Illinois (grain and food-related), and Texas (much of which relates to chemicals or plastics). Figure ES–2 displays a summary of originating and terminating freight traffic to and from Arkansas.

Figure ES–2: Summary of Freight Originating and Terminating in Arkansas by Commodity Tonnage

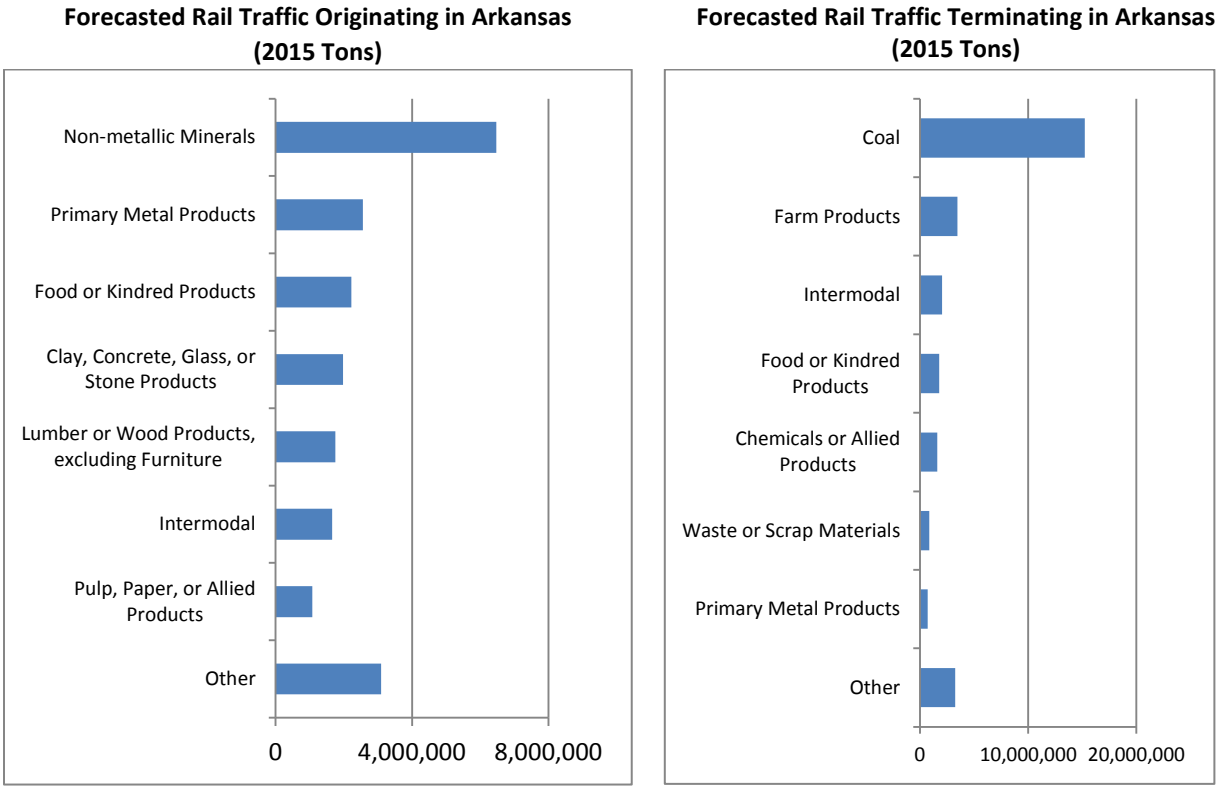


Figure ES–3. Texas Eagle Route through Arkansas

Passenger rail service in Arkansas is provided by the Amtrak, Texas Eagle service, a long-distance train that runs between Chicago and Los Angeles with a transfer at San Antonio, Texas. A single train in each direction passes through Arkansas each day, making six stops each at night. The northbound train makes its first stop in Arkansas at Texarkana at 8:43 PM and makes its last stop in Arkansas at Walnut Ridge at 1:41 AM. The southbound train makes its first stop in Arkansas at Walnut Ridge at 12:37 AM and its last stop in Texarkana at 5:58 AM.

By far the most heavily used Arkansas station on the Texas Eagle route is in Little Rock, accounting for 56 percent of passengers who got on or off Amtrak trains in Arkansas in 2013. The most common origins and destinations for travelers to and from Arkansas are Chicago and Saint Louis. These two stations account for over 38 percent of the ridership at Arkansas Amtrak stations. Dallas, Houston, and San Antonio are also significant origins/destinations.

In addition to inconvenient arrival and departure times, the Texas Eagle service is slower and less reliable than automobile travel. As an example, about six hours are required to drive between Little Rock and Saint Louis while seven hours and 40 minutes are required on Amtrak. Little Rock to Chicago is a ten hour drive but is over 14 hours on Amtrak. During the third quarter of 2013,

Texas Eagle trains were only on time about 54 percent of the time. On the other hand, Amtrak by some measures is a less expensive mode of travel than automobile travel, at least when compared with single occupancy automobiles.

Despite its limitations, Texas Eagle ridership to/from Arkansas has significantly increased in recent years. The number of passengers boarding and getting off Amtrak trains increased from 20,789 in 2003 to 41,358 in 2013. The increase in passengers using Amtrak in Arkansas nearly doubled in this period while the State's population grew roughly nine percent.

Railroad Funding in Arkansas

There is no dedicated, reliable public funding source for rail in Arkansas. Traditionally, freight railroads have been responsible for paying the cost of operating, maintaining, and performing any upgrades to their rail lines, structures, and equipment. The cost of the Amtrak Texas Eagle service is paid through ticket revenues and subsidies from the federal government.

Although public funding is inconsistent, there are examples of public funds being used to pay for projects involving rail in Arkansas, such as:

- The U.S. Federal Highway Administration (FHWA) funds about $3.7 million worth of improvements to roadway/rail grade crossings per year.
- Additional discretionary funding has been provided by FHWA for crossing improvements within High Speed Rail Corridors.
- The U.S. Department of Transportation (USDOT) Transportation Investment Generating Economic Recovery (TIGER) program has funded about $12 million in rail projects since the program began in 2009, including a rail line improvement/extension project in West Memphis and design/environmental work for a roadway/rail grade separation project in Jonesboro.
- The Federal Railroad Administration (FRA) Rail Line Relocation and Improvement program has funded rail projects, such as the rehabilitation of an Arkansas Midland rail line, and rehabilitation of bridges on the Ouachita Railroad. This program is currently unfunded.
- State funds have from time to time been used to fund rail projects. Generally, these are provided by the General Improvement Fund (GIF), which is contingent upon actual versus expected state general revenues in any given year.
- The U.S. Economic Development Administration (EDA) has sometimes provided funding for Arkansas rail projects through its Public Works program. One example is the partial funding for rehabilitation of the North Louisiana and Arkansas Railroad.
- The Delta Regional Authority has helped to fund at least four projects in eastern Arkansas since 2002, providing around $200,000 for each project.
- The federal government's low interest loan program, the Railroad Rehabilitation & Improvement Financing (RRIF) was used by Arkansas & Missouri Railroad to purchase property from BNSF in 2003.

Generally, public investment in railroad infrastructure or passenger services is justified by public benefits that result from rail such as:

- Passengers and freight that move by rail do not move by highway and thereby decrease highway maintenance expense, required investment, and congestion.
- Rail is a relatively fuel efficient mode of transportation and thereby generates less greenhouse gas and other emissions.
- Rail is a relatively safe mode of transportation, causing fewer fatalities and injuries relative to highway transportation.

Rail can also support economic development by lowering transportation costs for existing and prospective companies in Arkansas. Rail can also provide a vital transportation link to rural areas.

Rail Issues and Opportunities/ Initiatives

Based on data gathered and discussions with stakeholders, a number of issues and opportunities, as well as potential initiatives to address those issues and opportunities, have been identified.

Passenger Rail Initiatives

As described above, the Texas Eagle service is slow compared to automobile travel, to some degree unreliable, and provides relatively infrequent service at inconvenient times of the day. Furthermore, stakeholders have reported that some stations are in a poor state of repair.

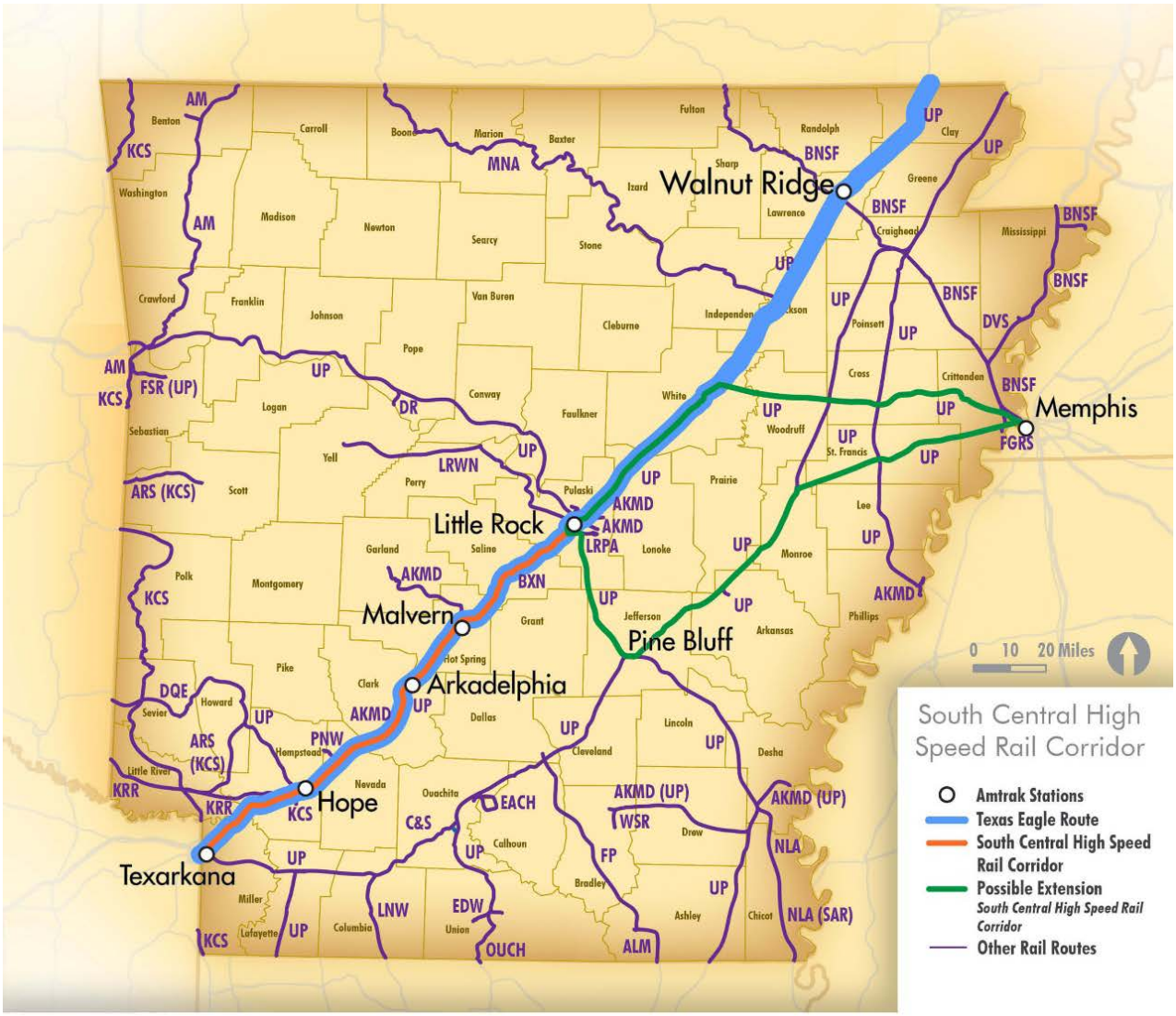
The U.S. Congress has designated a series of High-Speed Rail Corridors, which would be the focus of investment for improving intercity passenger rail train speeds. A portion of one of these corridors, the South Central High Speed Rail Corridor (SCHSRC), lies between Dallas and Little Rock through Texarkana. As part of the PRIIA legislation, the U.S. Congress requested an investigation of whether the SCHSRC could be extended to Memphis from Little Rock. Arkansas is currently studying the possibility of improving service between Texarkana and Little Rock, as well as the feasibility of passenger rail service between Little Rock and Memphis. This effort is collectively referred to as the Arkansas Passenger Rail Study. The study is funded by about $0.4 million from the FRA, matched by about $0.4 million from AHTD, and $0.1 million from the Arkansas General Improvement Fund.

The Arkansas Passenger Rail Study focuses on passenger rail service on existing freight railroad lines. Most freight trains operate at speeds below 50 miles per hour (MPH). This could limit the top speeds contemplated for passenger rail service. It would be impossible, for example, for 160 MPH passenger trains to share a busy freight corridor with many slow-moving freight trains. More likely, the focus of this study will be on achieving travel speeds competitive with automobile travel. In this sense, the term “high-speed rail” is misleading, since it conjures images of bullet trains in Europe or Japan, which is not what is being contemplated.

While Arkansas currently pays nothing for the existing Amtrak Texas Eagle service, if the state were to add or modify intercity passenger rail service, the state would need to compensate Amtrak for the service. In contrast to freight service, passenger rail service is not self-supporting. Not only

would any infrastructure improvements need to be publicly-funded, but Arkansas would need to pay for the usage of the passenger rail equipment and cover any operating losses.

Figure ES–4. South Central High-Speed Rail Corridor



RAILROADS

AKMD	Arkansas Midland Railroad
ALM	Arkansas, Louisiana & Mississippi Railroad
AM	Arkansas & Missouri Railroad
ARS	Arkansas Southern Railroad
BNSF	BNSF Railway
BXN	Bauxite & Northern Railroad
C&S	Camden & Southern Railroad
DQE	DeQueen & Eastern Railroad
DR	Dardanelle & Russellville Railroad
DVS	Delta Valley & Southern Railway
EACH	East Camden & Highland Railroad
EDW	El Dorado & Wesson Railway
FGRS	Friday-Graham Rail Spur
FP	Fordyce & Princeton Railroad
FSR	Fort Smith Railroad
KCS	Kansas City Southern Railway
KRR	Kiamichi Railroad
LNW	Louisiana & North West Railroad
LRPA	Little Rock Port Authority Railroad
LRWN	Little Rock & Western Railway
MNA	Missouri & Northern Arkansas Railroad
NLA	North Louisiana & Arkansas Railroad
OUCH	Ouachita Railroad
PNW	Prescott & Northwestern Railroad
SAR	Southeast Arkansas Economic Development District
UP	Union Pacific Railroad
WSR	Warren & Saline River Railroad

During the development of this Plan, a number of stakeholders expressed interest in additional passenger rail corridors. The most frequent requests were for passenger rail services between

Little Rock and Hot Springs or for service from central Arkansas to northwest Arkansas. From a purely demographic perspective, Northwest Arkansas would be a logical location for passenger rail service, since the area around Bentonville and Fayetteville is forecast to become the most populous area in Arkansas, surpassing the Little Rock metropolitan area in the coming decades.

Safety/Crossings

While rail is a relatively safe mode of transportation when compared to highways, railroad transportation nevertheless still generates risks. Typically, risks include the potential for collisions at roadway/rail grade crossings; trespassers, others being struck by trains on railroad right of ways; and general occupational hazards of railroad employees doing their jobs. Public agencies in Arkansas are best equipped to mitigate risks at roadway/rail grade crossings, since these are the areas over which agencies have the most control. A total of 2,464 public roadway/rail grade crossings are located in Arkansas, of which about 35 percent have train-activated signals (flashing lights, and/or gates alert drivers that a train is coming), while the other 65 percent rely on signage, such as crossbucks to warn motorists of the crossing.

According to FRA statistics, a total of 144 crashes occurred at Arkansas crossings between 2012 and 2014, resulting in 54 injuries and 18 fatalities. The accident rates at Arkansas crossings have trended downward. For example, FRA data reports 225 accidents, 102 injuries, and 29 fatalities at Arkansas crossings between 2005 and 2007, a higher rate than the more recent years of 2012 to 2014. Evidence also suggests that Arkansas may lag behind other parts of the country in crossing safety. For example, the 11 fatalities at roadway/rail grade crossings in Arkansas represent about 2.5 percent of all roadway/rail grade crossing fatalities nationwide between 2012 and 2013. However, vehicle miles traveled (VMT) in Arkansas were only about 1.1 percent of national VMT during that time period. The frequency of fatalities at crossings was higher than the national average on a per VMT basis. Arkansas also lags in crossing protection technology. Fifty-two percent of roadway/rail grade crossings nationwide have train-activated signals compared to 35 percent in Arkansas. The *Arkansas Strategic Safety Highway Plan* set a goal of reducing the number of annual railroad crossing fatalities to six or fewer by 2017.

Crossings are not only a safety concern, but also an inconvenience. There is a cost to the time that motorists must wait for trains to clear crossings. Trains in many cases must also slow for crossings. There are numerous instances throughout Arkansas of trains blocking crossings for extended periods of time.

Arkansas continues to address the issue of roadway/rail grade crossings through a number of means.

- Crossing improvements. Arkansas upgrades the safety countermeasures, such as installing train-activated signals, at eight to ten crossings per year on average.
- Grade separations. Grade separations consist of the construction of an underpass or an overpass, so that roadways and rail lines are vertically separated. Grade separations usually cost above $15 million to complete and can cost significantly more. AHTD completes on average one rail/grade separation per year.
- Crossing closure. If feasible, crossings can be closed, thus removing their associated risk.

- Siding extensions. Sometimes railroads can avoid blocking crossings over extended periods of time if the location where trains wait can be moved so that crossings are not blocked.

- Improved passive measures. In addition to active control devices that give advance notice of the approach of a train, passive control devices indicate that a crossing is present and that a highway user must look for an approaching train and take appropriate action. These include crossbucks, stop signs, approach warning signs, pavement markings, etc. The USDOT *Manual on Uniform Traffic Control Devices for Streets and Highways* provides guidance on appropriate passive measures. AHTD is working to ensure that passive measures at crossings in the state meet these standards.

- Public Education. Most accidents at crossings happen as the result of driver behavior. According to data by the FRA between January 1999 and July 2015, 92 percent of crossing accidents in Arkansas have resulted when drivers did not stop at crossings, stopped on the crossing, stopped and then proceeded over the crossing, or went around crossing gates. Operation Lifesaver is a national nonprofit organization whose mission is to end collisions, injuries and deaths at roadway/rail grade crossings and on rail property, through public education and awareness of rail safety.

- Improved crossing safety on passenger rail routes. Crossing improvements are a component of the Arkansas Passenger Rail Study. If passenger service were to be extended from Little Rock to Memphis, or if passenger rail service between Texarkana and Little Rock were to be improved, commensurate improvements to roadway/rail crossings on the corridor would be required.

Some communities in Arkansas are essentially bisected by railroad tracks, and roadways in these communities cross tracks at numerous locations. In these cases, a "corridor" approach to addressing crossing issues can be established, where a combination of approaches are used to reduce the risk and inconvenience of crossings.

Crossing safety improvements in Arkansas are primarily funded through the FHWA Rail-Highways Crossing (Section 130) Program. Some states fund crossing improvements beyond the FHWA program. Other states also actively enforce state regulations for crossing safety, in areas such as maintaining sight lines to crossings (enables motorists to see trains approaching), maintaining pavement markings, etc. Based upon the relatively high risks of crossings in Arkansas, the state could consider increasing the level of resources devoted to crossing issues, depending upon future funding capacity.

Roadway/rail crossings are not the only safety concern within Arkansas. More than five percent of carloads of rail nationwide are carrying hazardous materials, including about 75,000 carloads of toxic inhalant substances (TIH).[1] Railroad transportation of hazardous materials has come under increased scrutiny as of 2015 due to the growth of crude oil shipments by rail, which increased from 9,500 carloads nationwide to 540,383 carloads in 2014.[2] As the railroad industry points out,

[1] David Hunt, David Friedman, Mark Meketon, Carl Van Dyke, "Transporting Hazardous Materials by Rail: Identifying Feasible, Lower-Risk Routes," *TR News*, May-June 2013.
[2] Association of American Railroads, *Moving Crude Safely by Rail*, July 2015.

99.99 percent of carloads since 2000 have arrived at their destination without incident.[3] The railroad industry has sought to minimize risks by routing certain traffic away from high risk areas, voluntary increased inspections and speed limits on trains carrying hazardous materials, as well as general investment in infrastructure to reduce the risks of derailments. In May 2015, the U.S. Department of Transportation (USDOT) has promulgated new requirements for high hazard flammable trains. The rule,

- presented new standards for tank cars, plus required retrofitting for older tank cars;
- new brake standards for certain trains;
- new operational protocols for trains transporting large volumes of flammable liquids, such as routing requirements, speed restrictions, information for local governments; and
- better classification standards for energy products placed into transport.

Rail Corridor Preservation

The number of route miles of the U.S. railroad network has generally declined since reaching its peak in 1916. Decreases were highest in the 1970s due the industry's financial crisis during that decade, and in the 1980s due to railroads' ability to divest unprofitable lines per industry deregulation following the passage of the Staggers Rail Act of 1980. In many parts of the country, the rail network has generally stabilized, but in recent years, some relatively significant segments of the Arkansas rail network have either been threatened or abandoned. The abandonment of the 52 mile Caddo Valley Railroad was finalized in late 2014. The Delta Southern Railroad filed to abandon its line between McGehee, Arkansas, to Lake Providence, Louisiana in 2008 and 2011. The Arkansas Short Line Railroads Inc., the Southeast Arkansas Economic Development District (SAEDD), and the Lake Providence Port Commission purchased the 62 mile rail line before it could be abandoned. A major effort is currently underway to rehabilitate this line. A number of measures could address the issue of abandonment in the future:

- Develop a state rail corridor preservation policy;
- Establish a fund to support purchases of at-risk rail lines by third parties;
- Establish a legal/funding basis whereby the state can acquire rail corridors that would otherwise be abandoned;
- Provide grant or loans to support short line infrastructure investment to prevent their operations from declining to such an extent that continued operations are at risk;
- Reduce the costs to rail carriers of owning inactive rail corridors;
- Establish a rail-banking program (This is a legal means of maintaining an intact rail corridor. Rather than being abandoned, the corridor is assigned an "interim use" status, as a recreational trail);
- Use state law to discourage full abandonment of rail corridors, if such a law would be consistent with the state constitution.

[3] Ibid.

Rail and Economic Development

Stakeholders consulted for this Rail Plan have stressed that rail can help drive economic development in Arkansas. Rail access can help attract employers to the state and improve/maintain the competitiveness of employers currently within the state. For many companies, the landed or total cost of receiving or shipping goods is a key consideration in location decisions. Rail can help to reinforce competitive advantages of Arkansas as a business location, by reducing costs and providing transportation access to material resources. Rail can be particularly important to rural communities that produce raw materials but do not have high-capacity highway networks because of their remote location. Some initiatives that have been proposed or are underway to improve rail's role in economic development in Arkansas include:

- Cataloguing developable rail-served sites, particularly on low-density rail lines;
- Mapping of rail assets and raw materials;
- Developing and disseminating a handbook on multimodal facilities (currently underway);
- Evaluating transload facility feasibility and location guide;
- Creating a logistics directory for the State of Arkansas;
- Complete industrial rail access projects (a number of specific projects are presented in the investment program of this Rail Plan);
- Establishing an industrial rail access funding mechanism that can receive applications from any existing or new business.

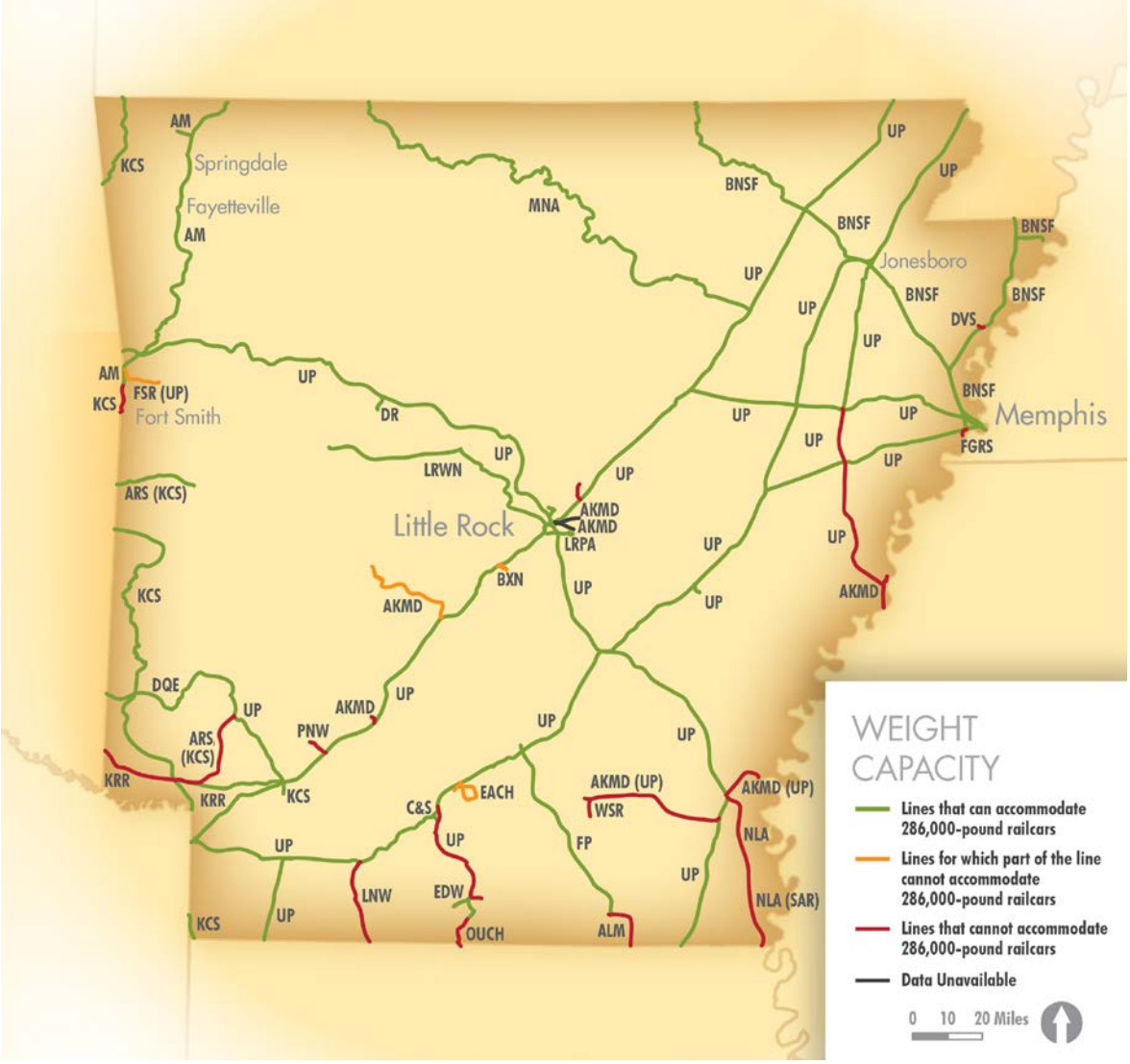
Rail Line Condition, Rail Line Rehabilitation

Currently, many of the Arkansas short line railroads are in a poor state of repair. Railroad operations are capital intensive, and track maintenance requires large investments in materials, equipment and construction labor on a regular basis. When traffic declines and revenues are marginal, maintenance often is deferred and maintenance requirements accumulate. Many short line railroads were created from rail lines previously owned by Class I railroads, which deferred maintenance for years before selling the lines. Two hundred and eighty-six miles of rail line in Arkansas are rated by the FRA as having an "excepted" track condition, which means that these track segments are in poor state of repair and in need of upgrade. Five hundred and forty-five miles of rail line are limited to ten MPH or less for freight operations. This slow speed of operations may hinder the competitiveness of rail services offered. The total mileage operated by Class III railroads is 979.

When rail lines cannot accommodate the industry standard 286,000-pound railcars, shippers must "light load" their railcars or use smaller cars, a practice that is inefficient. Thirteen of the Arkansas short line railroads have limited capacity to haul industry standard 286,000-pound carloads. A total of 396 track miles in Arkansas are unable to handle 286,000-pound railcars. Of these, 310 miles are on short line railroads, and 86 miles are on rail lines owned by Class I carriers. These restrictions limit these railroads' ability to attract new business, and to remain competitive with other rail lanes and modes of transportation.

Over $61 million worth of rail line rehabilitation/upgrade needs have been identified in the investment section of this Rail Plan. The completion of these projects will depend upon available funding or financing.

Figure ES–5. Weight Restrictions on Arkansas Rail Corridors



Expanding Access to Rail in Arkansas

Stakeholders consulted for this Rail Plan have expressed interest not only in preserving the existing rail system, but also in extending or reactivating some previously abandoned lines. Proposed initiatives include the following:

- The Chicot-Desha Metropolitan Port Authority sponsors a project to build an 8.1-mile rail line from the Port of Yellow Bend to the interchange with the NLA at Trippe Junction, Arkansas. This project would cost about $25 million. Environmental work has been completed, and several TIGER grant applications have been submitted to seek funding for the project.

- A recent study looked into the possibility of reconstructing a 76-mile segment of the former Chicago, Rock Island and Pacific Railroad (CRIP) line between Danville, Arkansas and Howe, Oklahoma.[4] The study evaluated the feasibility of restoring the line in two phases. An initial phase would restore the line (18.4 miles) between Hartford, Arkansas and an interchange with KCS in Howe, Oklahoma (Phase 1). A second phase would restore the remaining 57.6 miles between Hartford, Arkansas and an interchange with the Little Rock & Western Railway at Danville, Arkansas (Phase 2). The cost of the line's reconstruction is estimated to be $38.8 million for Phase 1 and $107.9 million for Phase 2.
- In Washington County, the Department completed the Fayetteville South Industrial Park Railroad Access Study focusing on the identification of possible rail line routes, determination of roadway/rail at-grade crossings, water features to be bridged, other potential constraints, design considerations, and cost estimates.
- The Department completed the Northwest Arkansas Regional Airport – Air Cargo Study and Freight Transportation Access Assessment. This study investigated the feasibility of constructing a rail line to the Northwest Arkansas Regional Airport, connecting to either the KCS or the Arkansas and Missouri Railroad (AM). Both alternatives included roughly 10 miles of rail construction.

Other rail access projects would improve the connection between rail and other modes of transportation. The Port of Little Rock and the port operator at the Port of Fort Smith have identified about $6 million in improvements that would improve rail access to these facilities. Transload facilities are areas where freight is transferred between truck and rail. Rail carriers have identified over $26 million worth of improvements to support transload facilities in Arkansas. Some stakeholders are interested in additional intermodal service (shipping containers or trailers on rail) within Arkansas, since the sole intermodal terminal within Arkansas at Marion is costly to access for shippers in other parts of the state. In order for a new intermodal service to be established in the state, providing this service would need to be worthwhile to the rail carrier. Rail carriers would require the following:

- A sufficient demand for trainload volumes of intermodal freight multiple days per week;
- A reasonable balance between empty and loaded containers; and
- A logical "fit" in the carriers' intermodal network, so that the service does not disrupt other intermodal services, and shipping distances are long enough to compete effectively with trucking.

Summary of Rail Infrastructure Needs

Figure ES–6 displays rail projects in Arkansas for which, as of 2014, funding has been identified. At least some of the funding has been provided by public sector sources. These projects represent

[4] South Logan County Chamber of Commerce, *Western Arkansas Railroad Reconstruction Economic Feasibility Study*, June 30, 2014.

about $46 million in public and private investment. Some are planned, while others are being designed or are under construction.

Figure ES–6. Funded Arkansas Rail Projects with Public Investment

Project Description	Cost	Funding Mechanism	Project Benefits
Rail extension and rehabilitation at the Port of West Memphis	Total cost is $27.0 million	$10.9 million from 2012 TIGER grant, other local and private funds	Economic development and modal connectivity
Rail Rehabilitation of the North Louisiana and Arkansas Railroad	Total cost, including work within Louisiana, is $13 million	U.S. Economic Development Administration, State of Arkansas SEAEDD, Lake Providence Port Commission, State of Louisiana, Delta Regional Authority, Arkansas Short Line Railroads, Inc.	Economic development, rail system preservation/ state of good repair, freight system efficiency
City of Jonesboro Railroad Corridor Highway 18/BNSF Crossing Planning for environmental and designs	$1.5 million	$1.2 million from 2014 TIGER grant, $0.3 in local match	Safety, reduces community impacts
Arkansas Passenger Rail Study	$0.9 million	$0.4 from FRA HSR (pre HISPR), $0.5 from State of Arkansas	Investigates potential transportation options
AKMD Warren Branch Rail Line Rehabilitation	$3.4 Million	$2.7 million from FRA Rail Line Relocation and Improvement program, $0.7 million from AKMD	Rail system preservation/ state of good repair, freight system efficiency
Ouachita Railroad Bridge Rehabilitation (OUCH)	$370,000	$330,000 from FRA Rail Line Relocation and Improvement program, $40,000 from OUCH	Rail system preservation/ state of good repair, freight system efficiency

Throughout the preparation of the Arkansas State Rail Plan, a much larger set of rail needs have been identified that are not funded. Projects have been put forth by short line railroads, public agencies, and Class I railroads. Of the Class I railroads, UP provided project cost estimates, while BNSF and KCS put forward recommended project needs but not cost estimates. Some projects put forward are for new rail lines or rebuilds of rail lines that had once been in place. It is not certain who would operate these lines. Project needs have been categorized as follows:

- Capacity. Increases to rail line capacity that will allow more trains per day to operate over rail lines.
- Extend or reactivate rail lines. Major construction of rail lines to serve areas not recently served by rail.
- Multimodal Improvement. Construction or improvement to transload, port, or intermodal container facilities.
- Rehabilitation/Upgrade. Projects to return rail lines and structures to a state of good repair and to modern standards.
- Yard. Improvements to rail yards in order to bring yards to a state of good repair, to improve efficiency, or to expand capacity.

- Industrial Access. Construction of turnouts, sidings, and spur tracks to serve rail customers.
- Rail Line Connections. Improved connections between two rail lines, sometimes of different railroads, but sometimes of the same railroad.
- Equipment. Needed purchase of new rail rolling stock.
- Safety. Improved safety at roadway/rail grade crossings or crossing closures.

As shown in Figure ES–7, identified unfunded rail needs exceed $1.6 billion. Most of these are the $1.1 billion that UP has identified in capacity needs. The second largest set of needs relate to extending the Arkansas rail network to locations that have not recently had rail access. This includes extending rail access to the Port of Yellow Bend, the reactivation of a rail line between Hartford, Arkansas and Howe, Oklahoma, and the extension of rail lines to multimodal/industrial facilities in Northwest Arkansas. Compared to extending the rail network, it is far less costly to maintain the existing rail network. More than $63 million in needs have been identified for rehabilitating and upgrading existing rail facilities.

Figure ES–7. Unfunded Arkansas Rail Needs

Type of Project	Class I Railroad	Class III Railroad	Railroad Uncertain	Grand Total
Capacity	$1,057,000,000			$1,057,000,000
Extend or reactivate rail line		$252,000,000	$167,300,000	$419,300,000
Multimodal Improvement	$60,000,000	$7,500,000		$67,500,000
Rehabilitation/Upgrade		$63,251,497		$63,251,497
Yard	$15,000,000	$15,510,000		$30,510,000
Industrial Access		$13,700,000		$13,700,000
Rail Line Connections	$13,000,000			$13,000,000
Equipment		$7,500,000		$7,500,000
Safety		$1,550,000		$1,550,000
Grand Total	**$1,145,000,000**	**$361,011,497**	**$167,300,000**	**$1,673,311,497**

Institutional and Funding Issues

By Act 1430 of 2013 the Arkansas General Assembly created a Task Force to investigate and make recommendations regarding intermodal transportation and commerce policy. The findings of the Task Force expressed concern over recent losses to the Arkansas rail network and recommended greater unified oversight, not just over highway, but also rail, waterways, ports, and aviation. As mentioned above, there is no consistent, dedicated funding source for rail in Arkansas, either through federal or state funding sources. Task Force members would like to find such a funding source.

In 2015, Arkansas Act 166 reestablished the Legislative Task Force on Intermodal Transportation and Commerce and expanded the membership to include representatives of the Arkansas Department of Aeronautics, the Metropolitan Planning Organizations in Arkansas, and the Arkansas Economic Development Commission. The charge of the Task Force was also modified in 2015. The

revised charge of the Task Force is to review and consider constitutional and legislative constraints related the creation of an Arkansas Department of Transportation, including consideration of existing agencies, agency funding, and oversight protocol.

Summary

Rail has traditionally served Arkansas well, from the time of high passenger volumes to the current trend of massive cross-country unit trains. The changing economy and the need for economical shipments have had an impact on the rail system in Arkansas. Transfer from Class I railroads to Class III railroads has made a significant impact on the viability of many local and regional businesses. Enhancement of the rail system in Arkansas will have a positive impact on the economy by providing more opportunities for receiving and shipping materials and goods into and out of Arkansas.

Chapter 1 The Role of Rail in Arkansas' Transportation System (Overview)

Introduction

The Memphis and Little Rock Railroad (M&LR) was the first railroad to operate in the state of Arkansas[5]. The M&LR ran 133 miles between Hopefield (Crittenden County), just opposite Memphis, Tennessee, to Little Rock (Pulaski County). The first railroad with interstate operations (1884) was the St. Louis Southwestern Railroad (SSW), commonly called the "Cotton Belt." By the early 1900s, there were nearly 200 railroad companies providing both freight and passenger services in most parts of the state.

As in other states, the number of railroads and railroad route miles in Arkansas peaked in the early 20th century. Since that time, the number of railroads and railroad route miles has declined due to competition from alternate modes of travel, such as automobile and aviation for passenger transportation, and trucking for freight transportation. On the other hand, rail remains a vibrant part of the Arkansas economy. Nationwide, railroads in the first decade of the 21st century carried more freight as measured by ton-miles (one ton of freight hauled one mile) than ever before. The U.S. freight rail network has become more concentrated, with more trains using fewer route miles. As an important part of the U.S. rail network, Arkansas shares in these trends.

The nature of railroad operations has changed dramatically. The types of freight rail services that railroads provide and the equipment used have become more specialized. Whereas most freight railcars previously were sorted into and out of multiple trains between their origin and destination, now many railcars are shipped within unit trains, which travel from origin to destination as one train. The boxcar had once been the predominant freight railcar type, used for hauling most commodities. Now, specialized railcars are used for hauling specific commodities.

Multimodal services, such as container-on-flatcar (COFC) and transload, have been growing business areas for freight railroads. Intermodal freight, primarily COFC, has continued to grow and become an increasingly important component in the U.S. transportation network, for both shipping goods domestically and internationally. The division between rail service and trucking service has blurred as trucking companies rely on rail intermodal for long distance freight service. J.B. Hunt Transport Services, Inc. of Lowell, Arkansas, helped pioneer rail intermodal by partnering with the Santa Fe Railway in 1989 to use rail intermodal service to move containers between cities while J.B. Hunt equipment and drivers picked up and delivered containers between intermodal ramps and customer locations.

[5] The Encyclopedia of Arkansas History and Culture

Before the Rail Passenger Service Act of 1970, passenger rail service had been provided by the same private companies that haul freight. With the National Railroad Passenger Corporation (Amtrak) taking over intercity passenger rail service in the early 1970s, freight and passenger services have become separate and distinct, although passenger trains use freight railroads' rail lines in Arkansas.

The Arkansas rail system operates over more than 2,500 miles of rail line, carrying several hundred passengers and nearly half a million tons of freight every day.

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 was subsequently updated in 1984, and then again in 2002.

In 2008, state rail plans took on increasing importance when the U.S. Congress passed the Passenger Rail Investment and Improvement Act (PRIIA). While the primary purpose of the act was to provide for improved passenger rail service in the United States, the act requires each state to have an approved rail plan as a condition of receiving future rail funding for either passenger or freight improvements. PRIIA requires that each rail plan includes the following:

- Inventory of rail system, services and facilities
- Review of rail lines including high-speed rail and abandonments
- Passenger rail service objectives
- General transportation, economic and environmental impacts on rail service
- Long-range service and investment program with a project list
- Statement of Public Financing Issues
- Identification of rail infrastructure issues reflecting consultation with all relevant stakeholders
- Review of passenger and freight intermodal connections
- Review of publicly funded projects, including safety
- Performance evaluation of passenger rail service
- Compilation of studies and reports on high-speed rail corridor development

This Arkansas State Rail Plan (Plan) has been prepared to conform to the requirements of PRIIA. It has also been prepared to reflect changes that have occurred to the Arkansas rail network since the last Plan in 2002.

The Plan focuses on freight rail, intercity passenger rail, and commuter rail. Freight rail focuses on the movement of goods. "Intercity passenger rail" refers to passenger rail transportation between metropolitan areas. "Commuter rail" refers to passenger rail transportation in a metropolitan area, between a central city and its suburbs, with morning and evening peak period operations and running on a railroad right of way. "Commuter rail" is usually considered transportation mass transit service.

Arkansas Goals for the Multimodal Transportation System

Rail is an important component of the mission of the AHTD, which is to provide a safe, efficient, aesthetically pleasing, and environmentally sound multimodal transportation system for the user. In support of this mission, the AHTD maintains several goals:

- Supports and promotes multimodal transportation activities, including rail
- Works with transportation providers and partners to improve the statewide transportation system
- Seeks to promote connectivity of transportation services and systems
- Supports opportunities for economic development in Arkansas, including opportunities that involve rail
- Maintains cooperative efforts with federal, state and local agencies to ensure environmental quality of life is preserved
- Promotes safety improvements of the multimodal system, including improved safety of the rail system

Role of Rail in the Arkansas Transportation System

Rail in Arkansas plays a unique role, whether used to carry people or to haul freight. The Arkansas rail network is projected to carry roughly 167 million tons of freight in 2015 with about 70 percent passing through the state. About 41,000 passengers got on or off intercity passenger trains in Arkansas in 2012. No commuter rail services are currently provided in the state.

Freight rail in Arkansas, as in other states, is primarily used for shipping products with a relatively low value over long distances, with some exceptions. Shippers frequently ship by rail when the transportation cost of shipping a product by other means would be excessive. This is apparent from the USDOT—Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF) data. Rail has the highest market share by tonnage for freight moving to and from Arkansas over 500 miles. Because most of the tonnage hauled by rail consists of low-value commodities like coal or grain, rail's share of the value of products shipped to and from Arkansas is much smaller than its share of the tonnage (Table 1-1).

Rail is estimated to carry only about five percent of the tonnage and two percent of the value of shipments to and from Arkansas below 500 miles in 2015. This short-distance freight movement is dominated by trucking, which is estimated to have an 89 percent market share by value and tonnage for 2015 shipments to and from Arkansas (Table 1-2).

Table 1-1. FHWA Freight Analysis Framework—2015 Freight Originating or Terminating in Arkansas, Average Move >500 Miles

Mode	% Freight Tons	% Freight Value
Air (include truck-air)	0%	2%
Multiple modes & mail	8%	20%
Other and unknown	1%	2%
Pipeline	12%	4%
Rail	36%	6%
Truck	34%	64%
Water	9%	2%

Source: FHWA FAF3.4

Table 1-2. FHWA Freight Analysis Framework—2015 Freight Originating or Terminating in Arkansas, Average Move <500 Miles

Mode	% Freight Tons	% Freight Value
Air (include truck-air)	0%	2%
Multiple modes & mail	2%	4%
Other and unknown	1%	1%
Pipeline	3%	2%
Rail	5%	2%
Truck	89%	89%
Water	0%	0%

Source: FHWA FAF3.4

Passenger rail, which includes intercity rail or commuter rail, is a relatively small component of passenger travel in Arkansas. Amtrak's Texas Eagle provides daily service to and from the state. According to Amtrak statistics, an average of about 90 to 100 people per day boarded or disembarked Amtrak trains at stations in Arkansas in 2009, the most recent year for which comparable highway statistics are available. This compares to an average of about 250,000 vehicle trips to, from, and within Arkansas per day in 2009, according to the Arkansas Statewide Travel Demand Model.[6] In 2009, the daily average number of vehicle trips between Arkansas and other states was approximately 23,000. Multiplying vehicle trips by an average vehicle occupancy (AVO) of 1.75, the average daily interstate passenger trips were approximately 41,000. Amtrak ridership in 2009 was about 0.2 percent of the passenger travel.

Percentage of Population Served by Rail

Arkansas is served by the following eight Amtrak intercity passenger rail stations, either within Arkansas or within 30 miles of the state border, six of which are inside the state of Arkansas:

- Texarkana, Arkansas
- Hope, Arkansas
- Arkadelphia, Arkansas
- Malvern, Arkansas

[6] 2009 is the base year of the Arkansas Statewide Travel Demand Model and the most recent year for which data is available.

- Little Rock, Arkansas
- Walnut Ridge, Arkansas
- Poplar Bluff, Missouri
- Memphis, Tennessee

According to 2011 American Community Survey (ACS) 5-year estimates, 429,940 Arkansas residents live in a census block group within a 10-mile radius of an Amtrak station, constituting 14.8 percent of the statewide population. This includes residents who are within ten miles of the Memphis, Tennessee station.

According to the same survey, 1,172,004 residents, or 40.5 percent of the statewide population resides within 30 miles of an Amtrak station. This includes residents in Arkansas who are within 30 miles of the Memphis, Tennessee station and the Poplar Bluff, Missouri station.

Table 1-3. Arkansas Population Served by Intercity Passenger Rail

Radius	Population	Percentage of State
10 miles	429,940	14.8%
30 miles	1,172,004	40.5%

Vision, Goals, and Objectives for Rail in Arkansas

The vision, goals, and objectives for the Arkansas State Rail Plan have been developed in close collaboration with stakeholders and reflect an extensive outreach effort to understand what Arkansans hope for the future of the Arkansas rail network. The vision, goals, and objectives also consider the overall AHTD mission and goals.

Vision

Arkansans will preserve, maintain, and improve a vibrant, safe, efficient, and environmentally sound railroad network that serves the economic development objectives and mobility needs of Arkansas communities throughout the state.

Goals/Objectives

Goal	Objectives
Improve safety of the Arkansas rail transportation system	▪ Improve safety of roadway/rail grade crossings ▪ Assist with grade separation and grade closures, where practical ▪ Support Operation Lifesaver and other efforts to increase public awareness of safety issues
Use rail transportation as a tool to drive economic development	▪ Communicate the benefits of rail transportation to Arkansas stakeholders ▪ Identify railroad-served sites ▪ Promote shovel-ready, railroad-served sites ▪ Facilitate communications among industry, economic development representatives, and logistics service providers
Preserve and expand the availability and efficiency of railroad transportation options in Arkansas	▪ Preserve existing railroad lines ▪ Maintain inactive railroad corridors intact ▪ Establish new or restored rail transportation service where appropriate ▪ Promote intermodal options to make rail transportation available to locations not directly served ▪ Support efforts to bring railroad lines in Arkansas to industry weight standards ▪ Promote efforts to bring railroad lines to a state of good repair ▪ Assist in eliminating capacity constraints where necessary ▪ Support improved connections between rail lines, roadways, and waterways, and between rail networks
Support passenger rail services	▪ Advance viable opportunities to link Arkansas population centers with intercity passenger rail service ▪ Advance viable opportunities for commuter rail service in Arkansas urban areas ▪ Support improvements to the existing Texas Eagle service for Arkansas
Identify funding sources	▪ Communicate the benefits of rail transportation to decision makers ▪ Investigate options for dedicated, reliable rail transportation funding source ▪ Promote opportunities to develop public/private partnerships ▪ Monitor and pursue federal funding and financing opportunities
Minimize environmental impacts of rail transportation in Arkansas	▪ Assist railroads and communities to develop cooperative solutions to adverse environmental impacts of rail transportation to land adjacent to railroad rights of way.

Organizational Structure of Rail Planning in Arkansas

Arkansas State Highway and Transportation Department

Rail planning in Arkansas is performed within the Multimodal and Project Planning Section (MPP), a component of the AHTD Transportation Planning and Policy (TPP) Division. Rail-related activities, conducted in cooperation with railroads, include preparation of the state rail plan, documentation of railroad system changes, management of databases, preparation of maps showing railroad operations, and rail line and railroad bridge studies. Other rail-related duties include administering shipper surveys, maintaining records and maps on rail line abandonments and mergers, rail freight data analysis, and participating in the American Association of State

Highway and Transportation Officials' (AASHTO) Standing Committee on Rail Transportation (SCORT) activities.

Rail line and railroad bridge studies are prepared for the state's Class II and Class III railroads in order to qualify railroads for possible federal funding assistance. Technical assistance is available to help with the formation of regional intermodal authorities under Arkansas Act 690 of 1997 and to help existing intermodal authorities in developing railroad projects and related rail transportation facilities. The AHTD is also the source of information for the Amtrak Texas Eagle rail passenger service, Arkansas' portion of the South Central High-Speed Rail Corridor, and the U.S. Department of Defense's Strategic Rail Corridor Network (STRACNET).

States receive annual federal funding for the improvement of roadway/rail grade crossings. Up to half of these funds can also be used for grade separation projects. In Arkansas, these funds are administered by the MPP Section. The MPP Section also maintains a railroad crossing inventory database, ranks all public crossings by a hazard rating using a Hazard Rating Index, and also participates in Operation Lifesaver activities. Operation Lifesaver is a nationwide program dedicated to reducing collisions, injuries, and fatalities at roadway/railroad grade crossings and on railroad rights-of-way.

Figure 1-1 shows the organization of AHTD and where the Transportation Planning and Policy Division is situated within the overall organization of the agency. Figure 1-2 displays the organization of the Transportation Planning and Policy Division.

Figure 1-1. Overall Organization of Arkansas State Highway and Transportation Department

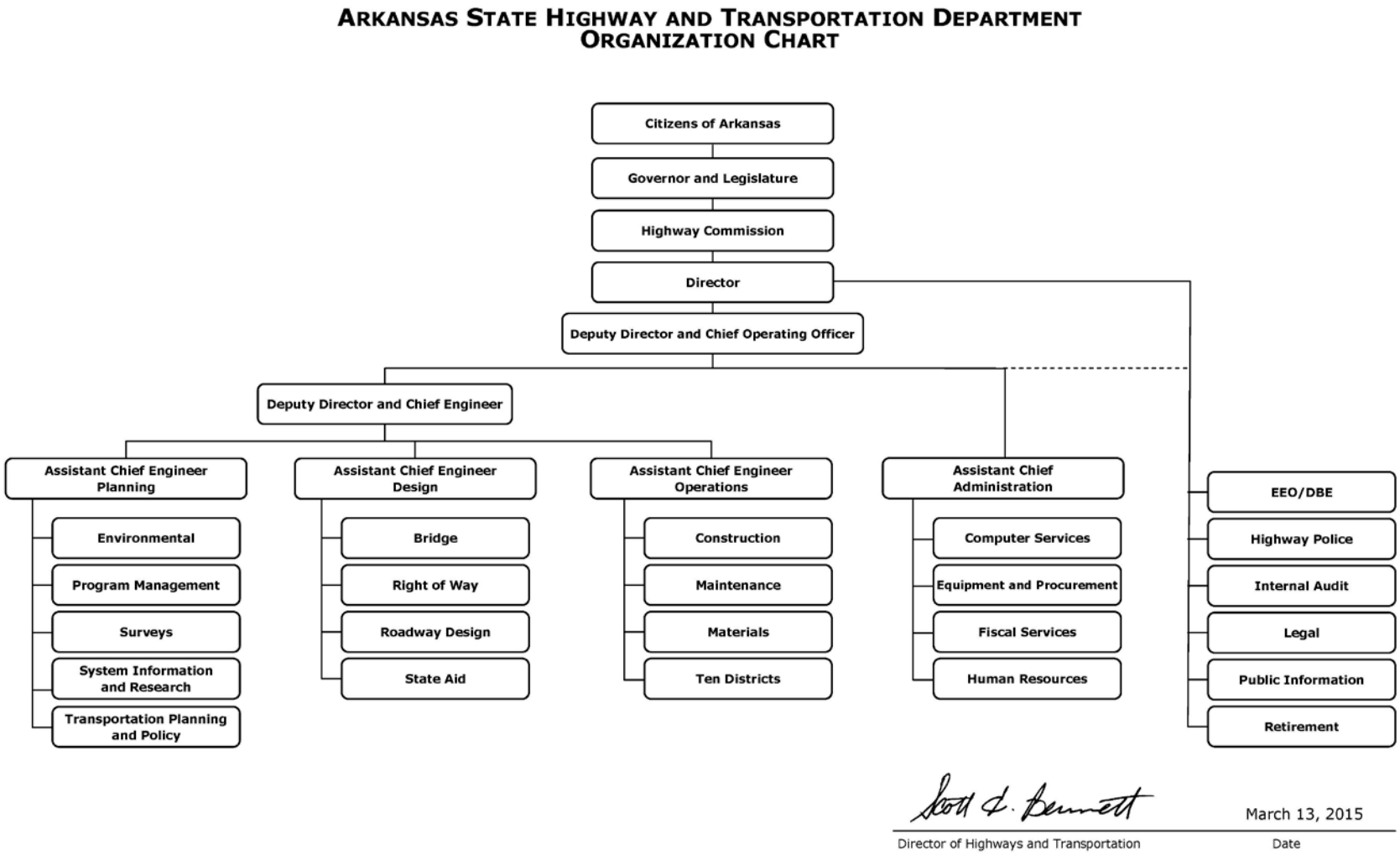
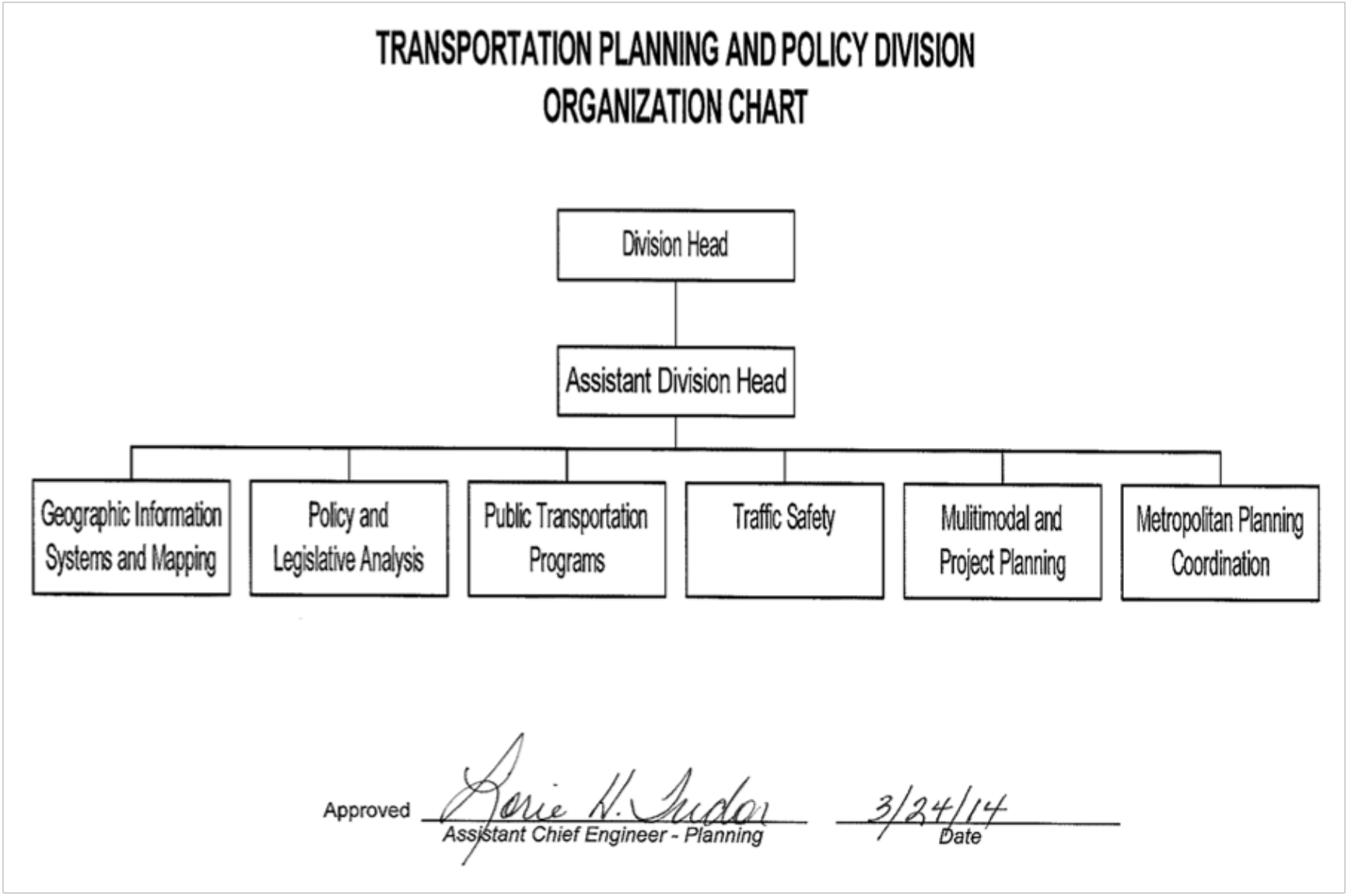


Figure 1-2. Transportation Planning and Policy Division



Other Public Sector Rail Planning in Arkansas

Although AHTD has primary responsibility for rail planning in the state, a number of other state and local agencies have an interest in the performance of the Arkansas rail system in carrying out their responsibilities.

Arkansas Economic Development Commission

The mission of the Arkansas Economic Development Commission (AEDC) is to develop and diversify the state's economy to enhance the quality of life for current and future Arkansans by stimulating job creation and retention in both new and existing business and industry**.** In recent years, the AEDC has been involved with a number of rail projects. When state funding is made available through the Arkansas general revenue fund for rail-related projects that involve economic development, the AEDC is usually the state agency through which this funding is made available.

Arkansas Waterways Commission

The Arkansas Waterways Commission (AWC) is the sole state agency responsible for developing, promoting, and protecting waterborne transportation in Arkansas. The AWC also promotes economic development for ports on the commercially navigable rivers of the state. Activities of the AWC are funded from general revenue appropriated by the General Assembly. The AWC has the authority to receive and use any federal, state, or private funds, donations or grants made available for the development, use, and expansion of river transportation resources of the state. The AWC, on numerous occasions, has worked with AHTD to improve rail access to ports in Arkansas.

Planning and Development Districts

Arkansas is divided into eight Planning and Development Districts (PDD). Each PDD covers six to twelve Arkansas counties which are bound together by common economic problems and opportunities. The PDDs provide many services including grant writing and administration for economic development projects in Arkansas. Some of these PDDs have been actively involved in rail project in recent years. The eight PDD areas include the following counties:

- *Central Arkansas Planning & Development District*—Faulkner, Lonoke, Monroe, Prairie, Pulaski, and Saline
- *East Arkansas Planning & Development District*—Clay, Craighead, Crittenden, Cross, Greene, Lawrence, Lee, Mississippi, Phillips, Poinsett, Randolph, and St. Francis
- *Northwest Arkansas Economic Development District*—Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, and Washington
- *Southeast Arkansas Economic Development District*—Arkansas, Ashley, Bradley, Chicot, Cleveland, Desha, Drew, Grant, Jefferson, and Lincoln
- *Southwest Arkansas Planning & Development District*—Calhoun, Columbia, Dallas, Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Ouachita, Sevier, and Union
- *West Central Arkansas Planning & Development District*—Clark, Conway, Garland, Hot Spring, Johnson, Montgomery, Perry, Pike, Pope, and Yell

- *Western Arkansas Planning & Development District*—Crawford, Franklin, Logan, Polk, Scott, and Sebastian
- *White River Planning & Development District*—Cleburne, Fulton, Independence, Izard, Jackson, Sharp, Stone, Van Buren, White, and Woodruff

Metropolitan Planning Organizations

Metropolitan planning organizations (MPO) are regional transportation policy-making organizations that are funded in part by the federal government and are required in urbanized areas with populations over 50,000. MPOs are designated by local officials in cooperation with federal and state agencies. They are required to maintain Long Range Transportation Plans, as well as Transportation Improvement Programs (TIP), which include projects to be funded using federal and other sources. Federally funded transportation projects within metropolitan areas are expected to be included with the relevant MPO's TIP. As the role of MPOs has evolved to consider freight and passenger rail alternatives, these organizations, in many cases, have begun to take a more active role in rail planning. There are eight MPOs in Arkansas, with the following jurisdictions:

- *Frontier Metropolitan Planning Organization*—Portions of Crawford and Sebastian Counties, including the Arkansas municipalities of Alma, Barling, Bonanza, Central City, Fort Smith, Greenwood, Kibler, Lavaca, and Van Buren.
- *METROPLAN*—Pulaski, Saline and Faulkner Counties, including Little Rock and other municipalities within and a portion of Lonoke County, and the municipalities of Austin, Cabot, Lonoke, and Ward.
- *Tri-Lakes Metropolitan Planning Organization*—Portions of Hot Spring and Garland Counties, including a portion of the municipality of Hot Springs Village and the municipalities of Hot Springs, Mountain Pine, and Fountain Lake.
- *Jonesboro Metropolitan Planning Organization*—A portion of Craighead County, including the municipalities of Jonesboro, Brookland, Bay, and Bono.
- *Northwest Arkansas Regional Planning Commission*—Benton and Washington Counties, including the municipalities within.
- *Southeast Arkansas Regional Planning Commission*—A portion of Jefferson County, including the municipalities of Pine Bluff and White Hall.
- *Texarkana Metropolitan Planning Organization*—A portion of Miller County, including the Arkansas municipality of Texarkana.
- *City of West Memphis*—A portion of Crittenden County, including the municipalities of West Memphis and Marion.

The Frontier and Texarkana MPOs along with the Northwest Arkansas Regional Planning Commission have jurisdictions that reach across state boundaries and include not only locations in Arkansas but also in Oklahoma, Texas, and Missouri, respectively.

Intermodal Authorities

Since the Arkansas General Assembly adopted Act 690 in 1997, seven intermodal authorities have been created. Intermodal authorities are public corporations authorized to acquire, equip, construct, maintain, and operate regional intermodal facilities. They can be created by two or more contiguous counties and/or municipalities. Intermodal authorities have the power to contract, raise, receive, and disburse funds; acquire property; and otherwise operate as a public corporation. Intermodal authorities can also operate as Foreign Trade Zones, with the associated tax advantages. Intermodal authorities have sponsored or are sponsoring a variety of rail projects, including rail-served river ports, transload facilities, rail-served industrial parks, rail-served industrial locations, or locations that include some combination of these elements. Intermodal authorities in Arkansas include the following:

- The *Regional Intermodal Transportation Authority of Western Arkansas* (RITA) was formed by Crawford and Sebastian Counties along with the cities of Fort Smith and Van Buren. The purpose of RITA is to plan and provide for, and to develop initiatives and projects important to that region's future economic development, particularly improvements that support the movement of freight.
- The *Southeast Arkansas Regional Intermodal Authority* was created by the cities of Warren and Monticello along with Bradley and Drew Counties, and is developing a regional intermodal facility east of Wilmar, Arkansas, south of U.S. 278.
- The *Northeast Arkansas Regional Intermodal Facilities Authority* (NEARIFA) serves Randolph, Lawrence, and Clay Counties and four cities: Corning, Pocahontas, Walnut Ridge, and Hoxie. Its mission is to support the prosperity of the northeast region of Arkansas.
- The *Blytheville-Mississippi County Intermodal Authority* is working to improve transportation options for the steel industry by constructing a slackwater harbor, extending rail lines, connecting to major highways, adding storage facilities, and possibly obtaining Foreign Trade Zone status. The authority is also assisting the Port of Osceola to develop rail access to the port's facilities.
- The *River Valley Regional Intermodal Facilities Authority* was established by Pope County and the City of Russellville. The authority intends to develop an intermodal transportation and industrial facility on the McClellan-Kerr Arkansas River Navigation System, including a slackwater harbor, a regional airport with air freight terminal, rail service by a short line railroad, a highway bypass connection with I-40, a truck-rail transfer facility, warehouses, an industrial park, and a foreign trade zone.
- The *Southwest Arkansas Regional Intermodal Authority (dba Southwest Arkansas Regional Intermodal Coalition)* was established by Clark, Dallas, Pike, Montgomery, and Nevada Counties, and the municipalities of Amity, Arkadelphia, Caddo Valley, Fordyce, Glenwood, Gurdon, Murfreesboro and Prescott. The Southwest Arkansas Regional Intermodal Authority's mission is to support job creation and new business development, assist existing businesses, and enhance the quality of life by working with participating counties and communities to share resources and maximize assets found in the region.

- The *Arkansas River Regional Intermodal Facilities Authority* was formed in 2000 at Pine Bluff and is an affiliate of the Economic Development Alliance of Jefferson County. The group has been inactive since 2011.

Port Authorities

River ports in Arkansas range in their ownership structure. Most are privately operated, but the physical locations of many are owned by county or local governments. Given the importance of rail access to port facilities, these port authorities have an interest in the performance of the Arkansas freight rail system.

Chapter 2 Description and Inventory of Arkansas Freight Rail System

U.S. freight railroads are generally separated into three categories based on their annual revenues: Class I for freight railroads with annual operating revenues of $467.0 million or more, Class II for freight railroads with revenues between $37.4 million and $467.0 million, and Class III for all other freight railroads. Figure 2-1 shows the current freight rail system in Arkansas.

In Arkansas there are 26 freight railroads: three Class I railroads, and 23 Class III railroads. Table 2-1 lists railroads by classification. The table also includes alpha codes[7] and miles of track operated (excluding trackage rights and miles owned but leased to others).

Class I Railroads

The state of Arkansas is served by three Class I Railroads: the Union Pacific Railroad (UP), the BNSF Railway (BNSF) and the Kansas City Southern Railway (KCS). Class I railroads primarily provide long-haul delivery service to national market areas and to international freight exchange points, such as deep-water ports of entry. Class I railroads also transport freight between Canada, Mexico, and all areas of the continental United States. Examples of value added services provided by the Class I railroads to customers are intermodal rail/truck service, logistics management, dedicated unit trains, product packaging and export shipping. Based on miles of track, the largest Class I railroad operating in Arkansas is the UP.

Class I Railroads are organized into divisions, which are major operating units or service areas of these railroads. Each rail line within a division is assigned a subdivision. Figure 2-2 displays Class I railroad subdivisions in Arkansas and the number of trains per day that these subdivision carry. As can be seen, the UP mainlines which traverse the state northeast/southwest, generally have the highest train density, including the Little Rock, Hoxie, Pine Bluff, and Jonesboro Subdivisions. These are segments of the UP mainline between Chicago, St. Louis, and Texas. The BNSF Thayer South Subdivision also carries a relatively high volume of freight as part of the BNSF Transcon Corridor's "Southeast Gateway." Detailed descriptions of each Class I railroad in Arkansas follow.

[7] Railroad Standard Carrier Alpha Codes (SCACs) are assigned based on operating authority approved by the Surface Transportation Board

Figure 2-1. Arkansas Freight Rail System

RAILROADS

AKMD	Arkansas Midland Railroad	DVS	Delta Valley & Southern Railway	LRWN	Little Rock & Western Railway
ALM	Arkansas, Louisiana & Mississippi Railroad	EACH	East Camden & Highland Railroad	MNA	Missouri & Northern Arkansas Railroad
AM	Arkansas & Missouri Railroad	EDW	El Dorado & Wesson Railway	NLA	North Louisiana & Arkansas Railroad
ARS	Arkansas Southern Railroad	FGRS	Friday-Graham Rail Spur	OUCH	Ouachita Railroad
BNSF	BNSF Railway	FP	Fordyce & Princeton Railroad	PNW	Prescott & Northwestern Railroad
BXN	Bauxite & Northern Railroad	FSR	Fort Smith Railroad	SAR	Southeast Arkansas Economic Development District
C&S	Camden & Southern Railroad	KCS	Kansas City Southern Railway	UP	Union Pacific Railroad
DQE	DeQueen & Eastern Railroad	KRR	Kiamichi Railroad	WSR	Warren & Saline River Railroad
DR	Dardanelle & Russellville Railroad	LNW	Louisiana & North West Railroad		
		LRPA	Little Rock Port Authority Railroad		

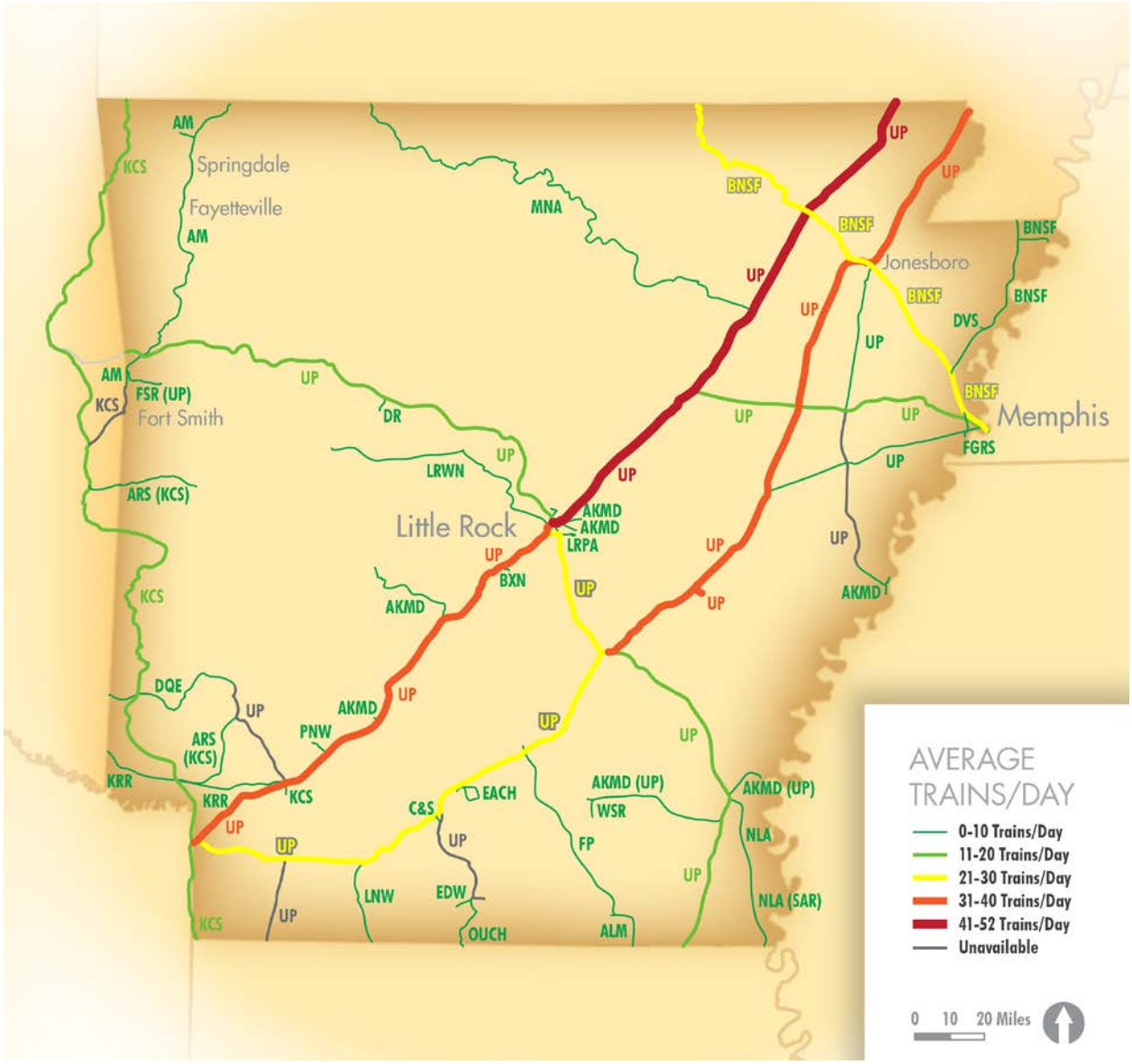
Table 2-1. Freight Railroads in Arkansas

Railroad	Alpha Code	Miles
Class I Railroads		
BNSF Railway	BNSF	198
Kansas City Southern Railway	KCS	158
Union Pacific Railroad	UP	1,327
Class I Total		1,683
Class III Railroads		
Arkansas & Missouri Railroad	AM	108
Arkansas Louisiana and Mississippi Railroad	ALM	12
Arkansas Midland Railroad	AKMD	149
Arkansas Southern Railroad	ARS	53
Bauxite & Northern Railway	BXN	6
Camden & Southern Railroad	CS	3
Dardanelle & Russellville Railroad	DR	5
Delta Valley & Southern Railway	DVS	2
DeQueen & Eastern Railroad	DQE	45
East Camden & Highland Railroad	EACH	54
El Dorado & Wesson Railway	EDW	6
Fordyce and Princeton Railroad	FP	55
Fort Smith Railroad	FSR	41
Friday - Graham Rail Spur	FGRS	3
Kiamichi Railroad	KRR	65
Little Rock and Western Railway	LRWN	79
Little Rock Port Authority Railroad	LRPA	17
Louisiana & North West Railroad	LNW	25
Missouri & Northern Arkansas Railroad	MNA	177
North Louisiana & Arkansas Railroad	NLA	46
Ouachita Railroad	OUCH	13
Prescott & Northwestern Railroad	PNW	8
Warren & Saline River Railroad	WSR	7
Class III Total		979
Class I and Class III		2,662

Union Pacific Railroad

The Union Pacific Railroad (UP) operates over 31,900 route miles, connecting 23 states in the western two-thirds of the United States. UP was incorporated by an act of Congress, the Pacific Railroad Act of 1862, during the Civil War. The UP of today is the product of numerous mergers, notably the Missouri Pacific, the Chicago and Northwestern, Western Pacific, Missouri-Kansas-Texas and Southern Pacific. UP is headquartered in Omaha, Nebraska.

Figure 2-2. Trains per Day of Arkansas Class I Railroad Subdivisions



Union Pacific Railroad owns by far the most track mileage in Arkansas. Ten different subdivisions comprise UP's 1,327-mile network in Arkansas. The three primary routes in Arkansas are the Hoxie Subdivision (carrying 35-45 trains per day), the Little Rock Subdivision (carrying 30-40 trains per day), and the Jonesboro Subdivision (carrying 25-35 trains per day) (Figure 2-3).

UP's operational hub in Arkansas is in North Little Rock, where the largest locomotive repair shop and the second-largest freight car classification yard in the entire UP system are located.

UP has operated "directional service" in Arkansas since its merger with the SP in 1996. Northbound traffic moves on the line through Little Rock, and southbound freight moves on the former SP line through Pine Bluff. This arrangement is sometimes referred to as "paired double track," where parallel rail lines effectively serve as double track, although they do not share the same right of way.

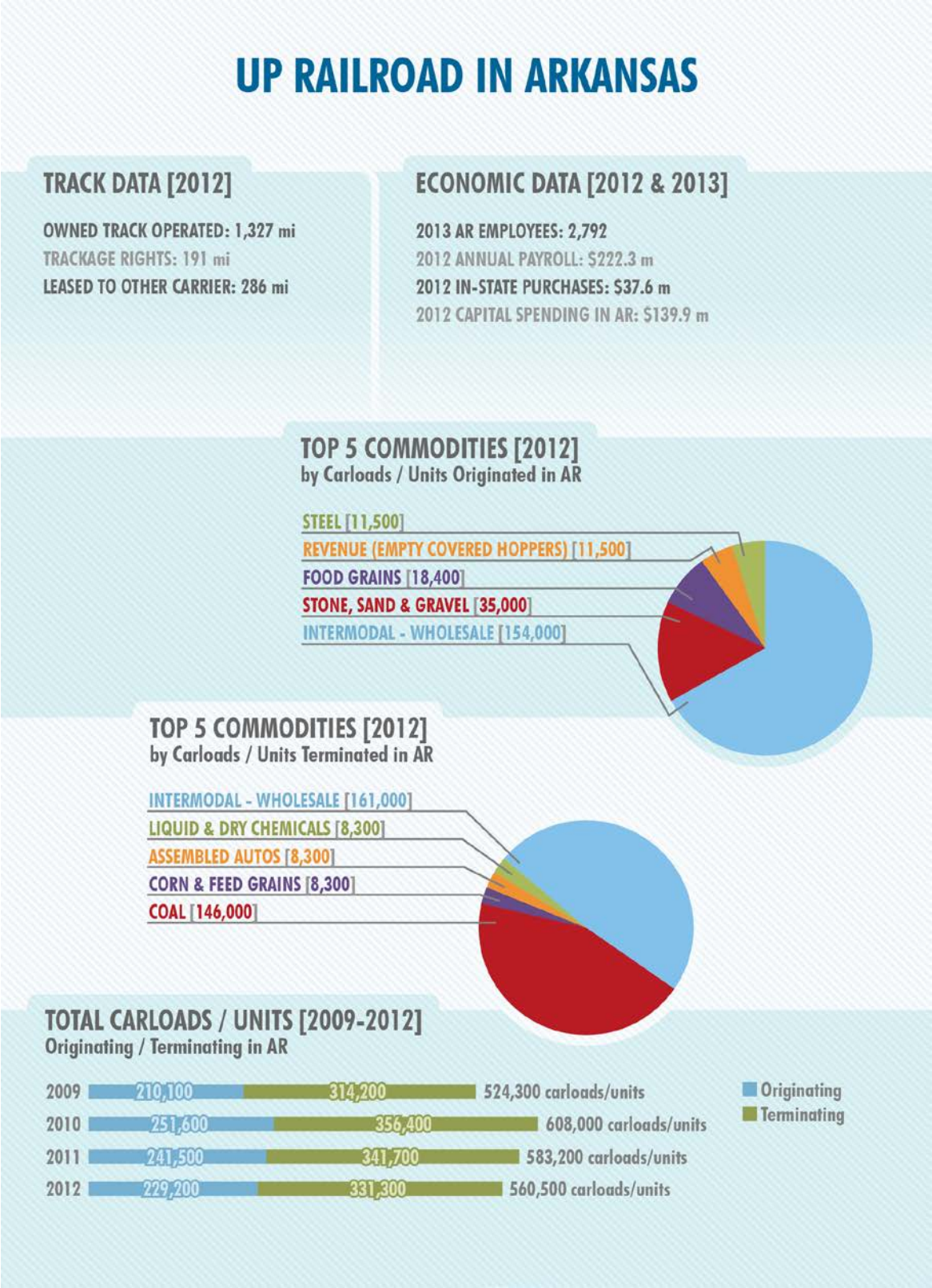
Figure 2-3. Union Pacific Railroad in Arkansas

UP is the predominant Class l rail carrier in Arkansas in terms of originating and terminating rail traffic, originating 79 percent and terminating 78 percent of all carloads/units originated or terminated by Class I railroads in the state. UP originated 229,000 carloads/units in the state in 2012. Primary commodities originated were intermodal (154,000 units); stone, sand and gravel (35,000 cars); and food grains (18,400 cars). A total of 331,000 units/carloads were terminated by UP in Arkansas in 2012, primarily consisting of intermodal shipments (161,000 units) followed closely by coal (146,000 carloads).

Amtrak operates passenger train service (the Texas Eagle) over UP through the state, connecting Chicago and Los Angeles through St. Louis, Little Rock, Dallas, and San Antonio.

UP has a large economic presence in the state, employing 2,792 people in Arkansas with a payroll of $222.3 million. UP purchased $37.6 million worth of goods and services in Arkansas, and invested $139.9 million of capital spending in Arkansas in 2012. UP provides connections to nineteen short line railroads in the state (Figure 2-4).

Figure 2-4. Profile of Union Pacific Railroad in Arkansas



Source: UP

BNSF Railway

BNSF Railway (BNSF) owns and operates over 32,000 route miles of track in 28 states and two Canadian provinces. BNSF, headquartered in Fort Worth, Texas, was formed in 1996 with the merger of the Atchison Topeka and Santa Fe Railway and the Burlington Northern Railroad.

BNSF owns two primary rail corridors in Arkansas operating over 198 miles of track. The two subdivisions in Arkansas are the Thayer South Subdivision and the River Subdivision (Figure 2-5). The Thayer South Subdivision operates between the Arkansas/Missouri border and the BNSF Tennessee Yard in Memphis. The River Subdivision is between SE Junction, just south of Saint Louis, Missouri, and River Junction, located in Turrell, Arkansas. The Thayer South Subdivision carries approximately three and a half times the rail freight traffic that the River Subdivision carries. The Thayer South Subdivision is a component of BNSF's "Transcon" route, one of BNSF's three "Corridors of Commerce." As its name suggests the "Transcon" corridor crosses much of the North American continent, with a western terminus in California and an eastern terminus in Atlanta. BNSF characterizes the section between Oklahoma and Atlanta as the "Southeast Gateway." East of Arkansas, the Transcon passes through Memphis and then between Birmingham and Atlanta using trackage rights over the CSX Railroad. BNSF representatives consulted for this Rail Plan characterize the Southeast Gateway as having high growth potential and being an important intermodal container corridor. Twenty three thousand carloads per year of freight use the 141 miles of BNSF track on the Transcon corridor in Arkansas. The recent completion of a $200 million expansion/reconstruction of the BNSF's Memphis Intermodal Facility will double BNSF's lift capacity to one million lifts per year.

BNSF representatives also consider the River Subdivision to have growth potential for the BNSF within the Arkansas. The rail line has direct access to Mississippi River ports, available capacity and promising locations for economic development. Large steel mills exist in the area and a new steel mill (Big River Steel) is being developed. A crude oil transfer facility is expected to begin operations soon transferring oil between rail and barges on the Mississippi River.

In addition to the lines that BNSF owns, the company also operates over 854 miles of track through trackage rights in the state. Many of BNSF's trackage rights were granted through an agreement between the BNSF and the UP as part of the merger between the UP and the SP in 1996. These were granted to mitigate potential competitive impacts of the merger, since both the UP and SP served locations in Arkansas before the merger. The terms of BNSF trackage rights vary by location. In some instances, BNSF has "overhead" trackage rights whereby BNSF trains can pass over a segment of the UP, but not serve any local customers. In other cases, BNSF has full trackage rights, whereby the company can serve local customers on the UP's route. BNSF provides connections to nine short line railroads in the state.

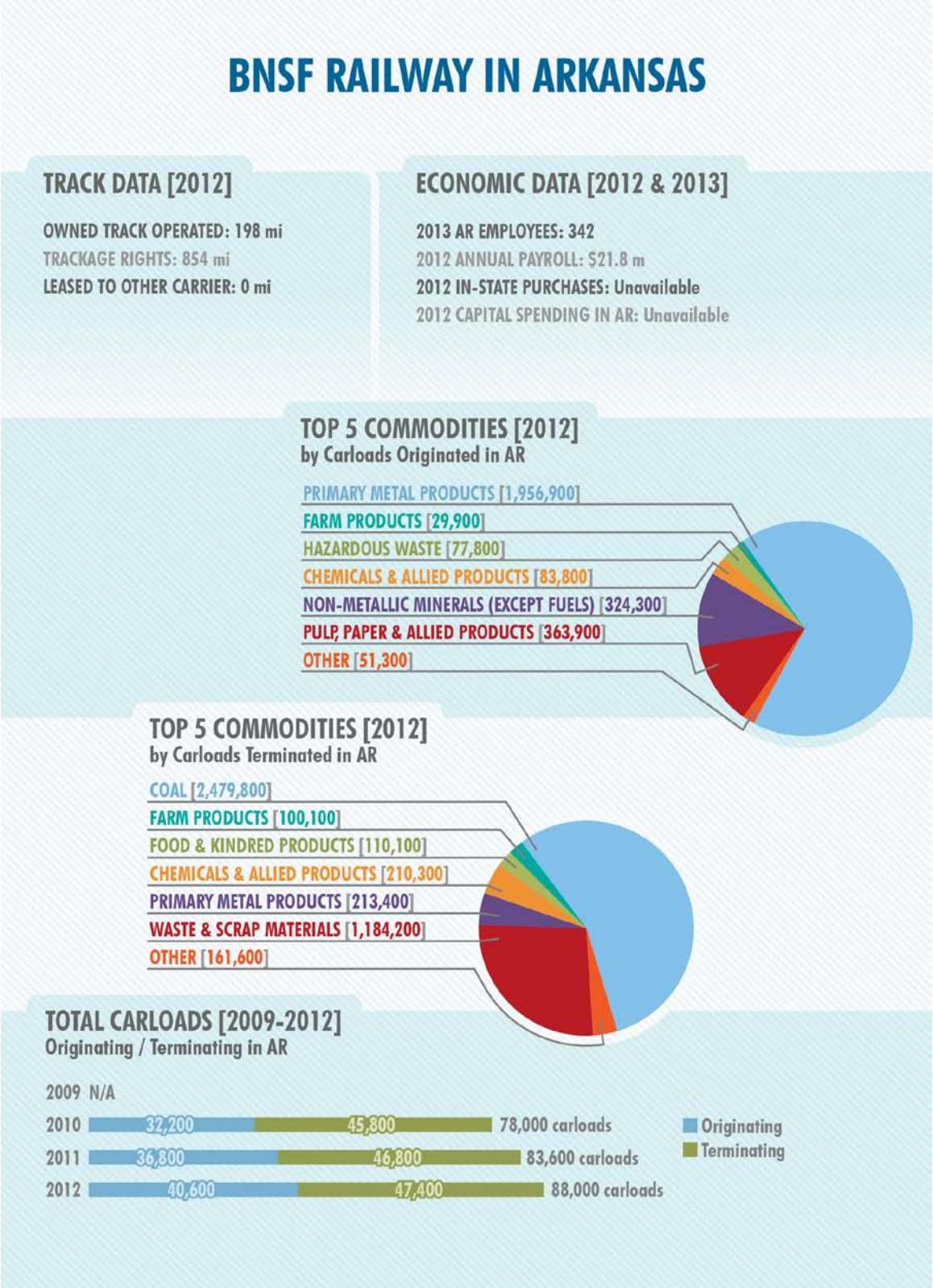
BNSF originated 41,000 carloads of rail freight traffic in Arkansas in 2012 (Figure 2-6). The primary commodities originating in Arkansas that are shipped by BNSF are primary metal products (nearly two million tons), pulp and paper products (364,000 tons), and non-metallic minerals (324,000 tons). BNSF delivered 47,000 carloads to Arkansas destinations in 2012. Coal was by far the largest commodity delivered (2.48 million tons) followed by waste and scrap materials (1.2 million tons). BNSF also provides intermodal rail service to/from Memphis, Tennessee, which

also serves businesses in Arkansas, not cited in the above statistics. This is in contrast to UP, whose intermodal terminal to serve the Memphis area is in Arkansas.

BNSF employees 198 people in Arkansas with a payroll of $21.8 million.

Figure 2-5. BNSF Railway in Arkansas

Figure 2-6. Profile of BNSF Railway in Arkansas



Source: BNSF

Kansas City Southern Railway Company

Kansas City Southern Railway (KCS) operates over 3,200 miles of track in ten states within the central portion of the United States. The KCS has the shortest route between Kansas City and Mexico, and three KCS subsidiaries operate in Mexico. KCS's primary emphasis is moving freight in the north/south direction and has major United States hubs in Kansas City, Shreveport, New Orleans, and Dallas.

KCS' operations in Arkansas are in the western part of the state. KCS operates 158 miles of track in the state, primarily hauling overhead rail freight traffic with neither an origin nor a destination within Arkansas (Figure 2-7).

Two KCS subdivisions are located along the western edge of Arkansas. The Shreveport Subdivision and Heavener Subdivisions both carry 14 trains per day on average. A KCS branch line connects Waldron, Arkansas, to Heavener, Oklahoma.

KCS originates and terminates a small volume of freight traffic in Arkansas when compared to BNSF and UP (Figure 2-8). KCS originated 20,000 carloads in Arkansas and delivered 45,000 carloads in 2012. Crushed and broken stone is the primary commodity originating in Arkansas on the KCS (10,000 carloads in 2012). Other leading commodities originating are wood pulp (2,000 carloads), hydraulic equipment (1,500 carloads), and scrap iron and steel (1,000 carloads). The primary commodities delivered to Arkansas by KCS are coal (21,000 carloads), corn (8,000 carloads) pulpwood chips and hardwood (2,000 carloads) and pulp fiber board (2,000 carloads).

KCS employees 56 people in Arkansas with a payroll of $4.8 million.

Figure 2-7. Kansas City Southern Railway in Arkansas

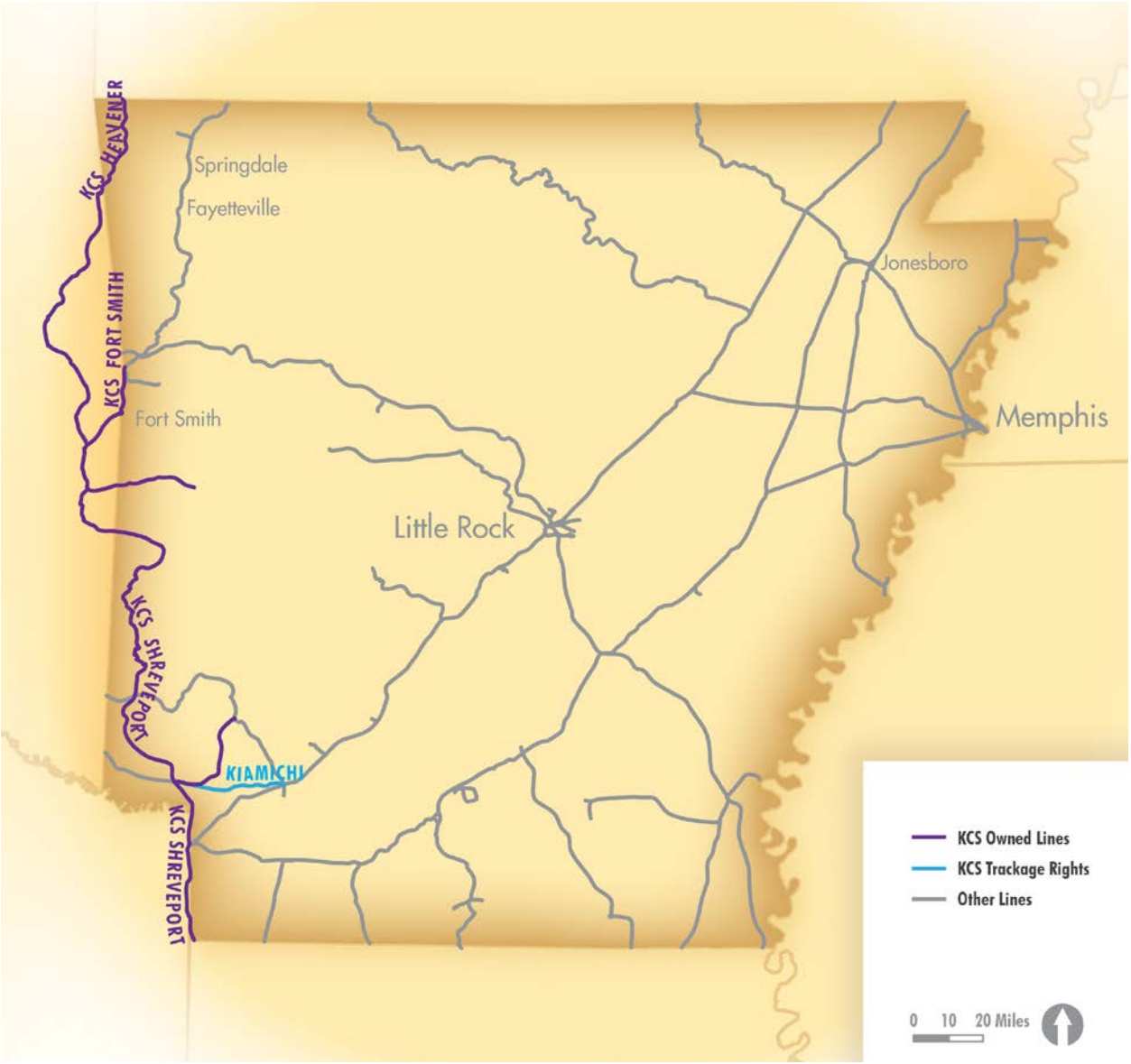
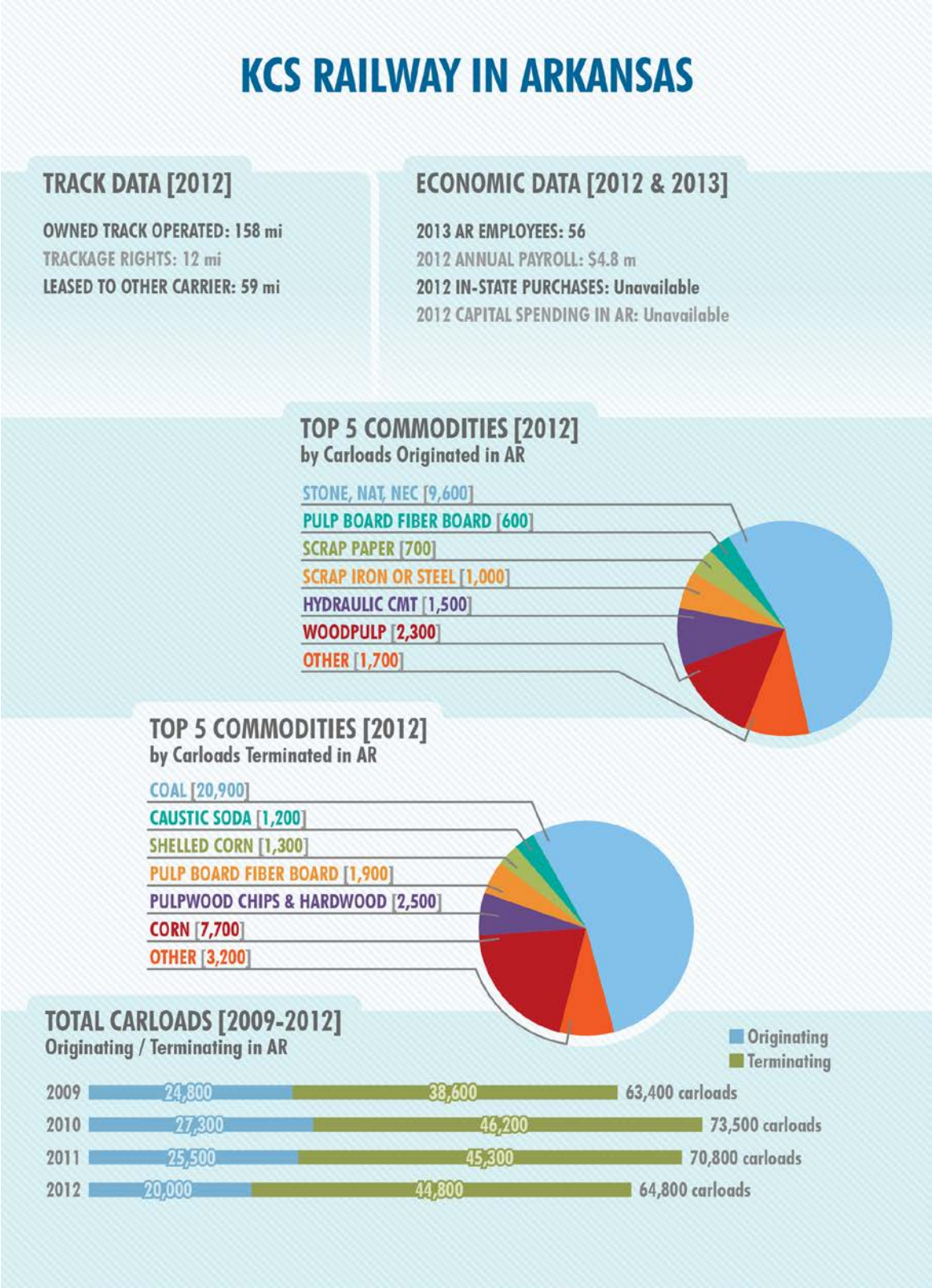


Figure 2-8. Profile of Kansas City Southern Railway Company in Arkansas



Source: KCS

Class II and Class III Railroads

Short line railroads are an important component to the Arkansas State rail system. Generally, the term "short line" railroad is applied to those carriers classified as "Class III" by the U.S. Surface Transportation Board—carriers with less than $37.4 million in annual revenues. Carriers with annual revenues between $37.4 million and $467.0 million are classified by the U.S. Surface Transportation Board (STB) as Class II and are frequently referred to as "regional railroads." The primary roles of short line and regional railroads are to provide shippers with a connection to Class I railroads (railroads with annual revenues over $467.0 million) and feed local traffic into the greater national rail system. Arkansas is home to 23 short line railroads, all of which are Class III and each with unique rail infrastructure, capabilities, services and opportunities. These services include dependable and low cost railcar pick-up and delivery, along with feeder railcar services to the Class I railroads for long-haul freight delivery. Many offer a full range of logistics service such as warehousing and transloading, product marketing, and trucking.

Short line railroads in Arkansas account for over 160,000 carloads of traffic per year, employ over 270 employees in the state (with annual payroll over $13 million), spend over $19 million in annual expenditures on both supplies and capital programs within the state, and operate just under 1,000 miles of trackage. These short lines serve 200–300 Arkansas shippers. They are diverse in size and capabilities, yet each has a significant impact in its own local economy.

Table 2-2. Arkansas Short Line Railroad Mileages

Railroad	Miles	Railroad	Miles
Local Railroads		**Switching/Terminal Railroads**	
Arkansas & Missouri Railroad	108	Camden & Southern Railroad	3
Arkansas Louisiana & Mississippi Railroad	12	Delta Valley & Southern Railway	2
Arkansas Midland Railroad	149	East Camden & Highland Railroad	54
Arkansas Southern Railroad	53	Fordyce & Princeton Railroad	55
Bauxite & Northern Railway	6	Fort Smith Railroad	41
Dardanelle & Russellville Railroad	5	Friday - Graham Rail Spur	3
DeQueen & Eastern Railroad	45	Little Rock Port Authority Railroad	17
El Dorado & Wesson Railway	6	**Total**	**979**
Kiamichi Railroad	65		
Little Rock & Western Railway	79		
Louisiana & North West Railroad	25		
Missouri & Northern Arkansas Railroad	177		
North Louisiana & Arkansas Railroad	46		
Ouachita Railroad	13		
Prescott & Northwestern Railroad	8		
Warren & Saline River Railroad	7		

Over half of the short line railroads are owned by parent companies with multiple lines within and outside the state.

Arkansas Short Lines is an Arkansas non-carrier rail holding company that has acquired or established service on four Arkansas railroads during the last two years:

- Camden & Southern Railroad
- Dardanelle & Russellville
- Ouachita Railroad
- North Louisiana & Arkansas Railroad

These short lines are located throughout the state, yet each has a distinct set of operations, customers, and traffic make up.

Genesee & Wyoming is a large railroad holding company that owns and/or operates over 100 railroads and switching operations in North America, Europe, and Australia, including nine of Arkansas' short lines:

- Arkansas Midland Railroad
- Prescott & Northwestern Railroad
- Warren & Saline River Railroad
- Arkansas Louisiana & Mississippi Railroad
- Bauxite & Northern Railway
- Fordyce & Princeton Railroad
- Kiamichi Railroad
- Little Rock & Western Railway
- Missouri & Northern Arkansas Railroad

Patriot Rail, another railroad holding company with several short line railroads across the country; owns two short line railroads in Arkansas:

- DeQueen & Eastern Railroad
- Louisiana & North West Railroad

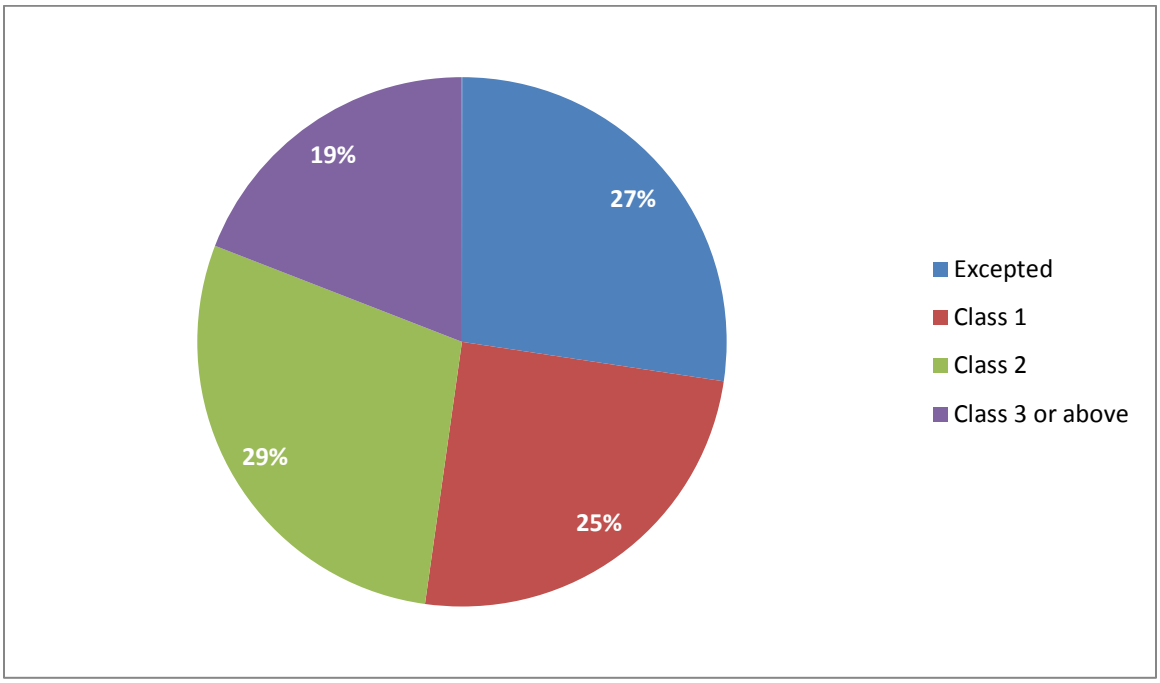
Class II and Class III Railroad State of Repair

The U.S. Federal Railroad Administration (FRA) classifies track by maximum allowable speed as follows:

- Excepted: Less than ten MPH, no hazardous materials or passenger rail service
- Class 1: ten MPH for freight
- Class 2: 25 MPH for freight
- Class 3 and above: 40+ MPH for freight

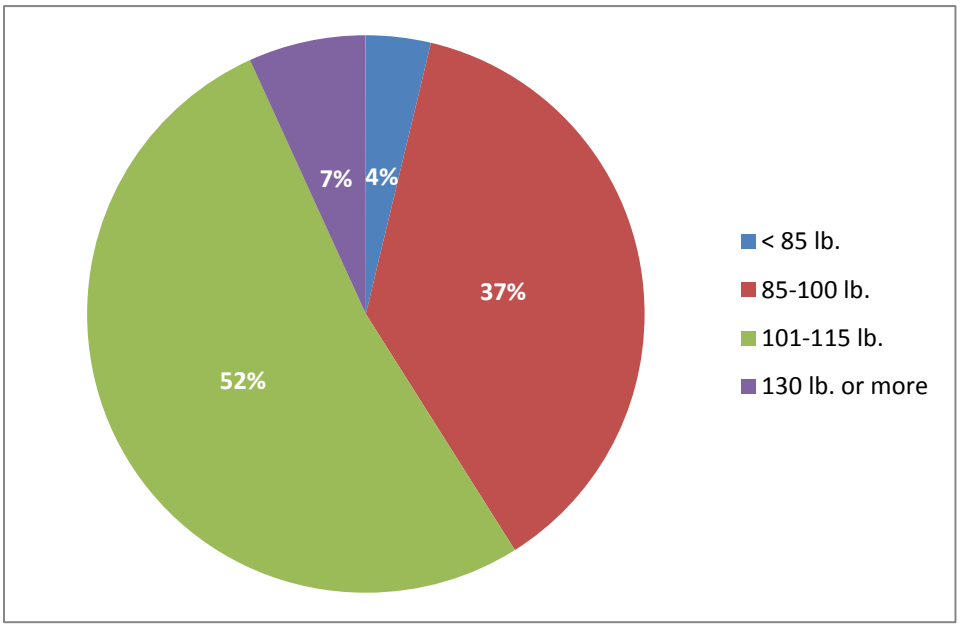
The FRA track classifications serve as a minimum for safe operations on a rail line at a given speed. Excepted track is considered to be in poor state of repair. Some states establish a goal that all rail lines will operate at least at Class 2 standards. Of the trackage operated by short line railroads in Arkansas, about 286 miles are Excepted track and 259 miles are FRA Class 1 track.

Figure 2-9. Distribution of Arkansas Short Line Mileage by FRA Track Class, 2013



Rail weight impacts the speeds at which trains can operate and the size of railcars that can be accommodated on rail lines. Generally, rail must be at least 100 pounds per yard to accommodate industry standard 286,000-pound railcars, although tie conditions and other factors influence weight restrictions as well. Class I railroads require that new industrial locations have at least 112-pound rail. Rail is costly to replace and can increase the cost of upgrading or rehabilitating a rail line. Over half of the rail on Arkansas short lines is over 100 pounds per yard (Figure 2-10).

Figure 2-10. Percentages of Arkansas Short Line Track Mileage by Weight



Short line railroads can generally be categorized as "local railroads" and "switching railroads." Local railroads provide line-haul transportation service. Switching railroad typically operate within a yard or a terminal area, making up and breaking down trains, storing and classifying cars, serving industries within yard limits. Each Class III railroad within Arkansas is summarized in the following sections based on non-confidential portions of a survey performed of short lines and publicly available information, such as from short line summaries on Class I railroad websites.

Local Railroads

Arkansas & Missouri Railroad

The Arkansas & Missouri Railroad (AM) was established in 1986 and operates 142 miles of track between Monett, Missouri and Fort Smith, Arkansas. One hundred and three of these track miles are within the state of Arkansas. AM's headquarters, including most of its employees and services, is located in Springdale, Arkansas. The line connects Arkansas freight and supplies to the national rail system through three Class I railroad connections with the BNSF, KCS, and UP. AM also provides haulage of UP traffic between Van Buren and Fort Smith. Traffic includes grain and feed supplements, paper products, sand, plastic, food products, scrap steel, lumber, aluminum, and bauxite. AM provides rail service to the river ports of Fort Smith and Van Buren. AM provides transloading and trucking services under its sister company, Ozark Transmodal, Inc., and operates transload facilities in Gateway, Springdale, and Fort Smith, including over seven acres of space and 40,000 square feet of warehouse.

Table 2-3. Arkansas & Missouri Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
108	103	5	0	Class 3: 103 Class 1: 5

Figure 2-11. Arkansas & Missouri Network in Arkansas

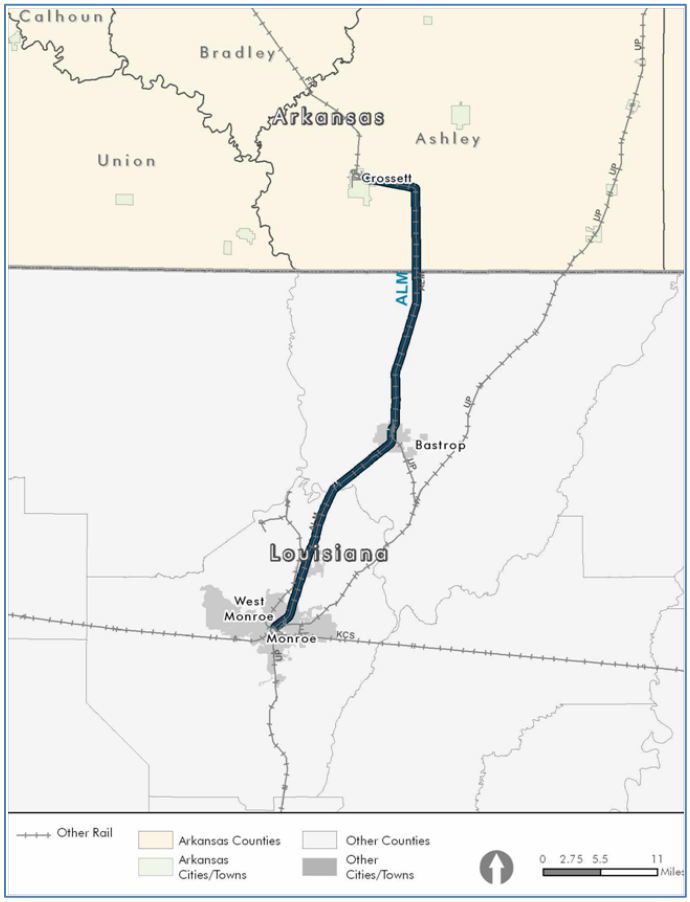
Arkansas, Louisiana & Mississippi Railroad

The Arkansas Louisiana & Mississippi Railroad (ALM) is one of nine Arkansas short line railroads owned and operated by Genesee & Wyoming. Genesee & Wyoming acquired the ALM in 2003 from Georgia Pacific. The line runs 53 miles from Crossett, Arkansas south to Monroe, Louisiana. About 12 miles of the line are located within the state of Arkansas. On the north end at Crossett, ALM interchanges with the Fordyce & Princeton Railroad and UP. Traffic consists of lumber, paper, forest products, and chemicals.

Table 2-4. Arkansas, Louisiana & Mississippi Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
12	12	0	0	Mostly Class 1, some Class 2

Figure 2-12. Arkansas, Louisiana & Mississippi Network in Arkansas



Arkansas Midland Railroad Co.

The Arkansas Midland Railroad (AKMD) was established in 1992 by the Pinsly Railroad Company and was sold to the Genesee & Wyoming in early 2015. The AKMD operates seven branch lines across the state of Arkansas totaling 125 miles. Traffic consists of forest and grain products, aggregates, building materials, cottonseeds, and chemicals. Since the lines differ in the geography, operations, infrastructure, and markets served, they are addressed separately.

Arkansas Midland—Cypress Bend Branch

The Cypress Bend Branch line runs from Cypress Bend, Arkansas to the UP rail yard in McGehee, Arkansas. A transload facility is located in McGehee with a 25+ car capacity. The branch is leased from the UP.

Table 2-5. Arkansas Midland—Cypress Bend Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
19.5	0	19.5	0	Class 2: 7.7 Class 1: 11.8

Arkansas Midland—Gurdon Branch

The Gurdon Branch line has been operated by AKMD since 2011. AKMD owns this 2.9-mile section that runs northerly from Gurdon, Arkansas. A team track on the line has three car spots. Also on the Gurdon Branch is storage capacity for 24 cars.

Table 2-6. Arkansas Midland—Gurdon Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
2.9	2.9	0	0	Excepted: 2.9

Arkansas Midland—Helena Branch

The Helena Branch line runs between Helena Harbor and Lexa, Arkansas where it connects with the UP. Several transload facilities are also located in Helena including the Scoular rail-barge facility with a capacity of 12 cars, the J. Kelly Rail-truck facility also with a 12 car capacity, the Delta Oil rail-truck facility with a capacity of 20 cars, and the Port of Helena rail-barge facility. The Helena Branch line has a storage capacity of 500 cars.

Table 2-7. Arkansas Midland—Helena Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
16	12.7	3.3	0	Excepted: 16

Arkansas Midland—Hot Springs Branch

The Hot Springs Branch line runs from Mt. Pine, Arkansas to Malvern, Arkansas where it connects to UP. A Railroad Distribution Services transload facility is also located in Jones Mill, Arkansas with nine car spots. Storage capacity for 650 railcars is available on the line.

Table 2-8. Arkansas Midland—Hot Springs Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
43.4	43.4	0	0	Class 2: 23.5 Class 1: 19.9

Arkansas Midland—Jacksonville Branch

The AKMD operates the 4.2 mile Jacksonville Branch line from Jacksonville, Arkansas northerly to a line segment leased by the city of Jacksonville. A team track transload facility is located at Jacksonville with three car spots. Storage for 25 cars is available.

Table 2-9. Arkansas Midland—Jacksonville Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
4.2	4.2	0	0	Excepted: 4.2

Arkansas Midland—North Little Rock/Carlisle Branch

AKMD operates in two sections on the North Little Rock/Carlisle Branch line, one from North Little Rock to Galloway and another from North Little Rock to the Carlisle Industrial Lead. Both connect with the UP at North Little Rock. Two transload facilities are located in North Little Rock, including the North Little Rock Logistics Center facility with 120 car spots and a team track facility with six car spots. Storage capacity for 150 cars is available.

Table 2-10. Arkansas Midland—North Little Rock/Carlisle Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
19	5.8	13.2	0	Unavailable

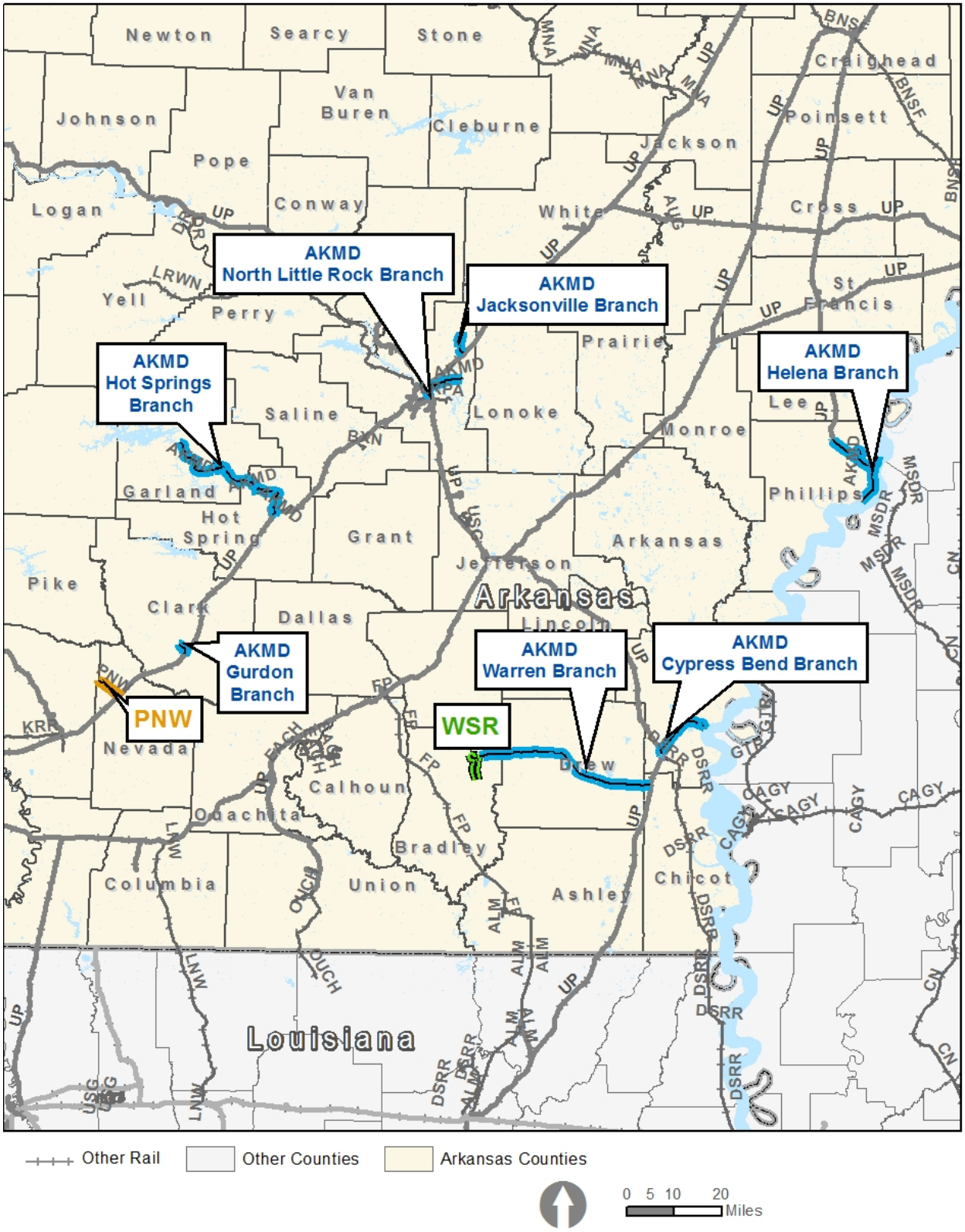
Arkansas Midland—Warren Branch

The Warren Branch line was leased in 2004 and runs 44 miles from Warren, Arkansas to Dermott, Arkansas with trackage rights to interchange in McGehee, Arkansas. The Warren Branch line has a storage capacity of 6,800 cars. Also accessible is the new Southeast Arkansas Intermodal transload Facility in Wilmar, Arkansas that has a capacity of 2,600 cars. The Warren Branch line of the AKMD leases 40.6 miles of track and owns 3.4 miles—all FRA "Excepted" track.

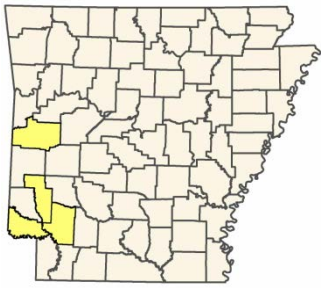
Table 2-11. Arkansas Midland—Warren Branch Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
44	3.4	40.6	0	Excepted: 44

Figure 2-13. Arkansas Midland Network



Arkansas Southern Railroad



The Arkansas Southern Railroad (ARS) began operations in 2005 when KCS leased two of its branch lines to Watco Transportation Services. ARS currently operates one 32 mile line from Ashdown, Arkansas, to Nashville, Arkansas, and another 28-mile line from Waldron, Arkansas, to Heavener, Oklahoma. Twenty-one miles of the latter are within the state of Arkansas. The Nashville Branch interchanges with the UP at Nashville, or with the KCS at Ashdown. The sole interchange for the Waldron Branch is with the KCS at Heavener, Oklahoma. Primary commodities handled include animal feed and chemicals.

Table 2-12. Arkansas Southern Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
53	0	53	0	Class 1: 32 Excepted: 21

Figure 2-14. Arkansas Southern Railroad Network in Arkansas

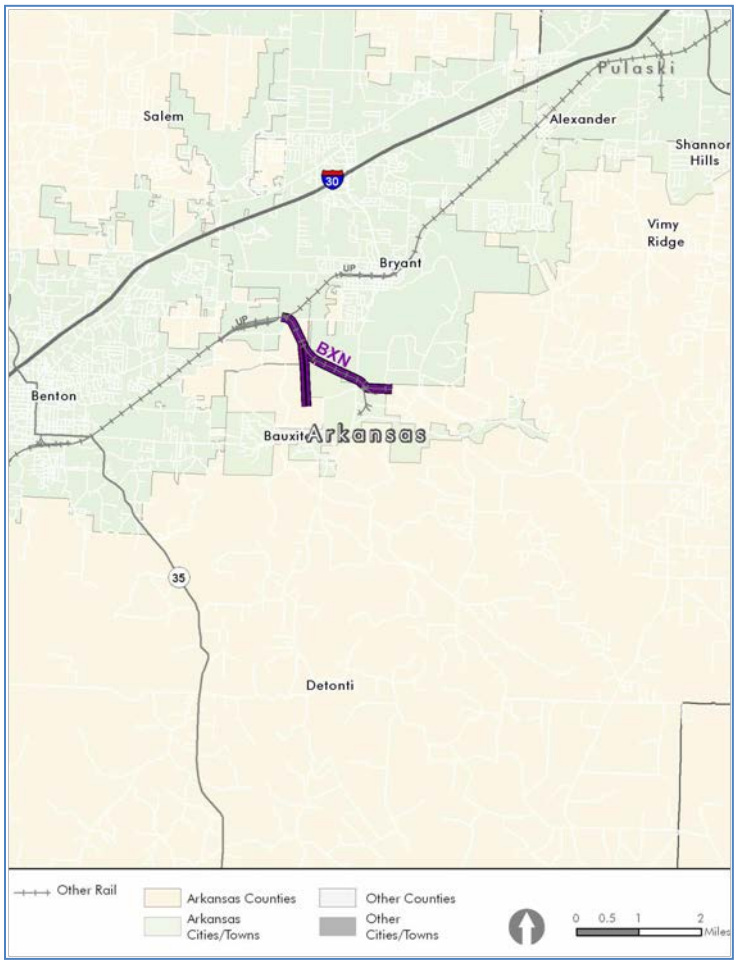
Bauxite & Northern Railroad

The Bauxite & Northern Railroad (BXN) operates about three miles of mainline track and about 3.5 miles of sidings and spurs, for a total of 6.5 miles of track. BXN owns another 1.5 miles of track that is out of service as of 2013. BXN interchanges with UP at Bauxite Junction, which is about three miles north of Bauxite, Arkansas, halfway between the outskirts of Benton and Bryant, Arkansas. Traffic includes bauxite, alumina, clay, and cement. BXN also offers railcar storage for up to 44 cars on eight tracks, as well as railcar weighing, washing and repair for customers. Most trackage on the BXN is FRA track Class 1 with no weight restrictions; however, 0.5 miles is "Excepted" track.

Table 2-13. Bauxite & Northern Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
6.5	6.5	0	0	Class 1: 6.0 Excepted: 0.5

Figure 2-15. Bauxite & Northern Railroad Network



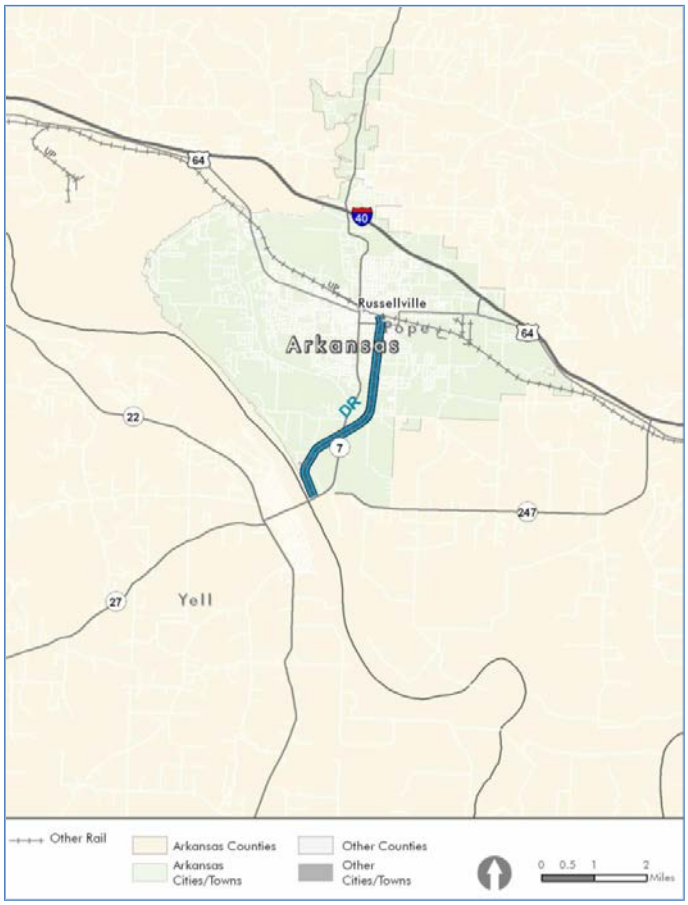
Dardanelle & Russellville Railroad

The Dardanelle & Russellville Railroad (DR) is owned by Arkansas Short Line Railroads Inc. and is headquartered in Russellville, Arkansas. The line began operations in 1883 and was organized under its current name in 1990. The DR runs from Russellville, Arkansas, to a location beside the Arkansas River across from Dardanelle, Arkansas for a total of 5.22 miles. The line's only interchange is with the UP in Russellville. Team tracks and transload facilities are located in Russellville and North Dardanelle, Arkansas. Traffic includes forest products, plastic, petroleum, and drilling commodities. The 5.22 miles of track owned by DR are in FRA "Excepted" condition.

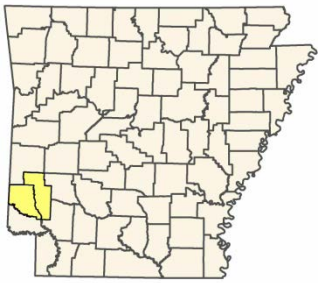
Table 2-14. Dardanelle & Russellville Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
5.22	5.22	0	0	Excepted: 5.22

Figure 2-16. Dardanelle & Russellville Railroad Network



DeQueen & Eastern Railroad



The DeQueen & Eastern Railroad (DQE) extends 45 miles across the western edge of Arkansas to the state line with Oklahoma, where it connects with the Texas, Oklahoma and Eastern Railroad (TOE), an affiliated railroad that operates in conjunction with the DQE 40 miles from the state line to Valliant, Oklahoma. Both railroads, purchased by Patriot Rail in 2011 from Weyerhaeuser are headquartered in DeQueen, Arkansas. DQE operates from Perkins, Arkansas to the state line, about 7.5 miles west of DeQueen. The line connects with the UP at Perkins and the TOE and KCS at DeQueen. In addition to providing rail service, the DQE owns a locomotive shop, a railcar repair facility, and a wheel shop, in DeQueen. Storage capacity for 150 cars is also available in DeQueen. Traffic includes forest products, gypsum board, grain and paper. All 45 miles of track operated by the DQE in Arkansas are FRA classified Class 3 or above.

Table 2-15. DeQueen & Eastern Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
45	45	0	0	Class 3: 45

Figure 2-17. DeQueen & Eastern Railroad Network

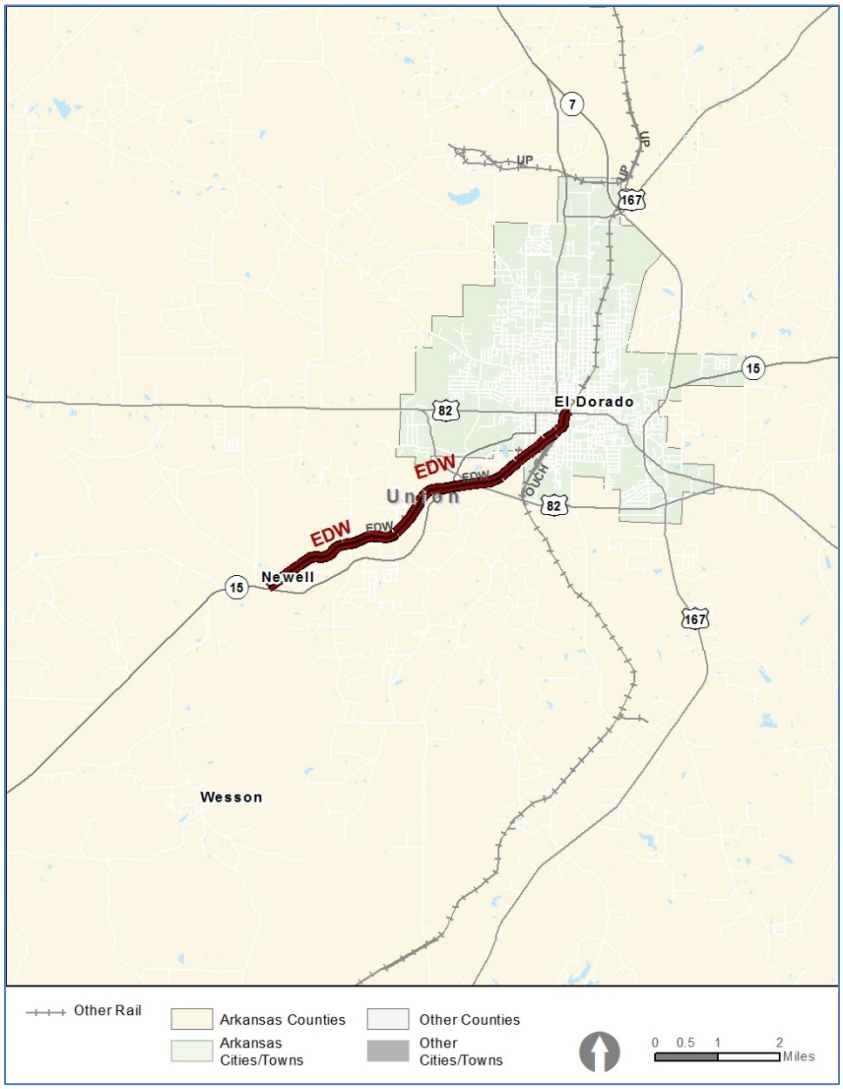
El Dorado & Wesson Railway

The El Dorado & Wesson Railway (EDW) originates from a UP connection at El Dorado, Arkansas, and terminates at Newell, Arkansas, about 5.5 miles. Including yard tracks, the company operates over 17 miles in all. The EDW has the ability to store up to 100 rail cars at Pearson Yard. Traffic is petroleum products, chemicals and medium density fiberboard. There are no bridges on this line, and all 17 miles of track (including yard track) are FRA Class 3 track. An additional 6.62 miles of track are leased for storage.

Table 2-16. El Dorado & Wesson Railway Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
6	6	6.62 (storage)	0	Class 3: 6

Figure 2-18. El Dorado & Wesson Network



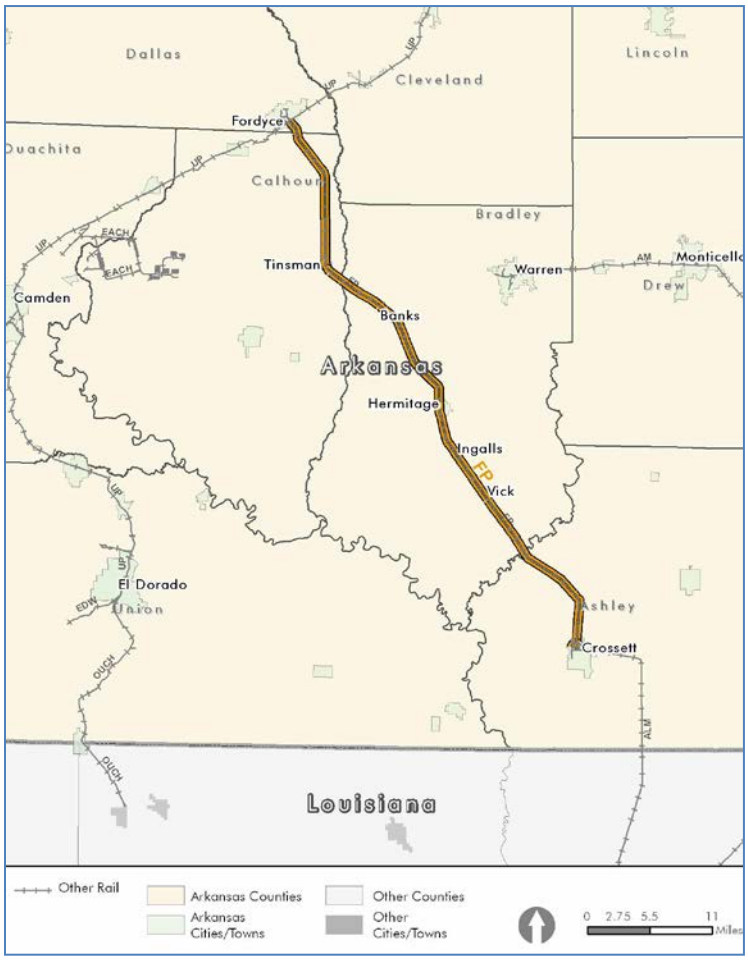
Fordyce & Princeton Railroad

The Fordyce & Princeton Railroad (FP) is a 55-mile short line railroad located in southern Arkansas running from Fordyce, Arkansas, to Crossett, Arkansas. The line was previously owned by Georgia Pacific, serving its forest products industry in the area. Georgia Pacific sold the FP to Genesee & Wyoming in 2004. FP is now one of the nine short line railroads in Arkansas owned and operated by Genesee & Wyoming. FP interchanges with UP and the ALM at Crossett. Traffic consists mostly of forest products. Most of the FP track is FRA track Class 2 condition.

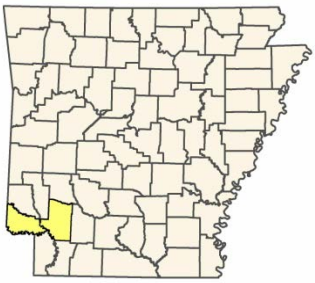
Table 2-17. Fordyce & Princeton Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
55	55	0	0	Mostly Class 2, some Class 1

Figure 2-19. Fordyce & Princeton Railroad Network



Kiamichi Railroad



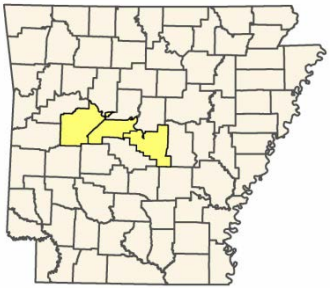
The Kiamichi Railroad (KRR) is owned and operated by Genesee & Wyoming, acquired in 2012 from RailAmerica. It operates 261 miles in the states of Oklahoma, Texas, and Arkansas, including trackage rights. Only 65.5 miles are located within the state of Arkansas, between Hope, Arkansas and the Oklahoma-Arkansas state line. The KRR connects with UP, at Hope, Arkansas, KCS at Ashdown and the DQE/TOE via Valliant, Oklahoma. It has trackage rights over KCS track within the city of Hope area to access industries. KRR can also interchange with KCS, Texas North Eastern Railroad, and BNSF through connections at Durant, Oklahoma, and trackage rights over BNSF track to Madill, Oklahoma. Traffic includes scrap metal, non-metallic minerals, and animal feed. KRR track within Arkansas is a combination of FRA track Class 1 at 31 miles and FRA Excepted class track at 34.5 miles.

Table 2-18. Kiamichi Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
65.5	65.5	0	6.5	Excepted: 34.5 Class 1: 31

Figure 2-20. Kiamichi Railroad Network in Arkansas

Little Rock & Western Railway

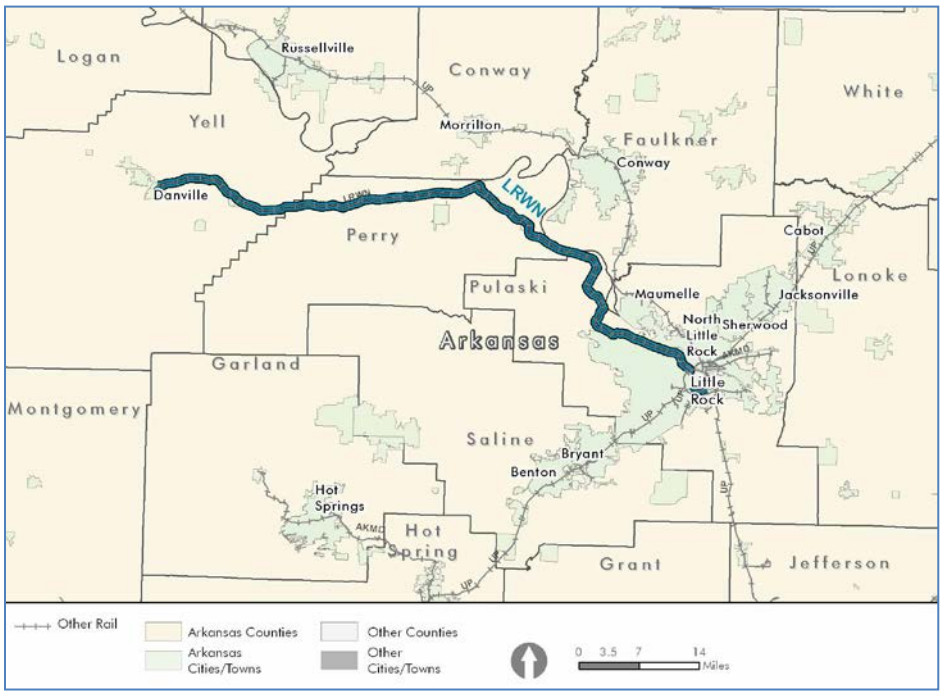


The Little Rock & Western Railway (LRWN) operates over 44 miles of track between Danville, Arkansas through Perry, Arkansas to Pulaski, Arkansas. The LRWN is one of nine Arkansas short lines owned by Genesee & Wyoming. LRWN interchanges with BNSF at Pulaski, Arkansas, and with UP at North Little Rock, Arkansas, using trackage rights over UP track. BNSF uses the LRWN as an intermediate switcher to interchange cars with UP in Little Rock, Arkansas (BNSF does not have access to interchange with UP directly in the Little Rock area). Traffic includes wood and paper products, grain, limestone slurry, cornstarch, salt, LP gas, and pulp mill liquid.

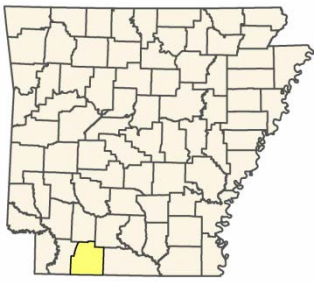
Table 2-19. Little Rock & Western Railway Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
79	44	35	5	Unavailable

Figure 2-21. Little Rock & Western Railroad Network



Louisiana & North West Railroad

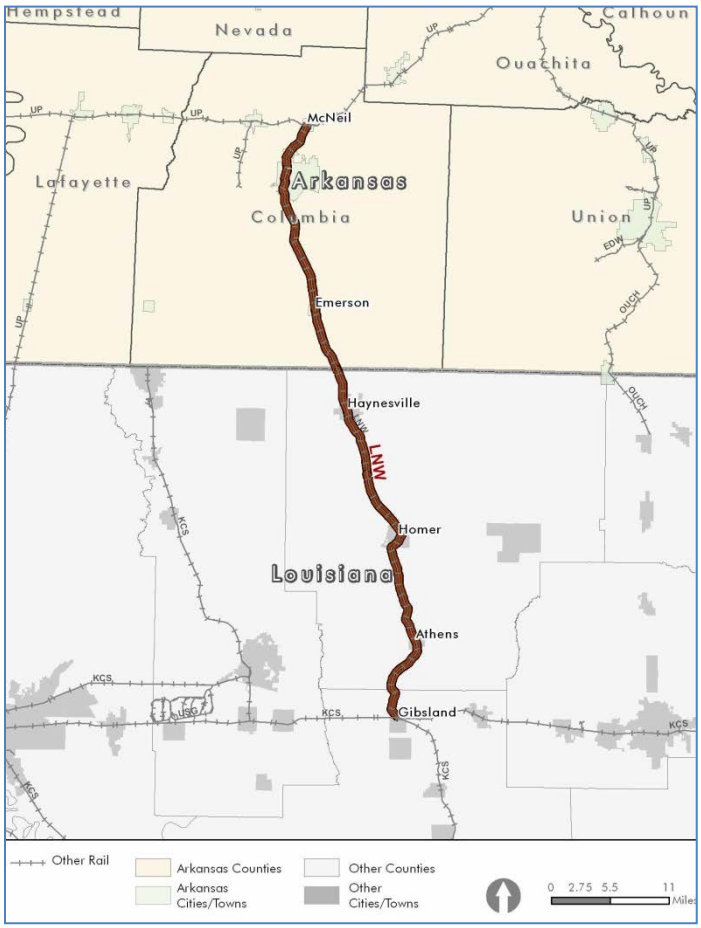


The Louisiana & North West Railroad (LNW) was purchased by the Patriot Rail Corporation in 2008 and is headquartered in Homer, Louisiana. The line crosses the Arkansas/Louisiana border running from McNeil, Arkansas, where it interchanges with the UP to Gibsland, Louisiana, where it interchanges with KCS. LNW provides rail service to shippers in Arkansas and Louisiana and also owns a 60-car capacity storage track. The LNW owns a locomotive shop and two railcar repair facilities. The LNW provides access to the Magnolia Transload facility in Magnolia, Arkansas. In Arkansas, the LNW owns 19 miles of track and leases six other miles from UP. All 25 miles of the rail line are in FRA Class 1 condition.

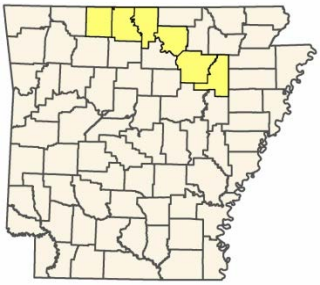
Table 2-20. Louisiana & Northwest Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
25	19	6	0	Class 1: 25

Figure 2-22. Louisiana & Northwest Railroad Network in Arkansas



Missouri & Northern Arkansas Railroad

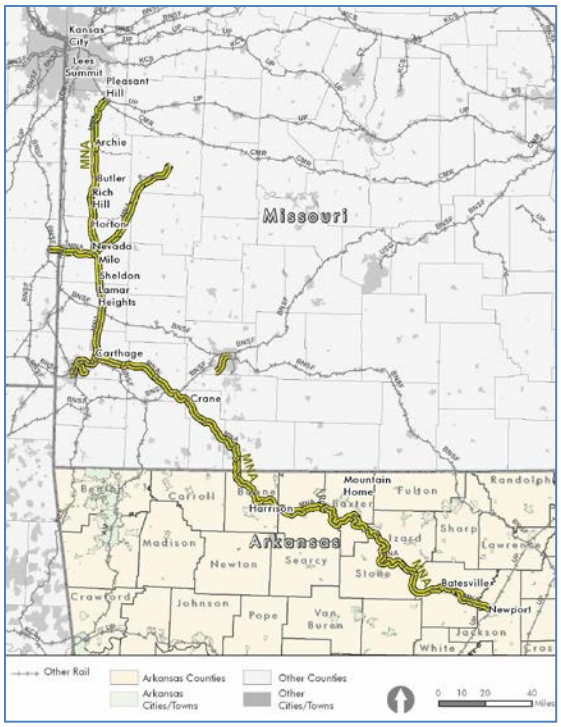


The Missouri & Northern Arkansas Railroad (MNA) operates 594 miles of track in Missouri and Arkansas, with its headquarters in Carthage, Missouri. The MNA is one of nine Arkansas short lines owned by Genesee & Wyoming. Roughly 177 miles of this line are located within Arkansas, starting at Newport, Arkansas, and running to the state line just north of Omaha, Arkansas. The line then runs north to Kansas City, Missouri. MNA owns the track from Diaz Junction in Arkansas to Pleasant Hill in Missouri, for a total of 384.1 main line miles. The MNA also operates over trackage rights on UP from Newport to Diaz Junction for about two miles in Arkansas and from Pleasant Hill to Kansas City for about 32 miles in Missouri. The MNA interchanges with UP at both of its endpoints. MNA also interchanges with BNSF at several points within Missouri and with KCS at Joplin, Missouri. Traffic includes coal, grain, frozen foods, minerals, steel, chemicals, asphalt, and forest products. Probably, the largest freight generator on the line is the Independence Power Plant in Newark, Arkansas. According to documents filed with the STB, this plant consumes about 6.5 million tons of coal per year. Coal from the Powder River Basin is shipped on the UP through North Little Rock and then onto the MNA at Newport and eight miles on the MNA to the plant. Due to the requirement for handling heavy traffic and unit trains that travel the line regularly, the track is rated FRA Class 2 or above.

Table 2-21. Missouri & Northern Arkansas Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
177	175	2	34	FRA Class 2 or above

Figure 2-23. Missouri & Northern Arkansas Railroad Network



North Louisiana & Arkansas Railroad

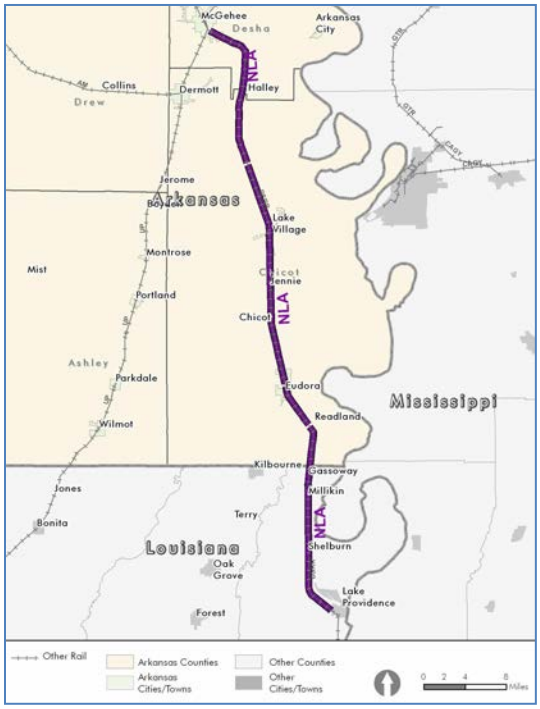
The North Louisiana & Arkansas Railroad (NLA) currently operates 62.1 miles of the former Delta Southern Railroad's rail line from McGehee, Arkansas to Lake Providence, Louisiana along the Mississippi River. Through a process of abandonment filings and acquisitions, this line was gradually acquired by several parties via Offers of Financial Assistance through the STB in 2011. Arkansas Short Line Railroads, Inc. (ASR) is the owner of 24.1 miles of the NLA and is the operator of the entire line. The other 38 miles of the line are leased from local economic development organizations in Arkansas and Louisiana. NLA leases 21.8 miles of track from the Southeast Arkansas Economic Development District (SEAEDD) from McGehee to the Arkansas/Louisiana state line. An additional 16.2 miles of track extends south to Lake Providence, Louisiana, which NLA leases from the Lake Providence Port Authority Commission. All tracks are currently under rehabilitation and are FRA "Excepted" class. ASR also owns three other short line operations within Arkansas and is headquartered in Russellville, Arkansas.

NLA interchanges indirectly with UP in McGehee, Arkansas through the AKMD. The line has access to the port in Lake Providence, Louisiana. NLA provides rail service to shippers on the line and has access to team tracks in Lake Village and Eudora, Arkansas, as well as a transload facility in Lake Village.

Table 2-22. North Louisiana & Arkansas Railroad

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
45.9	24.1	21.8	0	Excepted: 45.9

Figure 2-24. North Louisiana & Arkansas Railroad Network in Arkansas



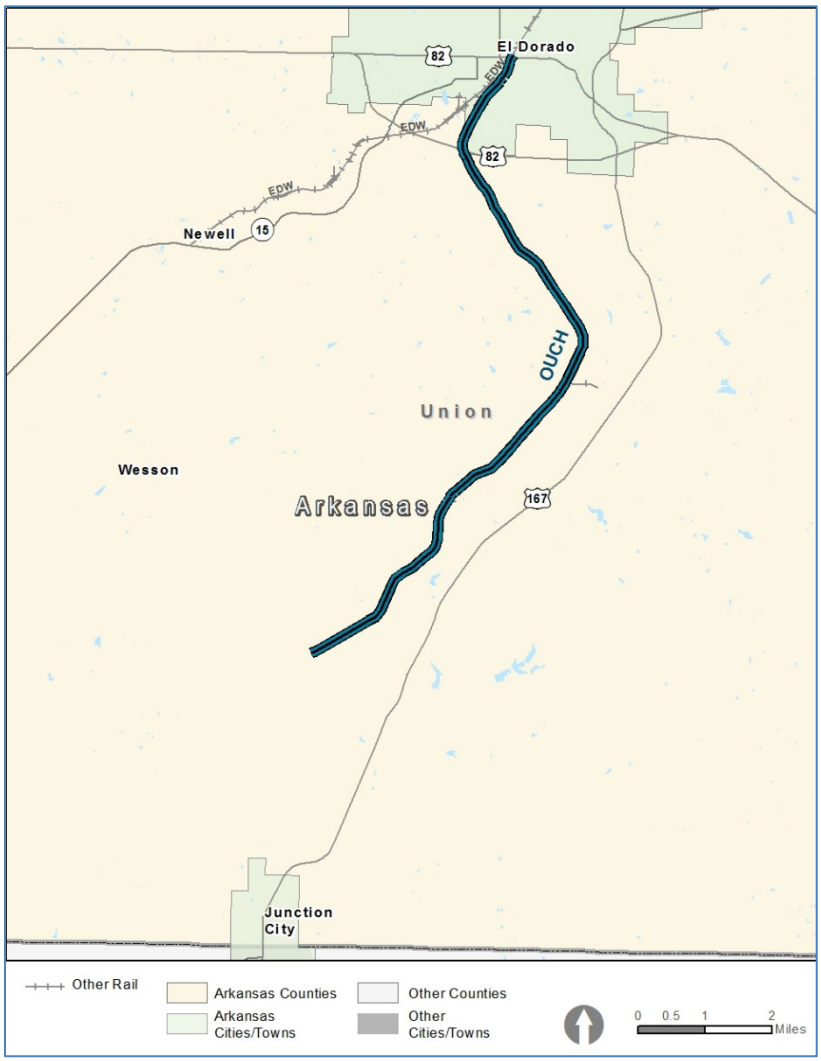
Ouachita Railroad

The Ouachita Railroad (OUCH) was sold to its current owner, Arkansas Short Line Railroads, in 1990 by the East Camden & Highland Railroad. The OUCH manages 13 miles of track from its headquarters in El Dorado, Arkansas to Lillie, Louisiana. Of the 13 miles owned, only 10 are currently in operation with no traffic on the remaining 3.0 miles. The line interchanges with UP at El Dorado. OUCH has a team track and transload facility in El Dorado. Traffic consists of chemical and forest products. All OUCH trackage is considered FRA Excepted track.

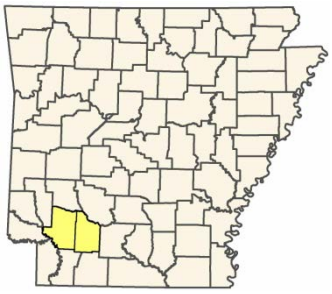
Table 2-23. Ouachita Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
13	13	0	0	Excepted: 13

Figure 2-25. Ouachita Railroad Network in Arkansas



Prescott & Northwestern Railroad



The Prescott & Northwestern Railroad (PNW), headquartered in Prescott, Arkansas was acquired by the Pinsly Railroad Company in 2010 from Potlatch Corporation. In 2015 the railroad was sold to Genesee & Wyoming. PNW operates 7.7 miles of track and owns another 3.5 miles of track that are out of service. PNW has 2,500 feet for car storage. Traffic is primarily roofing products. The 7.7 operational miles of track are FRA classified "Excepted" track.

Table 2-24. Prescott & Northwestern Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
7.7	11.2	0	0	Excepted 7.7

Figure 2-26. Prescott & Northwestern Railroad Network

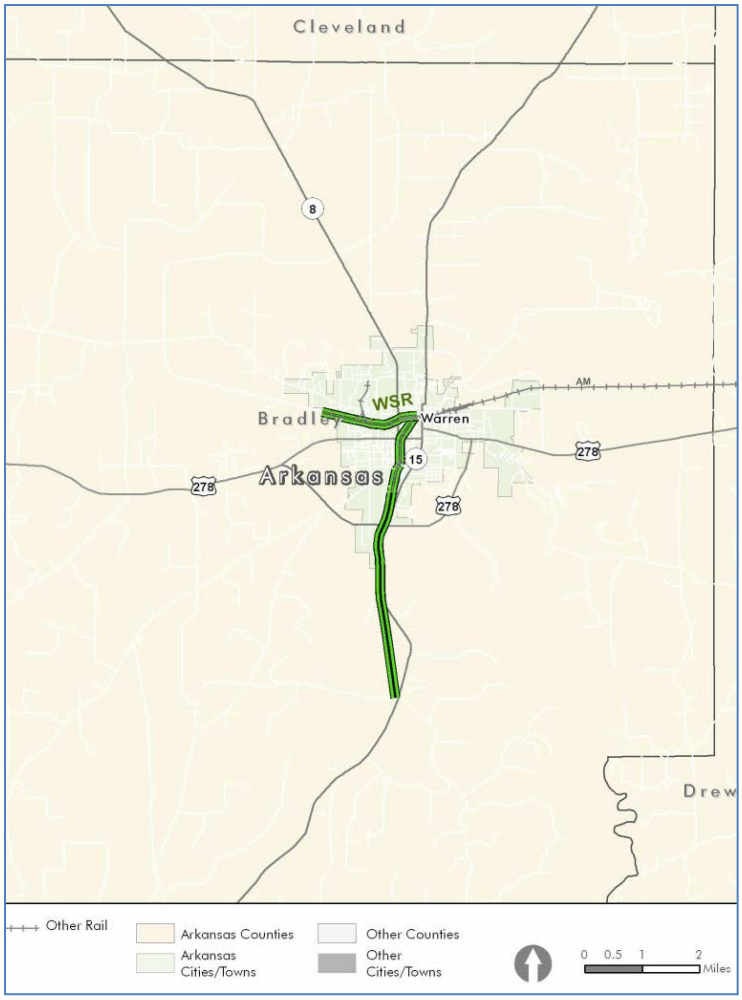
Warren & Saline River Railroad

The 9.6 miles of the Warren & Saline River Railroad (WSR) were acquired by the Pinsly Railroad Company in 2010 from Potlatch Corporation, a forest products company. In 2015 the railroad was sold to Genesee & Wyoming. WSR connects Cloquet, Arkansas to the AKMD in Warren, Arkansas via UP. WSR provides both rail service and railcar storage. Storage capacity is for 44 cars. Traffic is outbound lumber and forest products. The WSR owns 7.4 miles of track rated at FRA classification of "Excepted," and 2.2 miles of track are out of service.

Table 2-25. Warren & Saline River Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
7.4	9.6	0	0	Excepted: 7.4

Figure 2-27. Warren & Saline River Railroad Network



Switching Railroads

Camden & Southern Railroad

The Camden & Southern Railroad (C&S) is leased by Arkansas Short Line Railroads Inc. from the Camden Area Industrial Development Corporation (CAIDC). C&S operates 3.2 miles of track, of which approximately 1.2 miles are mainline track, while two miles are private industry track. All track is private industrial track that used to be part of facilities that closed prior to 2005, including an International Paper mill, a Tastee Freeze factory, and an Ames Oil refinery, all previously switched by UP. CAIDC has gradually acquired the properties for future economic development. There were no operations on the track until C&S was established in 2011. C&S leased the track and began operations as a new short line railroad serving customers and new tenants in this industrial park as developed by CAIDC. The C&S operates in Cullendale, Arkansas where it interchanges with UP. C&S provides rail service to shippers on the line with additional access to a team track and transload facility in Camden, Arkansas. Traffic includes forest products, plastic, petroleum, and drilling components. The 3.2 miles leased by the C&S is in FRA "Excepted" track condition.

Table 2-26. Camden & Southern Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
3.2	0	3.2	0	Excepted: 3.2

Figure 2-28. Camden & Southern Railroad Network

Delta Valley & Southern Railway

The Delta Valley & Southern Railway (DVS) is owned by Lee Wilson & Company and is headquartered in Wilson, Arkansas (Lee Wilson & Company is a subsidiary of GM Lawrence Group). A majority of the line was abandoned in 1947 and only 2.0 miles remain in service in Wilson, Arkansas. The DVS runs west-southwest from BNSF south of Wilson, Arkansas approximately two miles to the Evadale Junction. The DVS has storage for 15 60+ foot cars. DVS primarily ships outbound cottonseed. The DVS operates two miles of FRA classified "Excepted" track.

Table 2-27. Delta Valley & Southern Railway Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
2	2	0	0	Excepted: 2

Figure 2-29. Delta Valley & Southern Railway Network

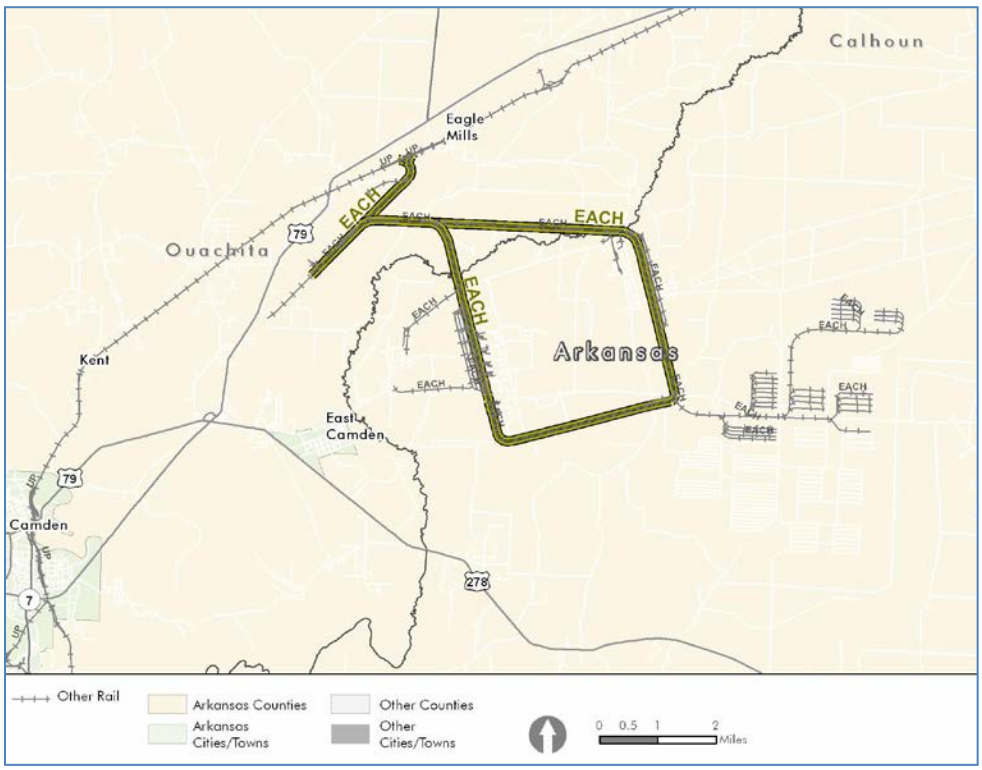
East Camden & Highland Railroad

The East Camden & Highland Railroad (EACH) is owned and operated by the Highland Industrial Park and is headquartered in East Camden, Arkansas. EACH was established in 1972 and currently operates railcar storage services on 54 miles of track in Arkansas and Louisiana. EACH trackage creates a loop between Eagle Mills, Arkansas and East Camden. The EACH is currently providing car storage only. Although it is a common carrier capable of handling all types of freight from potential customers in the industrial park, EACH is currently providing car storage only with 3,000 rail car spots available. The line connects to UP at Eagle Mills. EACH also provides switching in Louisiana, Iowa, and Tennessee serving Army Depots and industrial parks on those properties. EACH has been providing railcar storage and switching for over 40 years. It has never provided rail freight service; however, if a customer wished to locate within its industrial park, EACH would be able to consider this since it is a common carrier. EACH also currently provides transloading and cross docking services to on-site warehouses, and provides the switching required for these operations, interchanging with UP. EACH owns 54 miles of FRA Class 1 track.

Table 2-28. East Camden & Highland Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
54	54	0	0	Class 1: 54

Figure 2-30. East Camden & Highland Railroad Network



Fort Smith Railroad

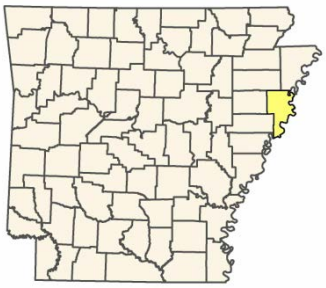
The Fort Smith Railroad (FSR) track is leased from UP by Pioneer RailCorp, an arrangement beginning in 1991. Pioneer RailCorp is headquartered in Peoria, Illinois with FSR offices located in Fort Smith, Arkansas. FSR operates 41 miles of track serving Fort Smith area. The rail line interchanges with Union Pacific in Fort Smith and has access to KCS by a reciprocal switch through UP. The FSR serves stations at Fort Smith, South Fort Smith, Barling, and Fort Chaffee. Traffic includes grain, food products, paper products, scrap and finished steel, lumber, peanuts, alcohol, military equipment, and charcoal. A transload facility is located in Fort Smith with a 3-car capacity. Another transload facility is being constructed. The FSR operates 23 miles of FRA classified "Excepted" track and 18 miles of FRA track Class 1 track.

Table 2-29. Fort Smith Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
41	0	41	0	Class 1: 18 Excepted: 23

Figure 2-31. Fort Smith Railroad Network

Friday-Graham Rail Spur

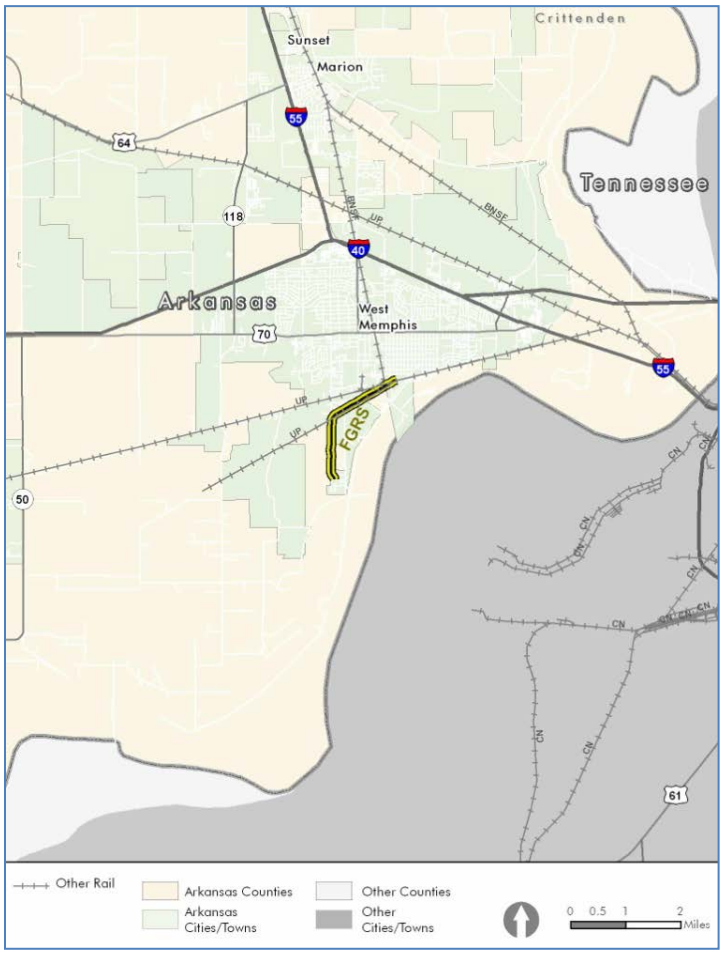


The Friday-Graham Rail Spur (FGRS) was rebuilt from an abandoned UP branch in 1991 and was established in 1994. Three miles of branch line track allows UP to access the Port of West Memphis in West Memphis, Arkansas. The FGRS is owned by the city of West Memphis and operated by UP, which provides employees, locomotives and rail cars for the operation. The spur directly accesses the UP with no other connecting railroads. FGRS provides rail service to the West Memphis Port, as well as the West Memphis International Rail Port Logistics Park, and has over 1,000 feet of storage track. Arkansas Logistics also provides transloading services at West Memphis with a car capacity of 15 rail cars. Current traffic includes steel, propane, and non-hazardous chemicals. Because of poor tie conditions, the track is FRA track Class 1 condition.

Table 2-30. Friday-Graham Rail Spur Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
3	3	0	0	Class 1: 3

Figure 2-32. Friday-Graham Rail Spur Network



Little Rock Port Authority Railroad

The Little Rock Port Railroad (LRPA) operates over 17 miles of FRA Class 1 track, all of which is located within the Little Rock Port Industrial Park in Little Rock, Arkansas. The track extends from a UP rail line near the airport to the Arkansas River dock and continues to the slackwater harbor, circling back to itself near Intermodal Loop Road. The LRPA interchanges with both BNSF and UP at the port. LRPA handles a varied commodity mix of steel, peanuts, plastic pellets, gas pipe, and wind blades. Transload operations are available, with 1,500 feet of storage capacity. LRPA has 30,000 feet of storage track. All 17 miles are FRA Class 1 track.

Table 2-31. Little Rock Port Authority Railroad Mileages

Miles Operated	Miles Owned	Miles Leased	Miles Trackage Rights	Miles FRA Track Class
17	17	0	0	Class 1: 17

Figure 2-33. Little Rock Port Authority Network

Restrictions of the Arkansas Rail Network

When many of the rail lines in Arkansas were originally constructed, they were built to accommodate railcars of sizes and weights that differed significantly from the standards of today's modern rail network. In some cases, not only have rail lines not been upgraded to accommodate new equipment, but lines have also lapsed into a poor state of repair, where limitations are due to poor tie conditions, bridges in need of replacement or other infrastructure issues.

Weight Restrictions

Most of the U.S. rail system is now rated to handle 286,000-pound freight traffic. A single carload, including both tare weight[8] of the car and lading weight[9] of loaded material, can weigh up to 286,000 lbs. Older rail lines with lightweight rail can still only handle up to 263,000 pounds, which restricts the traffic they can serve. Thirteen of the Arkansas short line railroads have limited capacity to handle the heavier 286,000-pound carloads. A total of 396 track-miles in Arkansas are unable to handle 286,000-pound railcars. Of these, 310 miles are on short line railroads, and 86 miles are on rail lines owned by Class I carriers. These restrictions limit the railroads' ability to attract new business, and to remain competitive with other rail lanes and modes of transportation. Furthermore, Class I railroads sometimes avoid restricted short line railroads, when possible, to prevent limitations in their own operations and capabilities. Upgrading track to handle 286,000-pound traffic can help promote rail service preservation, competitiveness, and economic development, especially where railroads have identified new opportunities or may already be losing traffic due to the limits. Furthermore, many of the areas, where track upgrades on short lines are needed, are also economically distressed areas in the southern portion of the state, so efforts at bolstering economic development would be particularly beneficial. Figure 2-34 displays the locations of weight restrictions on the Arkansas rail network.

Height/Width Restrictions

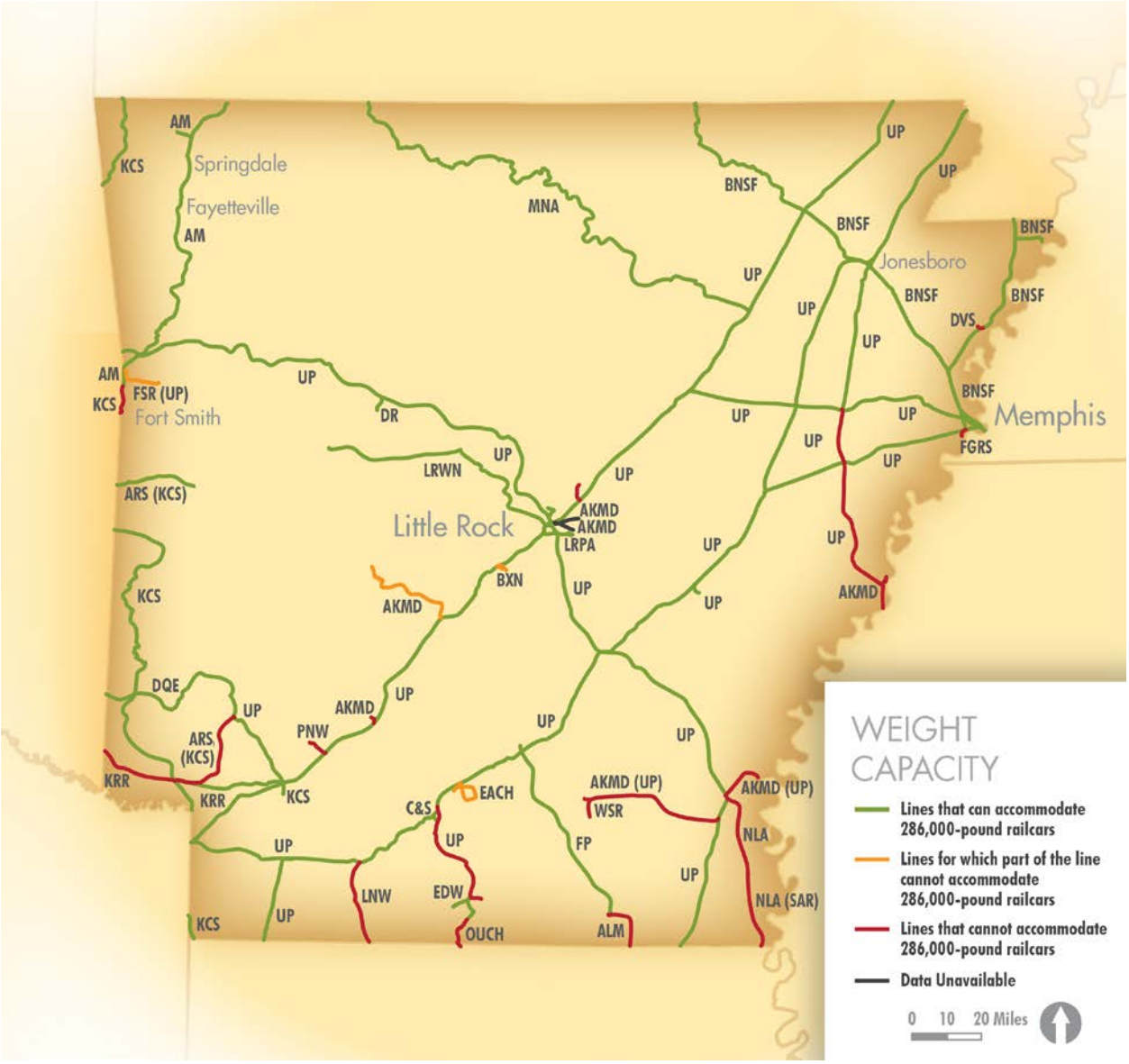
When most U.S. rail lines were built, the most common height standards were the Association of American Railroads' Plate B (15 feet two inches height over rail) or Plate C (15 feet six inches height over rail). However, new railroad equipment types have come into service requiring higher clearance over rail. Hicube boxcars are 17 feet high. Multilevel flatcars and double-stack intermodal cars can be as high as 22 feet over rail. Short line railroads surveyed for this Rail Plan reported being able to accommodate railcars of at least 17 feet.[10] BNSF reported no height restrictions. KCS reported that double stack intermodal cars cannot operate on the Fort Smith Branch. The most significant height restriction on the UP is in the Van Buren Subdivision near Conway. A tunnel is unable to accommodate double-stack intermodal railcars, thereby limiting any potential east/west intermodal movements traveling between Little Rock and Fort Smith.

Clearance issues can create problems, not only over rail lines, but for instances where rail lines are carried over roadways on height-restricted overpasses. As an example, KCS reports that an overpass in Texarkana is frequently struck by tractor trailers. These occurrences are highly

[8] Weight of railcar.
[9] Weight of freight carried in railcar.
[10] It is unusual for short line railroads to handle double-stack intermodal of multilevel flatcars, Class III railroads were not questioned about their ability to accommodate these types of equipment.

inconvenient to railroads and disrupt service to customers. Even if minimal damage is done, the rail line must be shut down until inspectors can certify that the overpass is safe.

Figure 2-34. Weight Restrictions in the Arkansas Rail Network

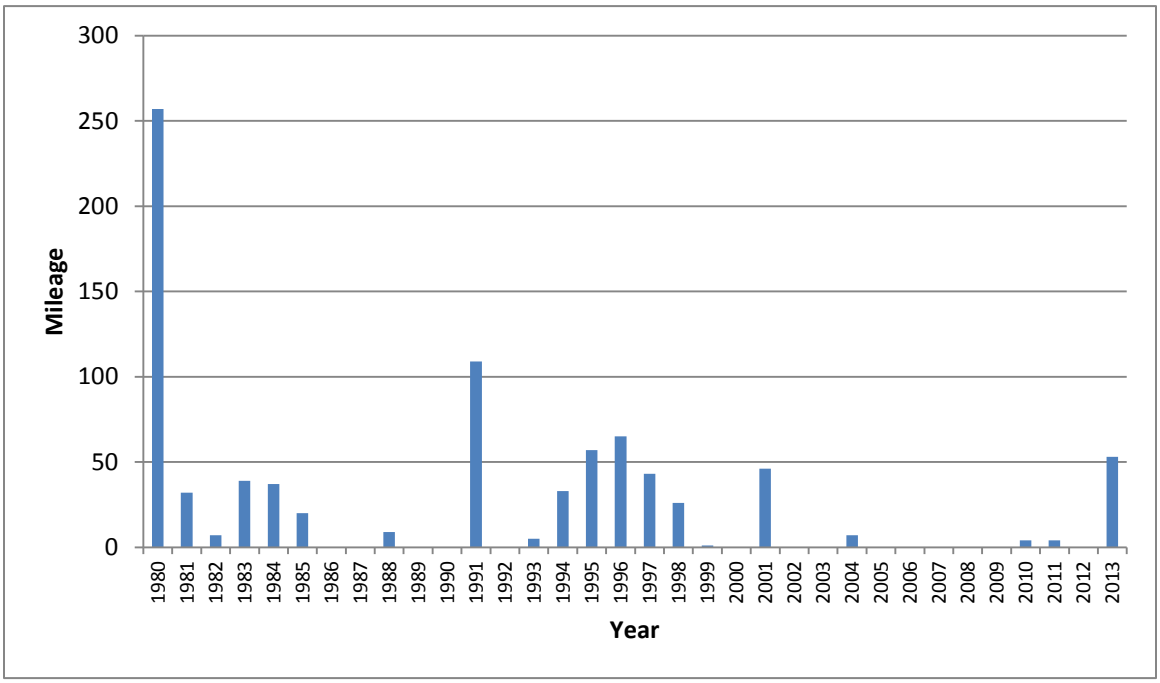


Abandoned and Inactive Rail Corridors

Rail lines in Arkansas have been abandoned for several reasons, including declining traffic and deteriorating infrastructure. In some cases, the departure of a key shipper or multiple shippers undermines the economic viability of the line. In other cases, a reduction in freight traffic and associated revenues causes a short line to stop maintaining its track. As maintenance continues to be deferred, the quality of rail service on the line and the economics of the remaining rail service on that line decline. Train speeds slow and costly derailments occur. It becomes difficult for the railroad to attract new business. The cost of restoring the line to a state of good repair becomes prohibitive, particularly since many short lines have limited available funds to invest. Ultimately, the line may become impassible.

The adoption of the Stagger's Rail Act in the early 1980s allowed railroads to more easily eliminate economically unprofitable rail lines by either selling them to another railroad operator or abandoning them. Since 1980, over 700 miles of mainline rail lines have been abandoned in Arkansas. Figure 2-35 displays miles abandoned by year. The most significant rail abandonment in the state resulting from the Stagger's Rail Act was the Chicago Rock Island and Pacific Railway abandonment in 1980.

Figure 2-35. Miles of Arkansas Rail Abandonments per Year



Sources: Arkansas 2002 Statewide Rail Plan, John Osment, STB Website

Railroad rights–of-way that have been abandoned can be "railbanked," a process included in the National Trails System Act of 1983. Rail-banking is a method by which lines proposed for abandonment can be preserved for future rail use through interim conversion to trail use. Rail-banking can be requested by either a public agency or certain private organizations, which file a "Statement of Willingness to Assume Financial Responsibility" and a "Public Use Condition" request with the STB during an abandonment proceeding. Under the terms of rail-banking agreements,

tracks and ties of a line can be removed, but the bridges and trestles must be kept in place. No permanent structures can be built on the right of way. This sort of arrangement, made between the UP, AHTD, and the Arkansas Parks and Tourism Department, has made possible the Delta Heritage Trail State Park, which is being developed in phases along 73 miles of abandoned UP right of way in southeast Arkansas between Helena Junction (6 miles west of Helena) and Cypress Bend (5 miles northeast of McGehee).

Arkansas Multimodal Freight Transportation System

Multimodal transportation involves the use of two or more modes of transportation for a single freight movement from origin to destination. For the purposes of the rail plan, multimodal transportation within Arkansas will be categorized into the following three categories:

- Rail/truck intermodal—These are movements of either containers or trailers using flat cars commonly referred to as Container-on-Flatcar (COFC) or Trailer-on-Flatcar (TOFC).
- Non-containerized rail/truck—These are shipments of bulk or loose freight moved by truck and rail. A broad range of facilities are used to transfer non-containerized cargo between truck and rail, often generically referred to as "transload" facilities.
- Rail/barge—Cargo is transferred between rail and barge transportation. Rail-served river port facilities also enable transfer between three modes: rail, truck, and barge.

Multimodal transportation allows shippers to benefit from the unique advantages of each mode. For example, the transportation cost of rail is lower than the cost of trucking over longer distances, but many shippers and their receiving customers do not have direct access to rail at their facilities. Rail/truck transfers allow shippers to benefit from the favorable long-haul economics of rail as well as the local flexibility of trucking. Similarly, shippers may have access to railroad transportation but are not located near a navigable waterway. Multimodal transloading allows these shippers to use inexpensive long-haul maritime transportation with rail providing the link to the port facility.

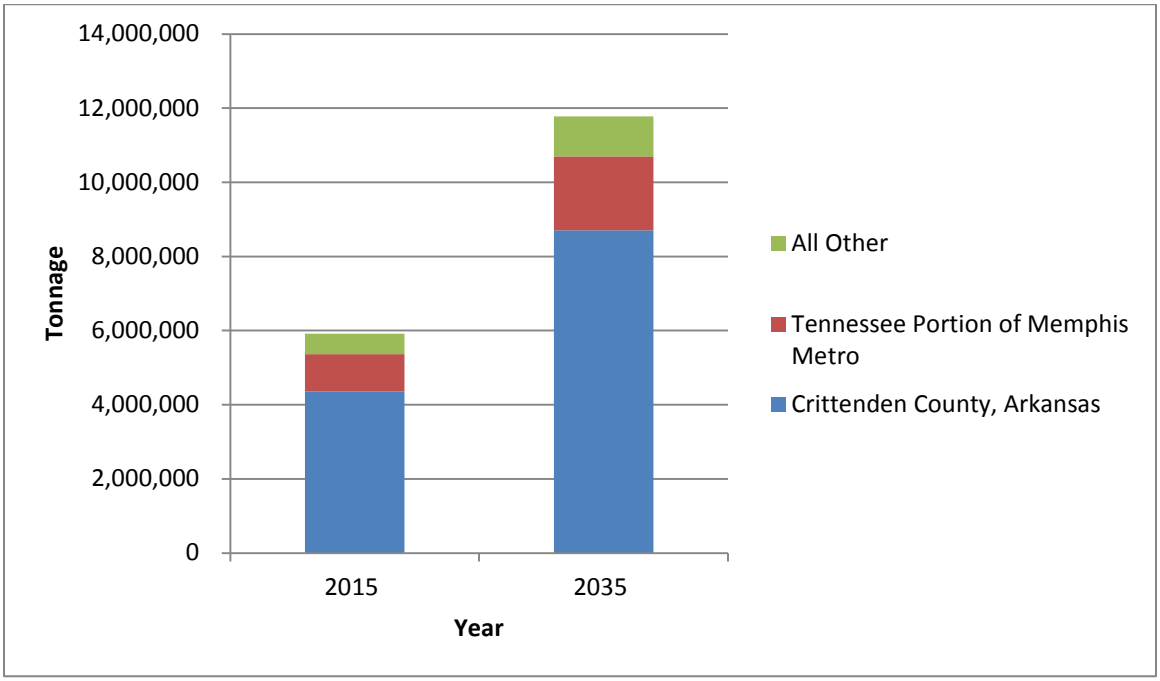
Rail/Truck Intermodal Facilities

The transportation of containers and trailers is one of the railroads' fastest growing services. As an example, total rail carloads/containers/trailers grew by about eight percent between 2002 and 2011 nationally, while the number of intermodal units handled (containers and trailers) increased by about 28 percent. Rail intermodal service occupies a unique transportation niche. Generally, railroad service is slower and less reliable, but less costly than truck service. Intermodal rail, however, is generally faster and more reliable, but also more expensive than traditional carload rail service. In terms of cost, speed, and reliability, intermodal rail typically occupies a position between trucking and carload freight rail services.

The sole intermodal terminal located within Arkansas is the UP terminal in Marion, Arkansas; the major UP train operations in Little Rock do not include a container/trailer intermodal facility. The Marion terminal has the capacity to handle 375,000 containers per year. The TRANSEARCH database used to analyze freight flows for this Plan also includes information on truck flows carrying containers to and from intermodal ramps, known as "drayage." As shown in Figure 2-36,

data suggests that intermodal drayage activity to/from Arkansas is dominated by the intermodal ramps in the Memphis area (including Crittenden County, Arkansas). These truck trips to and from intermodal ramps are expected to roughly double between 2015 and 2035.

Figure 2-36. 2015 and 2035 Rail Intermodal Drayage to and from Intermodal Ramps by Ramp Location and Tonnage (Originates or Terminates in Arkansas)



Source: STB Waybill Sample, IHS Global Insight's Transearch Database

TRANSEARCH data also suggests that most drayage traffic to/from intermodal ramps in the Memphis metropolitan area is local to the area. For example, of the estimated 5.4 million tons of drayage traffic to/from intermodal ramps in the Memphis area, about 4.6 million tons are estimated to move only within the Memphis area.

Non-Containerized Rail/Truck Facilities

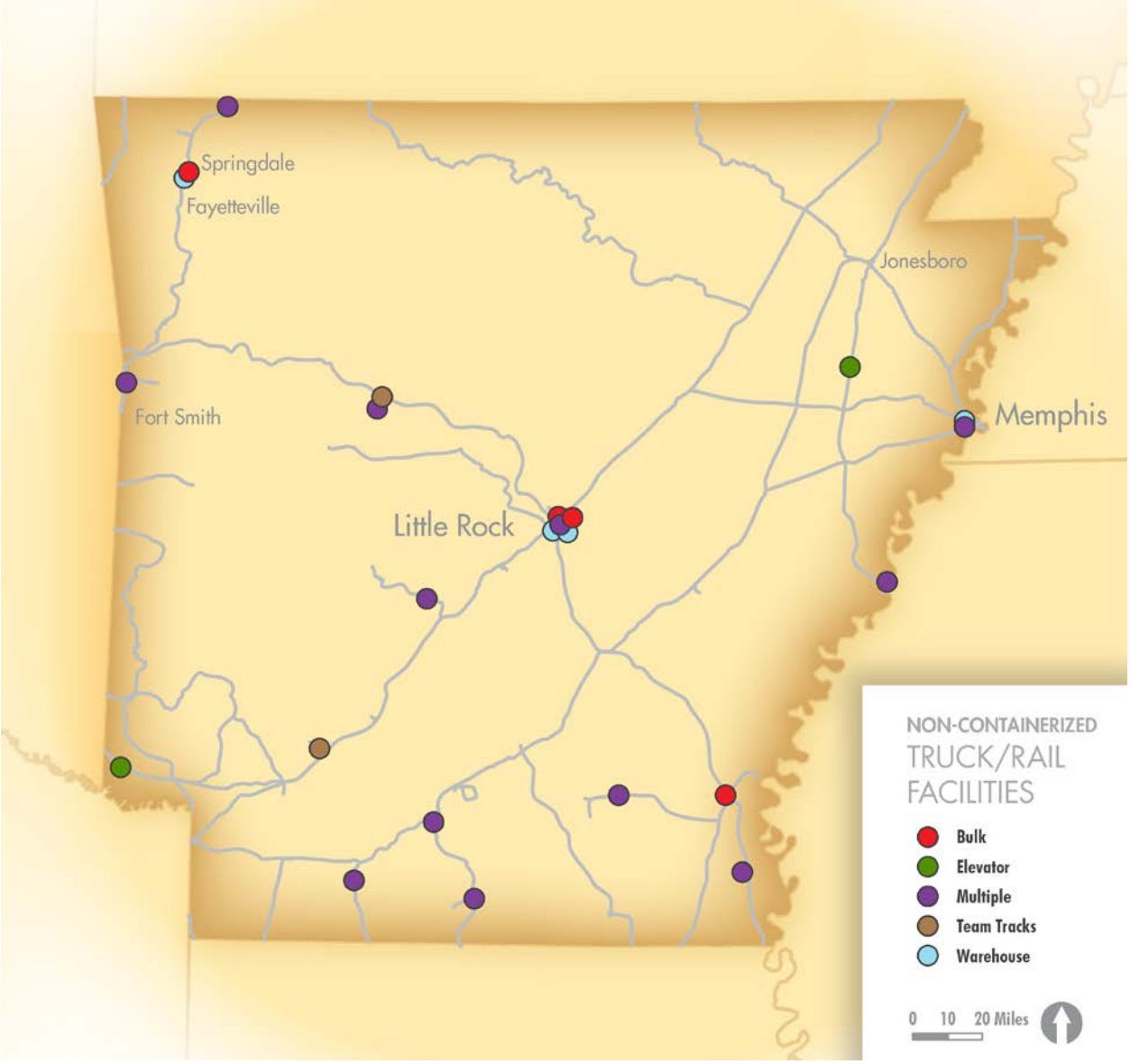
A broad range of facilities are used to transfer non-containerized freight between truck and rail:

- Bulk—These facilities are used for transferring fertilizers, plastics, chemicals, petroleum, ethanol, clays, aggregates, cement, minerals, agricultural, and other bulk products. Most items move in hopper or tank cars.
- Warehouse—Paper, consumer products, food, and beverages are stored and/or transferred within a warehouse. For food and other perishable commodities, warehouses can be refrigerated to include freezer temperature spaces.
- Dimensional—Lumber, panel, structural steel, and machinery are transferred either within a covered area or in the open. These items move in flatcars, gondolas, or boxcars.
- Elevators—Storage of agricultural products in elevated structures.

- Team Tracks—These are general purpose tracks with adjacent space for truck loading/unloading. These are often self-service, whereby the shipper arranges for product to be loaded/unloaded onto or off of railcars.

Figure 2-37 provides the locations of selected non-containerized rail/truck transfer facilities in Arkansas. The data sources for this figure are a database maintained by the U.S. Department of Transportation (USDOT), carrier websites, and a survey of short line railroads.

Figure 2-37. Non-Containerized Rail/Truck Facilities in Arkansas



Rail/Barge Facilities

Arkansas is one of 24 states in the U.S. that has access to inland waterways. With 1,000 miles of navigable waterways along four rivers, Arkansas enjoys one of the largest inventories of navigable waterways in the nation. According to U.S. Army Corps of Engineers statistics, Arkansas ports handled 14.5 million tons of freight in 2011—fairly evenly split between inbound and outbound shipments.

Rail can be used in conjunction with water transportation, with rail providing access to the waterway system. Ports can serve as logistics/transportation hubs, where truck, rail, and barge transportation, along with storage and other logistics services, are available at a single location. As businesses locate near to transportation hubs, ports can serve as economic development engines.

Waterborne transportation in Arkansas is provided on the Arkansas[11], Mississippi, Ouachita, and White Rivers. Currently, the Red River is navigable only to Shreveport, Louisiana, but plans are underway to extend navigation into Arkansas. Table 2-32 and Figure 2-38 list public ports and harbors in Arkansas, their railway access, and the commodities handled. Some ports, such as Osceola or Fort Smith, are specialized, while others, such as the Port of Little Rock, handle a broader range of cargo.

Table 2-32. Public Ports and Harbors in Arkansas

Port/Harbor Name[12]	Rail Access	Commodities Handled
McClellan-Kerr Arkansas River Navigation System		
Port of Van Buren	UP, AM	Non-Metallic Minerals, Other
Port of Fort Smith	AM, FSR	Iron Ore and Iron & Steel Waste & Scrap, Primary Iron and Steel Products (Ingots, Bars, Rods, etc.), Other
Little Rock Port/Harbor	UP, BNSF, LRPA	Distillate, Residual & Other Fuel Oils; Lube Oil & Greases, Building Cement & Concrete; Lime; Glass, Fertilizers, Iron Ore and Iron & Steel Waste & Scrap, Paper & Allied Products, Primary Iron and Steel Products (Ingots, Bars, Rods, etc.), Food and Farm Products, Other
Port of Pine Bluff	UP, BNSF	Fertilizers, Forest Products, Lumber, Logs, Woodchips, Paper & Allied Products, Primary Iron and Steel Products (Ingots, Bars, Rods, etc.), Food and Farm Products, Other
Mississippi River		
Helena Harbor	AKMD	Coal, Lignite & Coal Coke, Primary Iron and Steel Products (Ingots, Bars, Rods, etc.), Food and Farm Products, Other
Port of Osceola	None (BNSF nearby)	Food and Farm Products
Port of West Memphis	FGRS (Expected 2015 or 2016)	Food and Farm Products, Oilseeds (Soybean, Flaxseed and Others), Primary Iron and Steel Products (Ingots, Bars, Rods, etc.), Other
Yellow Bend Harbor	None	Various
Ouachita River		
Port of Camden	UP	Various
Port of Crossett	None	Various

Source: U.S. Army Corps of Engineers, Parsons Brinckerhoff

[11] In Arkansas, the McClellan-Kerr Arkansas River Navigation System primarily follows the Arkansas River, except for several miles where the System uses the White River Entrance Channel to access the Mississippi River.
[12] Harbors refer to facilities located at inlets located away from the primary river flow.

Figure 2-38. Map of Public Ports in Arkansas

Rail access has been proposed for the Yellow Bend Harbor and the Ports of Crossett and West Memphis. In West Memphis, funding from a TIGER grant will fund rail access to the base of the levee adjacent to the port facilities. A conveyor system over the levee will allow bulk freight to be transported between the port and a rail transloading area. The Port of Yellow Bend has selected a preferred alternative for gaining rail access but is seeking funding for environmental, construction, and engineering work. Rail access to the Port of Crossett is in the early planning stages.

Chapter 3 Description and Inventory of Passenger Rail Services in Arkansas

Introduction

Passenger rail transportation in Arkansas is provided by the Amtrak Texas Eagle. Daily service is offered from Chicago, through Saint Louis and Little Rock, continuing south to Dallas/Fort Worth and San Antonio—a one-way distance of over 1,300 miles. End to end, transit time is approximately 32 hours. At San Antonio, connecting rail passenger service is available, tri-weekly, to Los Angeles via the Amtrak Sunset Limited/continuation of the Texas Eagle. The South Central High-Speed Rail Corridor (SCHSRC) was designated in the year 2000 and follows the Texas Eagle route between Little Rock and San Antonio. At Fort Worth, the SCHSRC splits, with a leg extending north to Oklahoma City and Tulsa, Oklahoma.

Figure 3-1 shows Amtrak's Texas Eagle route, including the combined Sunset Limited/Texas Eagle, west of San Antonio.

Figure 3-1. Amtrak Texas Eagle Route

Source: Amtrak

Amtrak does not own any rail lines in Arkansas, and rail lines used by Amtrak are primarily used for hauling freight. The Texas Eagle operates through Arkansas over freight rail lines owned by the Union Pacific Railroad. Stations are located at Walnut Ridge, Little Rock, Malvern, Arkadelphia, Hope, and Texarkana, as shown in Figure 3-2. Passenger accommodations on the Texas Eagle include coach seating, sleeping cars, a dining car, and sightseeing lounge car. The southbound Texas Eagle serves Walnut Ridge at 12:37 a.m. Other nighttime stops through Arkansas are detailed in Table 3-1, with the eventual arrival in Texarkana on the Texas state line at 5:58 a.m. The

northbound Texas Eagle arrives in Texarkana at 8:43 p.m. and makes nighttime stops in Arkansas, reaching Walnut Ridge at 1:41 a.m. Stations in Arkansas are open during service hours, several hours before trains arrive and several hours after trains depart.

Figure 3-2. Amtrak's Texas Eagle in Arkansas

Scheduled departure times, as of June 2014, are listed in Table 3-1.

Table 3-1. Scheduled Amtrak Departures

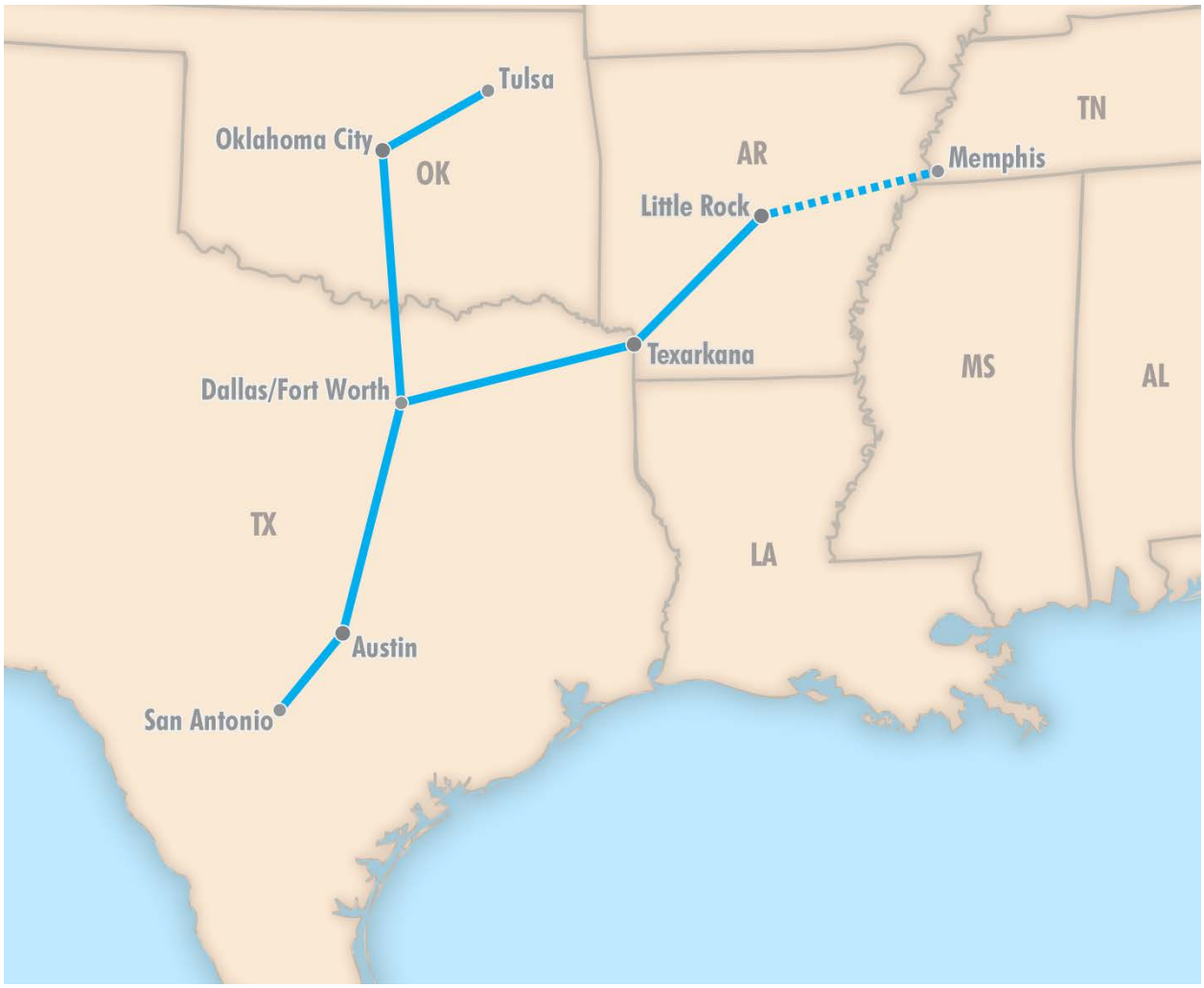
	Walnut Ridge WNR	Little Rock LRK	Malvern MVN	Arkadelphia ARK	Hope HOP	Texarkana TXA
Northbound Train 22/422 <----------	1:41 a.m.	11:39 p.m.	10:26 p.m.	10:02 p.m.	9:18 p.m.	8:43 p.m.
Southbound Train 21/421 ---------->	12:37 a.m.	3:10 a.m.	3:55 a.m.	4:20 a.m.	5:09 a.m.	5:58 a.m.

Source: Amtrak timetables, June 2014

High-Speed Rail

The federal government has designated 11 high-speed rail (HSR) corridors, of which one, the South Central High-Speed Rail Corridor (SCHSRC), enters Arkansas at Texarkana and travels to Little Rock. The SCHSRC follows the Texas Eagle route between Little Rock and San Antonio. At Fort Worth, the SCHSRC splits, with a leg extending north to Oklahoma City and Tulsa, Oklahoma. In addition, the Railroad Safety Enhancement Act of 2008 called for a study to examine the feasibility of extending the South Central Corridor from Little Rock to Memphis. This study is being conducted concurrently to this Rail Plan.

Figure 3-3. South Central High-Speed Rail Corridor



Designation as an HSR corridor has allowed corridors to receive specially targeted funding, in particular, the FRA's High-Speed Intercity Passenger Rail (HSIPR) program. Corridors have also been eligible for roadway/rail grade crossing improvements.

The federal government has applied several definitions of what constitutes "high-speed rail," but in its *Vision for High-Speed Rail in America* of 2009, the FRA described three categories of HSR:

- Emerging High-Speed Rail—Top speeds of 90 to 110 MPH per hour
- Regional High-Speed Rail—Top speeds of 110—150 MPH on grade-separated track
- Express High-Speed Rail—Top speeds of at least 150 MPH on grade-separated track dedicated to passenger service

High-speed rail represents an increase in train speeds compared to most intercity Amtrak services today, which travel on corridors with allowed train speeds typically no faster than 79 MPH (referred to as conventional passenger rail service). Only on Amtrak's Northeast Corridor can trains travel as fast as 150 MPH. Several segments in Michigan and Illinois have also been upgraded to 110 MPH service. For the South Central High Speed Rail initiative in Arkansas, the immediate goal is "higher speed" rail travel, not the 150 mile per hour speed on the Northeast Corridor.

Passenger Rail Ridership

Amtrak Ridership on the Texas Eagle was 41,358 in Fiscal Year 2012 (October to September). Ridership in 2012 grew 4.4 percent over 2011. Since 2003, ridership in Arkansas grew 99 percent and outpaced the 40 percent growth in Amtrak ridership nationally. Ridership at all stations in the state has grown between 66 percent and 118 percent. Little Rock is the busiest station in the state, with 58 percent of all ridership. Table 3-2 shows the number of passengers that got on and off Texas Eagle trains by station in Arkansas in FY 2003 and FY 2012.

Table 3-2. Amtrak Ridership Boardings and Alightings by Station in Arkansas

	2003	2012	Growth
Walnut Ridge	2,188	4,766	118%
Little Rock	11,700	24,036	105%
Malvern	1,269	2,105	66%
Arkadelphia	911	1,602	76%
Hope	Service began April 2013		
Texarkana	4,721	8,849	87%
Total	**20,789**	**41,358**	**99%**

Source: Amtrak State Fact Sheet, Arkansas 2003 and Arkansas 2012

By far the largest origins and destinations for travelers to and from Arkansas are Chicago and Saint Louis. These two stations account for over 38 percent of the ridership at Arkansas Amtrak stations. Other significant origins and destinations include Dallas and Longview, Texas, with its bus connection to Houston.

Table 3-3. FY 2012 Ridership between Top Five Origins/Destinations to and from Arkansas Stations

Station	To Arkansas	From Arkansas
Walnut Ridge		
Chicago	878	856
Saint Louis	329	334
Longview, Texas (Houston by bus)	138	138
Dallas	103	138
San Antonio	88	106
Little Rock		
Chicago	4,832	5,223
Saint Louis	2,115	2,311
Longview, Texas (Houston by bus)	1,042	662
Dallas	656	650
Los Angeles	612	662
Malvern		
Chicago	381	337
Saint Louis	147	135
Longview, Texas (Houston by bus)	93	72
Dallas	85	77
Fort Worth	62	57
Arkadelphia		
Chicago	322	336
Saint Louis	104	109
Dallas	60	55
San Antonio	75	26
Little Rock	21	54
Texarkana		
Chicago	1,268	1,333
Saint Louis	571	575
Dallas	520	529
Longview, Texas (Houston by bus)	381	375

Source: Amtrak

Modal Comparison of Travel

Travel from stations in Arkansas to major markets in the region is currently faster by automobile absent delays attributable to congestion or other factors. Train travel, however, is less expensive than travel by automobile for these routes, assuming Federal Government mileage reimbursement represents the costs of automobile travel. Table 3-4 shows the time and cost of traveling from stations in Arkansas to midwestern and Texas destinations served by the Texas Eagle. The table compares uncongested highway travel time by car and scheduled Amtrak travel times. The former does not include stops for meals or refueling. Cost for an automobile trip is based on the 2013 Federal Government mileage reimbursement, adjusted by the average vehicle occupancy in Arkansas of 1.74[13] and costs for the train is the two-week in advance fare in effect June, 2013. This analysis does not account for passenger value of time, which would be unfavorable to current rail service to/from Arkansas.

Table 3-4. Highway and Amtrak travel from Arkansas

From Stations in Arkansas to:		Chicago		St. Louis		Dallas		Austin	
Walnut Ridge	By car	8 hrs 4 min	$168	3 hrs 49 min	$71	6 hrs 47 min	$144	9 hrs 48 min	$207
	By train	12 hrs 11 min	$103	5 hrs 38 min	$50	10 hrs 53 min	$77	17 hrs 53 min	$97
Little Rock	By car	9 hrs 48 min	$212	5 hrs 56 min	$113	4 hrs 46 min	$103	7 hrs 46 min	$167
	By train	14 hrs 13 min	$118	7 hrs 40 min	$67	8 hrs 20 min	$75	15 hrs 20 min	$105
Malvern	By car	10 hrs 24 min	$226	6 hrs 32 min	$126	4 hrs 9 min	$90	7 hrs 10 min	$153
	By train	15 hrs 26 min	$97	8 hrs 53 min	$59	7 hrs 35 min	$54	14 hrs 35 min	$79
Arkadelphia	By car	10 hrs 44 min	$233	6 hrs 52 min	$134	3 hrs 47 min	$82	6 hrs 48 min	$145
	By train	15 hrs 50 min	$101	9 hrs 17 min	$60	7 hrs 10 min	$54	14 hrs 10 min	$79
Hope	By car	11 hrs 22 min	$247	7 hrs 30 min	$148	3 hrs 15 min	$69	6 hrs 11 min	$131
	By train	16 hrs 34 min	$106	10 hrs 1 min	$66	6 hrs 21 min	$39	13 hrs 21 min	$65
Texarkana	By car	11 hrs 50 min	$257	7 hrs 58 min	$158	2 hrs 45 min	$59	5 hrs 45 min	$122
	By train	17 hrs 9 min	$109	10 hrs 36 min	$70	5 hrs 32 min	$29	12 hrs 32 min	$56

Source: Amtrak.com, June 2013. Car costs include federal mileage reimbursement rate, 2013, adjusted by Average Vehicle Occupancy.

[13] 2009 FHWA National Household Travel Survey, http://nhts.ornl.gov/tools.shtml.

Passenger Rail Stations in Arkansas

The six passenger rail stations in Arkansas differ in the amenities provided. The Malvern and Arkadelphia stations have sheltered platforms but no station buildings, while the remaining stations have enclosed structures. The Malvern and Arkadelphia stations are flag stop stations, which means that trains only stop when there are passengers who have purchased tickets to board or depart at those stations. Table 3-5 describes Amtrak stations in Arkansas.

The Hope Amtrak station re-opened in April of 2013 after a multi-year effort to restore passenger service, which last operated in the 1960s. The station is located in the original 1912 Iron Mountain/Missouri Pacific Railroad Depot alongside the Hope Visitor Center and Clinton Museum. Restoration of the visitor's center and museum were completed in the mid-1990s with funding from the AHTD, and a separate area was set aside for Amtrak passengers in anticipation of future passenger service. The $250,000 station platform was funded by the Hope Parks and Recreation Department, AHTD, AEDC and the Southwest Arkansas Planning and Development District.

Figure 3-4. Station Platform in Hope, Arkansas

Source: City of Hope

Because stations in Arkansas are served by only two trains per day, one in each direction, arriving at night, these stations are typically not directly accessed by local transit. However, in Little Rock and Texarkana, bus stops are located a block or two away. The Little Rock River Rail trolley also stops several blocks from the Little Rock train station. Malvern, Arkadelphia, and Walnut Ridge are served by paratransit providers.

Table 3-5. Amtrak Stations in Arkansas

	Walnut Ridge WNR	Little Rock LRK	Malvern MVN	Arkadelphia ARK	Hope HOP	Texarkana TXA
Address	109 Southwest Front Street, Walnut Ridge, Arkansas 72476	1400 West Markham Street, Little Rock, Arkansas 72201	200 East First Street, Malvern, Arkansas 72104	798 South Fifth Street, Arkadelphia, Arkansas 71923	100 East Division Street, Hope, Arkansas 71801	100 East Front Street, Texarkana, Arkansas 71854
Shelter	Station building with waiting room, enclosed waiting area	Station building with waiting room, enclosed waiting area	Platform with shelter, no enclosed waiting area	Platform with shelter, no enclosed waiting area	Station building with waiting room, enclosed waiting area	Station building with waiting room, enclosed waiting area
ADA Accessible	Yes	Yes	Yes	No	Yes	Partially
Parking	Short/long term available	Short/long term available	None available	Short/long term available	None available	Short/long term available
Depot Hours	Midnight to 3:30 am	10:30 pm to 8:00 am	Unstaffed	5:18 am to 9:25 pm	Unstaffed	Mon, Sat, Sun 5:00 am to 8:00 am & 7:00 pm to 10:00 pm Other days 5:00 am to 9:00 am & 7:00 pm to 11:00 pm
Baggage Service	None	Checked baggage, storage, assistance, carts available	None	None	None	Checked baggage, storage, assistance, no carts available
Ticket Office	No	Yes	No	No	No	Yes
Restrooms	Yes	Yes	No	No	No	Yes
Telephone	Payphone	Payphone	Payphone	Payphone	None	Payphone
Flag Stop	No	No	Yes	Yes	No	No
Potential Transit Connection	Black River Area Development (paratransit)	Central Arkansas Transit bus and trolley	South Central Arkansas Transit (paratransit)	South Central Arkansas Transit (paratransit)		Texarkana Urban Transit bus

Source: Amtrak

Goals and Objectives for Arkansas Passenger Rail Services

As discussed above under vision, goals, and objectives for the Arkansas State Rail Plan, the following passenger rail objectives for Arkansas are:

- Advance viable opportunities to link Arkansas population centers with intercity passenger rail service
- Advance viable opportunities for commuter rail service in Arkansas urban areas
- Support improvements to the existing Texas Eagle service for Arkansas

AHTD is currently completing a passenger rail study that is to provide more specific objectives regarding passenger rail within the state.

Excursion Rail Operators in Arkansas

Excursion or tourist railroad operators provide special event or regularly scheduled train trips. Rail tourism can be an economic stimulus to Arkansas, as tourists not only ride the rails, but spend money on food, gas, lodging, and other attractions as well. Tourist train operations can also have the benefit of keeping rail lines in service, which may otherwise be abandoned or at least placed out of service. Due to these operations frequently relying on volunteer donations and services, they are able to keep rail lines active, which freight rail operations would be unable to support. There are two tourist train operations within Arkansas.

Arkansas & Missouri Railroad

The Arkansas & Missouri Railroad (A&M) is one of the few remaining commercial rail lines in the United States to offer both freight and passenger services. A&M excursions are in refurbished antique passenger or parlor coaches. The company provides three different excursions on its rail line. On Saturdays in January, February, and March, the company offers excursions between Ft. Smith and Winslow. On Fridays and Saturdays in April through December, excursions between Van Buren and Winslow are offered. On Fridays and Saturdays in March through September, excursions between Springdale and Van Buren are offered.

Eureka Springs & North Arkansas Railway

The Eureka Springs & North Arkansas Railway is a for-profit tourist rail line that provides excursions lasting a little under an hour on 2.5 miles of refurbished track in Eureka Springs, Arkansas. It operates over the line of the now-defunct Arkansas & Ozarks Railway Co. Excursions operate Tuesday through Saturday between April and October. The current owners embarked on an extensive rebuilding effort before placing the rail line back into service for excursion operations.

Chapter 4 Performance Analysis of Arkansas Rail Network

Performance of the Arkansas Freight Rail System

Performance measures can be used as benchmarks to determine needed improvements in the Arkansas rail network. The measures can point to needs of the rail network, gauge the success of improvement initiatives, or be used to prioritize projects or initiatives. Generally, performance measures are tied to goals and objectives developed through a planning process, and provide a means to evaluate whether these goals and objectives are being met.

Performance measures address the goals and objectives listed on Page 1-6 above. The performance measures do not directly address the quality and cost of rail service in Arkansas, since statistics such as the cost of service or measures of quality such as on-time performance are proprietary and not available for publication. However, this analysis indirectly addresses these issues through an assessment of the infrastructure on which the state's rail service relies and other relevant metrics.

One consideration in establishing performance measures relates to the frequency with which performance data is gathered and the difficulty in obtaining data. Certain freight rail-related performance data is publicly available and can be accessed over the Internet. However, other data is proprietary and can be made available only with the agreement of private railroad companies. Some agencies request annual reports of small railroads operating in their states to obtain information about the condition of their systems. Information from these annual reports is usually kept confidential and not published by the state. Rather, the data is used to help justify infrastructure improvements on an as-needed basis. Typically, the states that collect this type of information also maintain dedicated funding sources to support improvements and rehabilitation of short line railroads, either through grants and/or low interest loans.

From time to time, AHTD conducts surveys of rail carriers operating within the state, generally in association with a state rail plan. One such survey was conducted in support of the 2002 Arkansas State Rail Plan, another was completed in 2009, and another was completed to support the current Plan. Regular collection of this information is subject to negotiation with rail carriers. Table 4-1 displays recommended performance measures.

Table 4-1. Potential Performance Measures for Freight Rail in Arkansas

Criteria	Measure	Source
Improve safety of the Arkansas rail transportation system	Percentage of public crossings unprotected or under protected	AHTD Crossing Inventory, FRA Crossing Inventory
	Percentage of public crossings meeting grade crossing standards	AHTD data
	Number of crossing accidents/incidents, injuries, fatalities	AHTD accident reports, FRA Rail Safety Database
	Crossings grade separated or closed	AHTD records
	Total rail-related accidents/incidents, injuries, fatalities by type (train-related, crossings, other)	FRA Rail Safety Database
	Number of crossings available for consolidation	Special study
Use rail transportation as a tool to drive economic development	Tons originating, terminating, overhead by rail in Arkansas	*AAR Rail Fast Facts* published annually, filings with the STB
	New locations served by rail, i.e., locations with industrial sidings or spurs	Arkansas Economic Development office
	Rail carrier investment in Arkansas	Proprietary data to be obtained from rail carriers (for UP, BNSF on websites)
Preserve and expand the availability and efficiency of railroad transportation options in Arkansas	Change in railroad route miles, miles abandoned by type (Class I, III), size of abandonments	*AAR Rail Fast Facts* published annually, filings with the STB
	Mileage of rail line that is out of service or used solely for car storage but not abandoned	Proprietary data to be obtained from rail carriers
	Number of carriers with three or more derailments per year	FRA Rail Safety Database
	Percentage or number of rail miles unable to accommodate 286,000 lb. railcars	Proprietary data to be obtained from rail carriers
	Percentage of short line rail network with FRA Excepted or Class 1 miles	Proprietary data to be obtained from rail carriers
	Percentage of short line rail network with 112+ lb. rail	Proprietary data to be obtained from rail carriers
	Current FRA slow orders (miles of track, number issued)	Proprietary data to be obtained from rail carriers
	Double stack clearance on strategic rail corridors	Proprietary data to be obtained from rail carriers, although does not change unless there is a clearance program
	Dwell times at the UP North Little Rock and Pine Bluff yards	AAR's Railroad Performance website
	Miles of double track mainline	Proprietary data to be obtained from rail carriers
	Port facilities lacking rail access and associated tonnage	Inventory of port facilities, information on tonnage obtained from port authorities
	Percentage of employment within 100—200 mile radius of TOFC/COFC terminal	Census data, inventory of intermodal facilities
Minimize rail impacts of rail transportation in Arkansas	New low emission yard locomotives operating in either maintenance or non-attainment areas	AHTD, Railroads

Table 4-2 below displays a potential application of performance measures. In this case, a subset of the performance measures listed in Table 4-1 has been selected. Initial data has been collected to assess Arkansas' rail freight network performance, and targets have been established. Where possible, the performance of the Arkansas rail network over the period from 2010 to 2014 is evaluated against the performance targets. It may be appropriate for Arkansas to review and amend these performance measures with the Freight Advisory Committee.

Table 4-2. Sample Performance Measures with Data and Performance Targets

Criteria	Measure	Source	Target	Status - 2010 - 2014
Improve safety of the Arkansas rail transportation system	Number of public crossing accidents/incidents,	AHTD accident reports, FRA Rail Safety Database	25 percent decline in average annual accidents at public crossings over past five years for which data is available compared to prior five years	Target met - Average annual accidents at public crossings 2013 - 2009 was 33 percent lower than 2008 - 2004
	Number of fatalities at crossings	AHTD accident reports, FRA Rail Safety Database	No more than six per year	Goal met in 2011, 2012, 2013, not into 2010. 2014 data not available.
Use rail transportation as a tool to drive economic development	Tons originating, terminating by rail in Arkansas	*AAR Rail Fast Facts* published annually, filings with the STB	Volumes to/from Arkansas at least equal to national trends for major commodity categories, comparing most recent year for which data is available and value five years before	Target not met - For most commodities, the declines to/from 2007 to 2012 were more significant in Arkansas than nationally
	Rail carrier investment in Arkansas	Proprietary data to be obtained from rail carriers (for UP on websites)	Change from 2012 level ($139.9 million for UP in 2012 $'s)	NA

Table 4-2. Sample Performance Measures with Data and Performance Targets (continued)

Criteria	Measure	Source	Target	Status - 2010 - 2014
Preserve and expand the availability and efficiency of railroad transportation options in Arkansas	Change in railroad route miles, miles abandoned by type (Class I, III), size of abandonments	*AAR Rail Fast Facts* published annually, filings with the STB	No abandonments beyond minor spur tracks or industrial leads (less than five miles, not connecting networks)	Target not met - 52 miles of Caddo Valley abandoned
	Mileage of rail line that is out of service or used solely for car storage but not abandoned	Proprietary data to be obtained from rail carriers	Decline over 2014 level	NA
	Rail miles able to accommodate 286,000-pound railcars	Proprietary data to be obtained from rail carriers	Increase of 30 miles to 286,000 pound capacity every five years	Data not available
	Percentage of short line rail network with FRA Excepted or Class 1 miles	Proprietary data to be obtained from rail carriers	Decline over 2014 level (27 percent Excepted, 25 percent Class 1)	NA
	Percentage of short line rail network with 112+ lb. rail	Proprietary data to be obtained from rail carriers	Increase over 2014 level (47 percent)	NA
	Average annual dwell times at the UP North Little Rock and Pine Bluff yards	AAR's Railroad Performance website	Decrease over average 2014 level (30.7 hrs at North Little Rock, 31.8 hrs at Pine Bluff)	NA
	Port facilities lacking rail access	Inventory of port facilities	Change from 2014 (Yellow Bend, Crossett, West Memphis lack rail access)	NA
	Change in Truck/Rail Freight	U.S. Census, Commodity Flow Survey	Increase from between Commodity Flow Surveys	Target not met - Truck/rail freight declined from 7.1 million tons in 2007 to 5.7 million tons in 2012

Performance of Arkansas Passenger Rail Services (PRIIA Section 207 Performance Metrics)

Section 207 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) requires that Amtrak report specified performance metrics for each route in order that Amtrak, state governors, and other policy makers may work together to improve the national passenger rail network. For each metric, Amtrak and the Federal Railroad Administration (FRA) developed standards that represent a minimum level of service expected for that route. In some cases, standards are specific target numbers. In other cases, the standard is not a specific number, but rather a demonstration of consistent improvement.

The Section 207 performance metrics for Amtrak's 45 routes are organized in categories: financial, on-time performance, train delays, and other service quality. In the initial 2008 review of routes, the Texas Eagle was in the bottom third for the financial, on-time performance, and train delay categories. Per requirements of PRIIA Section 210, Amtrak is required to prepare a Performance Improvement Plan because of these poor ratings.

Table 4-3 lists performance measures, standards, and reported results for the third quarter of 2015 for the entire Texas Eagle route.

The FRA and Amtrak standards for financial performance help to identify the extent to which the service must be subsidized (i.e., the extent to which passengers are paying the costs of the service). The standards specify that the performance measures should improve over time. Financial metrics are based on an eight-quarter moving average published each quarter. If the quarterly metric improves from one year to the next, the standard has been met.

Two of the financial metrics are not currently available, including the percentage of short-term avoidable operating cost covered by passenger-related revenue and the long-term avoidable operating loss per passenger-mile. The percentage of fully allocated operating costs covered by passenger related revenue for the Texas Eagle service decreased from 48 percent for the period ending June 2014 compared to 44 percent for the period ending June 2015. Because this metric did not improve between these two periods, the standard was not met.

The number of passenger miles per train miles effectively measures the occupancy of Amtrak trains (i.e., the number of passengers on a train at any given time). The larger the number of revenue-passengers, the better the train should perform financially. This statistic decreased from 193 between July 2013 and June 2014 to 182 between July 2014 and June 2015. This reduction in passengers indicates the standard was not met.

Table 4-3. PRIIA Section 207 Performance—Texas Eagle (3rd Quarter FFY 2015)

Category	Metric	PRIIA Section 207 Standard	Period Covered	Metric	Met PRIIA goals?
Financial	Percentage of Short-Term Avoidable Operating Cost Covered by Passenger-Related Revenue	Continuous year-over-year improvement, 8-quarter moving average	N/A	Not Available	N/A
	Percentage of Fully Allocated Operating Cost Covered by Passenger-Related Revenue	Continuous year-over-year improvement, 8-quarter moving average	Compares July 2013-June 2015 with July 2012 - June 2014	July 2013—June 2015: 44% July 2012 — June 2014: 48%	No. Farebox recovery did not improve.
	Long-Term Avoidable Operating Loss per Passenger-Mile	Continuous year-over-year improvement, 8-quarter moving average	N/A	Not Available	N/A
	Passenger miles per train mile	Continuous year-over-year improvement, 8-quarter moving average	Compares July 2013-June 2015 with July 2012 - June 2014	July 2013— June 2015: 182 July 2012 — June 2014: 193	No
On-Time Performance	Change in effective speed from FY2008 baseline (MPH)	>=0	3Q2015	1.3	Yes
	End point On time Performance	80%	3Q2015	21.4%	No
	All stations On time Performance	80%	3Q2015	18.9%	No
Train Delays	Host Responsible Delays—minutes per 10,000 train miles (by host railroad)	<=900	3Q2015	BNSF—2026	No
			3Q2015	CN—2543	
			3Q2015	UP—2549	
	Amtrak Responsible Delays—minutes per 10,000 train miles	<=325	3Q2015	727	No
Other Customer Service Indicator Scores	Overall Service	82	3Q2015	53	No
	Amtrak Personnel	80	3Q2015	73	No
	Information Given		3Q2015	58	No
	On-Board Comfort		3Q2015	63	No
	On-Board Cleanliness		3Q2015	77	No
	On-Board Food Service		3Q2015	62	No

Source: FRA, PRIIA Section 207, Q2 FY 2013 Report, http://www.fra.dot.gov/Page/P0532

The metrics reported in the On-Time Performance category are measured against the FY 2008 baseline. When the change in the effective speed of the train is greater than zero the standard is considered to be met. The Texas Eagle is considered a Long-Distance Route with an On-Time Performance (OTP) standard of 80 percent. The Endpoint OTP measurement is within a tolerance of 10-30 minutes depending on the route length. All-Stations OTP is within 15 minutes of scheduled arrival. In the third quarter of fiscal year 2015, the Texas Eagle's average operating speed had increased 1.3 MPH over the FY2008 baseline, but the train did not meet goals for endpoint or all station on-time performance, with the train arriving on-time at its final destination 21.4 percent of the time and arriving on-time at mid-point stations only 18.9 percent of the time.

Delays are categorized as those caused by Amtrak and those attributable to the railroads over which Amtrak operates. Neither Amtrak nor the three host freight railroads met their goals for delay minutes. Each freight railroad host contributed more than the standard of 900 delay minutes per 10,000 train miles. Amtrak also exceeded the standard of 325 delay minutes per 10,000 train miles.

The final category is related to customer satisfaction. Overall satisfaction is measured against a 2010 standard of 82. For the Texas Eagle, customers reported being neither satisfied nor dissatisfied with the overall service with a grade of 53. The remaining metrics are measured against a 2010 standard with a value of 80. Amtrak Personnel and train cleanliness were rated the highest with scores of 73 and 77, respectively. Customers were not as satisfied with the information provided regarding on-board comfort or on-board food service, which scored 58, 63, and 62.

Chapter 5 Public Financing for Rail Projects and Services in Arkansas

Historically, the railroad industry has been operated and financed under private ownership. Public rail funding was made available when the rail industry faced economic crises, such as the massive railroad bankruptcies in the 1970s and 1980s and when a shrinking industry threatened to significantly reduce rail access to shippers who were not located on high-density rail lines. More recently, public freight rail investments have gone beyond a focus on preservation and support a range of transportation goals, such as economic development, mobility, safety, and sustainability.

Freight rail funding in Arkansas has largely come from the railroads that own and operate the rail infrastructure in the state, but some funding has come from public sources as well.

Support for the Amtrak Texas Eagle service is provided by ticket revenues and federal subsidies to Amtrak. Were Arkansas to request additional Amtrak service, the state would be required to pay for associated capital and operating subsidies.

Arkansas has participated in federal rail funding programs. Some federal programs are dedicated for rail projects, while others are focused on highway projects but can be used for rail as well. In the latter case, rail projects must compete for available dollars with highway projects.

Federal Legislation to Fund Passenger Rail

Passenger Rail Investment and Improvement Act of 2008

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) was enacted in October 2008. In addition to reauthorizing Amtrak, the act tasked Amtrak, the U.S. Department of Transportation (USDOT), the FRA, states, and other stakeholders with improving operations, facilities, and services. PRIIA authorized funding between 2009 and 2013 for the development of passenger rail service. PRIIA established an intercity passenger rail capital grant program for states that requires states to identify passenger rail corridor improvements in their state rail plans. Funds can be used for environmental work; planning projects; and financing the costs of facilities, infrastructure, and equipment necessary to provide or improve intercity passenger rail transportation. PRIIA authorized a funding program to develop the ten federally designated high-speed corridors for intercity passenger rail services, including the South Central High-Speed Rail Corridor between Little Rock, Texarkana, Dallas/Ft. Worth, Austin, and San Antonio. PRIIA also authorized competitive funding to states or Amtrak, in cooperation with states, to finance the capital costs of facilities, infrastructure, and equipment for high-priority rail corridor projects necessary to reduce congestion or facilitate intercity passenger rail ridership growth.

American Recovery and Reinvestment Act of 2009

After the economic recession, which began in late 2008, the American Recovery and Reinvestment Act of 2009 (ARRA) was signed into law in order to stimulate the economy. Within the law, $8 billion in funding for high-speed intercity passenger rail was included to jump-start American high-speed rail. Projects were 100 percent federally funded with no required local match; projects were not required to be included in a state rail plan.

Arkansas Funding of Rail

Arkansas has no dedicated funding programs for freight or passenger rail. However, some funding mechanisms can be used to fund rail projects within the state on a case-by-case basis. The Governor's Quick Action Closing Fund was established in 2007. This is a discretionary fund that is aimed at supporting economic development within the state. Its funding comes from $50 million in the General Improvement Fund every two years. As of early 2014, no new funding has been approved for the fund for the coming year. However, this fund has at times been used to fund rail projects, including the restoration of the North Louisiana and Arkansas Railroad line.

Arkansas practices "contingency budgeting," meaning that the amount of general revenues that agencies receive depends upon the amount of tax dollars actually received. The Arkansas legislature establishes both maximum and minimum levels of funding for portions of the state government that rely on general revenues (as opposed to revenues dedicated for a specific purpose). Typically, activities funded by the minimum level of funding are considered "A" priorities, while secondary activities are considered "B" priorities, and so on. Because rail is not routinely funded in Arkansas, it would be more likely to be subject to contingent funding, which would be available if revenues are higher than expected. In the past, state funding of freight rail projects related to economic development has been administered through the AEDC.

Local Rail Funding

In some instances, local communities in Arkansas have funded rail projects. In most cases, these are economic development initiatives with a rail component. As an example, a rail spur and public rail access facility were recently funded in part by the City of Monticello, Arkansas and Drew County, Arkansas. The Town of Russellville has a small tax that can be applied to economic development projects, including rail. It is important to note, however, that local communities, particularly small towns and villages, are limited in the size of investments that can be afforded.

Federal Programs to Fund Passenger Rail

High-Speed/Intercity Passenger Rail Program

Following the passage of ARRA, the FRA submitted a strategic plan to the House and Senate Appropriations Committees in 2009 describing how the FRA would use the $8 billion in ARRA funding to improve and deploy high-speed passenger rail systems. Soon after, FRA issued guidance for the High-Speed/Intercity Passenger Rail (HSIPR) grant program, combining programs specified by PRIIA into the HSIPR program. Under the program, the FRA solicited applications for more than

$10 billion in grant funding. Thirty-nine states, the District of Columbia, and Amtrak submitted applications requesting more than $75 billion—well in excess of the available funding—for projects and corridors in every region of the country. Approximately 99 percent of the nearly $10.1 billion allocated to the HSIPR program across funding sources has been obligated. According to the FRA, most rail investments to date are invested in key corridors with a focus on projects offering the greatest public benefits, as well as those projects ready for implementation

Federal funding for the HSIPR program must be appropriated annually. Although over $10 billion in funding was appropriated following PRIIA and ARRA, FY 2010 was the last year to include funding for the HSIPR program. No funding for the program was included in the federal FY 2011, 2012, or 2013 budgets.

Federal Commuter Rail Funding

Because they operate over the general U.S. rail network,[14] commuter rail services are relevant to this Rail Plan. Although no commuter rail services operate in Arkansas, such services could be eligible for funding under the Federal Transit Administration (FTA). Federal funding is available under the Section 5309 Capital Investment Program. The New Starts/Small Starts program is a competitive grant program that serves as the federal government's primary financial resource for supporting locally planned, implemented, and operated transit "guideway" capital investments. The New Starts program has helped to make possible hundreds of new or extended transit fixed-guideway systems across the country, including commuter rail systems. Once commuter systems are established for at least seven years, they may be eligible for the Section 5309 Fixed Guideway Modernization formula grants. Commuter rail systems may also be eligible for the FTA's Urbanized Area Formula Program (Section 5307). These grants are allocated to urban areas with populations over 50,000 on the basis of population/population density, or population/population density in addition to vehicle and passenger miles for urban areas with populations over 200,000. If a commuter rail system were established in Arkansas, this grant program could eventually benefit passenger rail in the state.

Federal Transportation Funding Programs Relevant to Rail

Transportation Investment Generating Economic Recovery

The first round of the Transportation Investment Generating Economic Recovery (TIGER) grant program was included in ARRA. There have been four additional rounds of TIGER grant funding. These grants were awarded on a competitive basis for surface transportation projects that the USDOT believes will have a significant impact on the nation, a metropolitan area, or a region. For the first time in 2014, a portion of the funds could be used for planning and studies, although most of the available to funding was restricted to publically accessible transportation infrastructure. Infrastructure projects must have independent utility, that being that they must be ready for their intended use upon completion of project construction.

Fiscal Year 2013 funds available through the TIGER program were $474 million, while collectively $3 billion in funding was made available between FY 2009 and FY 2012. These grants are

[14] As opposed to heavy rail or light rail, which operates over a dedicated right of way.

extremely competitive, so much so that applications for projects totaling $9 billion were received for the $474 million of funding available in FY 2013. The city of West Memphis received $11 million in TIGER funds in 2012 to upgrade and strengthen its existing rail infrastructure, allowing it to accommodate heavier loads. It also provided funding for extending a rail spur 13,500 feet to the base of the Mississippi River levee, for a direct connection between the local rail network and the waterway. Other TIGER funds have been used in Arkansas for roadway and bicycle/pedestrian projects. More recently, the City of Jonesboro received a $1.2 million grant to perform design and environmental work for a roadway/rail grade separation project.

Section 130 Highway/Rail Grade Crossing Program

This program provides federal support for projects that improve safety at public roadway/rail grade crossings. States may use funds for installing or upgrading warning devices, eliminating grade crossings through grade separation, or consolidating or closing grade crossings. The federal share of these funds is 90 percent, while the local share is ten percent. Arkansas has received, on average, $3.7 million in Section 130 funds for each of the last three federal fiscal years.

Moving Ahead for Progress in the 21st Century Act Programs with Selected Rail Application

As of early 2014, a variety of legislative alternatives have been introduced regarding the reauthorization of Moving Ahead for Progress in the 21st Century Act (MAP-21). Some of these proposals could significantly change the way that rail is funded in the United States. If any of these changes are made into law, they will be included in this Plan.

Congestion Mitigation and Air Quality Improvement Program

Funding for this program is available for areas that do not meet the National Ambient Air Quality Standards (nonattainment areas) as well as former nonattainment areas that are now in compliance (maintenance areas). In Arkansas, Crittenden County has been designated a nonattainment area. The program funds transportation projects and programs that improve air quality by reducing transportation-related emissions of criteria pollutants under the Clean Air Act's National Ambient Air Quality Standards. These include ozone, carbon monoxide, and particulate matter. Examples of Congestion Mitigation and Air Quality-funded rail projects include diesel engine retrofits, idle-reduction projects in rail yards, and projects that help substitute rail for truck transportation such as intermodal terminals or rail sidings. New language from MAP-21 places considerable emphasis on selected project types including electric and natural gas vehicle infrastructure and diesel retrofits. State departments of transportation and metropolitan planning organizations (MPO) select and approve projects for funding. The federal share is 80 percent with a non-federal match of 20 percent.

Surface Transportation Program

The Surface Transportation Program is a general grant program available for improving federal-aid highway, bridge, or transit capital projects. Eligible rail improvements include lengthening or increasing the vertical clearance of bridges, eliminating crossings, and improving intermodal connectors. The federal share is 80 percent with a non-federal match of 20 percent.

Transportation Alternatives Program

The Transportation Alternatives Program (TAP) provides funding for specific activities related to service transportation, of which several are relevant to rail. These include rail corridor preservation and preservation of historic rail buildings, establishment of rail museums. For most TAP projects, the federal share is 80 percent, and the non-federal share is 20 percent.

Other Federal Funding Programs Relevant to Rail

U.S. Department of Commerce Economic Development Administration

The Economic Development Assistance Programs under the Economic Development Administration (EDA) provides grants for projects in economically distressed areas. The program can provide between 50 to 80 percent of the total project cost, depending upon the level of economic distress in the area. The Public Works program is aimed at helping areas improve physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term, private-sector jobs, and investment. The Economic Adjustment program helps communities that are experiencing economic disruptions such as natural disasters, military base closures, trade-related disruptions, and major private-sector employer restructurings. Examples of rail-related EDA grants include the reconstruction of damaged rail infrastructure, rail spur, and access projects. According to the American Short Line and Regional Railroad Association (ASLRRA), more than $55 million in EDA grants went to rail projects with an average per project grant amount of $1.9 million since 2008. Many other EDA grants were not specifically for rail-related projects, but had rail-related components. Many areas of Arkansas would qualify for these grants, particularly rural areas within the state. Two EDA grants are helping to the North Louisiana Arkansas Railroad.

Delta Regional Authority

The Delta Regional Authority (DRA) provides economic development assistance in 252 counties in the Mississippi Delta area. Of these, 42 are located in Arkansas. Between federal fiscal year 2002 and 2012, the DRA funded 84 projects, investing $17.5 million in Arkansas counties. Between federal fiscal year 2002 and 2013, DRA funded the following freight rail projects in Arkansas:

- $157,000 of $3,795,000 project to build new access road and rail spur in Newport, Arkansas
- $200,000 of $2,715,000 project to build rail spur in McCrory, Arkansas
- $275,000 of $906,000 project to build public rail access facility and extend spur into industrial park in Monticello, Arkansas
- $210,000 of $13.139,000 million project to rehabilitate the NLA

U.S. Environmental Protection Agency, Diesel Emission Reduction Act National Funding Assistance Program

Funding is available for projects that lower locomotive emissions through the Diesel Emission Reduction Act National Funding Assistance program. These include retrofit technologies, idle-reduction technologies, aerodynamic technologies, and early replacement or repower. For FY 2013,

$9 million in eligible funding was available. The extent of federal match depends upon the type of project. There is no requirement that the project be in a nonattainment area for National Ambient Air Quality Standards, but applications are scored higher if the project is in a high priority area, which in Arkansas would include Crittenden and Pulaski Counties—the latter being home to one of the largest rail yard operations by the nation's largest railroad. High-priority areas are those that have the highest emissions from diesel engines.

Federal Financing Programs Relevant to Rail

Railroad Rehabilitation and Improvement Financing Program

The Railroad Rehabilitation and Improvement Financing (RRIF) program provides direct federal loans and loan guarantees to finance the development of railroad infrastructure. Eligible applicants include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures, and shippers served by one railroad who wish to build a connection to a competing carrier. Eligible projects include improvements to, rehabilitation, or acquisition of freight and passenger railroad equipment, track and structures, new multimodal facilities, and refinancing of associated debt. Direct loans can provide up to 100 percent of project cost with repayment periods up to 35 years. Interest rates are equal to the U.S. Treasury rate, but fees must be paid to defray the cost to the government of making the loan. These include a Credit Risk Premium, which depends upon the level of risk of the loan, and an investigative fee if outside professional services are necessary to issue the loan. In 2003, the Arkansas & Missouri Railroad used an $11 million RRIF loan to help finance the purchase of its property from BNSF, as well as to upgrade another 39 miles of track.

Transportation Infrastructure Finance and Innovation Act

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for large projects. Eligible applicants include state and local governments, transit agencies, railroads, special authorities, special districts, and private entities. TIFIA provides three types of financial assistance.

- Secured direct loans. These have a maximum term of 35 years after project completion. Repayment may begin up to five years after project completion.
- Loan guarantees. The federal government guarantees a borrower's repayments to a non-federal lender. Loan repayments to the lender must begin no later than five years after completion of the project.
- Standby line of credit. A federal loan serves as a contingent source of cash to supplement project revenues. Standby financing is available during the first ten years after project completion.

Federal credit assistance cannot exceed 33 percent of project costs. Interest rates are equal to treasury rates and are fixed. All projects eligible for Surface Transportation Program funds are eligible for TIFIA, as well as intercity passenger rail facilities and vehicles, publicly owned freight rail facilities, intermodal freight transfer facilities, access to intermodal freight transfer facilities,

and projects located within the boundary of a port terminal under certain conditions. Projects must be included in the state's Transportation Improvement Program (TIP). TIFIA loans have helped to finance the establishment of a commuter rail service, in addition to several passenger intermodal projects, of which commuter and intercity rail were components.

Private Activity Bonds

A private activity bond is a bond issued by or on behalf of local or state government for the purpose of financing the project of a private user. These bonds enjoy the same tax-exempt status as other state and local bonds. Up to $15 billion can be used for transportation infrastructure, and freight transfer facilities, such as rail-truck facilities, qualify among the types of private activities for which these bonds may be issued.

State Infrastructure Banks

State Infrastructure Banks (SIB) are revolving infrastructure investment funds for surface transportation that are established and administered by states. SIBs were originally authorized by the federal government in 1995 and expanded in 1997. Previous federal-aid highway bills have allowed the use of federal funds to capitalize a SIB. MAP-21 has not allowed new 2013–2014 funding to be used to capitalize SIBs.

Public-Private Partnerships

There are several forms of public-private partnerships (P3). The FHWA defines public-private partnerships as *"contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects.*" The Association of American Railroads (AAR) defines P3s differently, as "*arrangements under which private freight railroads and government entities both contribute resources to a project—offer a mutually beneficial way to solve critical transportation problems.*" Each definition implies participation by both the private and public sector in a transportation infrastructure project. The FHWA version focuses on increasing private-sector participation in roadway and other projects, which traditionally have been financed by the public sector. The AAR focuses more on public financing of freight rail projects, which have traditionally been financed by the private sector. Generally, the public sector participates in P3s where the public benefits exceed the public investment, while the private sector participates when a positive return is expected on private investment. P3s are also feasible for passenger rail projects, such as situations where developers or other local businesses help to pay for construction of or improvements to passenger rail stations.

Chapter 6 Ongoing Programs to Improve Safety and Security of Arkansas Rail System

Safety

One of Arkansas State Highway and Transportation Department's (AHTD) primary objectives is to maintain a safe transportation system. This goal is shared by rail operators and other rail stakeholders in the state. While rail is a relatively safe mode of transportation, accidents, injuries, and fatalities occur.

The AHTD's safety goals are listed below:

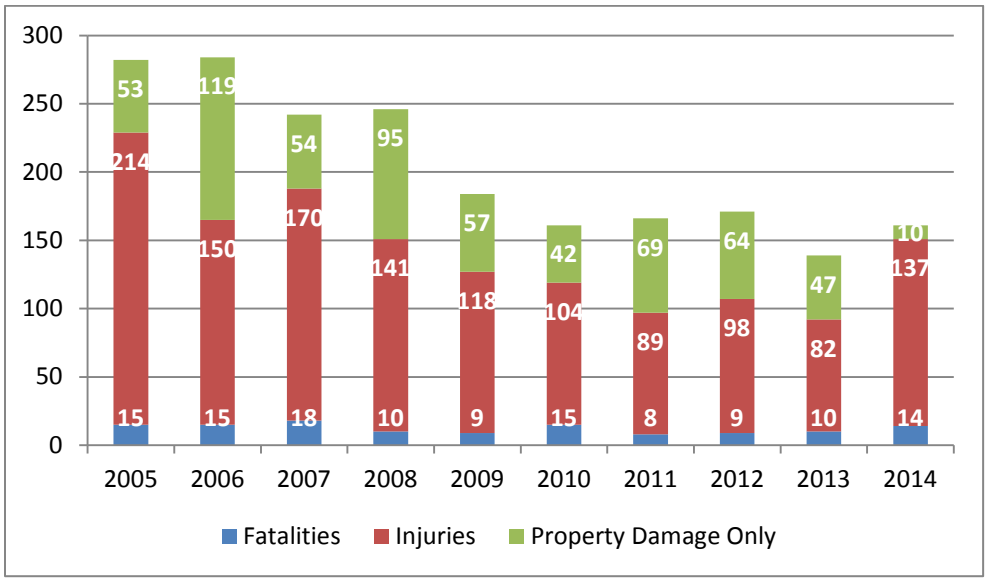
- Investigate and implement, where appropriate, advanced grade crossing protection technology.
- Encourage sealed rail line corridors through the removal of nonessential grade crossings.
- Support efforts to improve train control and operating systems at grade crossings.
- Promote research efforts to enhance rail safety.
- Advocate stronger enforcement and compliance of traffic laws at high-risk roadway/rail grade crossings.
- Continue the AHTD's proactive program to reduce the number of incidents, injuries and fatalities at grade crossings. AHTD's goal, as articulated in the *Arkansas Strategic Highway Safety Plan* of 2013, is to reduce the number of annual railroad crossing fatalities in Arkansas to six or fewer by 2017.

Rail Accident/Incident Trends in Arkansas

As shown in Figure 6-1, the number of rail-related injuries, fatalities, and property-only incidents/accidents[15] has generally trended downward over the past decade in Arkansas. For example, the number of fatalities associated with rail between 2010 and 2014 was about 27 percent lower than the number of fatalities between 2005 and 2009. Similarly, the number of injuries fell by 35 percent between the same two periods.

[15] The FRA does not differentiate between an "accident and an "incident." Rather, the FRA explains, "'Accident/Incident' is the term used to describe the entire list of reportable events. These include collisions, derailments, and other events involving the operation of on-track equipment and causing reportable damage above an established threshold; impacts between railroad on-track equipment and highway users at crossings; and all other incidents or exposures that cause a fatality or injury to any person, or an occupational illness to a railroad employee."

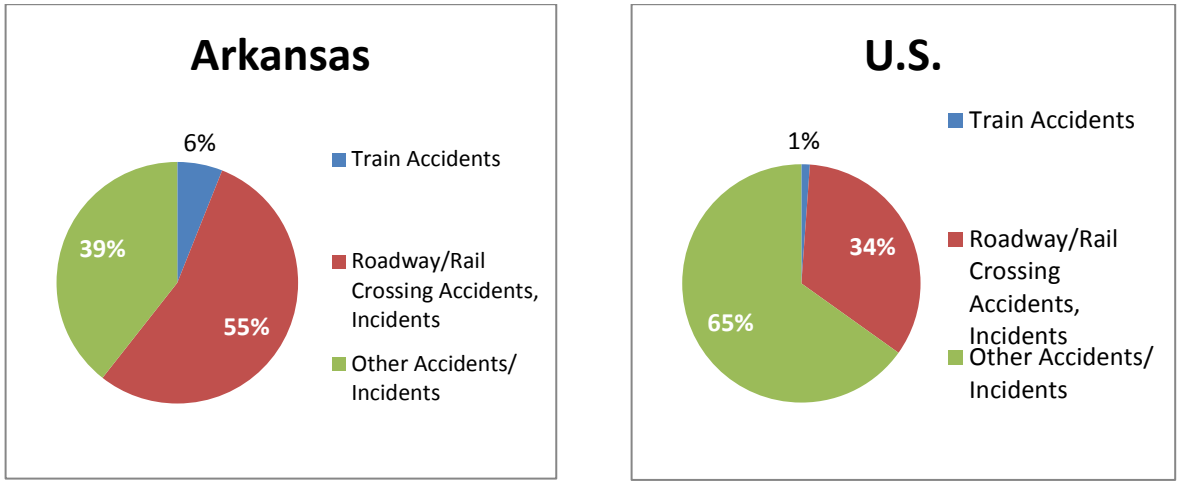
Figure 6-1. Arkansas Rail-Related Accident/Incident Trends by Severity



Source: FRA Safety Database

The majority of rail-related fatalities in Arkansas occur at roadway/rail grade crossings. Of the 32 rail-related fatalities that occurred in Arkansas between 2012 and 2014, 18 (or 55 percent) were at crossings. The nature of rail incidents/accidents in Arkansas differs somewhat from that of most states in the U.S. Between 2012 and 2014, 730 (or 34 percent) of rail-related fatalities in the U.S. occurred at grade crossings. Most fatalities during that time in the U.S. resulted from trespassers on railroad rights-of-way being struck by trains, rather than accidents at grade crossings. Trespassers on rail rights-of-way are a safety hazard in Arkansas as well, but accidents at crossings are a larger cause of fatalities. Figure 6-2 provides a comparison of the national and Arkansas data by type of fatal accident.

Figure 6-2. Comparison of Arkansas Rail-Related Fatalities to U.S. Fatalities by Type of Accident/Incident (2012—2014)



Source: FRA Safety Database

Evidence suggests that roadway/rail grade crossings may be a proportionately higher cause of death in Arkansas compared to overall vehicle travel when compared to the U.S. on average. During 2012 and 2013, the total number of vehicle miles traveled (VMT) in Arkansas was about 33 billion per year according to Federal Highway Administration (FHWA) statistics. During the same period the total VMT in the U.S. was around three trillion per year, so Arkansas accounted for roughly 1.1 percent of the nation's VMT.[16] On the other hand, the 11 fatalities that occurred at roadway/rail grade crossings in Arkansas accounted for 2.4 percent of all U.S. fatalities at roadway/rail grade crossings. Put another way, the incidence of fatalities at roadway/rail grade crossings was 0.16 per billion VMT in Arkansas compared to 0.08 per billion VMT on average in the U.S.

As shown in Figure 6-3, most non-fatal injuries that occur on the Arkansas rail network are "other accidents/incidents," rather than train accidents or collisions at roadway/rail grade crossings. These can include a broad range of occurrences, including employee illness or injury, or trespassers being struck by trains. The majority of injuries are work-related injuries to railroad employees or contractors who are on duty (Figure 6-4).

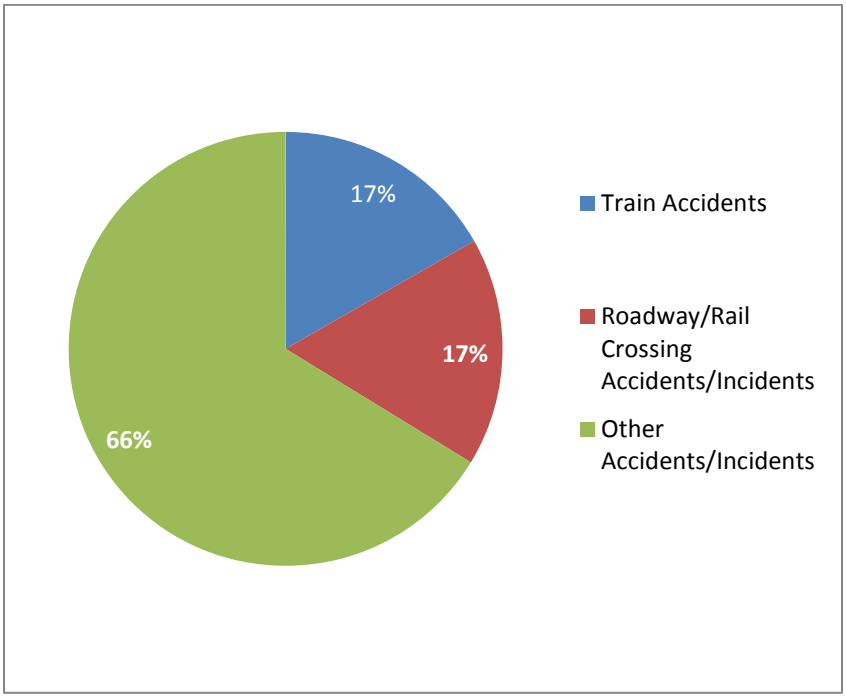
Of the 144 accidents/incidents at roadway/rail grade crossings in Arkansas between 2012 and 2014, about 42 percent occurred at crossings without train-activated warning devices such as lights and gates (Figure 6-5).

As of July 2013, there are 2,464 public roadway/rail grade crossings in Arkansas. Of these most do not have train-activated warning devices, such as flashing lights or gates (Table 6-1).

Nationwide, about 17 percent of public crossings have no gates but do have flashing lights, while about 35 percent of public crossings have flashing lights and gates, meaning that 52 percent of U.S. public crossings have train-activated signals compared to Arkansas where about 35 percent of public crossings have train-activated signals.[17]

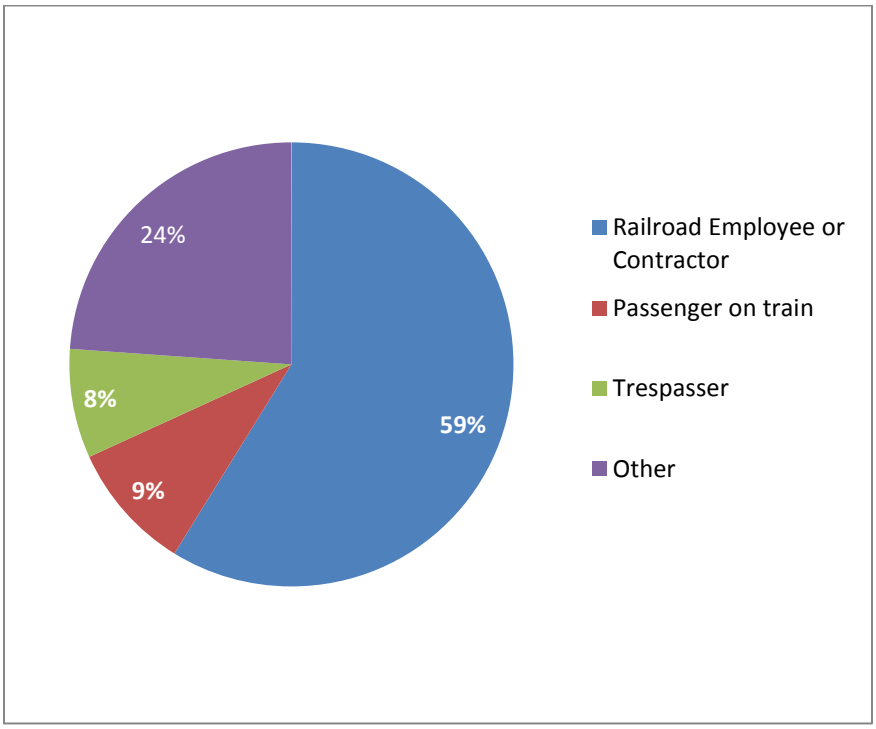
[16] U.S. Federal Highway Administration, *Highway Statistics, https://www.fhwa.dot.gov/policyinformation/statistics.cfm.*
[17] FRA Public Crossing Inventory File, Accessed on October 2015.

Figure 6-3. Rail-Related Injuries in Arkansas by Type of Accident/Incident (2012—2014)



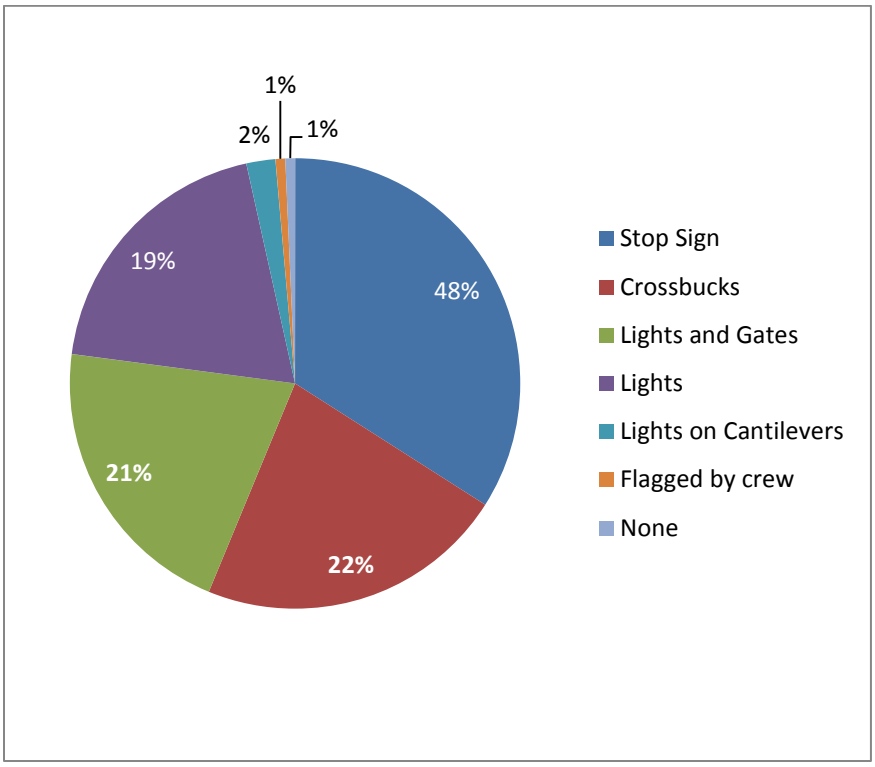
Source: FRA Safety Database, AHTD Crash Statistics

Figure 6-4. Rail-Related Injuries in Arkansas by Type of Person (2012—2014)



Source: FRA Safety Database

Figure 6-5. Roadway/Rail Grade Crossing Incidents/Accidents by Type of Crossing, 2012 - 2014



Source: AHTD Crash Statistics

Table 6-1. Inventory of Public Roadway/Rail Grade Crossings in Arkansas, July 2013

Type of Countermeasures	Number of Crossings	Percentage of Crossings
Flashing Lights and Gates	525	21%
Flashing Lights, no Gates	335	14%
Crossbucks and/or Stop Signs Only	1,591	65%
Total	2,451	100%

Source: AHTD

Safety Improvements at Roadway/Rail Grade Crossings in Arkansas

A major objective of AHTD's rail safety activities is to continuously improve the security of train and vehicle traffic at grade crossings. The AHTD Traffic Safety Section administers the federal Railway-Highway Crossing Program (Section 130). The purpose of the program is to fund safety improvements to reduce the number of fatalities, injuries, and crashes at public grade crossings. This is a formula grant program, in which states are allocated funds with 50 percent based on formula factors from the Federal Surface Transportation Program and 50 percent based on the number of public roadway/rail grade crossings. Each state receives a minimum of a one-half percent of the program funds. At least half of the funds are required to be used to install protective devices, such as warning bells, flashing lights, overhead cantilevers with flashing lights, and gates.

Arkansas has received, on average, $3.7 million in Section 130 funds for each of the last three federal fiscal years. AHTD annually calculates a hazard rating for each public grade crossing. The hazard rating uses four factors in the calculation: average daily vehicle traffic, number of trains per day, number and type of tracks, and crashes in the past 15 years as reported in the FRA's safety database. To select crossings to upgrade and to determine the appropriate protective devices, crossings are sorted by hazard rating, and anomalies such as questionable traffic counts are investigated and corrected. Fifteen to 20 crossings with the highest hazard ratings are scheduled for on-site diagnostic team meetings where AHTD, FHWA, the railroads, and local officials are invited to discuss the crossing and the options available for improvements. Proposed projects are also provided to the Arkansas State Highway Commission for consideration, such as by railroad engineers who observe repeated near-misses at specific locations, and by local officials responding to public input and changing residential patterns. Taking into account these considerations, AHTD upgrades eight to ten crossings per year.

AHTD also funds, on average, one grade separation per year. While grade separation projects entirely remove the risks associated with roadway/rail grade crossings as well as the inconvenience to highway users, they are much more costly to construct than improvements to crossings. Grade separations may be funded in part with Section 130 funds, but given that the typical grade separation project costs over $15 million, other funding sources are used to pay for these projects as well.

AHTD, in cooperation with railroads and local governments, also investigates possible opportunities to close or consolidate redundant or non-essential crossings.

Another rail safety activity is participation in Operation Lifesaver, a nationwide effort dedicated to reducing collisions, injuries and fatalities at roadway/railroad grade crossings. Operation Lifesaver educates the public on railroad safety, providing free presentations to all types of organizations including schools and civic groups, as well as to professional truck drivers. The programs are co-sponsored by federal, state, and local government agencies; highway safety organizations; and railroads. State agencies can support Operation Lifesaver by helping to spread the organization's message and materials and by sharing data. Some states also fund or help secure funding for Operation Lifesaver activities.

State-Sponsored Crossing Improvement and Enforcement in States Surrounding Arkansas

Table 6-2 outlines roadway/rail grade crossing improvement and enforcement activities in states surrounding Arkansas. In some cases, funding and enforcement activities are beyond what is available in Arkansas. As AHTD considers future activities to improve the safety of roadway/rail grade crossings, it may consider the advantages and disadvantages of the programs of these other states.

Table 6-2. State-Sponsored Crossing Improvement and Enforcement in States Surrounding Arkansas

State	State-Sponsored Crossing Improvement and Enforcement Activities
Louisiana	Responsibility for roadway/rail grade crossing improvement and enforcement lies with the Louisiana Department of Transportation and Development.
Mississippi	The Mississippi Department of Transportation (MDOT) employs five rail safety inspectors, whose duties include, among other things, inspecting all tracks, crossing surfaces, pavement markings and signs for conformity with federal guidelines and regulations. MDOT also employs four rail safety specialists who report defects to the FRA and the subject railroads for corrective action and/or repair.
Missouri	The Missouri Department of Transportation (MoDOT) Railroad Section focuses on railroad safety. Safety areas include grade crossing installation and upgrades, track safety, grade crossing signal inspection, grade crossing safety, employee safety, and railroad operating practices. The Railroad Section is funded in part by a tax on large railroad intrastate revenues, the revenue from which typically equals around $750,000 per year. MoDOT Railroad Section also annually programs about $1.2 million in state funds for the Grade Crossing Safety Account (GCSA), which is used in conjunction with federal Section 130 funds to improve safety at roadway/rail grade crossings in the state. The GCSA is funded from state motor vehicle licensing fees.
Oklahoma	The Oklahoma Corporation Commission Railroad Department monitors the operations of railroads in Oklahoma for compliance with state railroad crossing safety regulations. It also investigates and makes recommendations concerning railroad crossing openings, closings, and crossing signal upgrades.
Tennessee	Roadway/rail grade crossing improvement and regulation is handled through the Tennessee Department of Transportation Rail Safety/Regulatory Unit. In addition to administering Section 130 funds, the Rail Safety/Regulatory Unit employs inspectors that specialize in the enforcement of regulations pertaining to railroad operating practices, hazardous materials, track, and signal and train control. Among the duties of these inspectors are roadway/rail grade crossing inspections.
Texas	The Texas Department of Transportation employs 16 full-time employees in the Rail Safety Inspection Program. These inspectors conduct routine inspections to ensure compliance with applicable laws. They also respond to complaints and investigate accidents, including those regarding roadway/rail grade crossings.

Transportation of Hazardous Substances

Railroads have a common carrier obligation to provide rail service to their customers upon reasonable request, which mandates that they carry hazardous substances. According to the Association of American Railroads (AAR), more than 99.997 percent of hazardous material (hazmat) carloads arrive at their destination without release caused by an accident. Rail hazmat rates as measured by train accidents with a release per thousand hazmat carloads have declined 91 percent between 1980 and 2012.

Tank car standards have received new scrutiny due to the dramatic recent increase in crude oil shipped by rail as well as several major recent accidents involving crude oil shipment by rail, the worst of which killed 47 people on July 6, 2013 in Lac-Megantic, Quebec. In 2011 the AAR recommended a more stringent tank car standard for hauling ethanol or crude oil. In May of 2015, the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA) and the FRA established a new rule to improve the safety of hazardous material transportation by rail. The rule applies to "high-hazard flammable trains" (HHFT), which are defined as those with a continuous block of 20 or more tank cars with flammable liquid, or 35 or more tank cars with flammable liquid dispersed throughout the train. Highlights of the Rule are listed below.

- Establishes standards for new tank cars and retrofitting requirements for older tank cars carrying crude oil and ethanol, along with a schedule for retrofitting the older tank cars;
- Requires that a HHFTs be equipped with electronically controlled pneumatic (ECP) braking systems by 2023, and that certain HHFTs be so equipped by 2021;
- Restricts operating speeds on HHFTs to 50 miles per hour and 40 MPH if any tank cars are on the train that do not meet the enhanced standards;
- Requires routing analysis considering 27 safety and security factors for HHFTs;
- Improves the sampling, testing, and classification of unrefined petroleum-based products like crude oil;
- Requires railroads to adequately communicate HHFT routing decisions.

Figure 6-6 displays a diagram of the enhancements of the USDOT's new tank car standards.

Figure 6-6. New USDOT Tank Car Standards

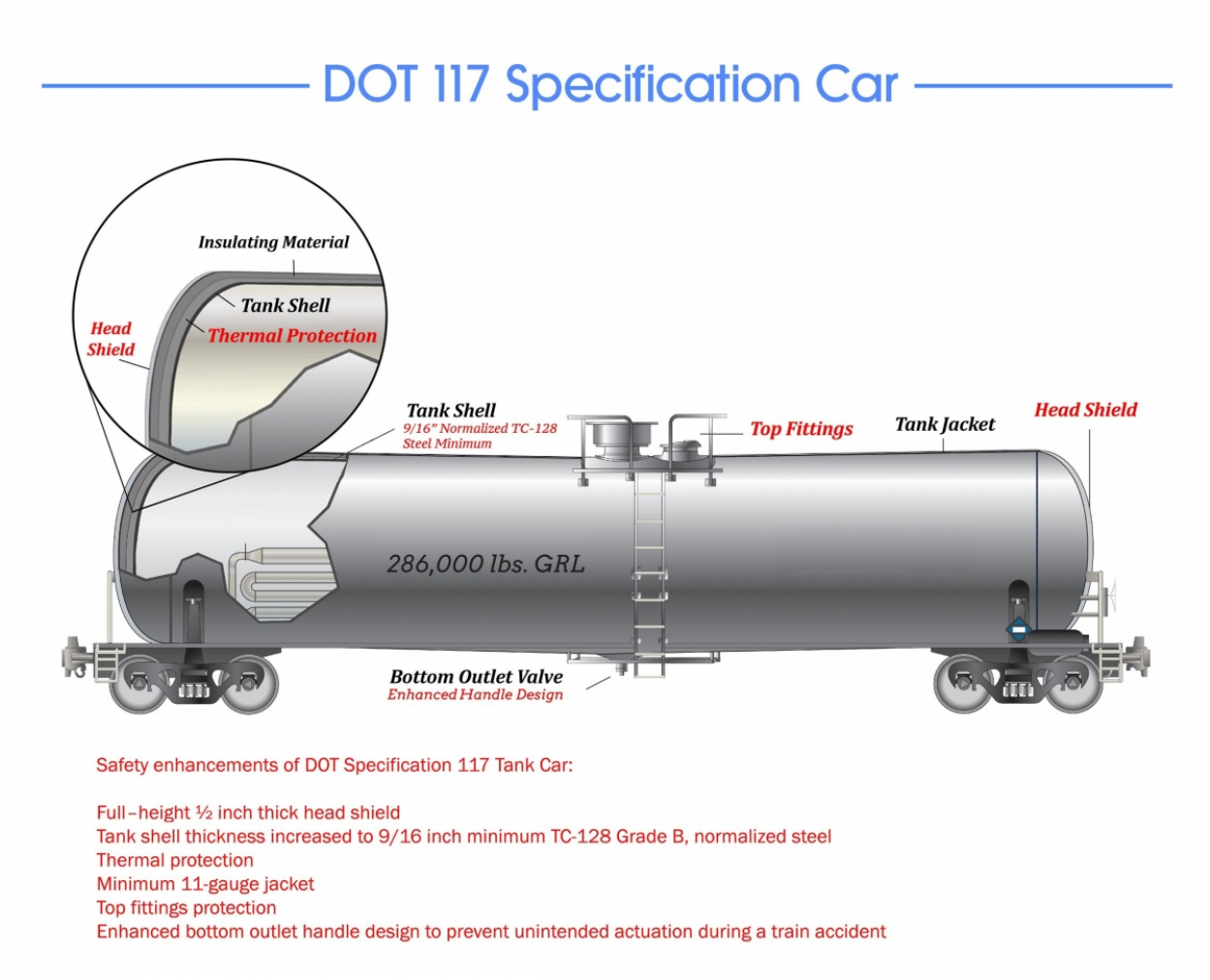
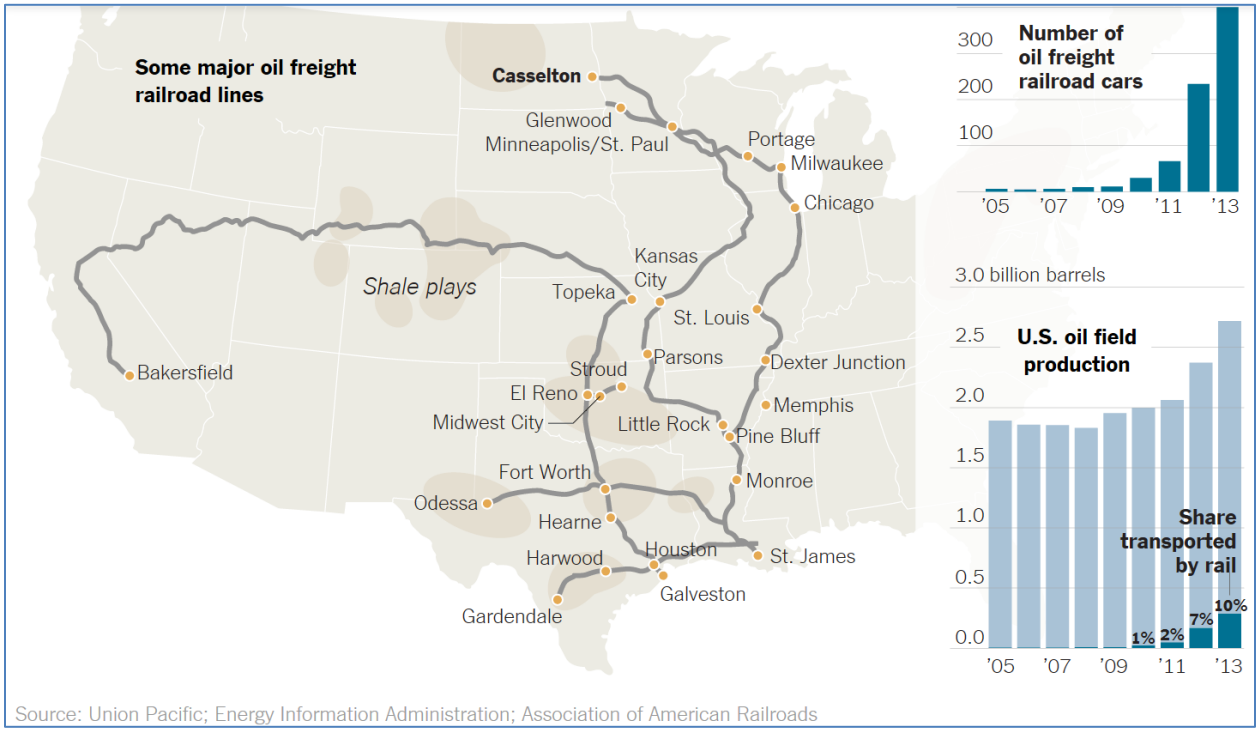


Figure 6-7 displays a map of crude rail flows on the UP, as well as crude by rail trends as found in an article in the *New York Times*. As shown, a number of major oil freight railroad lines pass through Arkansas.

Figure 6-7. Map of UP Crude Rail Flows, by Rail Trends



Source: New York Times

Just over five percent of carloads traveling by rail in the United States contain hazardous materials, including about 75,000 carloads per year of toxic inhalation hazards (TIH). Per federal regulations enacted in 2008, railroads are required to determine the routings for TIHs, as well as certain explosives and radioactive materials. Routings are subject to a risk assessment that considers the potential impacts on the population, the environment, landmarks, and rail operations due to an accident or an act of terrorism. Any deviation from the minimum-risk route requires justification by the railroad.

Positive Train Control

Positive train control (PTC) is a technology designed to automatically stop or slow a train before certain types of accidents occur, particularly train-to-train collisions, derailments caused by excessive speed, unauthorized incursions by trains into work zones where repairs are being made to track and structures, or the movement of a train through a switch that was left in the wrong position. The Rail Safety Improvement Act (RSIA) of 2008 mandated that Class I railroads install PTC on tracks that carry passengers or TIH materials. Based upon the January 2012 final FRA rule, the AAR estimates that PTC technology will need to be installed on 63,000 miles of U.S. freight rail lines. Many of the mainlines in Arkansas will fall under this mandate. The original RSIA legislation required that PTC be put into service by the end of 2015. The AAR is skeptical that this goal can be achieved, particularly since the entire network will need to be interoperable, and the FRA will need to certify the entire network. According to the AAR, U.S. railroads have, as of mid-2014, spent $4.5 billion on PTC implementation. To implement the entire network may cost another

$4.5 billion, in addition to the hundreds of millions of dollars spent each year to maintain the system.

Security

State and Federal Security Roles

The Transportation Security Administration (TSA), under the U.S. Department of Homeland Security, has primary federal jurisdiction over rail security. The Arkansas Department of Emergency Management is tasked with coordinating emergency responses to vulnerabilities within the state. In addition, the AHTD Public Transportation Program is responsible for providing safety and security oversight over rail transit programs.

Nationally, the TSA's Surface Transportation Security Inspection Program deploys 175 inspectors in 54 field offices (the closest to Arkansas is in Memphis) to verify implementation of voluntary freight rail security measures, conduct vulnerability assessments, and conduct regulatory compliance inspections. The TSA published rules aimed at protecting the nation's freight and passenger rail systems on November 26, 2008. These include a requirement by railroads shipping TIH, certain explosive materials, and certain radioactive materials (collectively referred to as "security-sensitive material") shipments to follow prescribed chain of custody procedures. Rail carriers, rail transit systems, and certain rail facilities are required to designate rail security coordinators to act as liaisons with the TSA. Railroads are required to report security concerns to the TSA. Upon request by TSA, railroads must be able to report the location of a single car with security-sensitive materials within five minutes and within 30 minutes the location of multiple security-sensitive material cars in multiple locations.

Strategic Rail Corridor Network

Rail will play an important role in facilitating a response to an emergency. A nationwide defense system of railroad lines has been defined by the U.S. Department of Defense (DoD) in cooperation with the FRA. This system, the Strategic Rail Corridor Network (STRACNET), provides access to essential military bases and support installations and is used for the deployment of military equipment during emergencies or natural disasters. The STRACNET system in Arkansas is shown on Figure 6-8. The DoD maintains minimum standards for STRACNET lines and connectors. STRACNET rail lines must be maintained to at least FRA Rail Class 2, while STRACNET connectors must be maintained to at least FRA Rail Class 1.[18] Lines must be able to accommodate railcars of the DoD clearance profile, which includes a 12-foot overall width and 16.92-foot overall height above rails.

[18] FRA track class standards establish requirements for track structures, track geometry, road bed condition, and frequency of track inspections. Tracks rated to FRA Class 2 standards must be built, maintained, and inspected to a sufficient standard for train speeds up to 25 miles per hour, while Class 1 tracks must be built, maintained or inspected to sufficient standards for train speeds up to ten miles per hour.

Figure 6-8. Strategic Rail Corridor Network in Arkansas

Source: U.S. Department of Defense, Surface Deployment and Distribution Command

Chapter 7 Rail Transportation's Economic and Environmental Impact

Economic Impact of Rail in Arkansas

Railroads are critical to the economic prosperity and global competitiveness of the United States. Railroads annually move more than 40 percent, in ton-miles, of the nation's freight, and link businesses with each other across the country and with market areas overseas. They also contribute billions of dollars each year to the economy through wages, purchases, and taxes. The presence of freight rail service in a community or region is an important factor to long-term economic growth, particularly in rural areas. Many of the state's businesses are dependent on rail service because the weight or size of shipments is not conducive to truck transportation. As an example, there is no economically feasible way to transport coal from Wyoming's Powder River Basin to Arkansas except by rail or rail/barge combination.

Railroads in Arkansas are an essential part of the state's economy. They operate railroad repair shops, transload facilities, and warehouses, and provide other valuable services. They also employ a skilled workforce and reinvest on average nearly 30 percent of their annual gross revenue in repairing and upgrading their infrastructure. In many cases, local vendors are used to supply material. Typically, a freight rail job supports 4.5 additional jobs in areas like construction and manufacturing. According to the Association of American Railroads (AAR), the railroad industry employed 3,286 individuals in Arkansas in 2011 with average wages and benefits of $103,560. The same year, 9,690 railroad retirement beneficiaries were located in Arkansas, receiving collectively $184 million in retirement benefits. According to Amtrak, the company employed 24 Arkansas residents in the federal fiscal year ended September 2012, paying total wages of $2,058,388. A survey of Class I and shortline railroads for this Plan yielded slightly higher estimates of railroad employment and payroll (Table 7-1). Actual numbers are higher, since some railroads did not provide relevant information.

Table 7-1. Direct Economic Impact of Railroads in Arkansas, 2012

Impact	Amount
Employment	3,542+
Payroll	$264 million+
Purchases in State	$41 million+
Capital Spending	$146 million+

Source: Survey of Class I and Short Line Railroads

In addition to directly employing residents of the state, many major industries within Arkansas rely on rail. Forty-eight percent of the electricity generated in Arkansas is fueled by coal. Most of this coal is delivered by rail, according to the U.S. Energy Information Administration (EIA). Arkansas has the sixth lowest electricity prices in the nation, which is an important strategic advantage for the state in promoting economic development initiatives. Cost-effective rail service impacts the cost of electricity in the state.

Other industries dependent on rail transportation are as follows:

- The non-metallic mineral industry in Arkansas depends heavily on rail, particularly since transportation comprises a sizeable percentage of the delivered cost of its products.
- According to the Poultry Federation of Arkansas, Oklahoma, and Missouri, the industry has contributed $3.6 billion to the Arkansas economy since 2010. This industry, as well as other animal production industries in the state, relies on rail for shipments of feedstock.
- Rail is an important consideration for the state's steel industry. Recently, the availability of rail service was a component of the site selection for the $1.1 billion Big River Steel mill. Ground was broken on the Big River Steel mill in September 2014, and production is planned to begin in mid-2016.
- Arkansas accounts for nearly half of all rice grown in the United States, and according to the Arkansas Rice Federation, the annual rice crop contributes more than $1.8 billion to the state's economy. The rice industry is a significant user of rail.

These are only a few examples of the industries in Arkansas that rely on rail. Additional Arkansas industries, including construction, chemical manufacturing, lumber and forestry, paper, soybean, and other industries rely on rail as well. One example of the impact of rail is the case of the Dardanelle & Russellville Railroad. This five mile long railroad serves approximately 11 customers, and over 600 jobs are dependent upon usage of the D&R Railroad

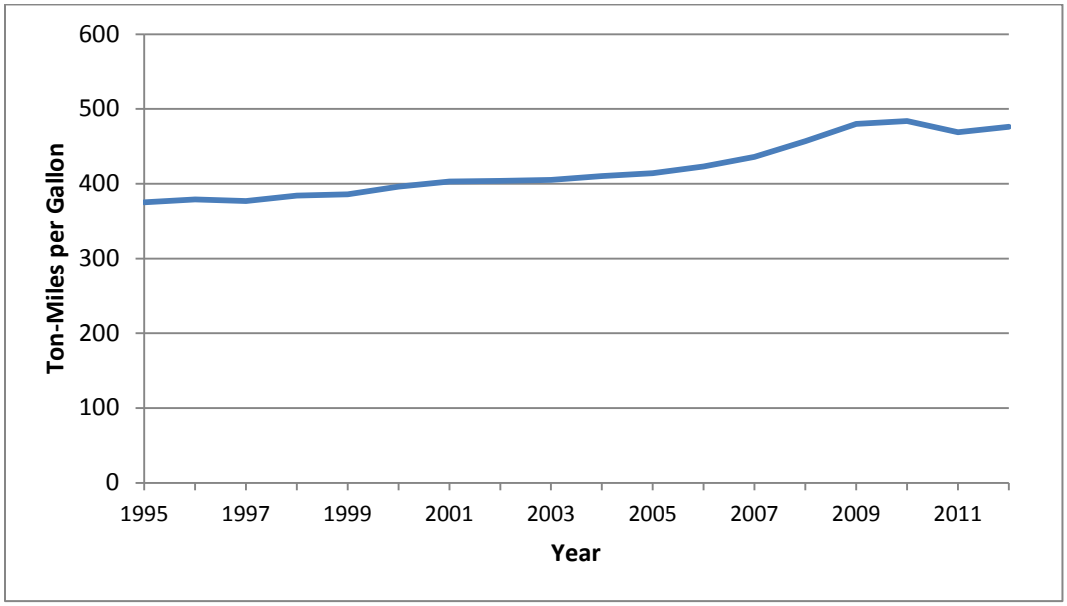
Energy Impact of Rail in Arkansas

Relative to trucking, freight rail is an energy-efficient mode of transportation. A study for the National Waterways Foundation estimates that in 2009 rail was more than three times as energy efficient as trucking. Rail can haul a ton of freight 478 miles on a gallon of fuel, whereas truck freight can carry a ton of freight an average of only 150 miles on a single gallon of fuel.[19] Similarly, a 2009 Federal Railroad Administration (FRA) study analyzed truck and rail fuel efficiency on 23 competitive routes.[20] The study found that rail fuel efficiency on these routes ranged from 156 to 512 ton-miles per gallon, whereas truck fuel efficiency ranged from 68 to 133 ton-miles per gallon. The rail-truck fuel efficiency ratio ranged from 1.9 to 5.5.

[19] Texas Transportation Institute for the National Waterways Foundation, *A Modal Comparison of Domestic Freight Transportation Effects on the General Public 2001 - 2009,*February 2012.
[20] ICF International for the FRA, *Final Report: Comparative Evaluation of Rail and Truck Fuel Efficiency on Competitive Corridors,* November 19, 2009.

Railroads continually improve their fuel efficiency. The average ton-miles per gallon of fuel consumed by the railroad industry improved by more than 25% between 1995 and 2012, increasing from 375 miles per gallon to 476. This trend is shown in Figure 7-1.

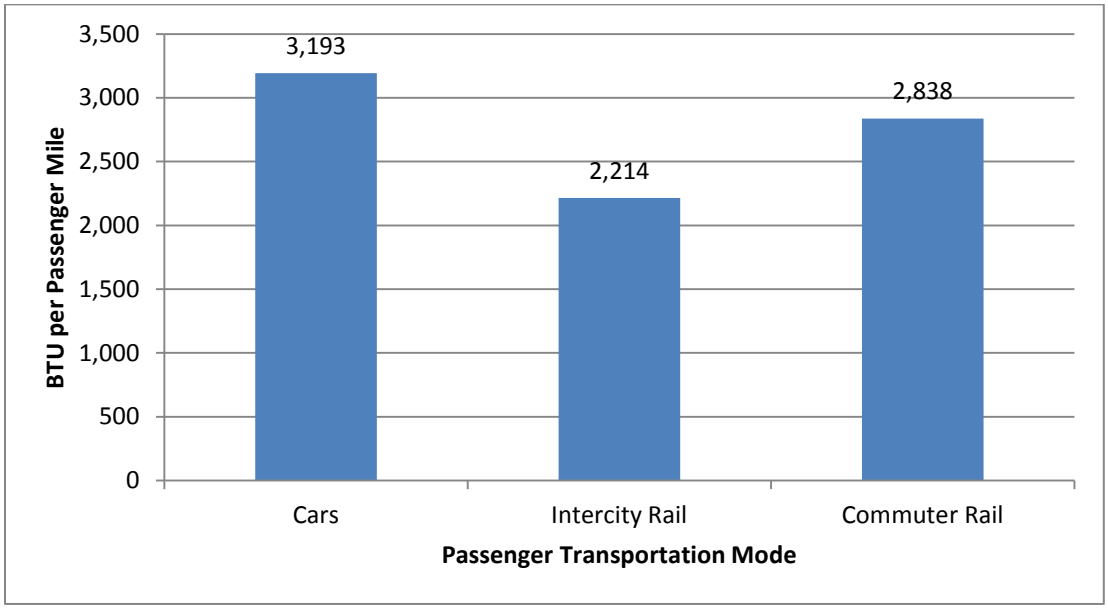
Figure 7-1. Railroad Industry Average Ton-Miles per Gallon of Fuel Consumed



Source: AAR

Passenger rail is also more fuel efficient than highway travel. According to data gathered by the EIA, intercity passenger rail consumes about 31 percent less energy per passenger-mile than automobile travel.

Figure 7-2. 2012 BTU per Passenger Mile



Source: EIA, Transportation Energy Data Book, 33rd Edition

Because rail is more fuel efficient, diversion of freight and passengers from highway transportation to rail could decrease the amount of diesel and gasoline consumed in Arkansas.

Environmental Impact of Rail in Arkansas

Since rail transportation consumes less fuel than highway transportation, rail produces fewer greenhouse gases, such as carbon dioxide. For example, a study completed in 2007 found that intermodal rail, potentially the least fuel-efficient rail service on a per ton-mile basis, generated 40 grams per ton-mile of CO_2, while the average CO_2 grams per ton-mile generated by the most fuel-efficient truck configuration was 177 on a life-cycle emissions cost basis.[21]

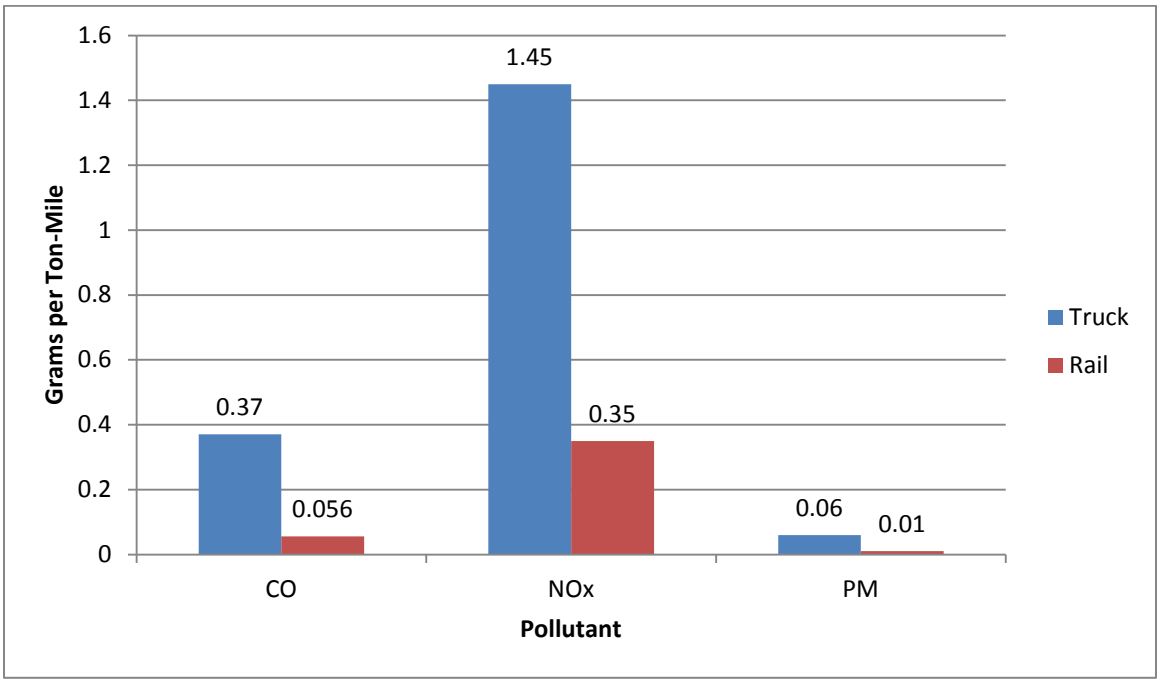
In addition, railroads have been introducing measures to improve fuel efficiency and reduce greenhouse gas emissions further:

- **New Locomotives.** As railroads update their locomotive fleets, less efficient older locomotives are replaced with more efficient new models. Some new locomotives, "gensets," have two or three independent engines that switch on and off, depending on how much power is needed.
- **Reduced Idling**. Locomotives idle for a number of reasons, such as to prevent freezing of coolant, charge batteries and air reservoirs, and provide heat and other amenities for crew members. Railroads are experimenting with technologies that will enable engines to shut down when not in use, smaller engines that use antifreeze, auxiliary power units that heat the engine and allow locomotives to shut down in cold weather, or stop-start technologies that evaluate whether ambient conditions are such that engines can be shut down.
- **Training.** Railroad engineers can reduce fuel usage through their skill and knowledge of handling trains. Training programs and simulators offer opportunities for engineers to learn new fuel-saving practices.
- **Information Technology.** Operations management systems plan the most fuel-efficient spacing and timing of trains. Locomotive monitoring systems can provide feedback to locomotive engineers on the most fuel-efficient speeds for a train, as well as warn of inefficiently performing locomotives. Improved trip planning can optimize how and when freight cars are assembled to form trains and when those trains depart. Improvements can result in better asset use, smoother traffic flow, and reduced fuel consumption.

Freight rail produces not only less greenhouse gas per ton-mile relative to truck transportation; it also produces less of other air pollutants. Figure 7-3 displays a comparison between truck and rail emission grams per ton-mile for 2009 from the National Waterways Foundation report.

[21]Life cycle emissions include not only fuel combustion, but also emissions from vehicle manufacturing, maintenance, and end of life, infrastructure construction, operation, maintenance, and end of life, and petroleum exploration, refining, and fuel distribution. Cristiano Facanha and Arpad Horath, "Evaluation of Life-Cycle Air Emission Factors of Freight Transportation" in *Environmental Science Technology*, 2007, Vol. 41, 7138—71444.

Figure 7-3. Comparison of Other Emissions Grams per Ton-Mile 2009



Source: National Waterways Foundation

Truck emissions of carbon monoxide (CO) are more than six times that of rail per ton-mile, while truck emissions of nitrogen oxides (NOx) are four times that of rail, and truck emissions of particulate matter (PM) are six times that of rail on a per ton-mile basis. To the extent that rail diverts freight from trucking; it can reduce the quantity of these harmful substances that is released into the atmosphere.

Safety Impact of Rail in Arkansas

Rail transportation is a relatively safe mode of transportation and imposes fewer risks than trucking. According to the National Waterways Foundation study, the number of fatalities per ton-mile for commercial vehicles was more than seven times the fatality rate associated with railroad transportation between 2001 and 2009. During the same period, the number of trucking injuries per ton-mile was almost 17 times the injury rate of freight rail transportation. The risk of hazardous material spills associated with rail is also less than that of trucking. The National Waterways Foundation study estimates that the number of gallons spilled per million ton-miles of hazardous materials carried by truck was over twice the rate for rail. By diverting freight off the highway system, rail improvements could improve safety along the Arkansas State Highway System.

Community Impact of Rail in Arkansas

One community impact of rail in Arkansas is to lower congestion. The AAR estimates that 9.3 million additional truck trips would have been required to handle the amount of freight that railroads carried in Arkansas in 2011. According to the AKMD, just one customer moves 90,000

trucks off the road by using this short line. Without railroads, the additional freight would have increased congestion and roadway damage on Arkansas' highway network.

On the other hand, the roadway impacts most visible to Arkansans are the interactions between trains and highway vehicles at Arkansas' 2,464 roadway/rail grade crossings. These have been noted by numerous planning documents within the state. AHTD will continue to work with local communities, railroads, and federal partners to not only improve the safety at the state's roadway/rail grade crossings, but to also improve mobility by resolving conflicts between trains and the motoring public through a variety of means.

Chapter 8 Trends and Forecasts that Impact Rail in Arkansas

The Arkansas rail network during the period covered by this Rail Plan will be influenced by a broad range of factors that will dictate the demands for both freight and passenger rail services.

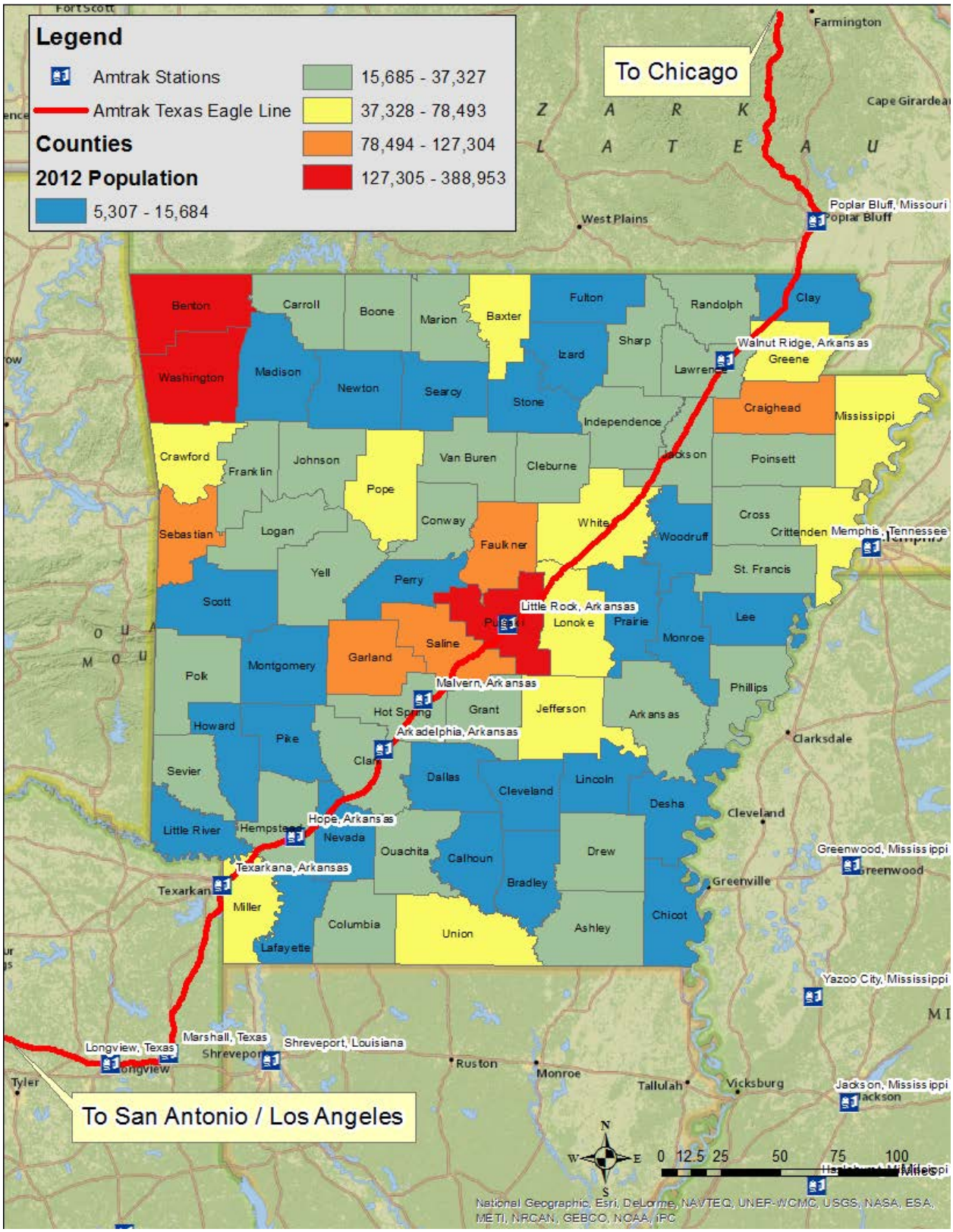
Demographic and Economic Trends

Arkansas Population and Rail

Intercity passenger rail service is most successful in connecting major population centers. Amtrak's Texas Eagle, however, does not operate where Arkansans necessarily reside, with only some of Arkansas' major population centers having passenger rail access. The Texas Eagle service connects Little Rock (the largest metropolitan area in Arkansas) with Texarkana (another significant population center), but it misses other major population centers, including the Fayetteville–Springdale–Rogers metropolitan area in Northwest Arkansas (the second largest), and the Fort Smith, Jonesboro, and Pine Bluff metropolitan areas. Figure 8-1 shows the Texas Eagle route in relation to Arkansas population centers. In addition, Shelby County, Tennessee, not shown in Figure 8-1, has a population of 940,764, which is by far the largest county that borders Arkansas.

Generally, the higher population areas of Arkansas are also the areas that have had the highest population growth. Benton County had the most growth in the state from 2010 to 2012, growing at 2.1 percent annually. The area around Little Rock had higher growth than many other parts of the state between 2010 and 2012. Given the population density, these areas would be promising areas for passenger rail service, not only intercity passenger rail services.

Figure 8-1. Arkansas Population by County, 2012 and Texas Eagle Route



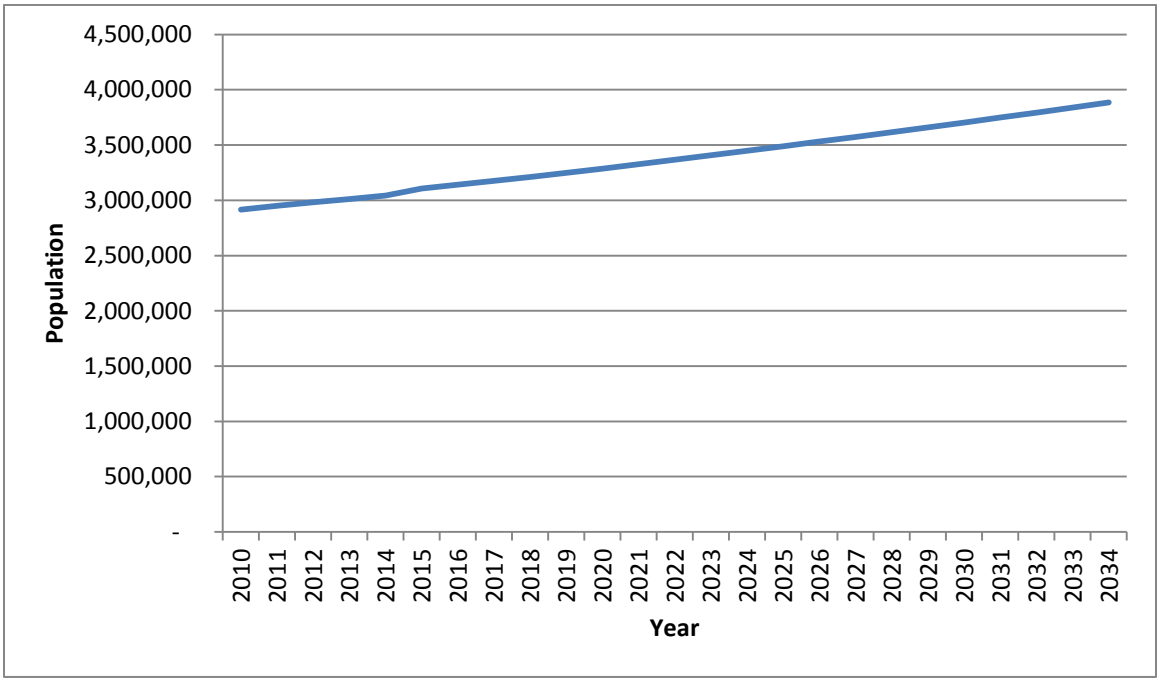
Source: U.S. Census Bureau

Population Forecasts

According to data from the Census State Data Center at the Institute for Economic Advancement, University of Arkansas Little Rock, the total population of Arkansas at the 2010 decennial census was about 2,916,000, and the 2020 population of Arkansas is forecast to be about 3,287,000—an increase of about 1.2 percent per year. Assuming this population growth rate was to stay constant at 1.2 percent through the following 20 years, total population in 2034 would be around 3,884,000.

On a county level, Benton County is forecast to grow the fastest, with 44 percent more inhabitants in 2020 than in 2010. At a constant growth rate, Benton County would be the largest county by 2026, surpassing Pulaski County (Little Rock), which is currently the most populous county in Arkansas. The strong growth in this area is attributed to the employment growth in Wal-Mart Stores, Inc., headquartered in Bentonville, as well as at related and supporting businesses such as Wal-Mart vendors. Population growth is expected to continue to be concentrated in the state's metropolitan statistical areas.

Figure 8-2. Arkansas Historical Population and Projections



Source: University of Arkansas Little Rock, Census State Data Center

The population increases will continue to place pressure on the Arkansas transportation network, as more people generate more passenger travel demand, and demand more products that will be shipped on the freight network. Rail transportation will help relieve the pressure on the highway network by moving some of the increase in freight or passengers.

Personal Income

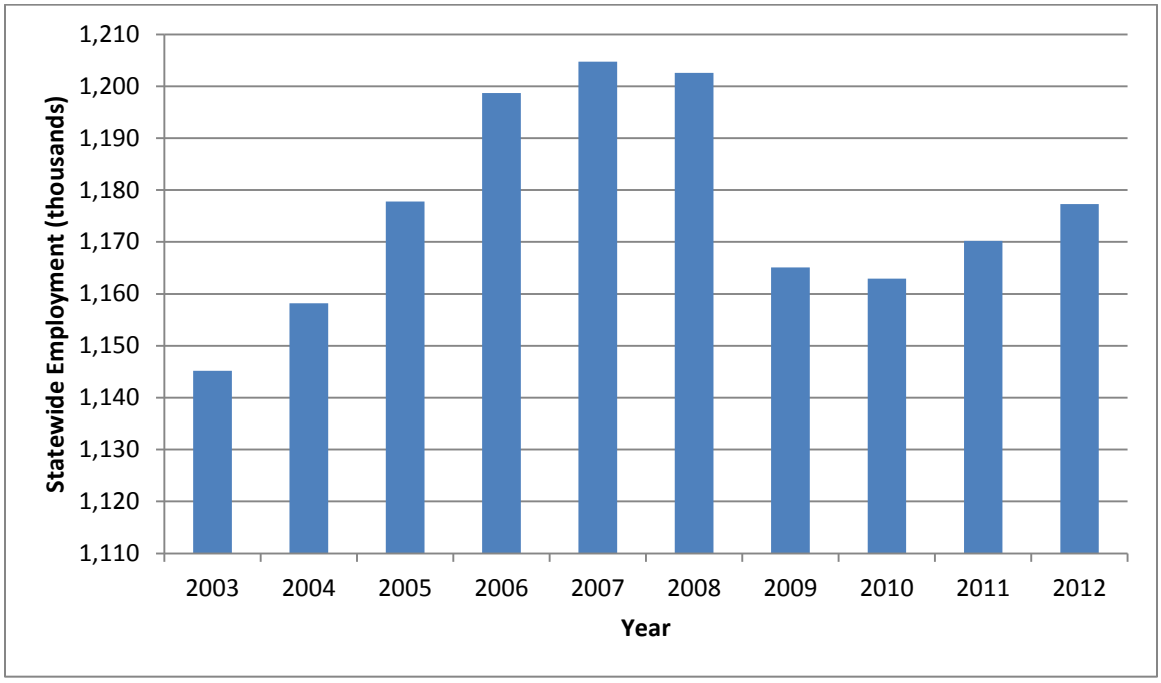
In 2012, the U.S. Bureau of Labor Statistics reported the average weekly earnings for private-sector Arkansas employees were $648 (or annual earnings of $33,700). Earnings grew by 13.5 percent from 2007–2012, representing an annual growth rate of 2.7 percent. As personal income grows,

consumers consume more products and increase personal travel. This places additional demands on the transportation network, including rail.

Employment

As of May 2013, the U.S. Bureau of Labor Statistics reported a total statewide employment in Arkansas of 1.19 million. For the year 2012, total employment rose 0.6 percent. At current levels, total employment has recovered to the point previously reached in 2005, although it is still below pre-recession peak of 2007 when total statewide employment was 1.20 million.

Figure 8-3. Historical Arkansas Statewide Employment (2003–2012)



Source: Bureau of Labor Statistics

The Arkansas Department of Workforce Services estimated 2010 employment at 1.31 million,[22] and projects that employment by 2020 will be 1.41 million—a growth of 7.40 percent for the 10-year period (a compounded annual rate of 0.72 percent). As shown in Table 8-1, many of the highest growth industries depend heavily on rail, including construction, wholesale trade, transportation, and warehousing.

[22] Arkansas Department of Workforce Services, Long Term Industry Employment Projections, http://www.discoverarkansas.net/

Table 8-1. Forecasted Arkansas Employment by Industry

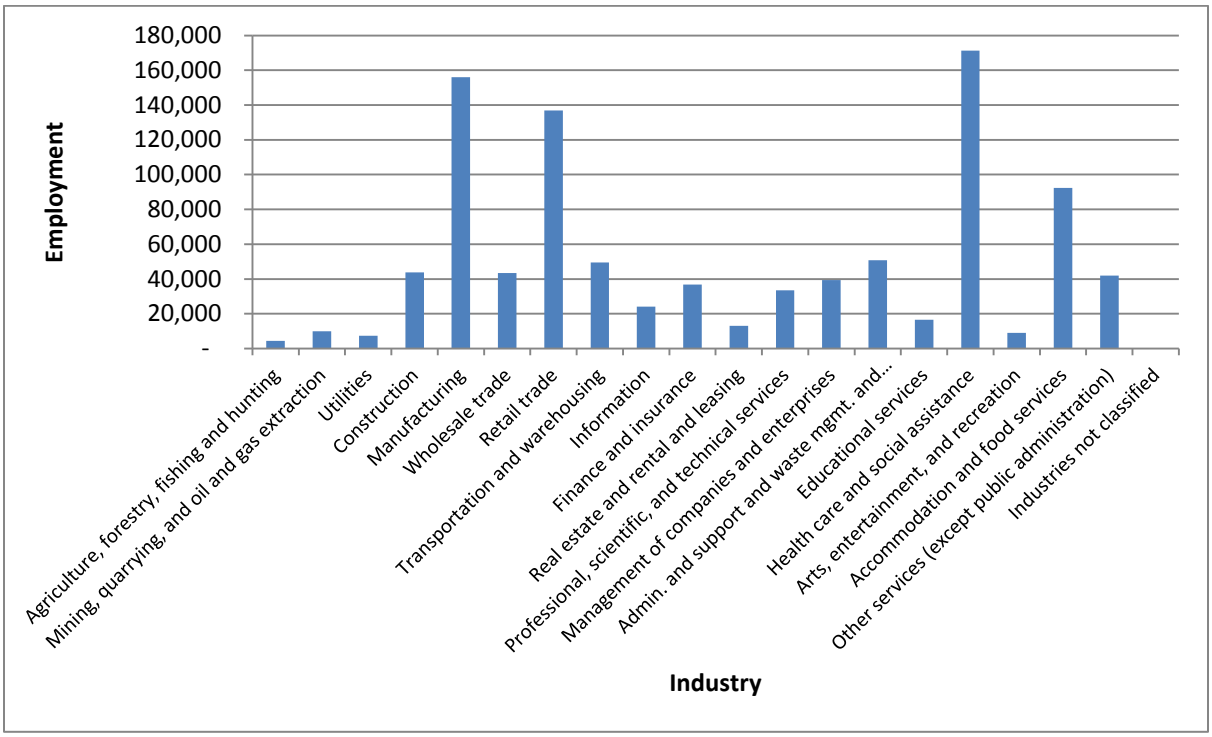
Industry	Estimated Employment 2010	Projected Employment 2020	Net Growth	Percentage Growth
Agriculture, Forestry, Fishing and Hunting	14,662	15,418	756	5.2%
Mining	8,906	9,323	417	4.7%
Construction	48,185	52,926	4,741	9.8%
Non-Durable Goods	83,427	87,463	4,036	4.8%
Durable Goods	77,508	81,969	4,461	5.8%
Wholesale Trade	46,428	51,656	5,228	11.3%
Retail Trade	129,487	135,377	5,890	4.5%
Transportation and Warehousing	51,522	58,439	6,917	13.4%
Utilities	7,317	7,307	(10)	-0.1%
Information	16,767	17,301	534	3.2%
Finance and Insurance	38,195	39,865	1,670	4.4%
Real Estate and Rental and Leasing	13,533	15,017	1,484	11.0%
Professional, Scientific, and Technical Services	38,450	41,367	2,917	7.6%
Management of Companies and Enterprises	25,767	27,192	1,425	5.5%
Administrative and Support and Waste Management and Remediation Services	52,449	58,554	6,105	11.6%
Educational Services	113,228	124,077	10,849	9.6%
Arts, Entertainment, and Recreation	9,672	9,746	74	0.8%
Accommodation and Good Services	89,106	100,960	11,854	13.3%
Other Services (Except Government)	43,100	47,248	4,148	9.6%
Total All Industries	**1,309,398**	**1,406,254**	**96,856**	**7.4%**

Source: Arkansas Department of Workforce Services

Industrial Outlook by Sector

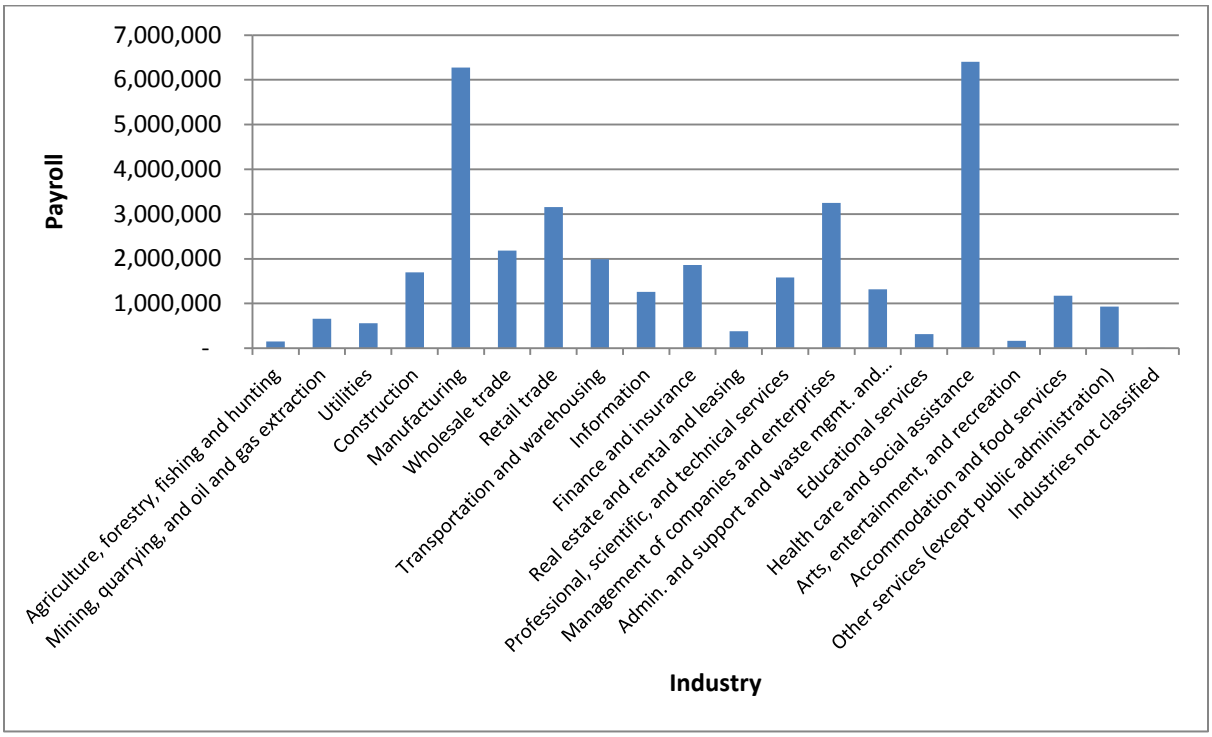
According to the most recently available County Business Patterns from the U.S. Census Bureau and displayed in Figure 8-4, in 2011, the largest sectors in the state, by employment, were Health Care and Social Assistance, Retail Trade, and Manufacturing. These three sectors alone accounted for 47.3 percent of total statewide employment. Depending on the specific type of manufacturing, this sector is a major user of rail. Retail distribution networks also frequently rely on rail transportation, particularly intermodal services inbound to distribution centers.

Figure 8-4. Arkansas Employment by Industry, 2011



Source: U.S. Census Bureau

Figure 8-5. Arkansas Annual Payroll by Industry, 2011



Source: U.S. Census Bureau

In terms of growth, Arkansas experienced strong growth in the Mining, Quarrying, and Oil and Gas Extraction industry. As shown in Table 8-2, from 2007 to 2011, this industry grew 55.4 percent in terms of employment, and 98.0 percent in terms of annual payrolls. The other strong growth sectors in terms of employment during this period were Management of Companies and Enterprises (29.8 percent), and Educational Services (26.5 percent). Depending on the specific industry, the Mining, Quarrying, and Oil and Gas Extraction sector is a major user of freight rail.

Table 8-2. Percentage Change in Arkansas Employment and Annual Payroll by Industry, 2007-2011

Industry	Percentage Change in Employment (2007–2011)	Percentage Change in Annual Payroll (2007–2011)
Total for all sectors	-4.9%	5.9%
Agriculture, forestry, fishing and hunting	-17.7%	-6.6%
Mining, quarrying, and oil and gas extraction	55.4%	98.0%
Utilities	8.6%	11.9%
Construction	-18.4%	-10.1%
Manufacturing	-18.5%	-4.1%
Wholesale trade	-7.7%	8.5%
Retail trade	-4.0%	4.6%
Transportation and warehousing	-17.5%	-10.4%
Information	7.7%	-0.3%
Finance and insurance	-4.3%	9.7%
Real estate and rental and leasing	-6.0%	4.0%
Professional, scientific, and technical services	-3.1%	9.5%
Management of companies and enterprises	29.8%	29.7%
Administrative and support and waste management and remediation services	-14.5%	1.6%
Educational services	26.5%	31.5%
Health care and social assistance	6.9%	12.1%
Arts, entertainment, and recreation	1.0%	17.1%
Accommodation and food services	2.3%	15.4%
Other services (except public administration)	-8.7%	-5.7%
Industries not classified	n/a	n/a

Source: U.S. Census Bureau

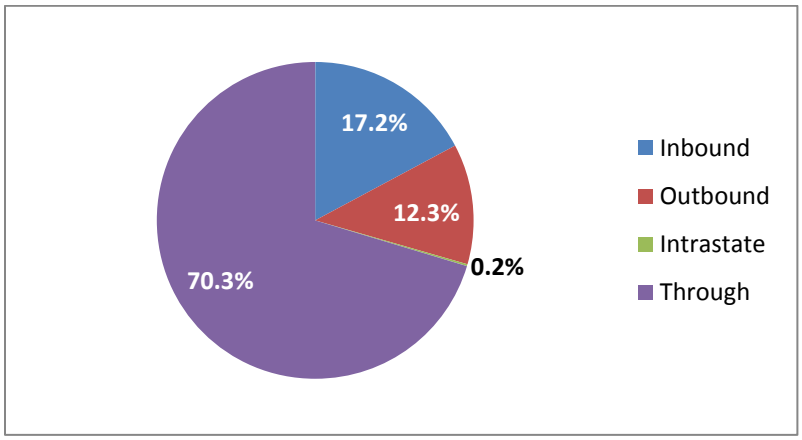
Freight Demand and Growth

Arkansas occupies an important role within the national freight rail network. According to the Association of American Railroads, the state was among the top ten states originating non-metallic minerals and primary metal products (notably steel) in 2011.

Rail Flows by Direction

The majority of rail freight moving in Arkansas passes through the state with both origin and destination outside of the state. As shown in Figure 8-6, about 70 percent of projected Arkansas 2015 rail freight is estimated to move between origins and destinations outside of Arkansas. Slightly more freight is estimated to terminate in Arkansas than freight originating within the state. A relatively small portion of rail freight in Arkansas, 0.2 percent, moves between locations within the state.

Figure 8-6. 2015 Share of Rail Freight Tonnage by Direction

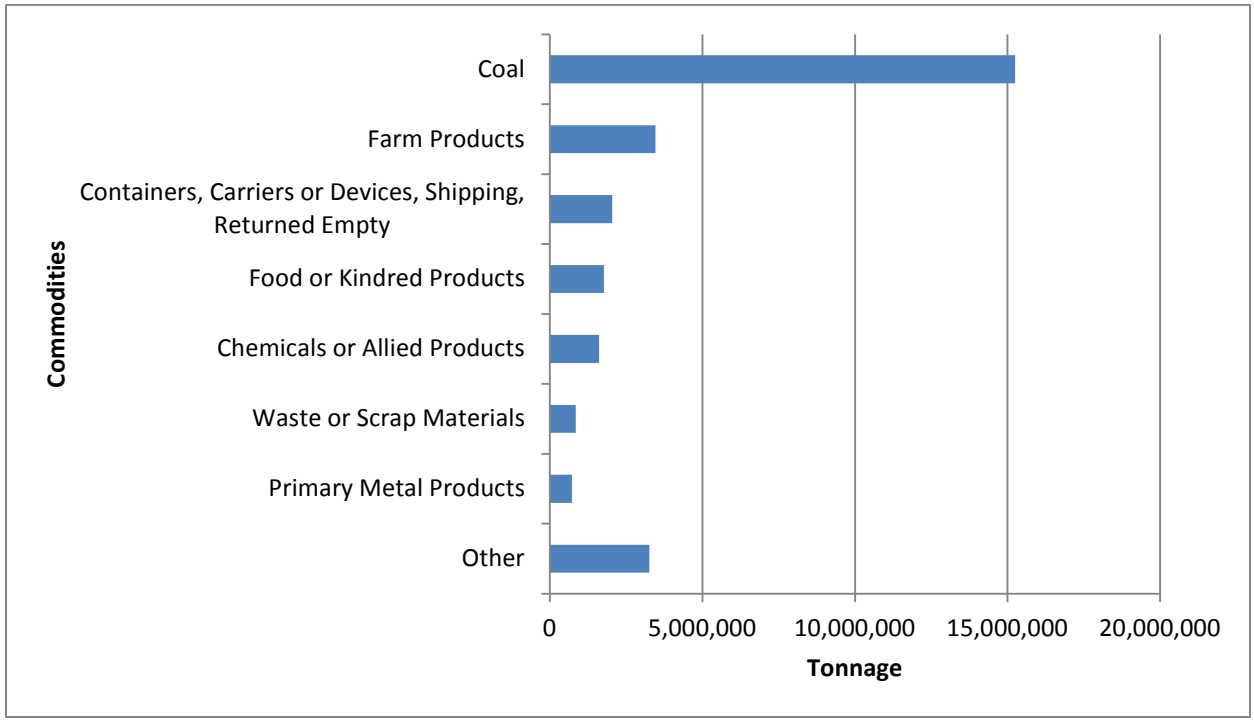


STB Waybill Sample, IHS Global Insight

Rail Flows by Commodity

As shown in Figure 8-7, inbound rail freight in Arkansas is dominated by coal, which primarily consists of bituminous coal shipments from Wyoming to fuel the state's power plants. Coal is estimated to account for over 57 percent of rail freight tonnage terminating in Arkansas in 2015. The next highest tonnage terminating in the state is the shipment of farm products. These are mainly grain shipments, providing feed for poultry, hogs, and other animal production industries. Containers and food and kindred products follow, with soybean oil and byproducts making up the majority of the latter.

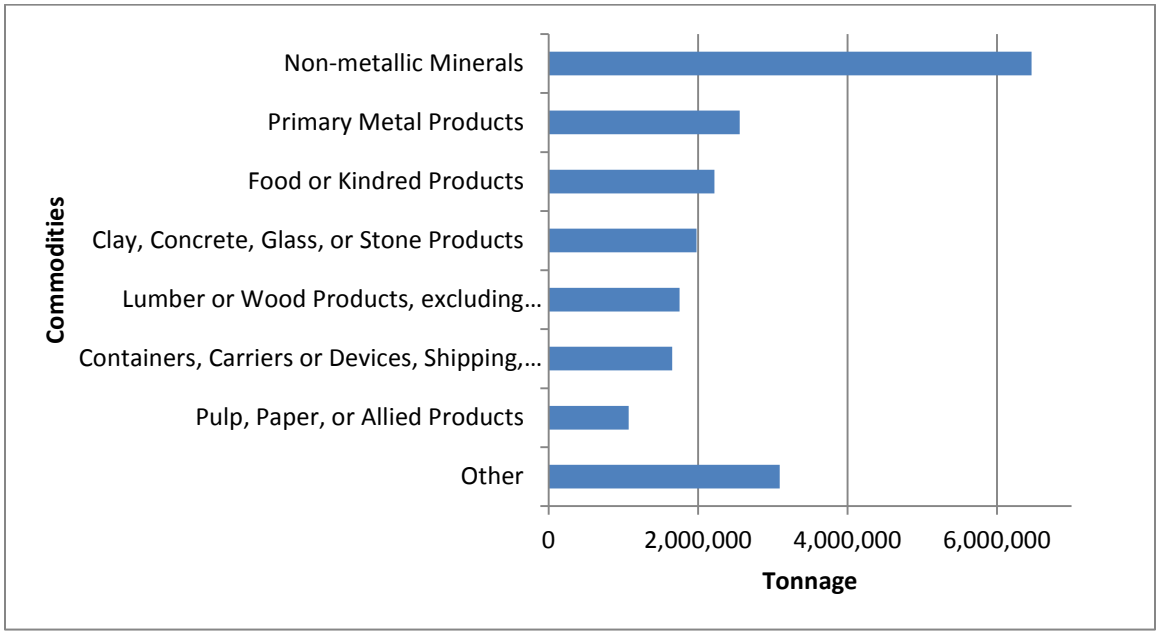
Figure 8-7. Projected 2015 Rail Tonnage Terminating in Arkansas by Commodity



Source: STB Waybill Sample, IHS Global Insight

Non-metallic minerals are estimated to have the highest tonnage of rail traffic originating in Arkansas in 2015, mostly comprised of shipments of broken stone or riprap. Non-metallic minerals are estimated to be about 35 percent of originating rail tonnage. As shown in Figure 8-8, other important commodities include primary metal products, food or kindred products, clay, concrete, glass or stone products, lumber or wood products. Primary metal products shipped from Arkansas are mostly iron and steel. Food and kindred products shipped consist mostly of milled rice, flour, or meal.

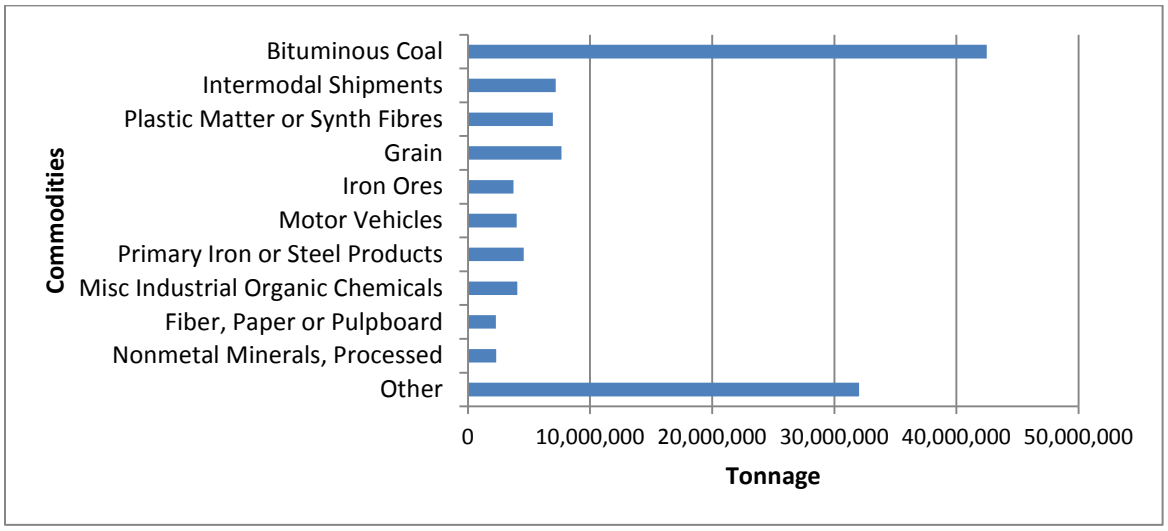
Figure 8-8. 2015 Rail Tons Originating from Arkansas by Commodity



Source: STB Waybill Sample, IHS Global Insight

The largest source of 2015 rail tonnage passing through Arkansas to/from other states is coal, followed by intermodal shipments (Figure 8-9).

Figure 8-9. 2015 Rail Tons Passing through Arkansas by Commodity



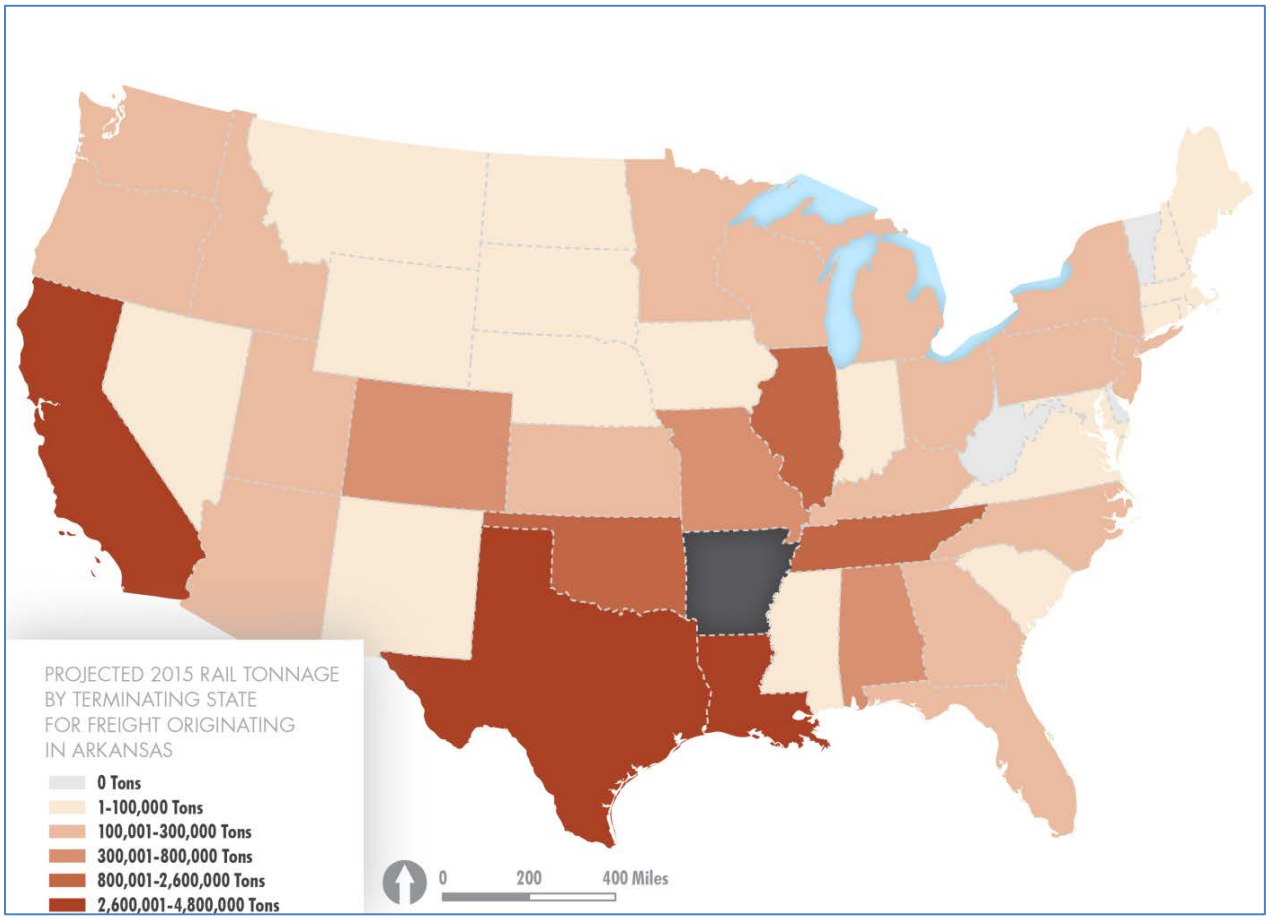
Source: STB Waybill Sample, IHS Global Insight

Geography of Arkansas Rail Flows

Rail Freight to and from Other States

The largest destinations for freight originating in Arkansas are Texas, Louisiana, and California (Figure 8-10). Much of the freight to California consists of intermodal shipments that originate at the UP Marion terminal. Gravel is the dominant commodity shipped to Texas and Louisiana.

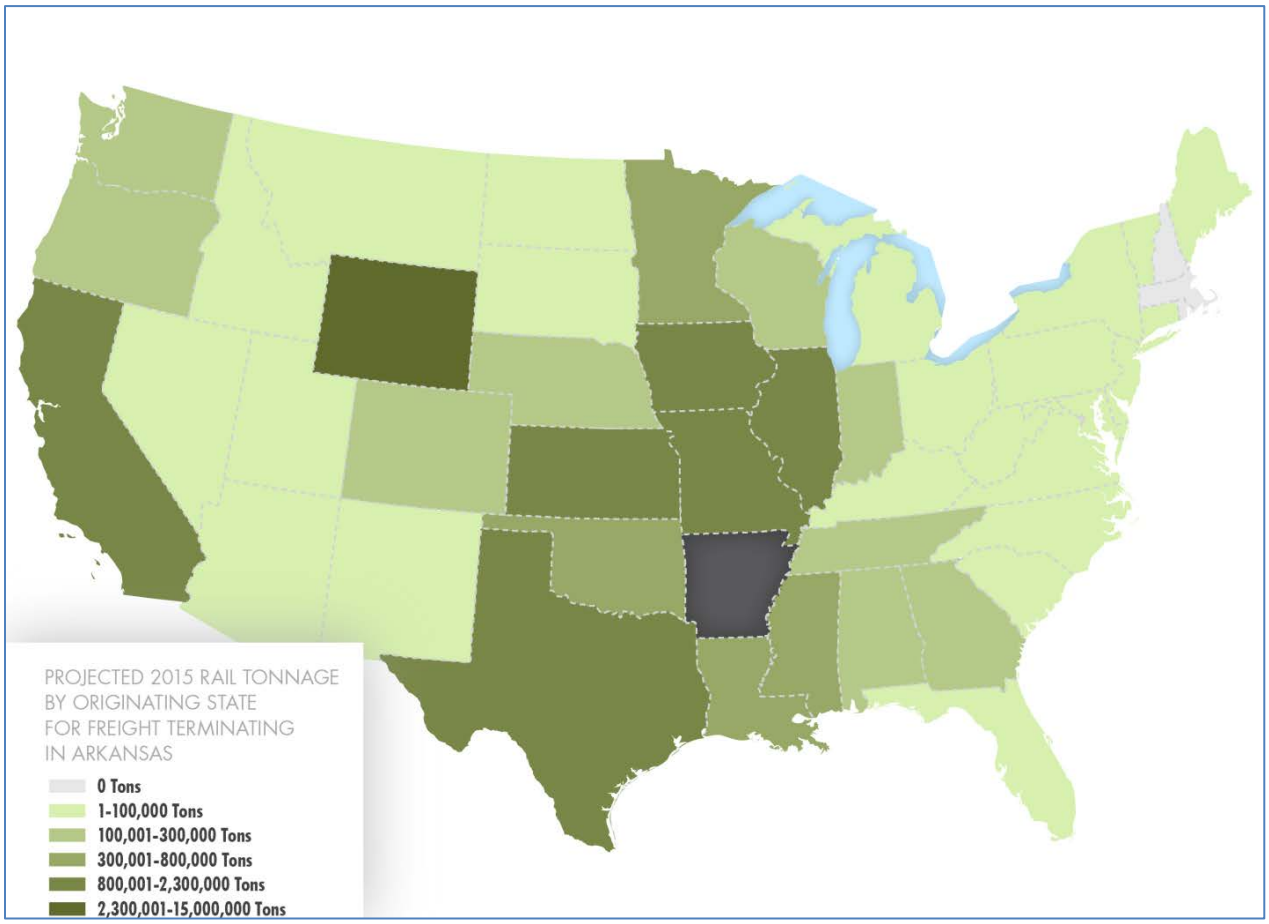
Figure 8-10. Projected 2015 Rail Tonnage by Terminating State for Freight Originating in Arkansas



Source: Transearch

By far the largest source of rail tonnage shipped to Arkansas is Wyoming, consisting of bituminous coal shipments (Figure 8-11). Shipments from California are primarily intermodal containers from the Ports of Los Angeles/Long Beach, which are unloaded at the UP intermodal terminal in Marion. Shipments from Iowa, Nebraska, Illinois, and Missouri consist of a variety of commodities but are most frequently related to grain or food. Inbound shipments from Texas consist of a variety of commodities including chemicals and plastics.

Figure 8-11. Projected 2015 Rail Tonnage by Originating State for Freight Terminating in Arkansas

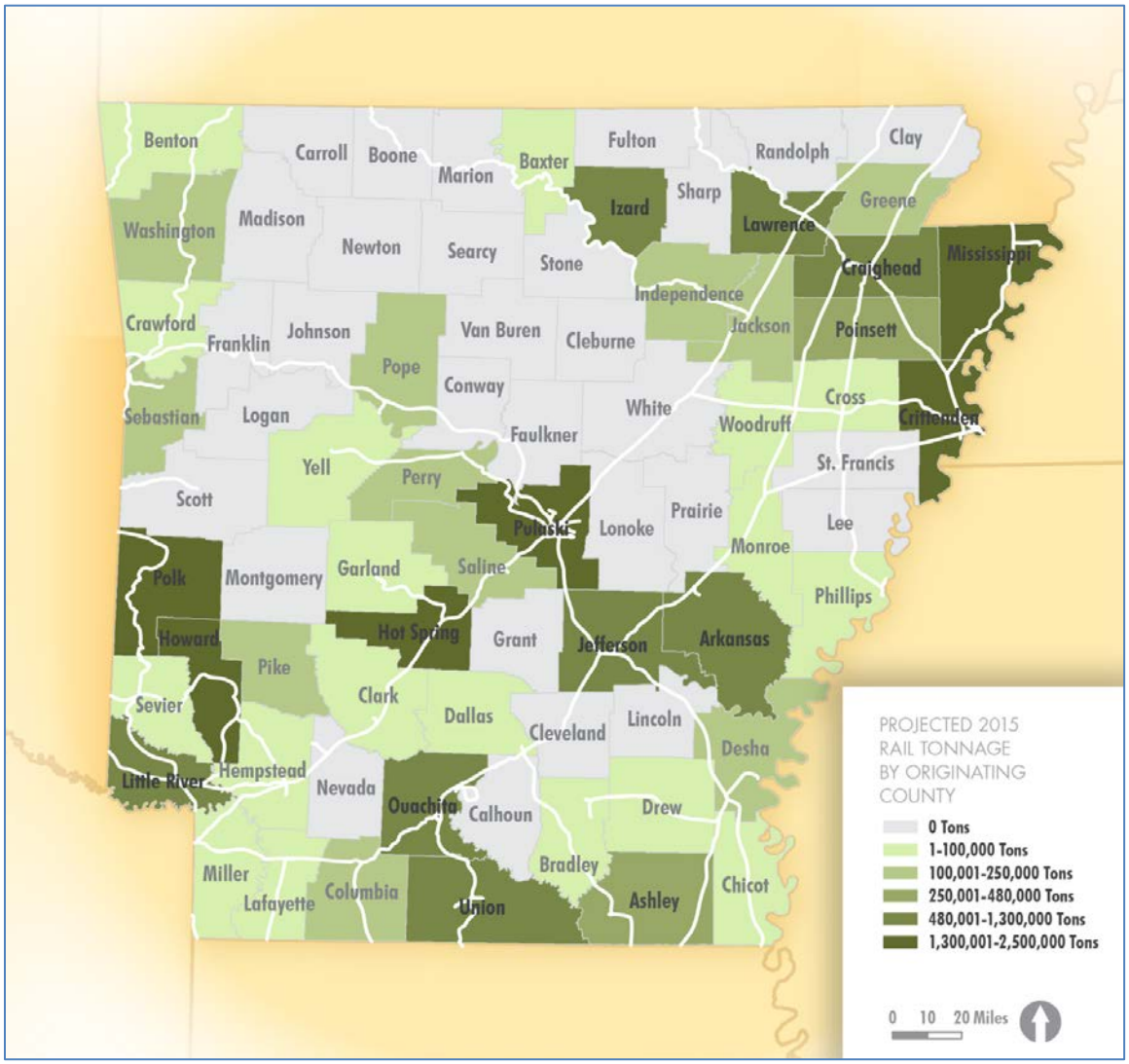


Source: Transearch

Rail Freight to or from Arkansas Counties

Figure 8-12 displays projected 2015 rail tonnage originating in Arkansas by county. As can be seen, Mississippi, Crittenden, Polk, Howard, Hot Spring, and Pulaski Counties have the highest volume of originating rail traffic. The major originating commodity from Crittenden County consists of intermodal containers originating from the UP facility in Marion. Much of the freight originating in Mississippi County is steel shipments. Much of the freight volume from Howard County consists of forest products. Hot Spring, Polk, and Pulaski Counties each originate sizeable volumes of broken stone/gravel.

Figure 8-12. Projected 2015 Rail Tonnage by Originating County



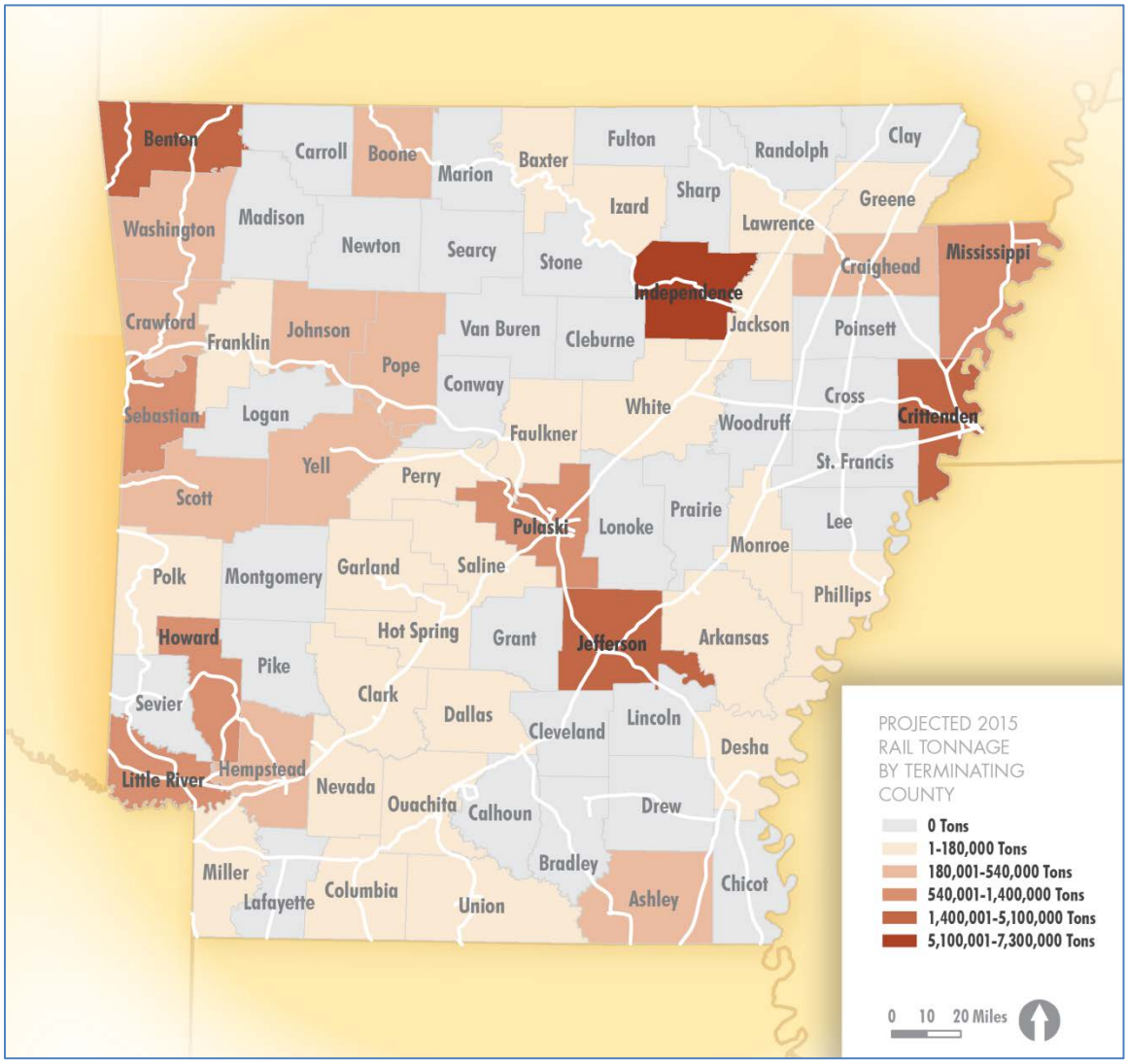
Source: Transearch

Many of the counties with the highest terminating tonnage in Arkansas contain coal-fired power plants (Figure 8-13). These include the following:

- Independence Power Plant in Independence County
- Flint Creek Power Plant in Benton County
- White Bluff Power Plant in Jefferson County

A large volume of intermodal traffic terminates in Crittenden County, associated with the UP Marion terminal.

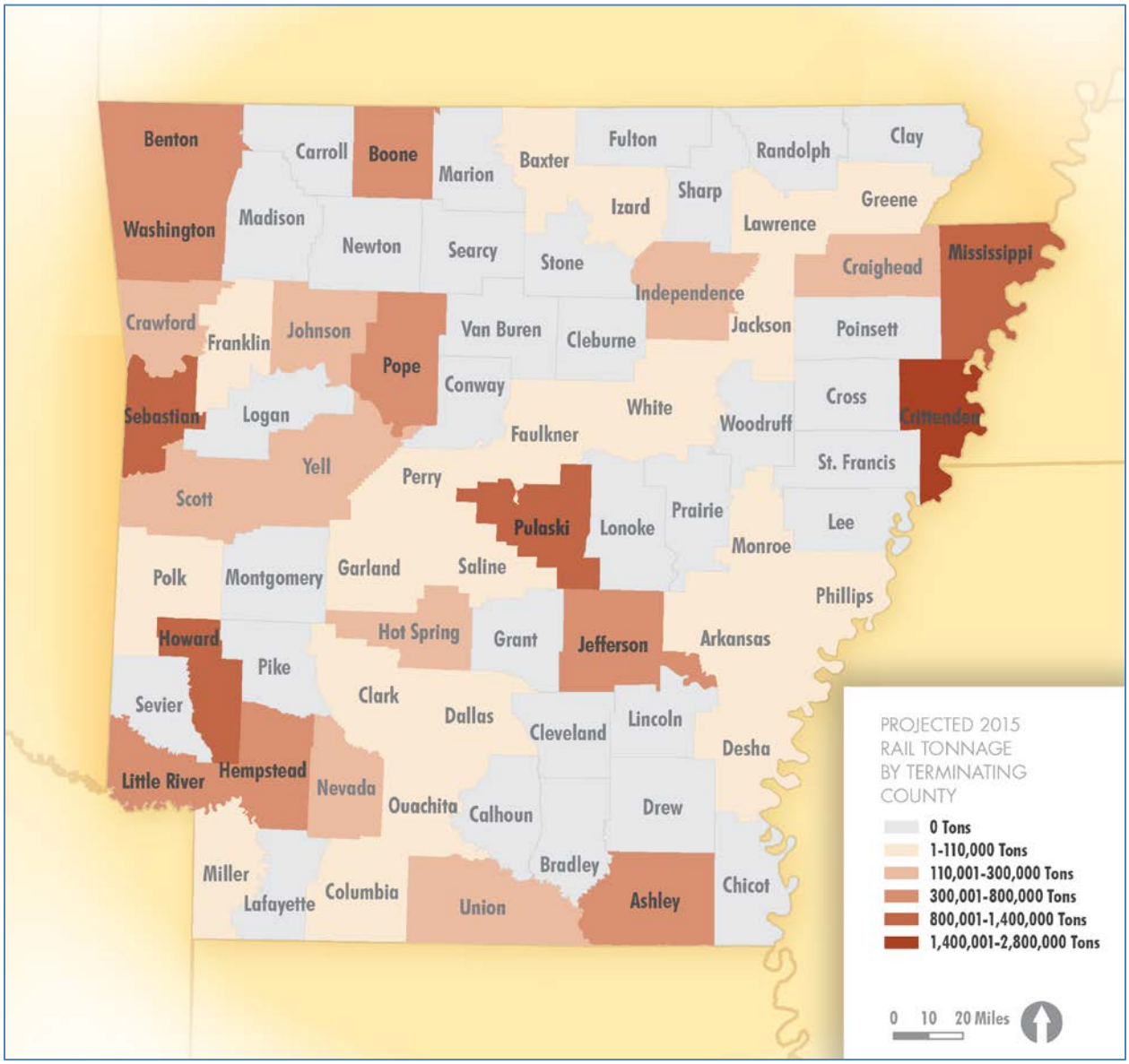
Figure 8-13. Projected 2015 Rail Tonnage by Terminating County



Source: Transearch

When coal traffic is excluded, the relative tonnage terminating at Arkansas is significantly different as shown in Figure 8-14.

Figure 8-14. Projected 2015 Rail Tonnage by Terminating County (excluding Coal)



Source: Transearch

Rail Freight Flows of Specific Commodities

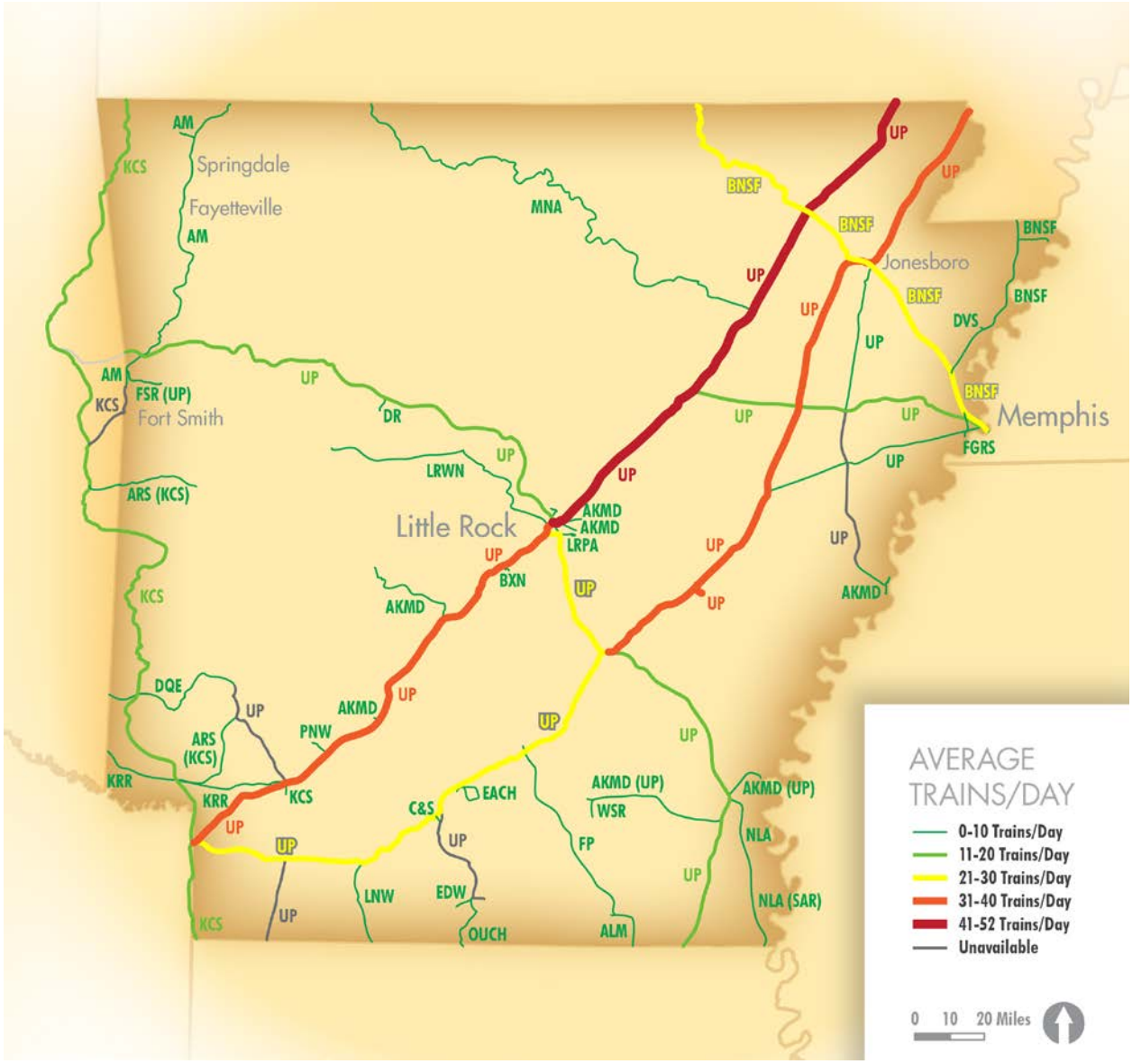
Rail freight flows of specific commodities are relatively concentrated in Arkansas counties and states that ship by rail to or from Arkansas. Highlights include the following:

- Ninety-six percent of forecasted 2015 grain tonnage that terminates in Arkansas by rail is expected to originate from Illinois, Iowa, Kansas, Missouri, or Minnesota. Sixty-two percent originates from Iowa or Illinois.
- All forecasted 2015 broken stone or rip rap rail tonnage from Arkansas is expected to originate from Polk, Pulaski, Hot Spring, or Lawrence Counties.
- Seventy percent of Arkansas broken stone or rip rap shipped by rail in 2015 is expected to terminate in Louisiana.
- Eighty-eight percent of outbound steel tonnage by rail from Arkansas in 2015 is expected to originate in Mississippi County.
- Eighty-eight percent of outbound milled rice, flour, or meal tonnage shipped by rail from Arkansas in 2015 is expected to be shipped from Arkansas and Craighead Counties.
- Forty-two percent of outbound milled rice, flour, or meal tonnage shipped by rail from Arkansas is expected to be shipped to either Illinois or Texas.
- Sixty-one percent of outbound tonnage shipped by rail of forest products from Arkansas in 2015 is expected to be shipped from Howard County.
- Seventy-six percent of outbound tonnage shipped by rail of forest products from Arkansas in 2015 is expected to be shipped to Oklahoma.

Freight Rail Line Densities

Figure 8-15 displays the density of Arkansas rail lines as measured in trains per day. The primary source of this information is a survey of railroads in Arkansas. The highest density rail lines are the Class I mainlines, particularly the UP mainlines that cross Arkansas between Texas and Chicago, Illinois, as well as the BNSF Thayer South Subdivision, which is a branch of the BNSF Transcontinental or "Transcon" route across the western United States.

Figure 8-15. Density of Freight Rail Lines in Arkansas in Trains per Day, 2012

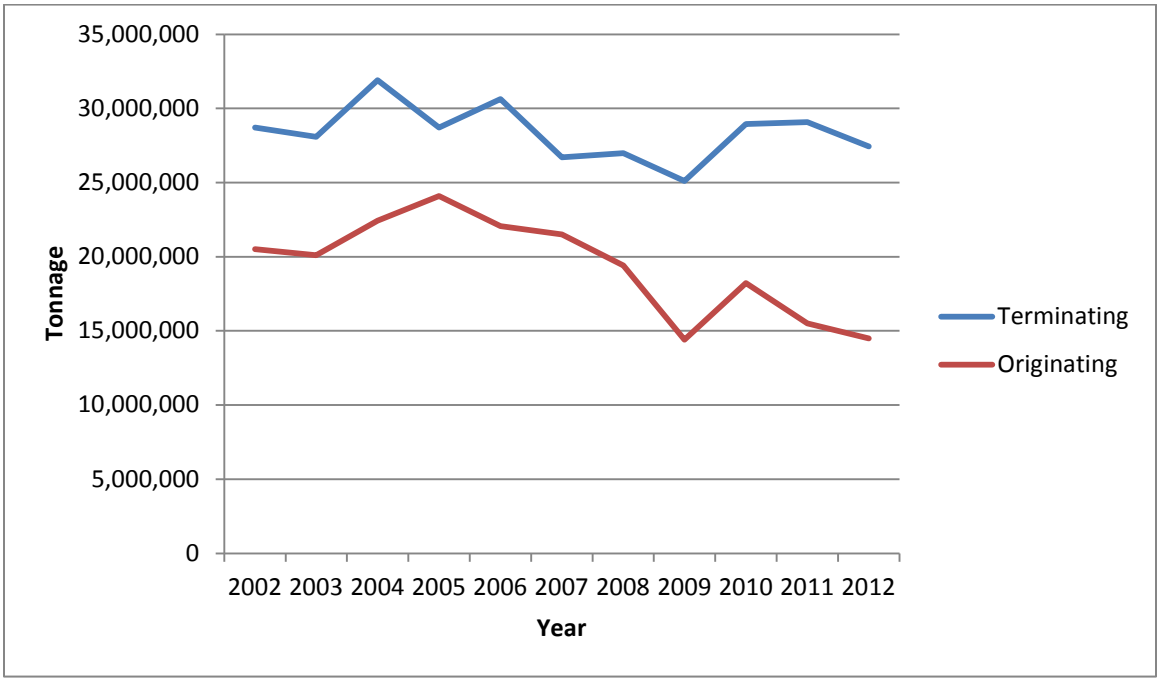


Source: Survey of Railroads

Recent Trends in Arkansas Rail Traffic

Freight tonnage terminating in Arkansas peaked in 2004 with nearly 31.9 million tons as shown on Figure 8-16. Freight shipments originating in Arkansas peaked in 2005. Freight volume levels reached their low point in 2009. Particularly for originating freight traffic, tonnages have not yet caught up to previous levels. In 2012, originating traffic was still 40 percent below its peak in 2005.

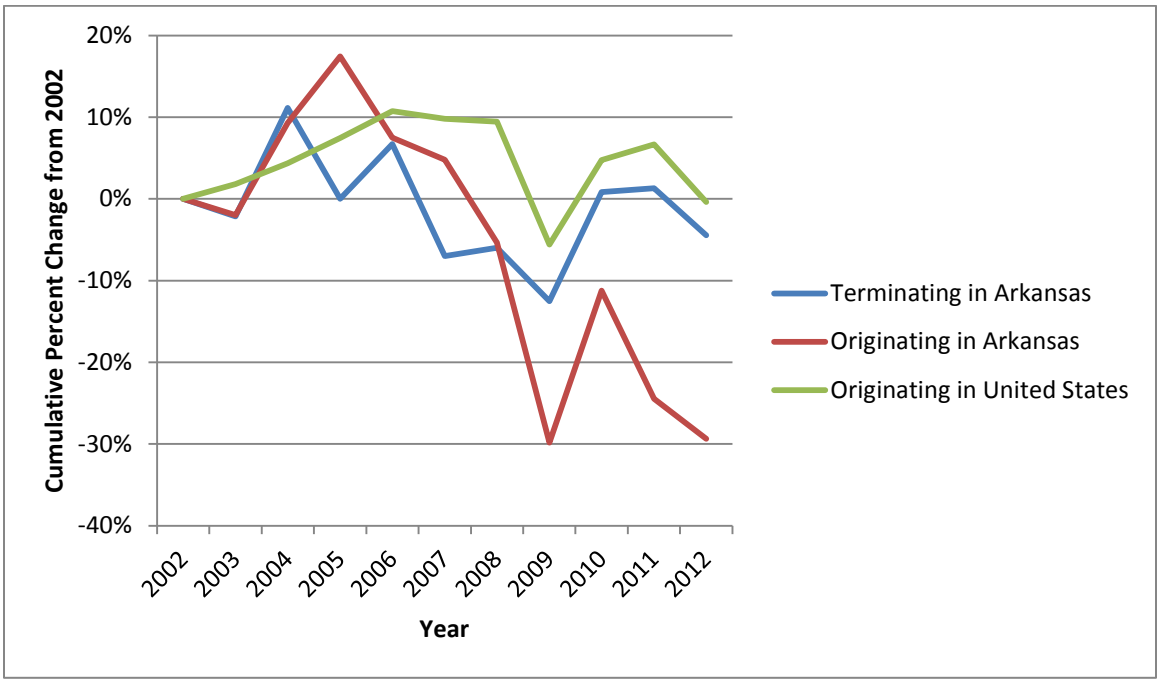
Figure 8-16. Rail Tonnage Originating and Terminating in Arkansas by Year



Source: U.S. Bureau of Transportation Statistics, Association of American Railroads

To some extent, declines in rail traffic in Arkansas between 2005 and 2012 mirror national trends. Overall, 2012 U.S. freight rail and U.S. rail tonnage handled was still slightly below the 2005 level. However, for some commodity groups, the declines in Arkansas were more dramatic than those of the United States as a whole, particularly for traffic originating in Arkansas.

Figure 8-17. Cumulative Percentage Change in Rail Tonnage since 2002



Source: Association of American Railroads

While the period between 2005 and 2012 saw declines in Arkansas rail traffic, it is important to keep in mind that long-term trends point toward continued growth in freight rail. For example, nationwide rail tonnage in 2012 was slightly below its 2005 level, but this was still 14 percent above 1995 levels, 24 percent above 1990, and 33 percent above 1985.

Trends That Could Impact Arkansas Rail Traffic in the Future

Agriculture

Farm products, terminating in Arkansas represent the second-highest rail freight tonnage, behind coal. Agriculture industry trends will have an impact on the future role of rail in Arkansas.

The most recently published *Census of Agriculture* totaled Arkansas statewide agricultural market value at $7.5 billion in 2007. Of this total, the proportions of production in terms of product value are as follows:

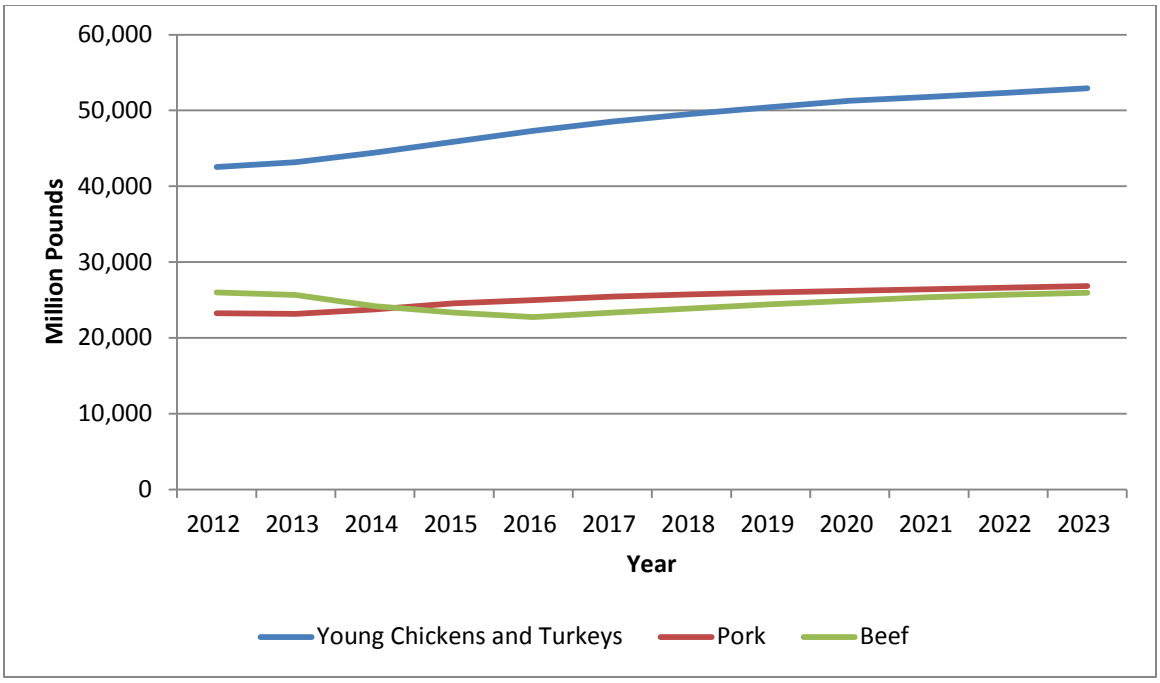
- Eggs and poultry, 49 percent ($3.7 billion)
- Grains, oilseeds, dry beans, and dry peas, 30 percent ($2.3 billion)
- Cattle and calves, eight percent ($626 million)
- Cotton and cottonseed, six percent ($473 million)[23]

[23] 'Ranking of Market Value of Ag Products Sold,' in *Census of Agriculture*, USDA, 2007.

Poultry

Production of broilers in the United States is expected to increase significantly in the long term. Increases in demand for feed should increase demand for railroad transportation.

Figure 8-18. Forecast U.S. Production Volumes for Young Chickens and Turkeys, Beef, and Pork (Annual)

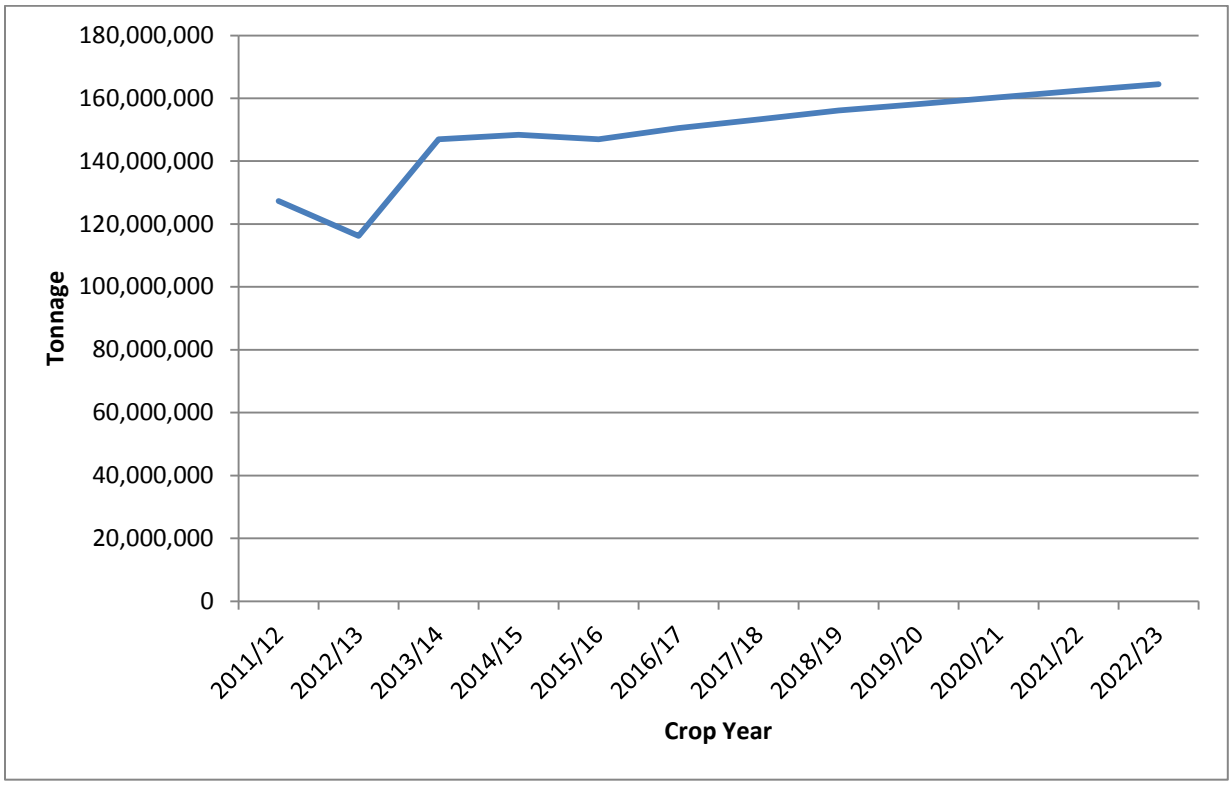


Source: USDA Long-term Projections, February 2011

According to statistics presented by the Poultry Federation of Arkansas, Missouri, and Oklahoma, Arkansas is ranked second in the nation in total pounds of broiler (chicken) meat produced, third in the nation in turkey production, and tenth in the nation in egg production. According to the University of Arkansas Division of Agriculture Research and Extension, Arkansas is ranked second in the nation for exports of chicken meat. The highest concentration of poultry production in Arkansas is in the northwestern part of the state, in Washington and Benton Counties.

As shown in Figure 8-19, the U.S. Department of Agriculture forecasts that corn used for animal feed (feedstock) will grow by 29 percent from the 2011/2012 crop year to the 2022/2023 crop year. Rail shipments of corn to support Arkansas poultry and other animal production industries should increase in the long-term. Shipments of grain to Arkansas (including corn) in 2015 are estimated to total 3.3 million tons.

Figure 8-19. U.S. Corn Used for Feed and Residual



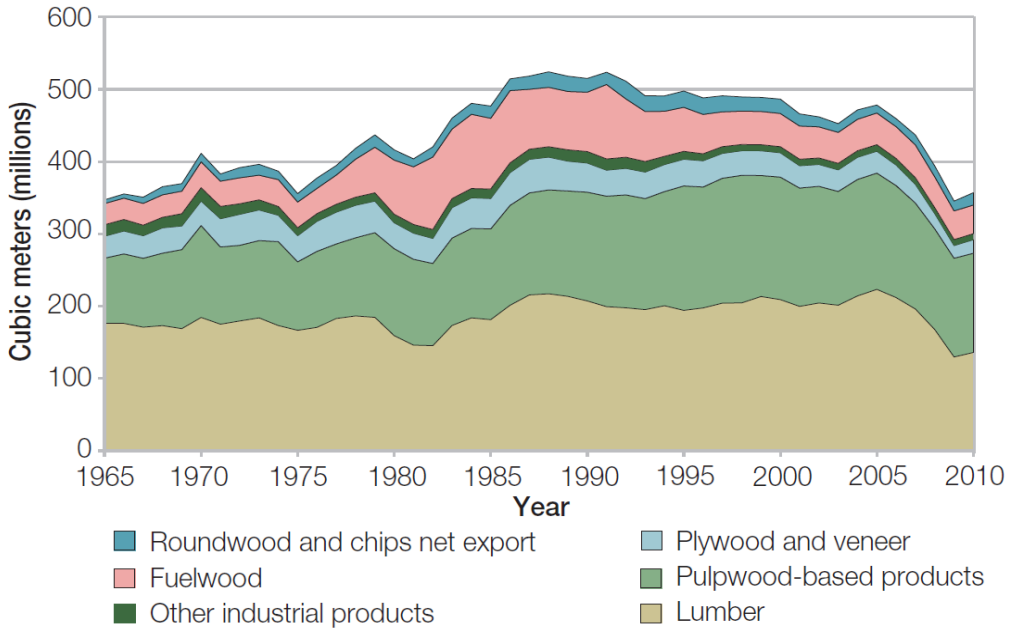
Source: U.S. Department of Agriculture

Forestry

Lumber and wood products rank fourth in cargo originated in Arkansas by rail by tonnage. The total value of shipments attributed to wood product manufacturing—including lumber, plywood, veneers, and other wood products—was $2.0 billion in 2011, a slight decline (-5.6 percent) from $2.2 billion in 2010. The industry has recovered from the 2009 level ($1.9 billion), but has not yet attained the volume produced in 2008 ($2.3 billion).

Over the long-term, U.S. forestry production has been relatively flat during most years since the 1980s, except for an unprecedented decline in the 2008/2009 time period. Although the population base to consume forest products has increased, the industry has faced challenges from foreign competition, substitution of other products, and increased use of recovered materials.

Figure 8-20. Roundwood Equivalent of U.S. Forest Product Output (1965—2010)



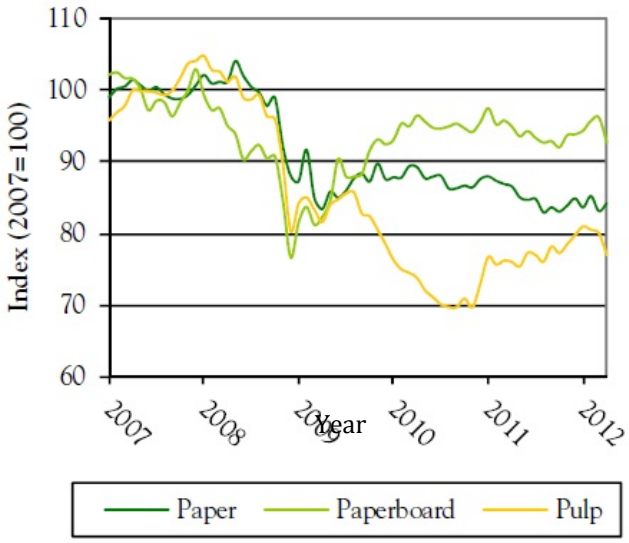
Source: U.S. Forest Service, Future of America's Forests and Rangelands: Forest Service 2010 Resources Planning Act Assessment.

Pulp, Paper, and Packaging

Pulp, paper, and packaging are the largest uses of forestry material in the southeastern United States. Domestic production of paper and pulp in the United State has not yet approached the pre-recession (2007) levels (Figure 8-21). Depressed consumer spending, foreign competition, and substitution of electronics for paper media further decreased national demand for paper products, which has been diminishing since 2006.[24]

[24] *The State of the Paper Industry: Steps Toward an Environmental Vision*, Environmental Paper Network, 2011.

Figure 8-21. U.S. Pulp, Paper, and Paperboard Production Indices (2007—2012)



Source: Federal Reserve, 2012, as cited in UNECE/FAO, 2012

Lumber and Timber

From 2010 to 2011, the total value of shipments for wood product manufacturing in the United States was estimated to have decreased by 1.4 percent from $70.6 billion to $69.6 billion according to the *Annual Survey of Manufactures*. In Arkansas, the total value of shipments in the wood product manufacturing sector decreased from $2.2 billion in 2010 to $2.0 billion in 2011—a decline of 9.1 percent.

Reductions in single-family and multifamily housing starts (31 percent between 2007 and 2011) have resulted in reduced lumber demand across the United States that has only begun to recover in 2012 and 2013, and forecasted to 2014.

Table 8-3. U.S. Construction Starts, Annual 2007—2014 (billions USD)

Construction Type	2007	2011	2012	2013	2014
Total Construction	640.9	442.2	471.7	507.1	588.4

Source: Dodge Construction Outlook, 2014

Other Forest Products

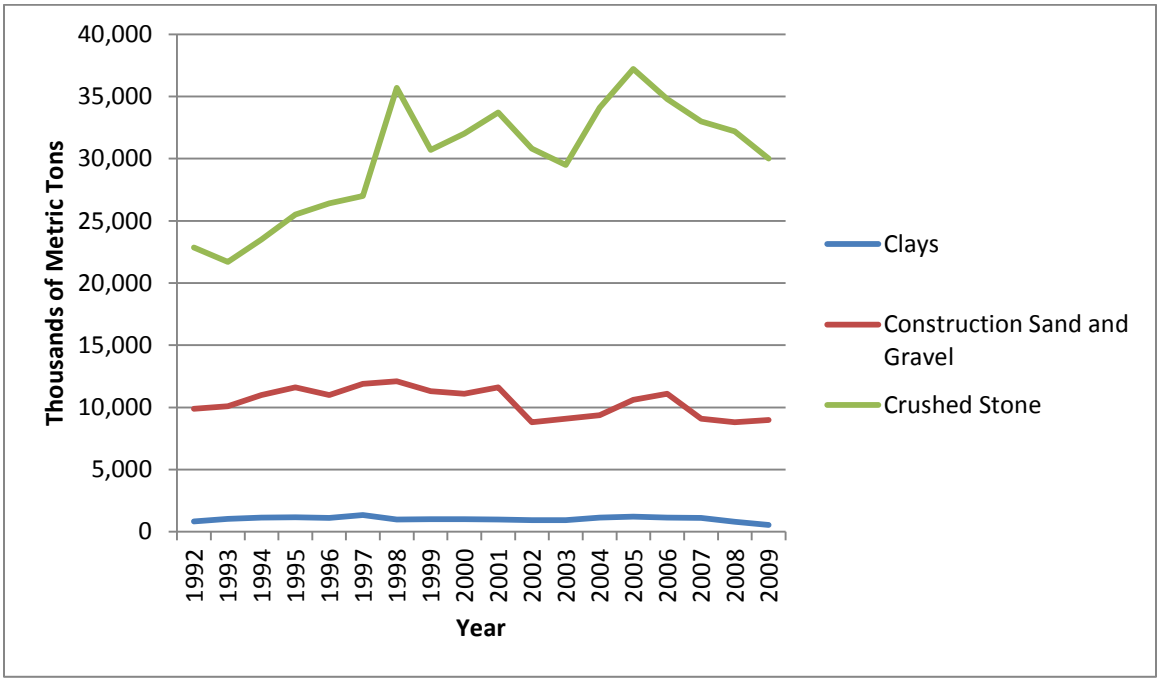
Environmental regulations in the European Union (E.U.) have classified wood pellets as a sustainable fuel source to be used as an alternative to coal. Because of restrictions on forestry harvesting within the E.U., U.S. and Canadian markets are now supplying a substantial portion of these fuel sources used in the European production of electricity. From 2002 to 2012, demand in the E.U. increased from nearly non-existent to $1.5 billion annually. Several southern states, including Mississippi, North Carolina, and Florida, have publicly supported the construction of wood pellet export facilities and are supporting short line rail assets to serve these businesses. A number of short line operators interviewed for this Plan that currently serve forestry industries indicated that they consider wood pellet production to be a potential opportunity.

Recent forecasts by the U.S. Forest Service set a wide range of scenarios for the future output of the U.S. forestry industry.[25] The scenarios hinge on the future role of wood as fuel. If wood becomes a major fuel source in the E.U. or U.S., harvest volumes of softwood and hardwood will grow. If wood does not play a major role as a fuel source, forest product production will continue previous trends and be flat over the long-term.

Non-metallic minerals

The U.S. Geological Survey maintains data on Arkansas non-metallic minerals through the *Minerals Yearbook*, with 2009 being the most recent year. Data from this source suggests that production of non-metallic minerals dropped to unusually low levels in 2009 (Figure 8-22). Clay production was the lowest that year since before 1992. In 2008 and 2009, construction sand and gravel production were similarly at their lowest levels since before 1992, except for one year, 2002. Crushed stone had dropped to its lowest level since 2003. If production of these commodities returns to normal levels as housing and construction demand continues to recover, rail traffic may increase commensurately.

Figure 8-22. Long-Term Trends of Arkansas Non-Metallic Mineral Products (Thousands of Metric Tons of Production)



Steel

Figure 8-23 displays the cumulative percentage change in steel production of the United States and the world between 1980 and 2012. As can be seen, U.S. steel production has generally been flat over this time period, typically somewhere between 0 and minus 20 percent of 1980 production level. Had the United States maintained a constant market share of world steel production, U.S. steel production would have more than doubled during this time period. In 1980, the United States

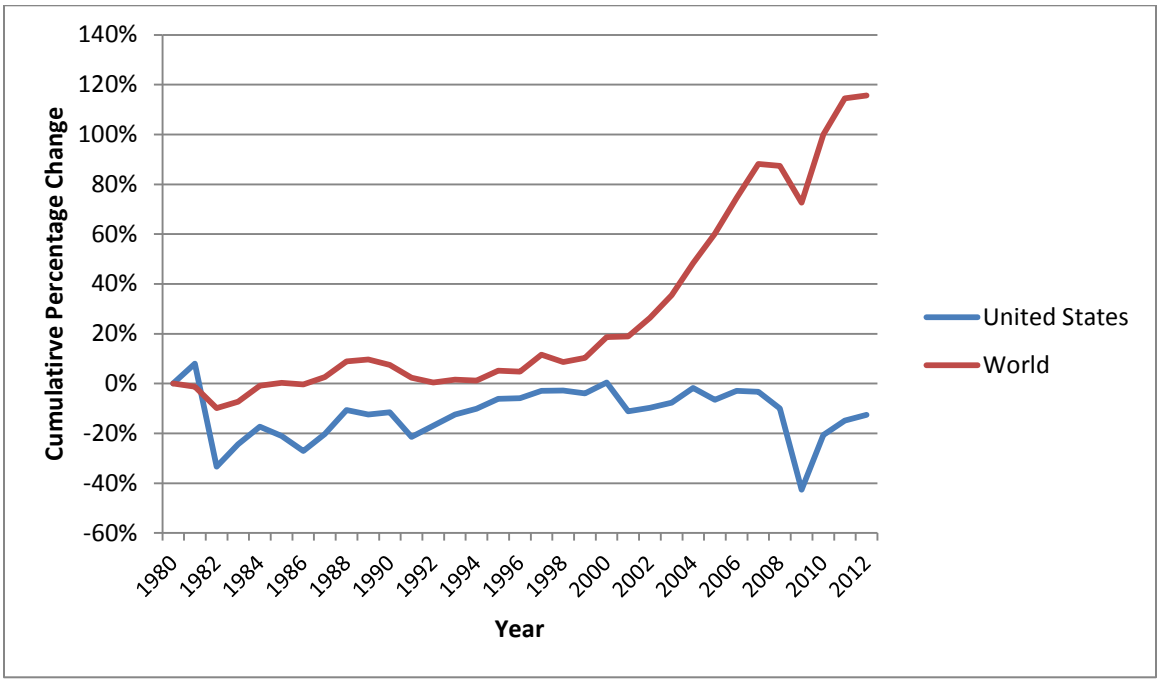
[25] U.S. Forest Service, *Future of America's Forests and Rangelands: Forest Service 2010 Resources Planning Act Assessment,* August 2012.

produced about 14 percent of the world's steel, whereas in 2012 it produced about six percent. Steel is bought and sold in a highly competitive global market. The figure also shows that the recession of 2009 caused an unprecedented drop in steel production. One area that has been a boon for U.S. steel mills over the last several years has been shale energy development. A number of plants across the country have been built or expanded to serve the industry.

Steel mills in Arkansas are primarily "mini-mills" that create finished steel from recycled scrap materials, as opposed to traditional methods of steel manufacture that use iron and coke as inputs. The share of U.S. steel produced at mini-mills has increased dramatically. In the 1960s only about ten percent of U.S. steel was produced at mini-mills. By 1990, the share had grown to about one third, and now, mini-mills produce about two thirds of U.S. steel. If past trends were to continue, Arkansas steel production may increase despite flat national production trends due to the shift toward mini-mills such as are found in Arkansas.

The Nucor-Yamato Steel facilities in Mississippi County are the largest steel mill facilities in the Western Hemisphere in square footage, at 2.6 million square feet. In Arkansas, the total value of shipments from iron and steel mills, and ferroalloy manufacturing was $4.3 billion in 2011, a 21 percent increase above the 2010 total of $3.5 billion.[26] In January 2013, Big River Steel, LLC announced plans to build a $1.1 billion facility on the Mississippi River near the community of Osceola (also in Mississippi County). Ground was broken on the facility in September 2014, with an expected completion date of mid-2016. This facility is anticipated to have an initial annual production capacity of 1.7 million tons of steel. Nucor steel also has plans to expand its facility in Blytheville.

Figure 8-23. Cumulative Percentage Change in Steel Production (1980–2012)



Source: World Steel Association

[26] *American Survey of Manufactures*, 2010 and 2011.

Energy Products

Coal fired power plants are the biggest source of demand for rail in Arkansas. Coal accounts for more than half of the rail tonnage terminating in Arkansas, and coal fired power plants account for most of the demand for coal. New coal generating capacity has recently been added to the Arkansas electric grid. In 2012, the John W. Turk Jr. Power Plant began operations—a 600 megawatt plant powered by coal shipped by rail from the Powder River Basin, Wyoming. This plant is owned and operated by the Southwest Electric Power Company and is located between Fulton and McNab, Arkansas. This contrasts to recent national trends, where low natural gas prices have in many locations caused power plants to switch from coal to natural gas, or at least reduce operations.

Recent regulations have the potential to decrease the demand for coal and hence, the volume of coal flowing to or through Arkansas. These include new National Ambient Air Quality Standards (NAAQS) for ozone and particulate matter; the Cross-State Air Pollution Rule (CSAPR) to address interstate transport of air pollution; Mercury and Air Toxics Standards (MATS); and regional haze regulations. In June 2014 under the authority of the Clean Air Act (CAA), the EPA proposed guidelines to cut CO_2 emissions from existing fossil fuel power plants, the Clean Power Plan (CPP). The EPA estimates that coal production for electric power would decrease by 25 to 27 percent by 2020 compared to a base case where the CPP does not take effect.[27]

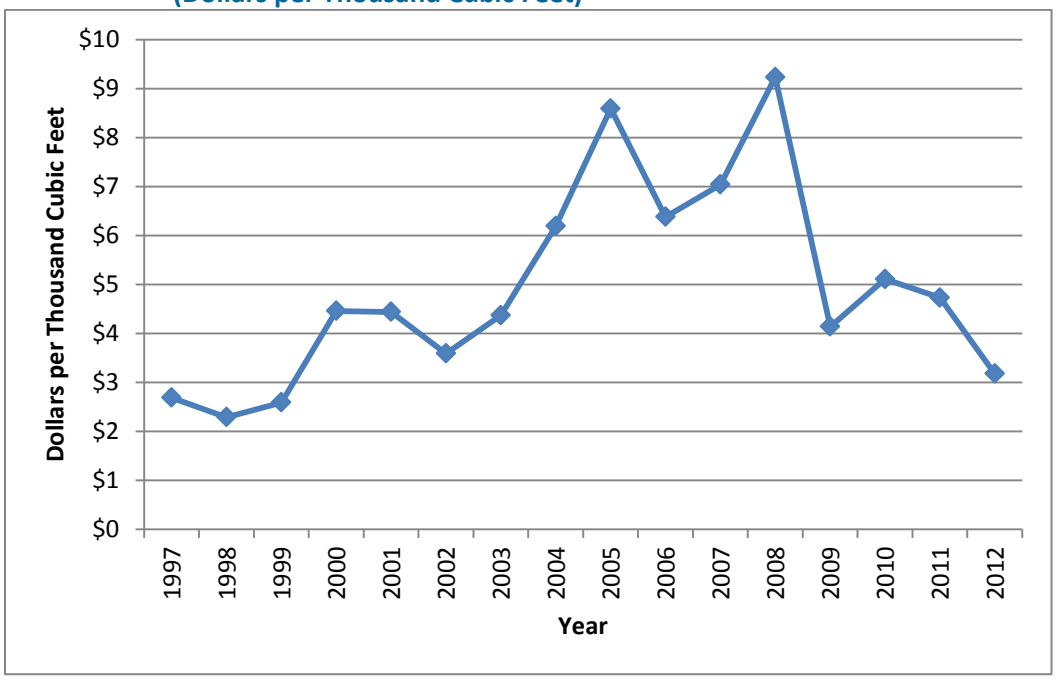
Shale energy exploration in Arkansas has brought mixed trends to Arkansas rail traffic. Indigo Resources announced plans in 2013 to build a rail-to-barge terminal in Osceola, Arkansas, to unload petroleum products from the BNSF onto barges traveling along the Mississippi to refineries down river from Osceola. Delek, the owner of a refinery in El Dorado, reports that the company completed construction of a new off-loading facility at the refinery, which will give the company the ability to receive increased volumes of Canadian, Bakken, Eagleford, Cushing, and other cost-advantaged crude by rail. In addition, the company has been purchasing tank cars for receiving crude oil by rail.

According to the Association of American Railroads, U.S. Class I railroads originated about 9,500 carloads of crude oil in 2008. By 2012 this had risen to 234,000, and by 2013 this had risen to about 400,000 carloads. Rail has emerged as a means by which buyers and sellers of oil can take advantage of regional price differentials, moving oil to locations where the change in price exceeds the cost of transportation due to rail's flexibility in serving multiple origins and destinations. Rail's prominence as a transportation option for crude oil also results from a lack of pipeline capacity at production areas such as North Dakota, the lower capital cost of using rail compared to building new pipelines, and the scalability of rail, as well as the faster transit times that rail provides. A number of rail lines used to carry crude oil are located in Arkansas. The safety implications of crude by rail movements are discussed in the chapter on rail safety. Due to many of the major sources of frac sand lie to the north of Arkansas in states such as Minnesota, Wisconsin, and Michigan, while many of the oil drilling areas lie to the south and west in Texas and Oklahoma, frac sand shipments have likely increased.

[27] U.S. EPA, *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, June 2014.

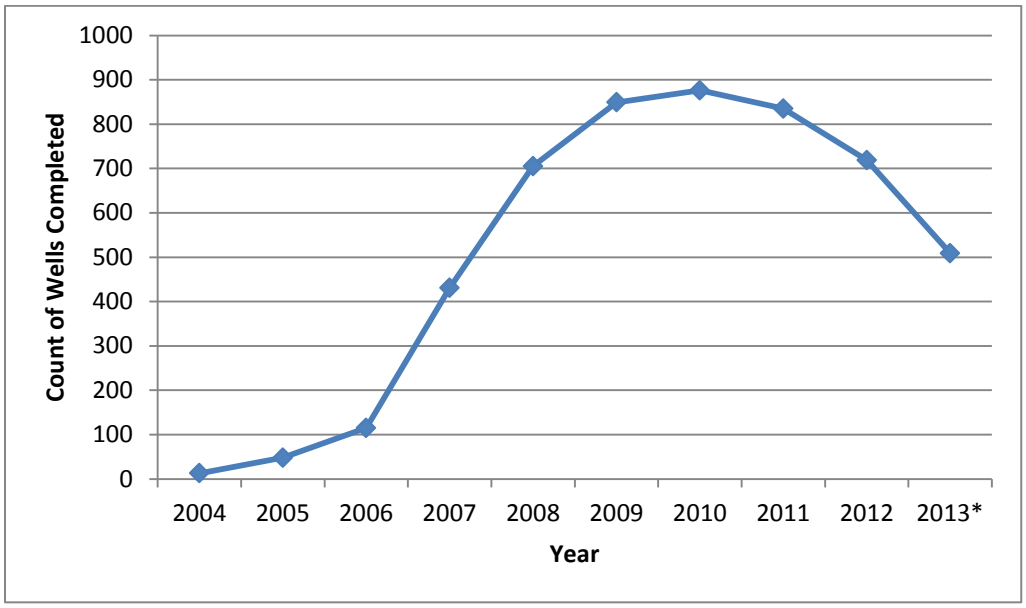
However, energy markets have proved to be volatile. Between June 2014 and January 2015, oil prices halved, which introduces uncertainty to the rate of drilling for shale oil wells. Also, reductions in drilling for gas in the Fayetteville Shale region have caused supporting rail traffic to decline. Shale gas exploration generates demand for rail in several ways. The exploration and drilling of wells require both inbound and outbound railcars. A shale well typically requires 30 rail carloads of inbound well service materials (pipe, sand, aggregates and lubricants) and can produce more than 20 carloads of outbound materials (drill cuttings, brine water). Natural gas liquids are often shipped by rail, but dry natural gas is typically shipped by pipeline. Fayetteville Shale in Arkansas produces dry gas, so shipments of natural gas liquids would be expected to generate less ongoing demand for rail than in other shale plays. Reductions in drilling in Arkansas are associated with low natural gas prices. As can be seen from Figure 8-24, natural gas prices to electric utilities peaked in 2008 and have fallen by two-thirds since that time. As can be seen in Figure 8-25, the number of wells that commenced operation peaked in 2010 and has declined since. Similarly, inputs from Arkansas previously supplied Haynesville Shale exploration, which is located in southwestern Arkansas, Louisiana, and Texas. Drilling in this area has also tapered off.

Figure 8-24. Arkansas Natural Gas Price Sold to Electric Power Consumers (Dollars per Thousand Cubic Feet)



Source: U.S. Energy Information Administration

Figure 8-25. Natural Gas Wells Completed in Arkansas (by First Production Date)

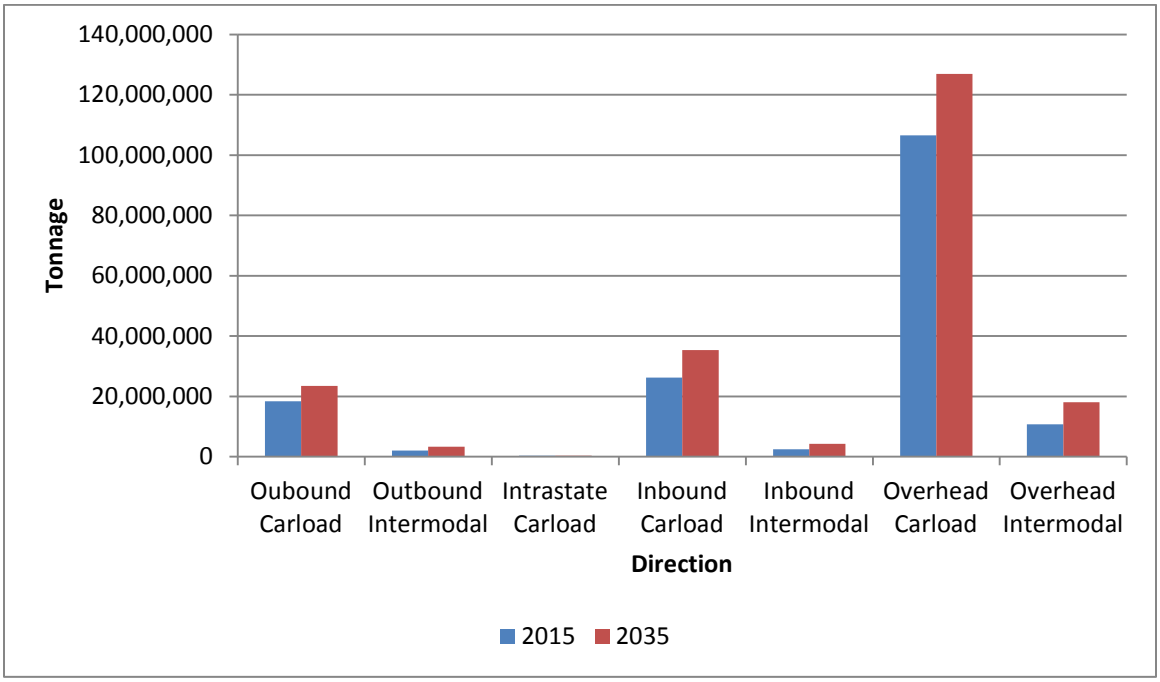


Source: Arkansas Oil and Gas Commission
**Data through 11/21/13*

Long-Term Forecasted Rail Traffic

Figure 8-26 displays rail traffic by direction and by mode for both 2015 and 2035, based upon forecasts by IHS Global Insight. As can be seen, the largest increases by tonnage are expected for overhead carload traffic, growing by about 20 million tons between 2015 and 2035—an increase of 19 percent. On a percentage basis, intermodal freight is expected to grow faster than carload freight, with inbound intermodal increasing by 73 percent, outbound intermodal increasing by 61 percent between 2015 and 2035, and overhead increasing 69 percent. Overall, rail tonnage originating in Arkansas is expected to grow by about 30 percent between 2015 and 2035, or about 1.3 percent per year. Rail tonnage terminating in Arkansas is expected to grow by 38 percent between 2015 and 2035, or about 1.6 percent per year. Rail tonnage moving through Arkansas between other states is expected to increase by about 24 percent or 1.1 percent per year.

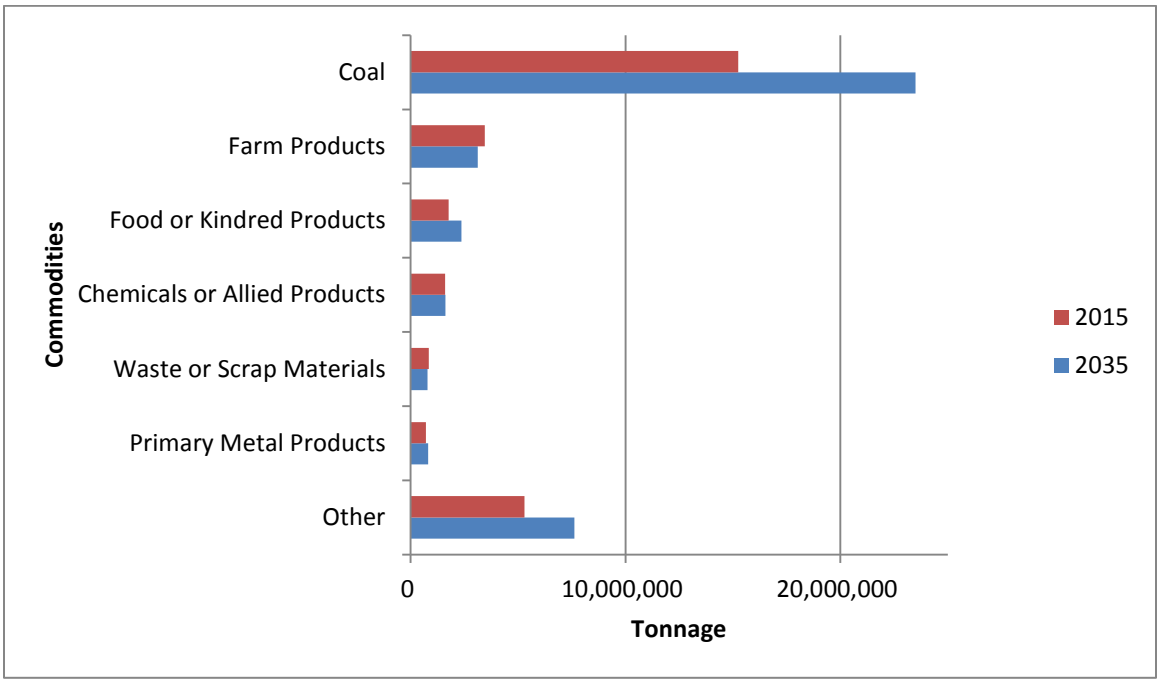
Figure 8-26. Forecasted Rail Traffic in Arkansas by Direction (2015–2035)



Source: STB Waybill Sample, IHS Global Insight

By commodity, IHS Global Insight predicts that coal will post the biggest volume gains for freight terminating in Arkansas between 2015 and 2035 (Figure 8-27). On the one hand, this forecast may overstate the volume of coal shipments, since it was developed before the dramatic recent increase in natural gas production and associated drop in price, as well as new regulations impacting coal-fired power plants. The other largest growth area consists of "Other" commodities.

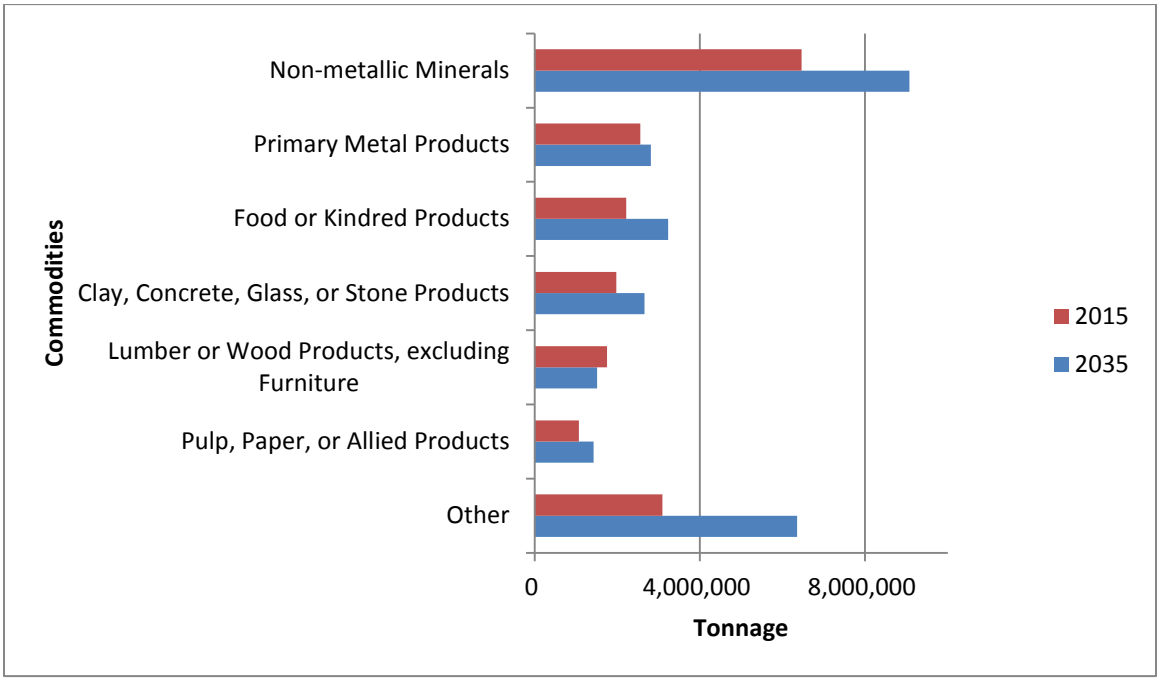
Figure 8-27. Forecasted Rail Traffic Terminating in Arkansas by Commodity



Source: STB Waybill Sample, IHS Global Insight

For freight originating from Arkansas, "Other" commodity tonnage is expected to increase by over three million between 2015 and 2035 (Figure 8-28). Non-metallic minerals are expected to post the second-highest increases, growing by 2.5 million tons over that same time period.

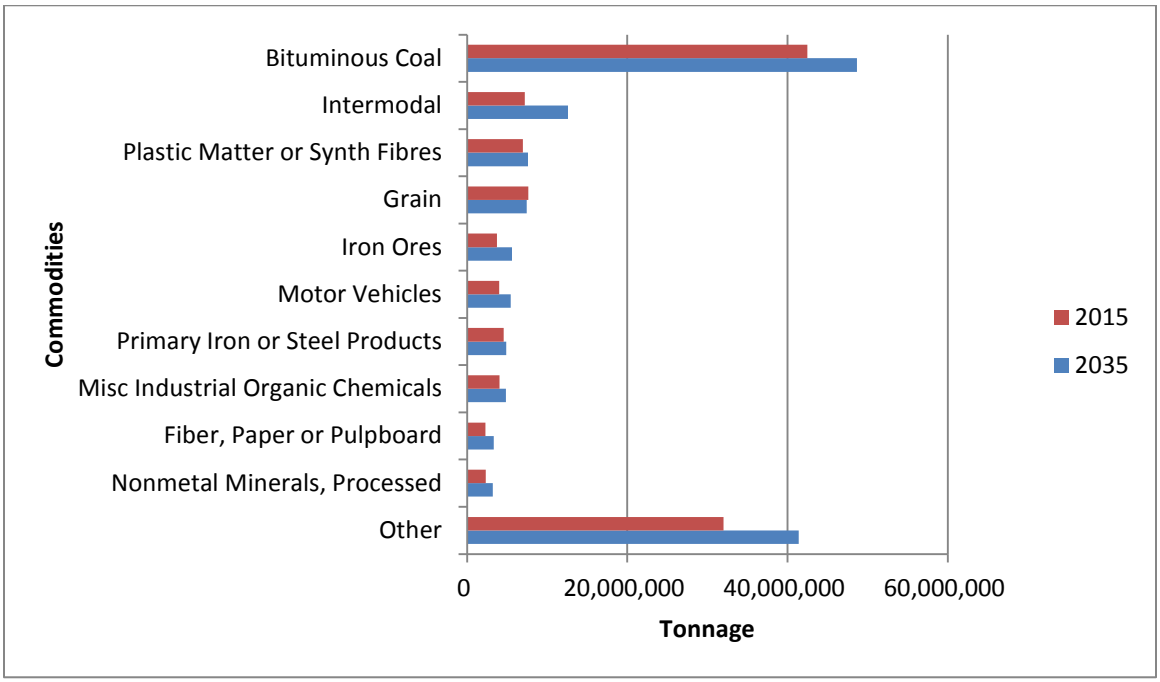
Figure 8-28. Forecasted Rail Traffic Originating in Arkansas by Commodity



Source: STB Waybill Sample, IHS Global Insight

As shown in Figure 8-29, coal is the highest-volume commodity that passes through Arkansas to and from other states. This is primarily Powder River Basin coal from Wyoming being shipped to locations to the east or south of Arkansas, such as Tennessee, Texas, or Alabama. Because coal is by far the highest-volume commodity passing through Arkansas to begin with, even a relatively modest percentage growth in coal volumes translates to a major forecasted increase in rail traffic. As discussed previously, new environmental standards issued after the forecasts shown in Figure 8-29 were developed cast some doubt regarding this future growth. The second-highest growth commodity consists of intermodal shipments, primarily between the Port of Los Angeles/Long Beach and points east of Arkansas, including Memphis and Atlanta. IHS Global Insight forecasts do not expect much increase in grain shipments passing through Arkansas.

Figure 8-29. Current and Forecasted Rail Freight Overhead to Arkansas by 2015 and 2035 Tonnage

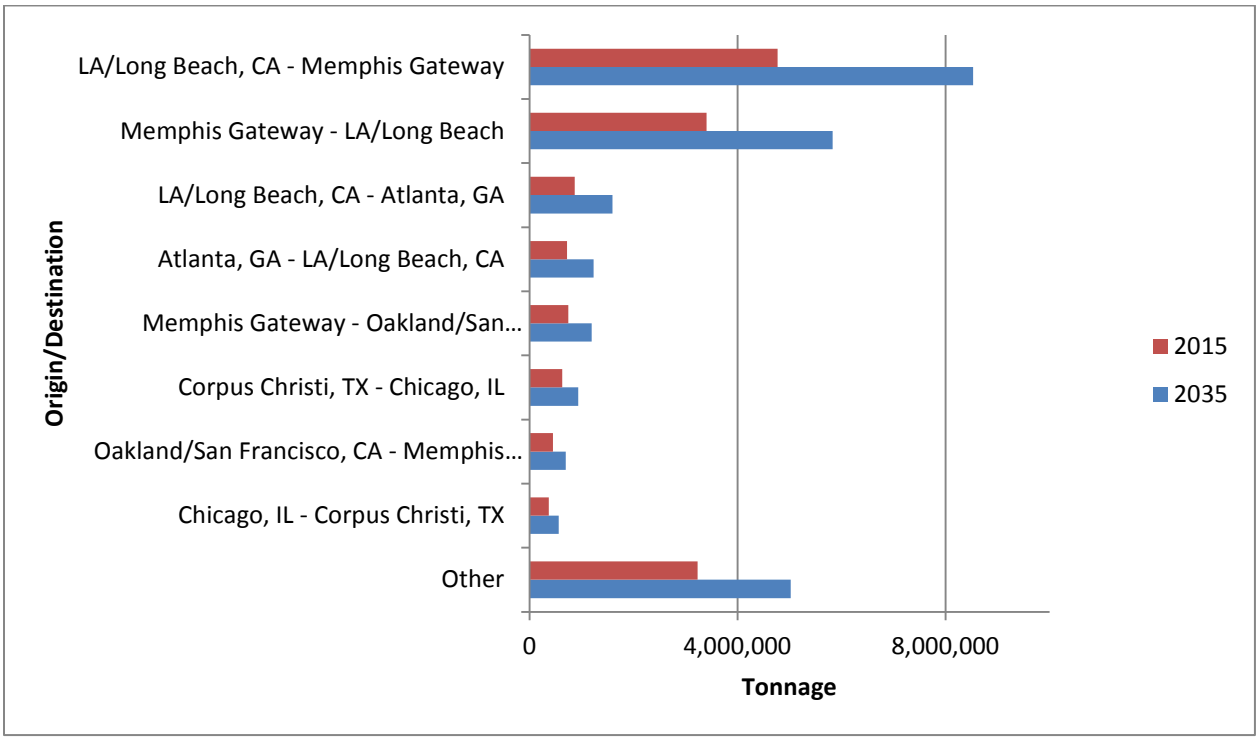


Source: STB Waybill Sample, IHS Global Insight

Intermodal Rail Flows

Most intermodal traffic on the Arkansas rail system travels between the Ports of Los Angeles/ Long Beach, California, and either the Memphis Gateway (including intermodal terminals in Tennessee and the UP ramp in Marion, Arkansas), or the Atlanta, Georgia, metropolitan area. Los Angeles traffic is expected to have the highest growth of intermodal rail traffic passing to, from, or through Arkansas (Figure 8-30). A discussion of trends that will influence international trade appears later in this Plan

Figure 8-30. Origin and Destination Region of Intermodal Rail Flows to, from, and through Arkansas by Tonnage (2015 and 2035)

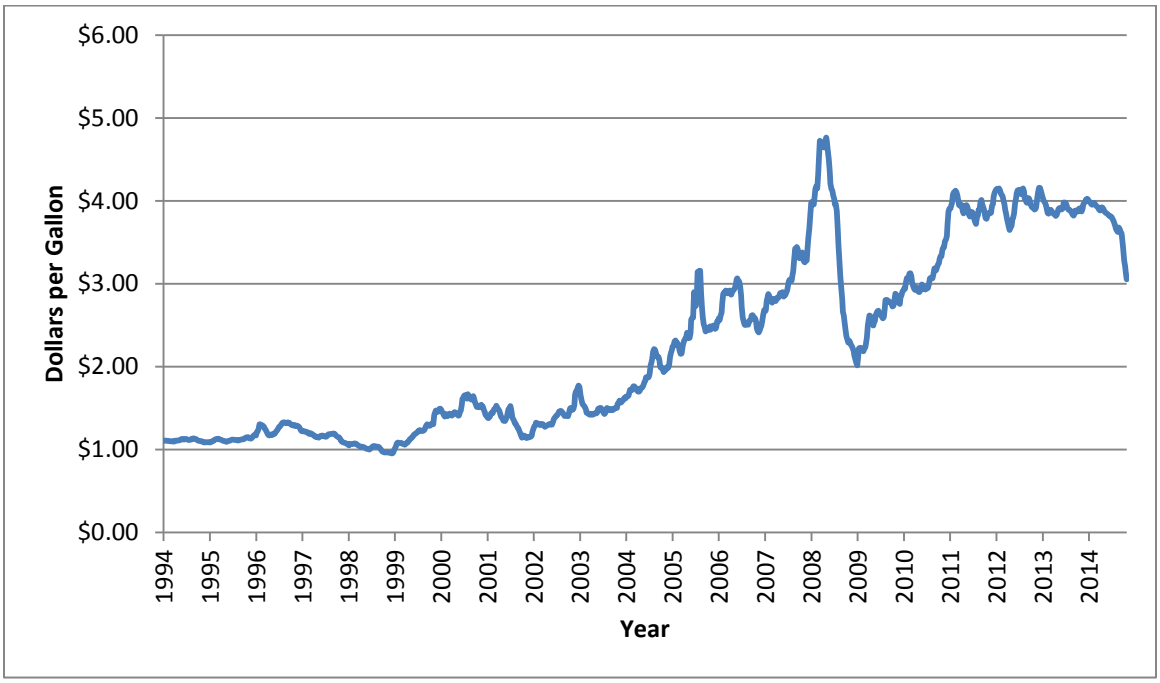


Source: STB Waybill Sample, IHS Global Insight

Fuel Cost Trends

Figure 8-31 shows the historical average U.S. weekly No. 2 retail diesel fuel prices. As can be seen, as of early 2015, fuel prices are much higher than they were in the late 1990s through 2004, but have dropped significantly from 2011–2014 levels.

Figure 8-31. U.S. No 2 Diesel Retail Prices (Dollars per Gallon)



Source: EIA

Increases in the price of fuel actually improve the relative economics of rail, since freight rail is less fuel intensive than trucking, and passenger rail is less fuel-intensive than automobile travel. However, diesel prices are volatile.

There has also been a shift toward natural gas in the trucking industry. As an example, truck engine manufacturer Cummins, Inc. estimates that by 2020 nearly 30 percent of its high horsepower engine production will be natural gas due to increased availability and low cost of this fuel. Companies such as United Parcel Service (UPS) have recently announced plans to increase their natural gas fleets. Declines in natural gas prices, such as those that underlie the trends shown in Figure 8-24, help to explain the shift. Railroads have also begun to experiment with natural gas locomotives. This shift to natural gas may dilute some of the impact of rising fuel prices on the relative economics of truck and rail.

Highway and Airport Congestion

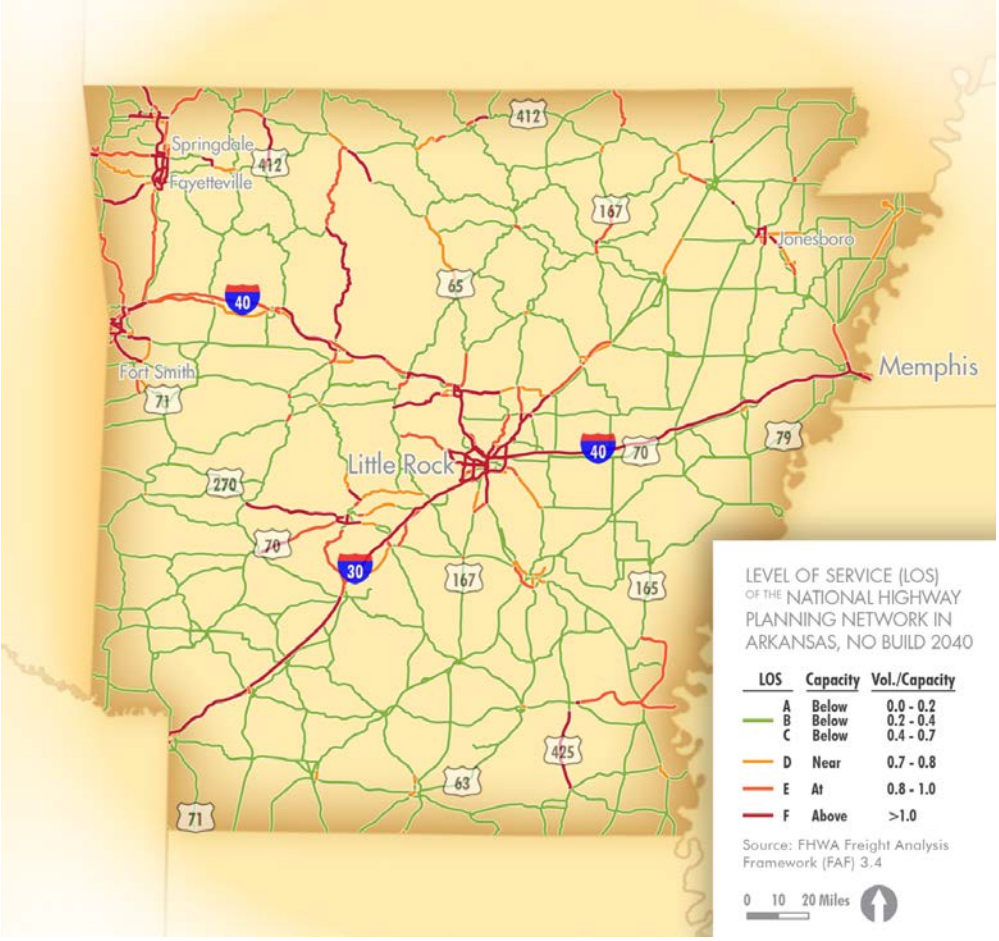
Highway Congestion

Rail transportation can relieve highway congestion by diverting freight and passengers from trucks and automobiles to train services. Funding for roadway improvements must compete with funding

for system preservation, which consumes nearly three quarters of the available highway funding in Arkansas.

The FHWA Freight Analysis Framework-3 (FAF3) has estimated volume to capacity ratios for the National Highway Planning Network (NHPN) in Arkansas. To develop these figures, FAF3 freight flow data were combined with data from the national Highway Performance Monitoring System. Figure 8-32 displays the expected levels of service (LOS) for Arkansas highways in 2040 with no capacity additions. At LOS A through C, vehicles operate at or near free flow speed, while speeds decline at LOS D or below. LOS of E or F are considered highly congested and near standstill travel speeds. Unless expanded, significant portions of the NHPN in Arkansas will be at or near capacity by 2040, including each of the state's major interstate highways.

Figure 8-32. Level of Service—National Highway Planning Network in Arkansas in 2040 without Capacity Expansion

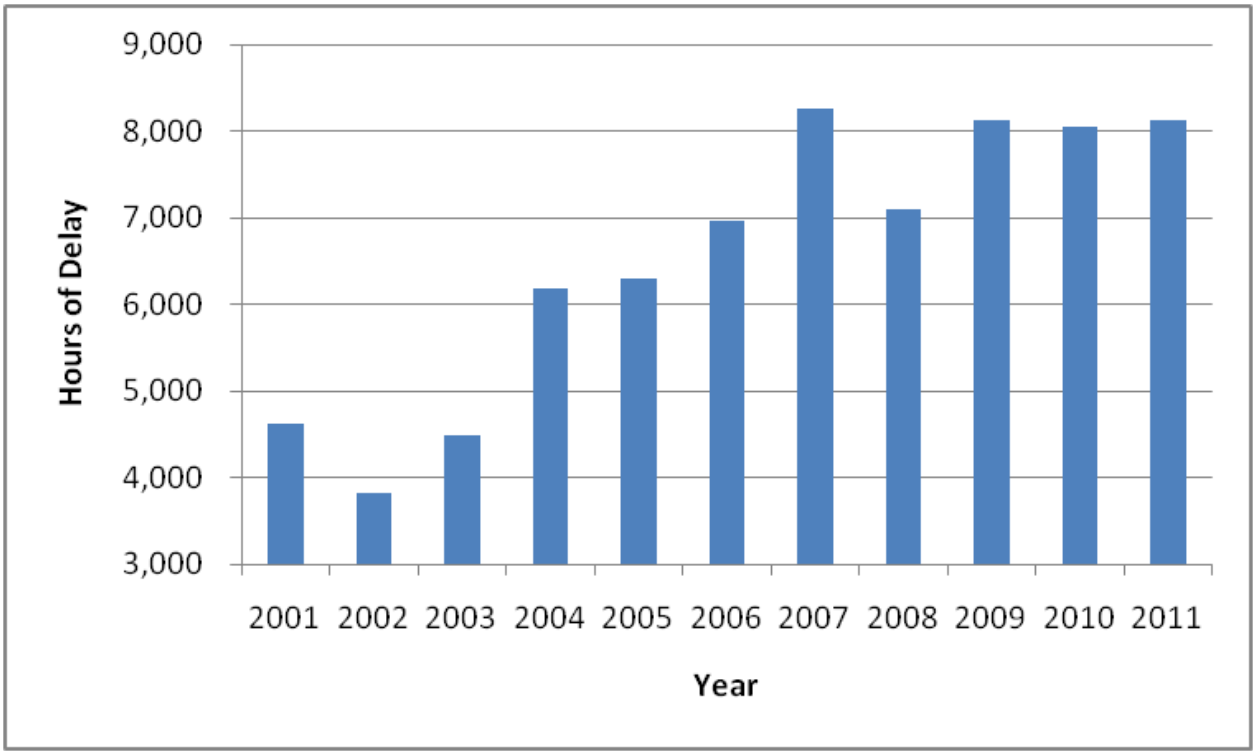


Source: FHWA Freight Analysis Framework

Arkansas has several areas of urban congestion. As an example, total delay for Little Rock has generally increased over the past decade, with an annual average increase of seven percent according to the Texas Transportation Institute's 2012 Urban Mobility Report. Total delay is measured as the total travel time above that needed to complete a trip at free-flow speeds. It is measured in thousands of person-hours. The total delay for Little Rock, shown in Figure 8-33 as

annual hours of delay, has increased by 75 percent from 2001 to 2012.[28] Rail transit projects, such as the rail alternatives proposed by the Little Rock *I-630 Fixed Guideway Alignment Study* or the *Northwest Arkansas Fixed Guideway Study* can help to relieve urban congestion.

Figure 8-33. Little Rock, Arkansas, Historical Roadway Hours of Delay (2001–2011)



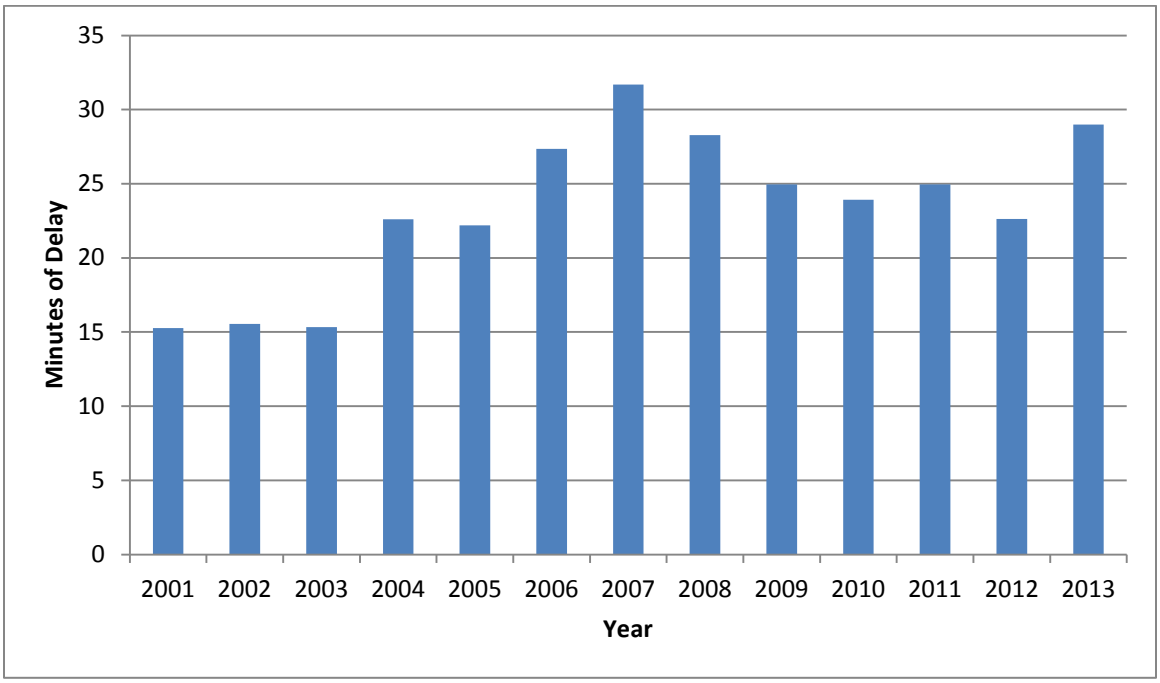
Source: Texas Transportation Institute

Airport Congestion

Intercity passenger rail can relieve airport congestion in those cases where the two modes serve as substitutes. Figure 8-34 shows the historical annual arrival and departure delays for air travel in the state of Arkansas. Delay is measured as the difference between scheduled and actual departure and arrival times. To reflect changes in the total number of flights to and from Arkansas, delay minutes have been divided by flights to and from Arkansas. The total annual delays peaked in 2007 and steadily declined from 2007 to 2012, but then spiked again in 2013.

[28] Texas Transportation Institute, 2012 Annual Urban Mobility Report, http://mobility.tamu.edu/ums/report/

Figure 8-34. Minutes of Delay per Flight Arriving/Departing from and to Arkansas (2002–2013)



Source: U.S. Bureau of Transportation Statistics

Arkansas Rail and International Trade

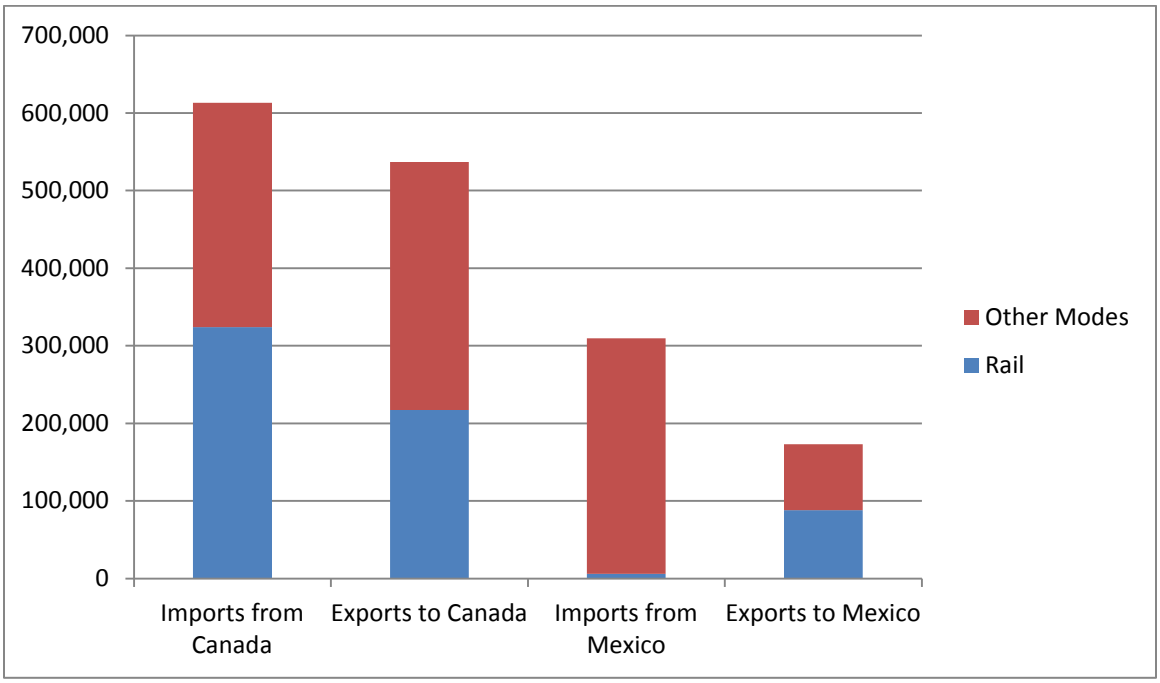
NAFTA Trade

Rail helps to facilitate trade between Arkansas and the North American Free Trade Agreement (NAFTA) nations of Mexico and Canada. According to data by the Institute for Trade and Transportation Studies (ITTS), Mexico and Canada are the largest foreign trading partners of Arkansas, accounting for about a third of the value of Arkansas exports. Figure 8-35 displays Arkansas trade with Canada and Mexico by rail and other modes. The non-rail traffic consists almost entirely of truck freight but also includes a small amount of air freight. As shown, over half of the imports from Canada and exports to Mexico are carried by rail.

Nearly half of Arkansas exports by rail to Canada and Mexico are primary steel products, although Arkansas also exports significant quantities of gypsum, non-metallic minerals, milled rice, flour or meal to Canada as well. Imports received by rail from Canada are primarily aluminum smelter products, non-metallic minerals, chemicals, and lumber.

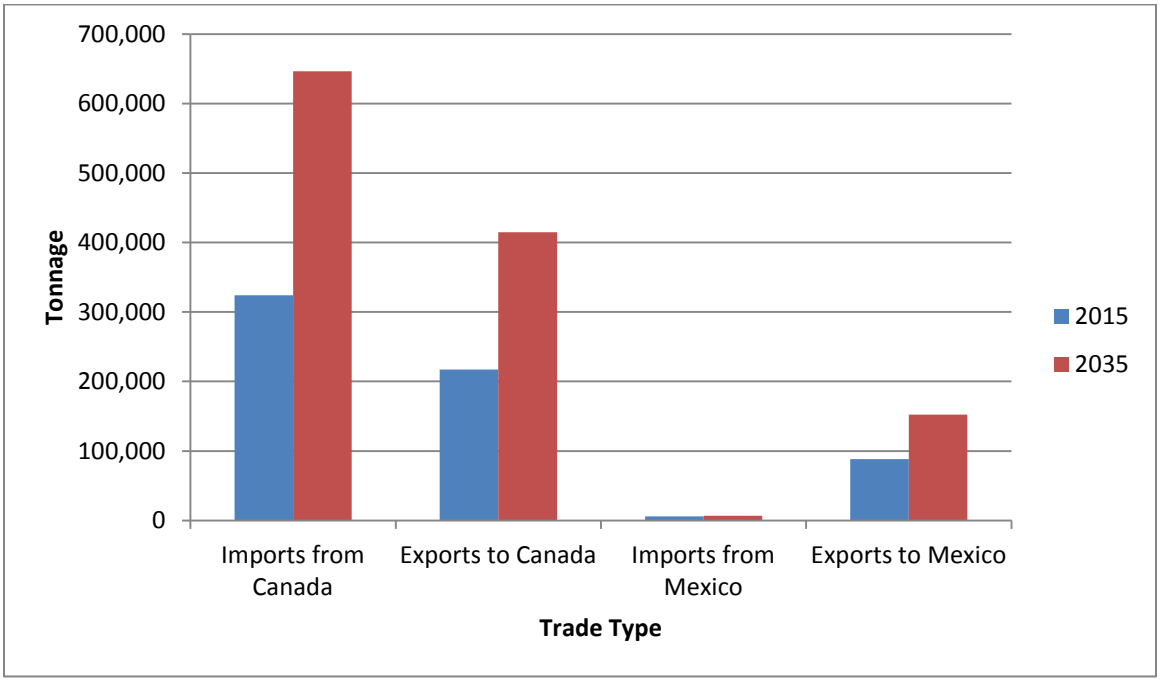
Trade between Arkansas and Canada or Mexico is expected to nearly double between 2015 and 2035 (Figure 8-36). NAFTA trade is estimated to be about one percent of inbound tonnage by rail to Arkansas and 1.5 percent of outbound tonnage by rail from Arkansas in 2015.

Figure 8-35. Rail's Role in Arkansas NAFTA Trade



Source: IHS Global Insight TRANSEARCH database

Figure 8-36. 2015 and 2035 Trade by Rail between Arkansas and Mexico/Canada



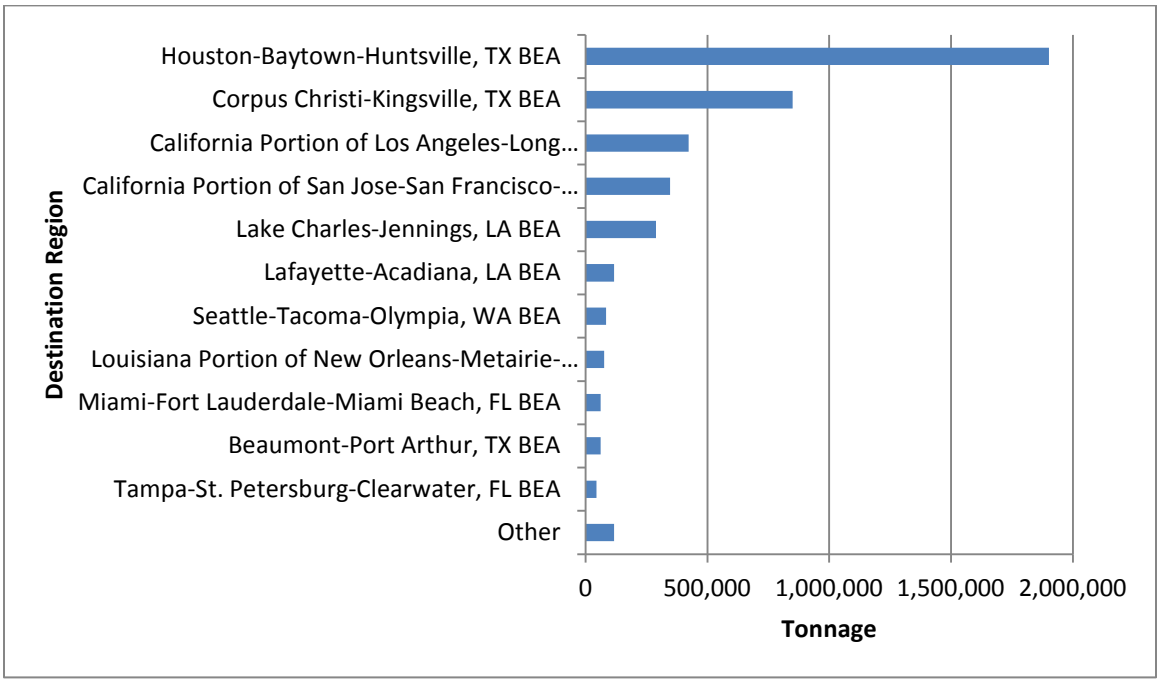
Source: IHS Global Insight TRANSEARCH database

Rail Trade with Port Areas

Arkansas intermodal flows are discussed previously. In general, the majority of intermodal traffic that travels to, from, or across Arkansas originates or terminates in the Los Angeles, California area, although smaller volumes also travel to and through Arkansas from/to Corpus Christi, Texas, the San Francisco/Oakland, California, area, and other areas.

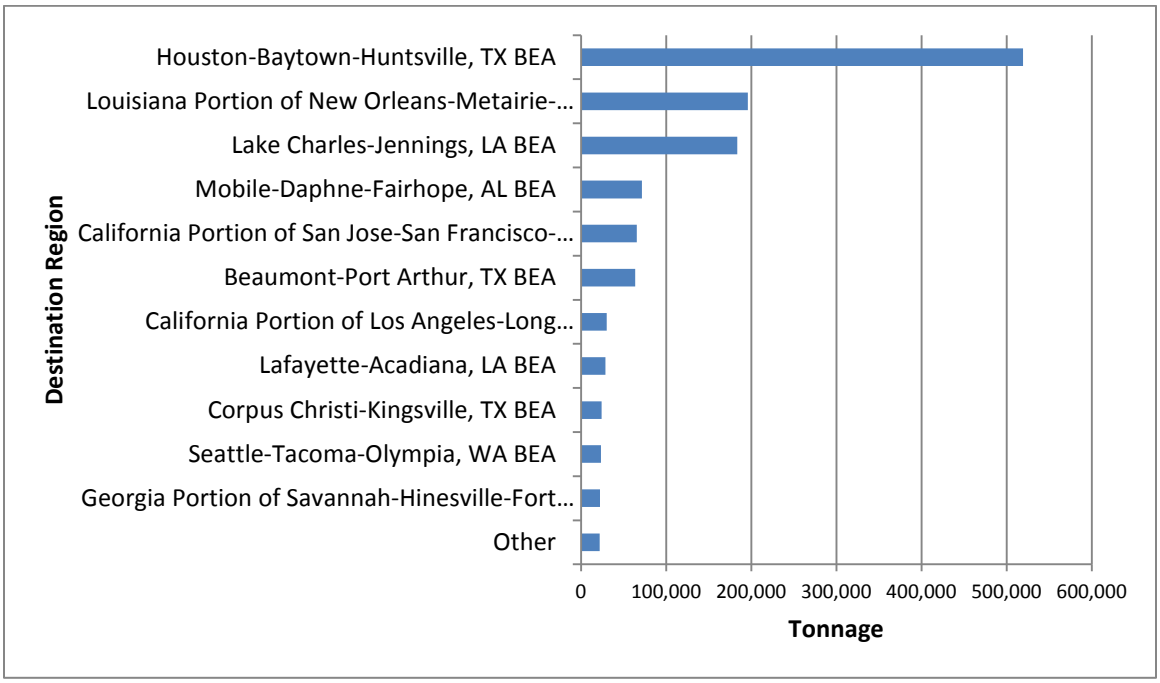
Figure 8-37 and Figure 8-38 display tonnages between Arkansas and port regions carried in carload rail service (not intermodal) from IHS based on the STB Waybill Sample. As shown, the largest volumes of trade are between Arkansas and locations in Texas and California, followed by locations in Louisiana. This is generally consistent with data on the value of Arkansas vessel shipments by gateway as gathered by ITTS, which indicates that Los Angeles and Long Beach, California collectively handled about 32 percent of the total value of Arkansas export vessel trade in 2012, while Houston handled another 14 percent, and New Orleans handled another 12 percent.

Figure 8-37. Carload Rail Freight from Arkansas to Port Regions by 2015 Tonnage



Source: STB Waybill Sample, IHS Global Insight

Figure 8-38. Carload Rail Freight to Arkansas from Port Regions by 2015 Tonnage



Source: STB Waybill Sample, IHS Global Insight

A broad range of commodities flows between Arkansas and port regions in carload rail service. Some highlights are as follows:

- More than half of shipments from Arkansas to the Houston area are nonmetallic minerals, such as gravel, broken stone, or riprap. Other important commodities include rice, primary iron, and steel products. Another data source, the FAF-3 suggests that milled grain products are the state's largest export to be shipped by rail to ports and then shipped by water. According to the Arkansas Farm Bureau, more than 60 percent of the rice produced in the state is exported.
- More than half of the shipments from Arkansas to the Corpus Christi, Texas, area consist of grain or iron and steel products.
- More than half of the shipments from Arkansas to the Los Angeles area consist of frozen poultry, and iron and steel products. According to data by ITTS, Arkansas exports of meats (including poultry) were worth about $460 million in 2011.
- More than half of the shipments to the Oakland/San Francisco area are frozen poultry.
- More than half of the shipments from the Houston area to Arkansas are chemical products.

Panama Canal Expansion

Through reductions in transportation costs, the Panama Canal expansion could affect patterns of international containerized freight movements as well as those of bulk commodities such as grain. A discussion of containerized freight will be followed by an assessment of potential impacts on grain.

Panama Canal Expansion Impact on Containerized Freight

The expansion of the Panama Canal is projected to be completed in 2015. In addition to doubling the capacity of the canal, this major infrastructure project will allow the passage of much larger ships. For container ships, the maximum vessel size will increase from a capacity of about 5,000 twenty-foot equivalent units (TEUs) to vessels able to carry in excess of 13,000 TEUs. This large increase in vessel size will likely reduce the cost of moving containers from Northeast Asia to the U.S. East Coast.

The question concerning containerized trade flows affecting Arkansas is whether such cost reductions could induce some of the volumes moving to West Memphis/Memphis and locations in the U.S. Southeast to be shipped through East Coast ports rather than through West Coast ports, reducing volume growth through Arkansas. Table 8-4 displays total estimated intermodal volumes from West Coast port regions to the Memphis, Atlanta and Birmingham regions. Estimated 2015 volume from the California ports' regions to the Memphis region totals 3.2 million tons. Volumes moving to major destinations in the Southeast are much smaller than those destined for Memphis. As shown in Table 8-4, volumes to the larger Atlanta and Birmingham regions total 1.3 million tons compared to the 3.2 million ton total to Memphis.

Table 8-4. Estimated Total 2015 Intermodal Volumes from California Port Regions to the Memphis, Atlanta and Birmingham Regions

Origin Region	Destination Region	Tons
California	**TN Memphis BEA**	**3,210,139**
CA Los Angeles-Long Beach-Riverside BEA	TN Memphis BEA	2,763,688
CA San Jose-San Francisco-Oakland BEA	TN Memphis BEA	446,450
California	**GA Atlanta-Sandy Springs-Gainesville BEA**	**1,082,561**
CA Los Angeles-Long Beach-Riverside BEA	GA Atlanta-Sandy Springs-Gainesville BEA	867,185
CA San Jose-San Francisco-Oakland BEA	GA Atlanta-Sandy Springs-Gainesville BEA	215,376
California	**Birmingham-Hoover-Cullman, AL BEA**	**224,945**
CA Los Angeles-Long Beach-Riverside BEA	Birmingham-Hoover-Cullman, AL BEA	201,521
CA San Jose-San Francisco-Oakland BEA	Birmingham-Hoover-Cullman, AL BEA	23,424

Source: STB Waybill Sample, IHS Global Insight

Addressing this question requires a consideration of six fundamental factors that could affect routing shifts:

- Geography and route costs—No matter what the product, goods imported from Northeast Asia destined for Central regions, including Memphis, are more likely to be moved through West Coast ports because the alternative routes are more costly and take longer.
- Product value—Higher-value products from Northeast Asia tend to be shipped through West Coast ports regardless of their destination in the Eastern U.S. For such products, the value of time associated with longer transit times and the resulting inventory carrying costs tends to outweigh lower transportation costs available from "all water" shipping services.
- Supply chain network development—Marginal changes in transportation costs resulting from the Panama Canal expansion may be a small part of overall supply chain network costs.

Additionally, large complex supply chain networks cannot be easily altered based on transitory fluctuations in transportation costs. Thus, shifts in shipping patterns may best be explained by how supply chains evolve rather than by simple and limited changes in one component of transportation costs.

- Port readiness—While the expanded Panama Canal will allow passage of container ships up to about 13,000 TEU capacity, ships of that size will not be able to call on some major U.S. East Coast ports for years.
- Transportation cost reductions—Cost reductions for full TEUs, which may amount to hundreds of dollars per TEU, are not likely to be fully passed on to consumers or cargo owners. Other participants in the transportation network, some of whom have also made significant investments, will also desire to retain some of the transportation cost reductions that they have helped enable. The net result is that a large portion of the realized aggregate cost reductions may be retained by transportation providers, reducing incentives to consumers and cargo owners to shift cargo routing to achieve savings.
- Competitive dynamics—An expectation that the Panama Canal Authority will compete head-to-head for market share based on pricing may be incorrect. West Coast transportation interests have much more control over how they can segment markets and price services than the Panama Canal. Ocean carriers and their railroad partners can differentiate services and pricing on a point-to-point basis, while the Panama Canal cannot.

Summary of Potential Coastal Shifts

Based on each of the factors outlined above, coastal shifts in Northeast Asia-U.S. container trade resulting from Panama Canal expansion are likely to be minimal and gradual. The impacts on volumes moving through West Coast ports to Arkansas and through Arkansas to Memphis are likely to be near zero.

It is possible, however, that there could be an impact on container freight volumes moving through Arkansas to destinations in the Southeast such as Atlanta. Estimated volumes of over one million tons destined to Southeast regions are relatively small.

Panama Canal Expansion Impacts on Grain Transportation

As is the case for container ships, Panama Canal expansion will enable larger bulk vessels to transit the canal, and this may result in lower transportation costs for bulk products, including the agricultural crops moved from U.S. Gulf ports to Asian markets. The extent to which this effect may affect U.S. exports depends on the following transportation factors:

- The portion of these products exported to Northeast Asia (i.e., where lowered costs resulting from Panama Canal expansion would have an effect)
- The route used to transport these products to Asia, for example, by rail out of West Coast ports versus barge via the Mississippi River to the area around New Orleans, referred to as the "Center Gulf"

Currently, the lower Mississippi River has a 45-foot draft, and existing Panamax vessels can be loaded only to a 39.5-foot draft. The Panama Canal expansion would allow vessels to be loaded to the full 45-foot draft that the lower Mississippi can accommodate, enabling around 13,300 additional tons to be loaded onto the same vessel. One model sponsored by associations of soybean shippers estimates that this improvement in capacity would reduce the costs of shipping soybeans from the Central Gulf region to Japan by about 21 percent.[29] According to the same model, the rate improvement would move the location where shippers are indifferent between shipping through the Central Gulf and the Pacific Northwest from 70 miles west of the Mississippi River to 161 miles west of the Mississippi River.

The potential impacts on Arkansas vary by crop and by production area. The following sections assess potential impacts on rice (of major importance in Arkansas) and other grains.

Rice Production and Exports

Arkansas is the largest producer of rice in the United States, growing 43 percent of total U.S. volume in 2013 according to USDA statistics. However, the Panama Canal expansion is expected to have little impact on the pattern of Arkansas shipments of rice by rail for export. Nearly half of total U.S. rice exports are to Mexico, and Central and South America with nearly all of this volume being shipped through Gulf ports. In contrast, U.S. exports of rice to Asia are transported almost entirely through West Coast ports while exports to other world regions are transported mostly out of Gulf ports.

U.S. rice exports to Northeast Asian countries (primarily Japan and South Korea) accounted for 17.5 percent of rice export value in 2013 according to U.S. Census Bureau data, and this volume was transported nearly 100 percent through West Coast ports (primarily the Port of Oakland). Exports to Southeast Asian countries represented a much smaller share of U.S. exports at less than one percent of U.S. export value. These volumes were also transported primarily through West Coast ports. Of the estimated 1.9 million tons of rice shipped from Arkansas by rail in 2015, about six percent (or 92,131 tons) are estimated to be shipped to the Los Angeles and Oakland areas with likely export destinations in Asia, while about 24 percent (or 385,281 tons) are shipped to port areas in Houston and Louisiana with likely destinations to world regions other than Asia. While the Panama Canal expansion will allow larger dry-bulk ships to transit the canal and possibly allow ocean transportation costs to be marginally reduced on the Panama Canal route to Asia, it is not expected that such impacts would outweigh the shorter distances and lower costs represented by the current West Coast route. Arkansas exports to the West Coast ports will continue to be shipped to West Coast ports.

Other Agricultural Crops

Most agricultural crops that could be affected by the Panama Canal expansion project are produced north of Arkansas, and these impacts could moderately increase rail traffic through Arkansas. Table 8-5 provides an analysis of agricultural export shipments to Asia by crop and production area that could shift from West Coast to Gulf Coast ports as a result of the Panama Canal expansion. Current gateways were identified by the FAF-3 database as well as the primary existing flows to

[29] United Soybean Board, U.S. Soybean Export Council, Soy Transportation Coalition, *Panama Canal Expansion: Impact on U.S. Agriculture*, September 2011.

port gateways. Several commodities and origins could see a shift, including wheat from Kansas and corn/soybeans from Minnesota, Iowa, and Illinois.

Table 8-5. Potential Shifts to Gulf Coast Ports as a Result of Panama Canal Expansion by Major Crop and Production Area

Crop and Production Area	Current Gateway	Potential Shift to Gulf Coast
Wheat from Kansas	Gulf Coast and West Coast	Potential Shift
Wheat from Montana, North Dakota, South Dakota, Minnesota, Nebraska, Idaho California	West Coast	No Shift
Corn and Soybeans from North Dakota, South Dakota and Nebraska and all areas to the west	West Coast	No Shift
Corn and soybeans from areas along the Mississippi, Ohio, Arkansas Rivers, including Indiana, Kentucky, Arkansas, Louisiana, Mississippi, Tennessee, and Missouri	Gulf Coast	No Shift
Corn and soybeans from Minnesota, Iowa, Illinois	Gulf Coast and West Coast	Potential Impact

Source: FAF-3, Parsons Brinckerhoff analysis

Reviewing the approximately 9.7 million tons of grain and oil kernels, nuts, seeds (e.g., soybeans) that pass through Arkansas by rail between origins/destinations outside of Arkansas, about 3.5 million ton originate in Midwestern states and terminate in Central Gulf port regions. Moderating the overall impact on rail is the fact that any shifts toward the Gulf Coast may divert freight to barge rather than to rail. In certain instances, grain is shipped by a combination of rail and barge. For example, Saint Louis/East Saint Louis is a transshipment point where unit trainloads of grain are transferred to barge to continue travel down the Mississippi River. UP provides rail/barge service at East Saint Louis when barge rates at East Saint Louis are low and delivered grain prices at the Gulf Coast are high. UP also provides this service when there are issues with the Mississippi River north of East Saint Louis. UP was asked about the potential for rail-barge service at river ports in Arkansas. UP responded that the company does not see opportunities associated with rail/barge in Arkansas at this time. When asked the same question, KCS responded similarly.

Table 8-6 displays the base of rail traffic through Arkansas that could increase as a result of the Panama Canal expansion. The Panama Canal expansion could affect some portion of this freight that is shipped to Asia.

Table 8-6. 2015 Rail Grain Traffic Passing through Arkansas between Locations in the Midwest and the Central Gulf Region by Tonnage

Origin State	Destination Region	Tons
Iowa	Houston-Baytown-Huntsville, TX BEA	20,732
Iowa	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	204,568
Illinois	Corpus Christi-Kingsville, TX BEA	57,354
Illinois	Houston-Baytown-Huntsville, TX BEA	1,276,570
Illinois	Shreveport-Bossier City-Minden, LA BEA	24,097
Kansas	Houston-Baytown-Huntsville, TX BEA	7,865
Kansas	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	478,189
Minnesota	Houston-Baytown-Huntsville, TX BEA	23,981
Minnesota	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	153,936
Missouri	Corpus Christi-Kingsville, TX BEA	39,427
Missouri	Houston-Baytown-Huntsville, TX BEA	11,176
Missouri	Lake Charles-Jennings, LA BEA	9,971
Missouri	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	40,396
North Dakota	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	23,721
North Dakota	Shreveport-Bossier City-Minden, LA BEA	8,707
Nebraska	Houston-Baytown-Huntsville, TX BEA	29,508
Nebraska	Louisiana Portion of Baton Rouge-Pierre Part BEA	28,954
Nebraska	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	848,176
Wisconsin	Houston-Baytown-Huntsville, TX BEA	105,874
Wisconsin	Louisiana Portion of New Orleans-Metairie-Bogalusa BEA	68,544
Wisconsin	Shreveport-Bossier City-Minden, LA BEA	23,938
Total		**3,485,685**

Source: STB Waybill Sample, IHS Global Insight

Onshoring

Onshoring has the potential to increase rail traffic in Arkansas associated with certain manufacturing industries. Some of the manufacturing subsectors within Arkansas have been subject to foreign competition. Today however the transfer of American manufacturing activity to Asia—especially to China—has begun to reverse. The original motivations for "off-shoring" production to overseas locations of much lower Asian wage rates coupled with inexpensive transportation are changing. Boston Consulting Group (BCG) reports that increases in Chinese wages and benefits averaged 19 percent annually between 2005 and 2010 versus less than a four percent annual gain in the U.S., and projects the former to rise 18 percent annually through 2015.[30] Adjusted for productivity, the wage advantage of production in China will have been cut in half in that 10-year period. Fuel prices have tripled since 2000 and are expected to remain high, which increases transportation costs for shipping goods from Asia.

A consequence of the narrowing sourcing cost differential is the return of manufacturing to North America, both to Mexico ("near-shoring") and the U.S. ("on-shoring"). A 2011 study by AlixPartners, LLP surveyed 80 senior executives at manufacturing-oriented firms from 15 different

[30]The Boston Consulting Group, "U.S. Manufacturing Nears the Tipping Point", March 2012.

industries that sell to the U.S. market.[31] More than two of five respondents (42 percent) reported that their firms were either returning some Asian/Indian operations to the Americas now, or would within one to three years. The first choice location was Mexico for 63 percent of the respondents, followed by 19 percent favoring the U.S.

BCG by contrast, in the report cited previously, expects that three-quarters of the manufacturing re-shored from China in the next ten years will locate in the United States. Acknowledging Mexico's lower labor costs, improving productivity, and the advantage of free trade, BCG believes the less-skilled labor supply, poorer infrastructure, less-established supplier networks, and safety risks in Mexico place it behind the U.S.

The so-called Tipping Point Industries (i.e., industries for which it may become more economical to manufacture in the United States) account for almost $200 billion of U.S. imports from China in 2010, and they fall in the following seven sectors:

- Computers and Electronics ($122 billion)
- Appliances and Electrical Equipment ($25 billion)
- Machinery ($14 billion)
- Furniture ($13 billion)
- Fabricated Metal Products ($10 billion)
- Plastics and Rubber Products ($9 billion)
- Transportation Goods ($6 billion)

The primary impacts on rail in Arkansas would be on Fabricated Metal Products and Transportation Goods—two industries that are present in Arkansas and use rail. Fabricated Metal Product manufacturing uses primary metal products as does Transportation Goods manufacturing. A total of about 0.7 million tons of primary metal products are estimated to be shipped to Arkansas by rail in 2015. Roughly 0.4 million tons of transportation equipment are estimated to be shipped inbound to Arkansas by rail in 2015, and roughly 0.5 million are estimated to be shipped outbound by rail in 2015. Two and a half million tons of primary metal products are forecast to be shipped from Arkansas, and about 0.7 million are forecast to be shipped from Arkansas in 2015.

[31] Reported in "Mexico—The New Low Cost Location for 'Off-shored' Manufacturing?", Stifel, Nicolaus & Company, Inc., 7/13/11

Chapter 9 Arkansas Rail Service Needs and Opportunities

Passenger Rail Issues and Opportunities

Some issues that have been identified with the existing Amtrak Texas Eagle service are as follows:

- **Roadway/Railroad Grade Crossings**: The numerous grade crossings along the Texas Eagle route in Arkansas can affect travel time and safety. Many of these crossings lack adequate protection for higher speed passenger rail service such as four quadrant gates, median barriers or flashing lights with gates. These additional safety measures would be necessary if additional, faster passenger rail service were initiated. Passenger trains must reduce speed for crossings where vehicle/train crashes are possible.
- **Train Scheduling**: Amtrak's service in Arkansas suffers from inconvenient arrival and departure times. Southbound stops in the state are between midnight and 6:00 a.m.; northbound stops are between 9:00 p.m. and 1:30 a.m. This schedule has a negative impact on train ridership in the state.
- **Freight Train Conflicts**: The Texas Eagle uses shared track with the UP. Increases in freight train traffic have caused scheduling conflicts with the passenger trains, resulting in delays and service reliability problems.
- **Inadequate Modal Connections**: Few options are available along the Texas Eagle route for passengers to connect with other modes of transportation like regional airports and bus terminals.
- **Stations**: Stakeholders mentioned that some stations are in a poor state of repair and in need of upgrade/rehabilitation.

Stakeholders also recommended new passenger rail services. Prominent among the recommended new passenger services were the following:

- Rail service in between central Arkansas and Northwest Arkansas
- Rail access within the northwest Arkansas region
- Rail service between Hot Springs and Little Rock
- New services at stations, such as enclosed passenger waiting areas in those stations with only platforms/shelters

Freight Rail Issues and Opportunities

State of Good Repair

Many of the short line railroads have had difficulty keeping up with maintenance requirements on the lines. Railroad operations are capital intensive, and track maintenance requires large investments in materials, equipment and construction labor on a regular basis. When traffic declines and revenues are marginal, maintenance often is deferred and maintenance requirements accumulate. Washouts from flooding are common in many areas of Arkansas, adding to the maintenance issues. In a number of cases, short line railroads were created through the acquisition of rail lines formerly owned by larger railroads. In many cases, maintenance had been deferred under the former owners, so that new owners face a significant maintenance backlog.

Currently, many of the Arkansas short line railroads have excessive worn rail and ties, as well as worn switches, poor line and surface condition. Deteriorating rail conditions place railroads in jeopardy of ceasing operations if left unresolved. They could also be shut down involuntarily by the Federal Railroad Administration due to unsafe operating conditions. Loss of rail service would have a negative impact on many shippers and communities within the state. As discussed earlier, 286 miles of rail line in Arkansas are rated Federal Railroad Administration (FRA) track condition "Excepted," which means that these track segments are in poor state of repair and in need of upgrade. When track segments rated FRA Class 1 are included, 545 miles of rail line are limited to ten MPH or less for freight operations. This slow speed of operations may hinder the competitiveness of rail services offered.

Figure 9-1. Segment of Excepted Track in Arkansas

Height and Weight Capacity

Thirteen of the Arkansas short line railroads have limited capacity to haul 286,000-pound carloads. A total of 396 track miles in Arkansas are unable to handle 286,000-pound railcars. Of these, 310 miles are on short line railroads, and 86 miles are on rail lines owned by Class I carriers. These restrictions limit these railroads' ability to attract new business, and to remain competitive with other rail lanes and modes of transportation.

The FRA and the American Short Line and Regional Railroad Association (ASLRRA) commissioned a study in 2003 to estimate the cost of upgrading the nation's rail infrastructure on Class II and Class III carriers to accommodate 286,000-pound railcars.[32] The component costs of upgrading rail lines depend upon the specific circumstances and conditions. Based upon the unit costs and amount of infrastructure that would need to be repaired or replaced, the ASLRRA study found that for a representative sample of routes, the cost of upgrading rail was the most expensive component of upgrading short line and regional railroads to 286,000-pound standards. Replacing light rail with heavier rail accounted for about 55 percent of the total sampled upgrade costs. The cost of upgrading bridges accounted for another 26 percent, while replacing ties, turnouts, and ballast/surfacing was another 12, six, and two percent, respectively. The report estimated the average cost per mile of upgrading sampled rail lines to 286,000-pound standards to be about $102,017 per mile.

Updated to current cost levels using the STB's All Inclusive Index—Less Fuel (All-LF), the current cost would be about $141,418 per mile. Given the 396 miles of line that are unable to accommodate 286,000-pound railcars, the total cost of upgrading all line segments would be $56 million. Numerous factors could make the actual cost of upgrading these lines differ substantially from $56 million. The actual cost will depend upon the number and type of bridges that must be upgraded, the specific condition of each rail line, as well as other factors. However, this cost estimate is provided to offer a sense of the order of magnitude of the issue.

As mentioned previously in this Plan, height limitations could also block certain types of railcars from passing through Arkansas. A tunnel between Little Rock and Conway on the UP Van Buren Subdivision and the KCS Fort Smith Branch is not able to accommodate double-stack intermodal service. Certain railcars intended for carrying automobiles would also be restricted.

Rail Corridor Preservation

The number of route miles of the U.S. railroad network has generally declined since reaching its peak in 1916. Decreases were highest in the 1970s due the industry's financial crisis during that decade, and in the 1980s due to railroads' ability to divest unprofitable lines per industry deregulation following the passage of the Staggers Rail Act of 1980. As shown in Table 9-1, the rate of decline in rail route mileage has slowed nationwide since 1990. In many parts of the country, the rail network has generally stabilized with a few miles being abandoned here and there per year, if any. In recent years, some relatively significant segments of the Arkansas rail network have either been threatened or abandoned.

[32] ZETA-TECH Associates, Inc. , *An Estimation of the Investment in Track and Structures Needed to Handle 129,844 Kg (286,000 lb. Rail Cars on Short Lines)*, 2003.

Table 9-1. Percentage Change of U.S. Railroad Network

Decade	Percentage Reduction in U.S. Rail Network
1920—1930	-1.5%
1930—1940	-6.2%
1940—1950	-4.2%
1950—1960	-2.8%
1960 - 1970	-5.4%
1970 - 1980	-13.5%
1980 - 1990	-18.0%
1990 - 2000	-1.0%
2000—2010	-3.7%

Source: Association of American Railroads, Ten Year Trends

The Caddo Valley Railroad, formerly operating 52 miles from Gurdon to Birds Mill, Arkansas went out of service in 2010 when its main customer, Bean Lumber in Glenwood, Arkansas went out of business. Likewise, the Delta Southern Railroad, which formerly operated from McGehee, Arkansas to Tallulah, Louisiana abandoned and sold that line between 2008 and 2011. Portions of the line were acquired by local and regional economic development groups, and rail service has been re-established under a new short line—North Louisiana and Arkansas Railroad. As mentioned previously, a number of Arkansas short lines are in poor state of repair. Given the high cost of upgrading these lines and difficulties in operating over substandard rail infrastructure, there may be cause for concern over additional operations ceasing service.

If one were to characterize freight lines as "at risk" if they carry no or small volumes of traffic and are in poor state of repair, the segments listed below would be at risk. In this case "low traffic" is defined as lower than 50 carloads per mile of track operated per year.

- The Ouachita Railroad is in poor condition and carries only small volumes of freight.
- The last four miles of the AKMD Hot Springs branch is inactive, carrying no traffic.
- The Fort Smith Railroad carries only small volumes of freight and is in a poor state of repair.

Safety and Crossing Issues

As discussed in the section on safety, rail-related injuries or fatalities most frequently occur under one of three circumstances: 1) vehicles or pedestrians are struck by trains at roadway/rail grade crossings; 2) individuals, most frequently trespassers, are struck by trains on the railroad right of way or on structures such as bridges; 3) railroad employees or contractors are injured or suffer a work-related illness while working for the railroad. Much of the effort by state transportation agencies to improve rail safety typically focuses on grade crossings because they are typically best equipped to address risks associated with roadway/rail grade crossings,.

Roadway/rail grade crossings are a major issue in Arkansas. As mentioned in the section on safety issues, evidence suggests that the frequency of fatalities at roadway/rail grade crossings in Arkansas may be higher than the national average as measured on a fatality per vehicle miles traveled (VMT) basis. Arkansas has a lower proportion of public roadway/rail grade crossings that are equipped with train-activated warning signals (gates, lights) compared to the national average.

All of the Class I railroad companies interviewed for this study expressed interest in working with AHTD to address crossing issues, particularly crossing closures. Class I carriers emphasized not only the safety implications of crossings, but also the operational inconvenience of roadway/rail grade crossings to both motorists and to railroad operations. Many of the Class III railroads expressed concern over crossing issues as well. Almost all of the most recent long-range transportation plans prepared by metropolitan planning organizations (MPO) in the state discuss future plans for grade crossing improvements or for grade separation.

Railroad Competition

As referred to in the description of the UP, this railroad originates about 79 percent of all carloads/intermodal units and terminates about 78 percent of all carloads/intermodal units in Arkansas. It owns roughly half of the railroad route miles in the state. Many portions of the state are relatively dependent upon the UP.

BNSF has access to a significant portion of the UP system in the eastern half of the state, with trackage rights of more than 854 route miles in Arkansas. Most of these trackage rights were granted as a condition of the merger between the UP and the SP railroads in 1996 as a means to preserve competition and counteract the competitive impacts of two former competitors consolidating into one company. All told, BNSF has access to about 40 percent of the Arkansas rail network. But given that BNSF handles roughly 14 percent of originating carloads/units and 11 percent of terminating carloads/units in Arkansas, BNSF's access does not necessarily translate to market share.

Evidence suggests that access to multiple rail carriers can lower railroad rates. For example, a report commissioned by the Surface Transportation Board (STB) in 2009 found that terminating locations for coal shipments served by multiple railroads, even with relatively uneven market shares of 80/20 percent, have railroad transportation rates 11 to 15 percent lower than those cases where one railroad is a monopoly. [33]

Some stakeholders have expressed interest in additional competition between railroads in Arkansas. Railroad competition can sometimes be improved by building new connections to competing rail carriers. Entergy Arkansas explored this possibility when it gained approval from the STB in 2001 to construct an 8.6-mile track from its power plant in Redfield, Arkansas to be able to access both the UP and the BNSF instead of solely the UP. Competition from other modes, such water/ barge, can also affect railroad rates.

From the standpoint of public benefits, reduced railroad rates as a result of competition are not in and of themselves a public benefit, since they represent an economic transfer rather than an efficiency improvement.

Intermodal Freight

As discussed on the section regarding the Arkansas' multimodal transportation system, a single intermodal terminal is located within the state of Arkansas—the UP terminal in Marion. This terminal is one of five primary intermodal terminals in the Memphis metropolitan area, including

[33] Laurits R. Christensen Associates, Inc., *Analysis of Competition, Capacity, and Service Quality*, November 2009.

the new NS terminal in Rossville, the NS Forrest Yard, the BNSF Memphis Intermodal Facility at the Tennessee Yard, and the combined CSXT/CN Intermodal Gateway Memphis terminal. Arkansas' proximity to the Memphis metropolitan area has advantages and disadvantages to Arkansas shippers. Memphis is a major east/west gateway, served by five of the seven Class I railroads in the United States. It is the western terminus of NS and CSX, as well as the eastern terminus of the UP. It is one of the largest intermodal markets in the nation. Collectively, the five intermodal terminals in the Memphis area have a combined capacity to handle over 1.4 million containers per year. By trucking containers to and from Memphis, Arkansas shippers can ship or receive containers by single rail carrier service to/from nearly any major intermodal market in North America. Memphis maintains connections with East Coast, West Coast, and Gulf Coast seaports and is one of the largest destinations of intermodal shipments from the Port of Los Angeles/Long Beach, after Chicago and the Dallas/Fort Worth markets.

But intermodal terminals in Memphis can be a long distance to truck containers from many parts of Arkansas. While there are alternatives, such as shipping containers through Kansas City or Dallas/Ft. Worth, these are also distant locations. A number of Arkansas communities have expressed interest in having intermodal terminals locate within their areas. Railroads generally apply the following criteria in deciding whether to add locations to their intermodal networks:

- Expected freight volumes. Typically, western carriers (UP and BNSF) prefer that new intermodal terminals generate trainload volumes of freight, which permit a reasonable frequency of service over a specific intermodal route. Ideally, service would be every day of the week or at least five days a week.
- Inbound and outbound container balance. If the predominant direction of containers is inbound or outbound with little demand for loads in the opposite direction, empty containers must be repositioned to balance supply and demand for containers. Repositioning empty containers is expensive and can undermine the economics of intermodal transportation.
- Location within the railroad's intermodal network. Railroads prefer that the market area of intermodal terminals not overlap excessively with other terminals on their systems. Varying radii are used for market areas, but Class I railroad representatives have at times suggested 200 miles as an appropriate market area for terminals on their system. Railroads also prefer intermodal terminals that can facilitate relatively long distance moves. For western carriers such as UP and BNSF, these are moves of more than 500 miles, and preferably more than 750 miles. Due to the economics of rail intermodal, these services can compete more effectively with trucking over longer distances. Railroads also prefer to maximize shipment distances so as to maximize revenues.

UP previously operated a paper ramp in Fort Smith. Paper ramps are essentially parking lots that containers are brought to and from by contracted trucking firms. They serve as extensions of railroads' intermodal networks without actually being rail-served. They benefit shippers because containers are made available in the general vicinity of where containers are needed, thus saving shippers the expense of moving empty containers to that area. Unfortunately, inbound and outbound shipments were not balanced at this location. UP was not able to provide the service economically, and the service was discontinued. UP also previously operated an intermodal

terminal in Little Rock, but was unable to continue operating the terminal due to insufficient freight volumes.

The most feasible approach to establishing a new intermodal terminal in Arkansas would likely be to attract anchor customers to locate near the proposed terminal. This could be a large manufacturing facility that would generate a base level of demand intermodal shipments, hopefully balancing inbound and outbound shipments. Another possibility would be a logistics firm that would market the terminal as a component of a door-to-door service. A similar service was recently established between CSX Intermodal and Schneider National at Marion, Ohio.

Rail and Economic Development

Rail supports economic development initiatives in Arkansas in a number of ways. When companies decide whether to move to, expand, or remain within a state, sometimes rail access is a component of the location decision. Even companies that use rail only occasionally benefit from the availability of rail and may see rail as a criteria for where to locate. Effective rail service supports existing employers as well. Rail can be particularly important to rural communities where the roadway network is more limited and other transportation options like trucking can be costly or not readily available.

One recent trend in economic development is to provide locations that already have zoning, permitting, transportation infrastructure, and utilities in place. Companies can move to these locations with a minimum of time and additional expense. Industrial parks are tracts of industrial land that are subdivided for industrial usage. Industrial parks attract employers by providing an integrated package of infrastructure within a specific location, of which rail can be a component. Rather than building separate rail access to each facility, tenants within an industrial park can share rail infrastructure and services.

Multimodal facilities can help to attract companies that will not be directly rail-served. Rail can be a component of port or other multimodal hub. By providing multiple transportation options at a single location, these facilities can help attract employers to communities. Numerous multimodal facilities serve Arkansas shippers, including the UP Marion facility, non-containerized rail/truck transload facilities, and port facilities. There is a need to improve rail access at some of the port facilities in the state.

Some stakeholders believe that there is a need to improve the amount and availability of information needed to promote rail for economic development, such as information on rail-served sites, natural resources in close proximity to rail, contact information for economic development and logistics experts, information on transload facilities, etc.

Freight Trends and Opportunities

Some commodity-specific opportunities and threats for rail freight in Arkansas include the following:

- The state's poultry industry uses rail for inbound shipments of feed. As the industry grows, rail shipments are expected to grow.

- Shipments of forest products (e.g., lumber) have declined over the past several years caused, in part, by the slump in the housing market and substitution for lumber by other materials. Gradual recovery in housing should lead to some return of traffic. Wood pellets could be a growth opportunity for Arkansas rail, given the European requirements for renewable energy sources.
- Arkansas steel-making capacity continues to increase with planned projects in Mississippi County. Construction has started on a new steel plant in Osceola, the Big River Steel plant. Arkansas is a supplier of steel piping for the energy industry and the pipeline industry. Reshoring trends also favor the manufacturing of metal products in the U.S. These industries represent opportunities where rail can support economic development.
- Good rail access can strengthen Arkansas ports and harbors by providing additional transportation options at these transportation hubs.
- Although several new coal fired power plants have recently been built in Arkansas, new environmental regulations have the potential to reduce coal shipments not only to Arkansas, but also across Arkansas. These regulations, in addition to recent reductions in the cost of natural gas, have the potential of increasing the relative cost of coal fired electric generation compared to natural gas and other types of electric generation. Given that coal accounts for over half of tons terminating in Arkansas and over a third of tons passing through Arkansas, reductions in coal traffic could significantly impact rail volumes in the future. Rail in Arkansas also plays a role in crude-by-rail shipments. Given volatility of energy markets, it is difficult to forecast likely future volumes.
- Non-metallic mineral shipments from Arkansas have decreased recently, but could recover. There is an opportunity to export some specialty products from Arkansas, such as high-purity silica sand.

Highway Relief

Freight and passengers that are moving by rail are not moving by truck on busy highways. As discussed earlier in this Plan, rail produces fewer externalities to the general public when compared to highway transportation. Railroad transportation is safer, less polluting on a per ton-mile basis, does not consume valuable Arkansas highway capacity, and does not generate wear and tear on publicly maintained roadways and bridges.

One issue relates to the amount of freight on Arkansas highways that could divert to rail if railroad infrastructure in the state were improved. As discussed in the introduction to this Plan, rail freight is generally used for hauling low-value commodities long distances. Table 9-2 compares the rail percentage of combined truck and rail tonnage in Arkansas relative to rail's market share of truck and rail tonnage nationwide. Freight that passes through Arkansas to and from other states is not included in the modal share figures for Arkansas that appear in Table 9-2.

Table 9-2. Comparison of Rail Percentage of Combined Truck and Rail Tonnage to, from, within Arkansas to Rail Percentage of Combined Truck and Rail Tonnage Nationwide by Commodity, 2007

Commodity	Arkansas	Nationwide	Commodity	Arkansas	Nationwide
Alcoholic beverages	0%	8%	Milled grain prods.	32%	9%
Animal feed	6%	11%	Misc. mfg. prods.	6%	1%
Articles-base metal	3%	5%	Mixed freight	0%	0%
Base metals	24%	15%	Motorized vehicles	2%	10%
Basic chemicals	41%	35%	Natural sands	13%	3%
Building stone	0%	0%	Newsprint/paper	24%	23%
Cereal grains	15%	12%	Nonmetal min. prods.	3%	2%
Chemical prods.	4%	6%	Nonmetallic minerals	31%	13%
Coal	100%	81%	Other agricultural products	6%	5%
Coal-n.e.c.	7%	16%	Other foodstuffs	17%	6%
Crude petroleum	5%	6%	Paper articles	4%	9%
Electronics	1%	2%	Pharmaceuticals	0%	0%
Fertilizers	22%	23%	Plastics/rubber	14%	23%
Fuel oils	0%	1%	Precision instruments	0%	1%
Furniture	4%	1%	Printed prods.	0%	1%
Gasoline	0%	1%	Textiles/leather	1%	2%
Gravel	24%	4%	Tobacco prods.	0%	0%
Live animals/fish	0%	0%	Transport equip.	61%	20%
Logs	0%	1%	Unknown	0%	0%
Machinery	1%	1%	Waste/scrap	5%	3%
Meat/seafood	0%	0%	Wood prods.	9%	8%
Metallic ores	19%	63%			

Source: FHWA Freight Analysis Framework-3

Table 9-3 compares rail market share of combined rail and truck tonnage by mileage range in Arkansas relative to the national average.

Table 9-3. Comparison of Rail Percentage of Truck and Rail Tonnage to, from, within Arkansas with Rail Percentage of Truck and Rail Tonnage Nationwide by Mileage, 2007

Mileage	Arkansas	Nationwide
50—99 miles	0%	2%
100—249 miles	29%	8%
250—499 miles	17%	24%
500—749 miles	36%	44%
750—999 miles	23%	55%
1,500—2,000 miles	21%	66%
1,000—1,499 miles	86%	70%
More than 2,000 miles	53%	30%

Source: FHWA Freight Analysis Framework-3

An analysis has been completed using the FHWA Freight Analysis Framework (FAF-3), which compares Arkansas' use of rail and trucking relative to the national usage of rail and trucking. Freight is categorized by commodity and mileage blocks. For each instance where rail has a lower market share by mileage range and commodity when compared to the national average rail market share, an estimate is provided for the additional rail freight if Arkansas maintained the national average market share for that mileage range and commodity. The purpose of the analysis is to identify opportunities for freight diversion to rail. This analysis has important limitations. Modal share between trucking and rail depends not only on distance and commodity, but also a variety of other factors as well. These factors include: volume shipped, location of markets within networks, specific supply chain needs and circumstances, availability and frequency of direct service, and interline versus single line lanes (significant given Arkansas' proximity to the east/west rail system interchange along the Mississippi River), etc. Furthermore, commodity codes are general, so that "Other Agricultural products" could, for example, refer to a variety of commodities with varying suitability for shipment by rail, anything from cut flowers to soybeans. However, this analysis points to areas that might warrant further investigation.

The results, shown in Table 9-4, suggest that the largest potential modal shifts may lie in relatively short haul shipments of cereal grains and gravel. Nationwide, a small share of gain and gravel shipments between 50 and 99 miles travels by rail, while according to FAF-3, none such shipments use rail in Arkansas. Given that large volumes of these commodities are shipped within Arkansas, even a small rail modal share of this freight could divert a significant tonnage from highway to rail. Typically, short haul rail moves are most feasible when shipments are in unit train quantities with minimal switching at either end of the move and no transloading. Otherwise, it becomes more economical simply to truck from origin to destination.

Table 9-4. Largest Potential Shift if Rail in Arkansas Had National Modal Share by Commodity and Mileage Range, 2007

Commodity	Mileage	Arkansas Rail Share	National Rail Share	Arkansas Tons	Rail Share with National Modal Average
Truck and Rail Freight Originating in Arkansas					
Cereal grains	50—99 miles	0%	4%	18,543,000	662,000
Gravel	50—99 miles	0%	2%	19,073,000	332,000
Base metals	250—499 miles	6%	19%	1,714,000	215,000
Basic chemicals	500—749 miles	10%	56%	442,000	204,000
Cereal grains	500—749 miles	38%	78%	503,000	203,000
Coal-n.e.c.	250—499 miles	0%	24%	617,000	146,000
Newsprint/paper	1,000—1,499 miles	40%	79%	354,000	137,000
Basic chemicals	250—499 miles	3%	44%	300,000	121,000
Truck and Rail Freight Terminating in Arkansas					
Cereal grains	50—99 miles	0%	4%	18,543,000	662,000
Gravel	50—99 miles	0%	2%	19,073,000	332,000
Base metals	500—749 miles	2%	21%	1,278,000	248,000
Nonmetallic minerals	250—499 miles	1%	23%	873,000	194,000
Base metals	250—499 miles	5%	19%	1,274,000	177,000
Metallic ores	250—499 miles	13%	80%	253,000	170,000
Fertilizers	250—499 miles	3%	25%	645,000	143,000
Coal-n.e.c.	250—499 miles	0%	24%	596,000	143,000

Source: FHWA Freight Analysis Framework - 3

Chapter 10 Proposed Passenger Rail Improvements

Intercity Passenger Rail Initiatives

In 2000, USDOT designated the South Central High-Speed Rail Corridor (SCHSRC). This designation allows states to apply for available federal funding to support of development of the corridor. The designated Corridor links:

- Dallas/Ft. Worth with Austin and San Antonio, Texas
- Dallas/Fort Worth with Oklahoma City, Oklahoma
- Oklahoma City and Tulsa, Oklahoma
- Dallas/Fort Worth with Texarkana, Texas/Arkansas
- Texarkana, Texas/Arkansas, and Little Rock, Arkansas

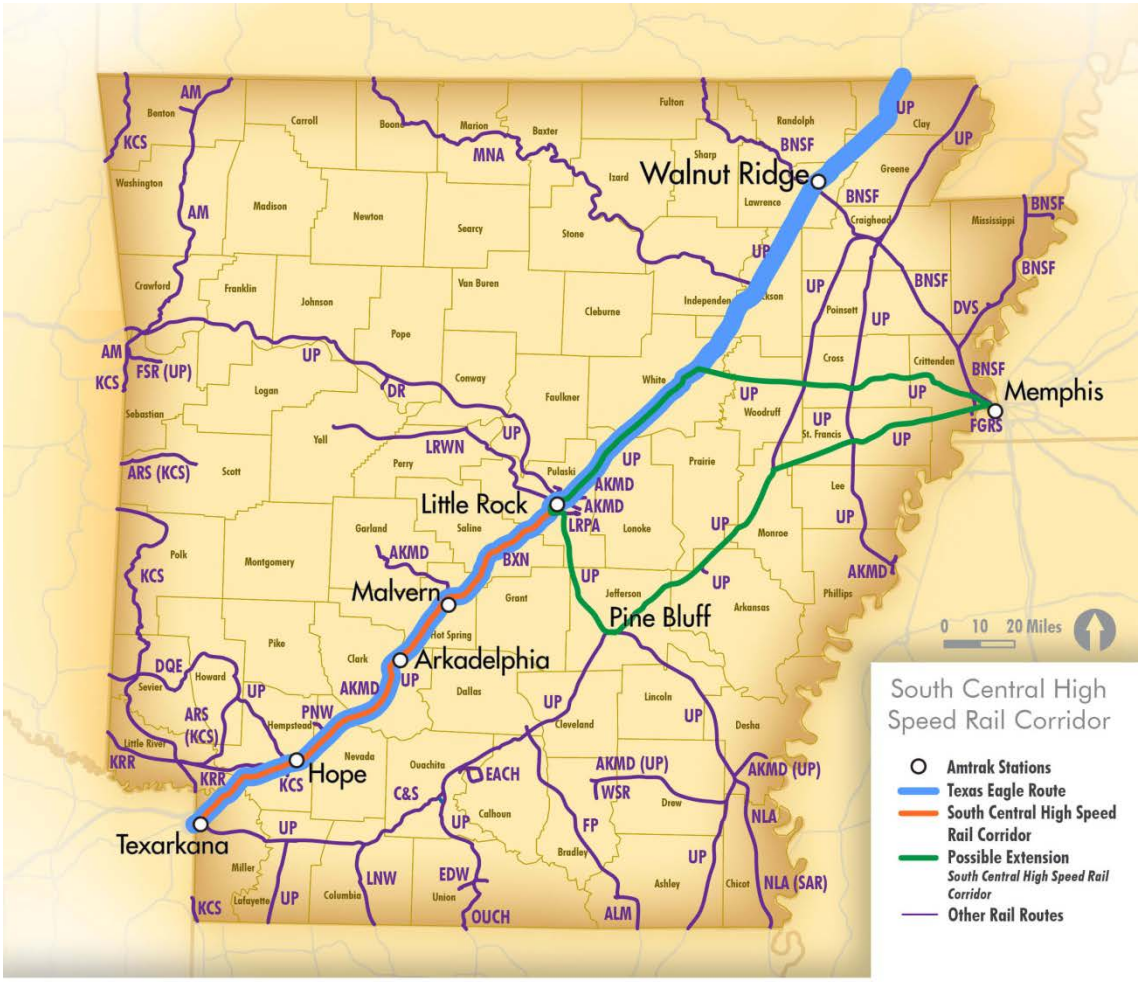
These SCHSRC routes are connected today by Amtrak long-distance passenger trains, with the exception of Oklahoma City and Tulsa, Oklahoma. Amtrak operates service in the SCHSRC along shared Class I freight rail lines.

The need for improved Arkansas intercity passenger rail service in this corridor is demonstrated by:

- Increasing intercity and regional travel demands
- No direct passenger rail connectivity between Little Rock and Memphis
- Limited rail system capacity that causes conflicts between freight and passenger rail services
- The identified need to reduce congestion between Little Rock and Memphis
- Limited surface roadway capacity

Two initiatives are underway to enhance passenger rail service in Arkansas. The initiatives are (1) a feasibility study of intercity passenger rail service from Little Rock to Memphis, Tennessee; and (2) a Service Development Plan for the federally designated SCHSRC (Figure 10-1). Completion of the studies will provide the basis for the development of a Passenger Rail Corridor Investment Plan. This plan will contain the needed data to support future decisions for major investments in passenger rail service in Arkansas.

Figure 10-1. Existing Texas Eagle Service, and SCHSRC with Possible Extensions from Little Rock to Memphis



RAILROADS

AKMD	Arkansas Midland Railroad	DVS	Delta Valley & Southern Railway	LRWN	Little Rock & Western Railway
ALM	Arkansas, Louisiana & Mississippi Railroad	EACH	East Camden & Highland Railroad	MNA	Missouri & Northern Arkansas Railroad
AM	Arkansas & Missouri Railroad	EDW	El Dorado & Wesson Railway	NLA	North Louisiana & Arkansas Railroad
ARS	Arkansas Southern Railroad	FGRS	Friday-Graham Rail Spur	OUCH	Ouachita Railroad
BNSF	BNSF Railway	FP	Fordyce & Princeton Railroad	PNW	Prescott & Northwestern Railroad
BXN	Bauxite & Northern Railroad	FSR	Fort Smith Railroad	SAR	Southeast Arkansas Economic Development District
C&S	Camden & Southern Railroad	KCS	Kansas City Southern Railway	UP	Union Pacific Railroad
DQE	DeQueen & Eastern Railroad	KRR	Kiamichi Railroad	WSR	Warren & Saline River Railroad
DR	Dardanelle & Russellville Railroad	LNW	Louisiana & North West Railroad		
		LRPA	Little Rock Port Authority Railroad		

Feasibility Study

Passenger rail corridor alternatives between Little Rock and Memphis are being analyzed. The alternatives analysis considers infrastructure improvement options and associated cost estimates for stations and to support alternative train speeds and schedules. An operating plan for each alternative is being developed that contains operation simulations, and equipment and crew scheduling scenarios. Ridership forecasts and travel demand estimates for each alternative are being prepared to evaluate possible travel times and services. Maintenance-of-way costs for track and bridges and cost-sharing arrangements are being studied. Other components of the feasibility

study are administrative cost estimates, cost/benefit allocations, a risk assessment, and phased implementation plans.

The following primary evaluation criteria are being used to identify a preferred alternative:

- Functional Criteria for service operations
- Purpose and Need for the action
- Technical Feasibility
- Financial Feasibility
- Economic Feasibility
- Impact to existing passengers traveling between Little Rock and Memphis
- Long term maintenance costs

In addition, the following 10 secondary criteria are being used:

- Environmental impacts
- Right of way requirements
- Enhanced mobility/Travel time savings/Enhanced service reliability
- Consistency with local, regional and statewide plans
- Safety for all involved modes
- Capital and operating costs
- Constructability
- Proximity to population and employment centers
- Ridership potential
- Address, evaluate, and study redundancy in the transportation system

Service Development Plan (SDP)

The SDP will contain all of the key information needed for funding decisions for the selected alternative as well as an outline of the benefits ascribed to the planned service. An essential component of the SDP will be a comprehensive Cost-Benefit Analysis taking into account all the quantifiable benefits. The SDP will include ridership demand and revenue forecasts for each station as well as financial projections that include operating costs and revenues for each phase of proposed service.

Sunset Limited / Texas Eagle PRIIA Section 210 Performance Improvement Plan

PRIIA Section 210 stipulates that, Amtrak is required to develop route-specific plans to improve performance for long distance routes with the lowest performance records as of 2008. The Texas Eagle was one of the routes covered by the Section 210 mandates, with the Amtrak Performance Improvement Plan (PIP) completed in September 2010. Passengers on the Texas Eagle have experienced extensive layovers at San Antonio as the Texas Eagle and Sunset Limited trainsets are combined for the service between San Antonio and Los Angeles. These layovers have improved recently, so that the current layover for westbound passengers is four

hours 50 minutes, compared to seven hours 45 minutes in the past. For eastbound passengers, the layover has been reduced from nine hours 30 minutes to two hours ten minutes.

In its PIP, Amtrak has proposed to combine the Sunset Limited and Texas Eagle trains into a single trainset that would travel between Chicago and Los Angeles. A separate connecting service would be provided for passengers traveling on the Sunset Limited to markets between New Orleans and San Antonio. This operating change would reduce layover time in San Antonio to 50 minutes for eastbound passengers and two hours 40 minutes for westbound passengers. None of these schedule changes would significantly improve the convenience of train departures and arrivals in Arkansas as shown in Table 3-1. For example, the proposed schedule in the PIP recommends an 8:50 p.m. departure from Texarkana and a 1:36 a.m. departure from Walnut Ridge for northeast trains. A 1:52 a.m. departure from Walnut Ridge and a 7:08 a.m. departure from Texarkana is recommended for southwest bound trains. In each case, trains arrive and depart Arkansas in the middle of the night. According to Amtrak, the capital costs of the proposed service change make it unlikely to occur.

Amtrak Station Improvements

Over the next five years Amtrak plans to make upgrades at stations around the nation to insure a path of travel from the public right of way through stations to trains that is compliant with the Americans with Disabilities Act (ADA). This work will include Arkansas stations that are not publicly owned.

During public outreach sessions for this Plan, some stakeholders recommended funding improvements to Amtrak stations in Arkansas. The station at Malvern was singled out as a station particularly in need of improvement.

Other Passenger Rail Initiatives

Stakeholders presented a number of additional potential passenger rail initiatives during the public outreach process. Prominent among these were requests for passenger rail service between central Arkansas and northwest Arkansas, passenger rail service between Little Rock and Hot Springs, and rail service within the northwest Arkansas region.

Chapter 11 Proposed Freight Rail Strategies and Initiatives

Through the collection of data and through the stakeholder outreach process, a number of potential initiatives to improve the rail network and services in Arkansas have been identified. These could help the state move toward achieving the vision, goals, and objectives as presented on page 1-5. Included are not only infrastructure investments, but also policy and marketing initiatives. Specific infrastructure projects that are associated with many of these initiatives are presented in Chapter 12 of this Plan.

As will be discussed in Chapter 12, the availability of funding for rail infrastructure projects in Arkansas is highly limited. The infrastructure components of these initiatives are dependent upon developments in state funding, but more importantly, on new federal funding sources.

Safety/Crossing Initiatives

Arkansas will continue efforts to improve safety at roadway/rail grade crossings. This will include projects traditionally funded by the FHWA Railway-Highways Crossing Program (Section 130), which primarily focus on improving safety countermeasures at crossings. The Department will also continue to seek opportunities to close crossings.

AHTD will also continue to create vertical separations between rail lines and roadways where warranted, e.g. grade separation projects. Since they typically involve the construction of overpasses and underpasses, grade separation projects are costly and complex to complete. A grade separation will typically cost in excess of $15 million and often much more. AHTD prioritizes crossings for grade separation, not only based on a hazard index that predicts likelihood of collision at the crossing, but also based on a variety of other factors, such as community impacts. In some cases, grade separation projects are proposed by MPOs or other local planning departments, based upon their own criteria.

AHTD is also seeking innovative solutions to reduce the instances of blocked crossings. In a number of locations in Arkansas, trains are reported to block crossings for extended periods of time. Trains blocking crossings for extended periods of time, not only create a nuisance, but also safety problems. Emergency vehicles may not be able to respond to incidents because roadways are blocked by a train. Building overpasses and underpasses is a costly approach to alleviating this problem. However, in some instances, far less expensive solutions can be found to recurrent train blockages of crossings. For example, train operations can be altered so that trains no longer need to wait at locations where they block roadways. This can create a “win-win” situation where railroad operations are more fluid and crossings are no longer blocked. As an example, on one siding in Mayflower, if a train is long and the engineer misjudges where to park the train by only 20 to 50 feet, the train will block a crossing. A longer siding would remove this occurrence.

AHTD is considering a "Corridor Planning" approach to address roadway/rail grade crossing interferences in some areas, so that a series of crossing treatments minimize the conflicts between trains and vehicles within a given area. This approach can include some combination of crossing closures, crossing improvements, grade separations, or new sidings. By addressing a series of crossings at once, regional roadway mobility can be maintained, while reducing roadway/rail conflicts. This approach can be effective in areas where communities are bisected by train tracks with numerous crossings. Some examples where a corridor approach may be appropriate are in Ashdown and Kensett.

One recent crossing initiative is in Jonesboro, where the City of Jonesboro is seeking to separate the BNSF line from Highway 18/Highland Drive. The City was able to show that this crossing has one of the highest hazard index ratings of all crossings in the state, and is blocked on average two hours per day. As a result, the City recently received a $1.2 million TIGER grant toward a $1.5 million project to conduct environmental studies and perform engineering work to separate the crossing. The grade separation project will not only improve safety and reduce the inconvenience at Highway 18 crossing, but will also make it feasible to close another crossing and thereby improve safety at the other location as well.

Figure 11-1. Highway 18/BNSF Crossing in Jonesboro

As discussed in Chapter Six, some states fund roadway/rail grade crossing safety improvement measures beyond the federal Section 130 funds. Examples are provided in Table 6-2. These can include crossing improvement funds and/or crossing enforcement and inspection. Based upon the relatively high risks of crossings in Arkansas as discussed on page 6-1, Arkansas could consider increasing the level of resources devoted to crossing issues, depending upon future funding availability.

To summarize, safety/crossing initiatives include:

- Crossing improvements;
- Crossing closures;
- Grade separations;
- Siding extensions;
- Corridor planning;
- Future consideration of an expanded role in crossing safety if funding permits.

Rail Corridor Preservation

As discussed previously, the issue of railroad corridor preservation was cited by stakeholders as a critical issue in Arkansas. Once a rail corridor has been abandoned per the STB abandonment process, the corridor may be permanently lost. The cost of re-acquiring the land, assembling the parcels and grading to reassemble a right of way once lost can be prohibitive.

States pursue a variety of approaches to corridor preservation. In numerous cases across the country, state governments have acquired rail lines that otherwise would have been abandoned. Typically, the state then leases the rail line back to a rail operator. When or if the rail line appears to be self-supporting, rail lines are frequently sold. The lease payments are used to maintain the line and in some instances are applied against the purchase price.

Another approach is to encourage another party to acquire a threatened line. Ohio, for example, has a rail line acquisition program which provides assistance for the acquisition of rail lines to prevent cessation of service or preserve the line or right of way for future rail development. The program also considers providing assistance to acquire a line if the acquisition can enhance the line's viability. In this case, the state is not acquiring the line but helping to provide the resources for another party to do so.

Over a dozen states provide grant or loan assistance to invest in short line railroad infrastructure. Part of the purpose of these programs is to maintain short lines as viable entities. This helps to avoid a downward spiral whereby the railroad is unable to invest in its track and structures, service deteriorates causing further loss of business with the resulting decrease in revenues making the carrier less able to reinvest in the line. Short line assistance programs develop detailed methodologies for evaluating projects and the extent to which the project helps to fulfill the state's transportation goals.

One representative of a company that owns several railroads in Arkansas recommended that the state government consider ways to reduce the cost of owning rail lines that are out of service. Even when railroads do not operate trains over lines, costs are incurred, which creates a perverse incentive to abandon the lines. For example, because wear and tear on crossings is caused by vehicular traffic, not trains, crossings must periodically be resurfaced even without rail traffic. A small crossing costs $25,000 to $30,000 to resurface, and resurfacing a major crossing costs ten times this amount. In addition, ownership costs such as property taxes must be paid. Identifying creative ways of reducing the costs of inactive rail corridors could help to decrease the risk of abandonment.

Figure 11-2. Rail-Banked Delta Heritage Trail

Source: Arkansas Department of Parks and Tourism

Another option to preserve rail corridors is through rail-banking or a designation called "public use condition." Under rail-banking, the corridor is preserved for future use and made into a recreational trail in the interim. This preserves the corridor intact, so that any easements along the right of way do not revert to adjacent property owners. Public entities can also insert themselves into an abandonment process and request a public use for the corridor. Unlike the interim trail use condition, the public use condition does not guarantee that the corridor will be kept intact. Railroads are not required to sell their lines for public use, or interim trail use, although the STB process encourages them to do so.

One issue with rail-banking is the infrequency with which freight rail operations return to these lines. While the intent of the rail-banking program is to preserve corridors for future freight rail operations, in reality it is often difficult to remove the recreational trail and convert the property back to freight rail operations. Advocates of rails-to-trails sometimes argue that freight and recreational uses are compatible, i.e., rails-with-trails. Many freight operators, however, are hesitant to operate freight trains adjacent to a recreational trail. On the other hand, a corridor that has been rail-banked as a recreational trail may be more likely to be returned to freight service than a corridor that has not been preserved at all. Also, there are examples across the country of railroad rights of way that are owned by state governments and neither used neither as active rail operations nor as recreational trails.

Preserving the former Delta Southern Railroad

As discussed on Page 2-32, the North Louisiana and Arkansas Railroad has been created from a rail line formerly owned by the Delta Southern Railroad between McGehee, Arkansas and Lake Providence, Louisiana. The Delta Southern originally filed to abandon the segment between Lake Village, Arkansas and Shelburn, Louisiana in 2004. The Southeast Arkansas Economic Development District (SAEDD), the Lake Providence Port Commission, and the Madison Parish Commission stepped in to acquire the line. Subsequently, Delta Southern filed to abandon the remaining portions of the line between McGehee and Lake Providence in 2010. Arkansas Short Line Railroads, Inc. and the Lake Providence Port Commission have purchased these segments.

The line had fallen into disrepair and is currently being rehabilitated through a combination of funding by a variety of sources, including:

- U.S. Economic Development Administration
- State of Arkansas
- SAEDD
- Lake Providence Port Commission
- State of Louisiana
- Delta Regional Authority
- Arkansas Short Line Railroads, Inc.

Some states have established laws that essentially give the state or other public entities preferential rights to acquire abandoned rights of way. For example, railroads in New York State are prohibited from disposing of abandoned rail lines for 180 days after consummating an abandonment with the STB while the New York State Department of Transportation informs all affected counties, cities, towns, and villages, and all parties have had an opportunity to reach an agreement to preserve the corridor if they would like to do so.

A logical first step to addressing the issue of corridor preservation is to develop a state policy toward rail corridor preservation. It could take the form of a legislative initiative that would give a state agency of the authority to purchase and preserve rail corridors. The policy could also consist of a less formal agreement between relevant state agencies, such as the AHTD, AEDC, and the Governor's Office, to establish a process to react to a threat of a significant loss to the Arkansas rail network. Having an agreed approach would help position stakeholder agencies to act in advance of specific abandonment "crisis" situations.

To summarize, potential measures to address rail corridor preservation include:

- Develop rail corridor preservation policy;
- Establish a fund to support purchases of at-risk rail lines by third parties;
- Establish a legal/funding basis whereby the state can acquire rail corridors that would otherwise be abandoned;
- Provide grant or loans to support short line infrastructure investment;
- Reduce the costs to rail carriers of owning inactive rail corridors;
- Promote the development of excursion operations on at-risk corridors, where such an operation would be viable;
- Establish a rail-banking program;
- Use state law to discourage full abandonment of rail corridors, if such a law would be consistent with state constitution.

Industrial Access/Economic Development

Stakeholders have stressed that freight rail transportation in Arkansas should not solely be viewed as a means to move product from point A to point B, but as a driver of economic development. Efficient rail service and accessibility can attract employers to the state and improve/maintain the competitiveness of employers currently within the state. For many companies the landed cost of receiving or shipping goods is a key consideration in location decisions. Rail can help to reinforce competitive advantages of Arkansas as a business location by reducing costs and providing transportation access to material resources.

Efforts to boost rail's role in economic development include infrastructure improvements, new industrial access connections, and marketing initiatives. Some marketing initiatives that have been proposed by stakeholders include:

- **Need to catalogue locations available for industrial development along rail corridors.** Particularly emphasized would be locations on low-density rail lines, where the costs of building a new siding or rail spur is not as high. On heavily used Class I railroad mainlines, shippers are often required to build costly sections of running track and high speed turnouts that allow trains to enter and exit rail corridors at speed, but on light-density rail lines, the investment needed to access shipper facilities is less. It could also be helpful to distribute a catalogue of transload facilities in the state. Figure 2-37 could be a start.
- **Rail related land use mapping**. The AEDC and SEAEDD are sponsoring an initiative to map the natural resources adjacent to rail lines because rail is used for transporting raw materials, such as minerals, lumber, and agricultural product,. This can help economic developers identify opportunities along rail lines, and communicate the value of rail lines to decision makers within the state.
- **Directory of key contacts.** Some stakeholders mentioned the difficulty of identifying relevant economic development representatives or logistics providers. It may be beneficial to develop a directory that could be used by Arkansas stakeholders concerned with freight transportation, as well as companies considering Arkansas as a place to locate. An analogous directory has been created for logistics firms within Indiana.[34]
- **Freight transportation guidebook**. AEDC and SEAEDD are also sponsoring a guidebook to multimodal transportation. Economic development representatives have encountered a low level of understanding among communities regarding the nature of different multimodal options, such as varying transload facility layouts. This handbook is intended as an easy guide to steer communities to the best options for their specific needs. AHTD also could help in disseminating this information.

Most frequently, rail infrastructure projects related to economic development focus on industrial access, i.e. building rail access to new or existing businesses. Some states have rail industrial access programs, where the state will help fund the construction of new rail infrastructure connecting businesses to existing rail lines. Projects are evaluated in part by their economic impact on the

[34] http://www.indianalogistics.com/directory/

state, including employment. Some industrial access programs require that the grantee repay funds if the resulting employment impact is not as expected or the new rail infrastructure goes unused. One issue in establishing industrial access programs is in balancing the need to evaluate projects and provide oversight to project selection against the requirement for the speedy provision of funding. Often, business location decisions occur within a tight timeframe. An industrial access program is of little utility if it cannot keep up with that tight time frame.

Not all industrial rail access projects respond to the needs of a specific existing establishment but are constructed on speculation, designed to create a "shovel ready" site with infrastructure pre-established for development. A number of initiatives of this sort have been started or are under consideration in Arkansas.

One example of an industrial access project in Arkansas is the International Rail Port Logistics Park (IRPLP) Project. In 2012, the City of West Memphis received an $11 million TIGER grant to apply toward a $27 million project to upgrade existing track in the IRPLP in West Memphis, Arkansas to support the handling of heavier rail carloads of manifest and unit trains within the Port and to construct an approximately 13,500 ft. new rail lead to the base of the St. Francis levee. These improvements will facilitate the connection to and construction of a new transload facility on private lands through an agreement with the City and a private developer that will add the capability for handling bulk commodities from truck and rail to the Mississippi River navigational transportation system.

This project is only the beginning of a more comprehensive plan for rail infrastructure in the area. A private shipper intends to construct a loop track for a grain loading/unloading facility. Eventually, a second wye connection will be built, which will allow trains to enter/exit the UP mainline in two directions. Rail access will not only serve the grain facility, but also any tenants in the West Memphis Regional Megasite, which occupies the areas to the west of the loop track shown in Figure 11-3, within the area bounded by the dashed line to the east of Waverly Road.

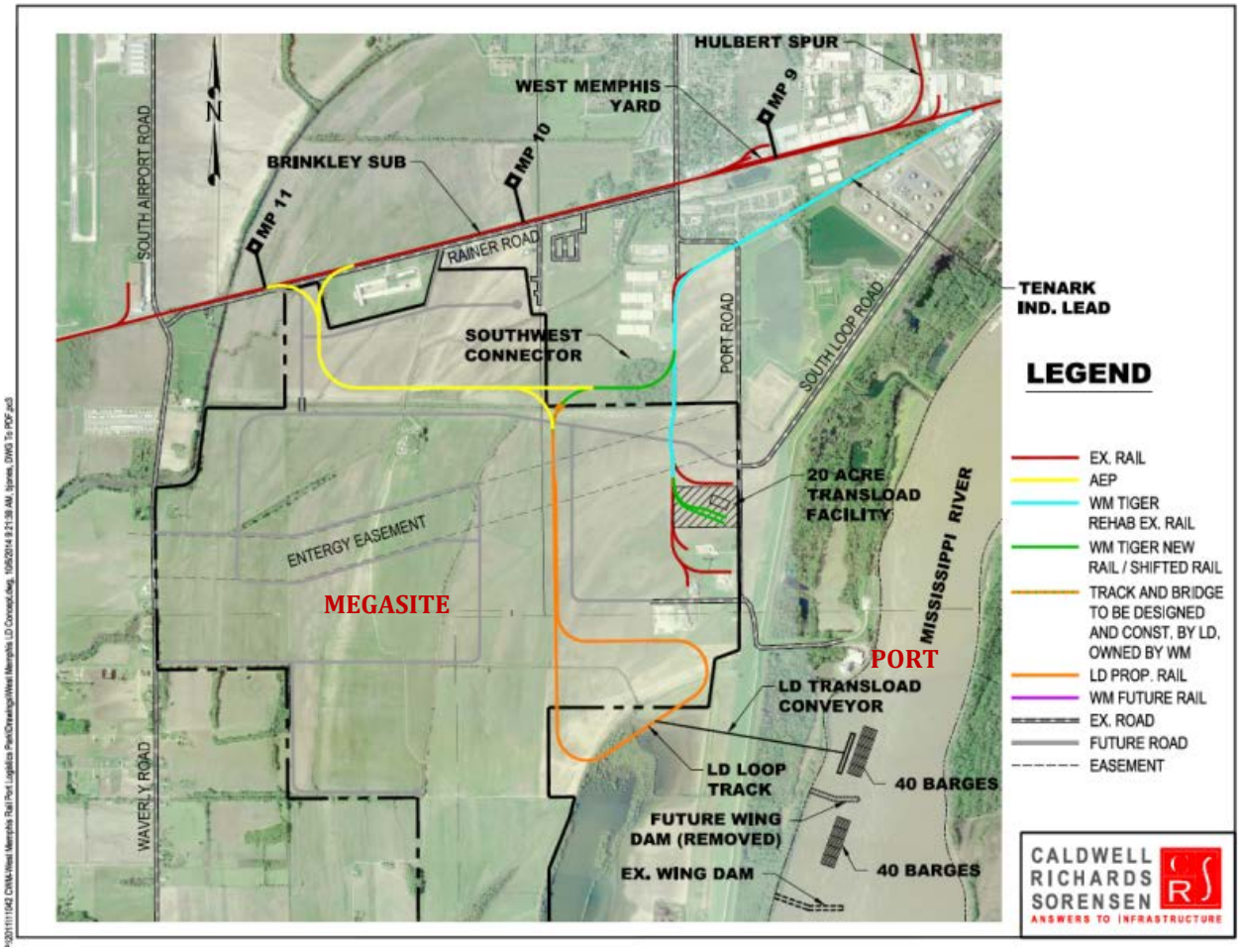
Another example of an industrial access project on a smaller scale is an $875,000 project to rehabilitate and extend a rail spur into the Monticello Economic Development Industrial Park in Monticello. This is being constructed in conjunction with a new Public Rail Access Facility.

Arkansas railroads have proposed a number of projects to improve industrial access for this Plan. These include over $14 million in identified needs to build new spurs and turnouts.

To summarize, potential or initiatives underway to support rail-related economic development in Arkansas include:

- Cataloguing developable rail-served sites, particularly on low-density rail lines;
- Mapping of rail assets and raw materials;
- Developing and disseminating a handbook on transload facilities;
- Creating a logistics directory for the State of Arkansas;
- Implementing specific industrial access projects;
- Establishing an industrial rail access funding mechanism that can receive applications from any existing or new business.

Figure 11-3. West Memphis Rail Plan



Extending or Reactivating the Arkansas Rail Network

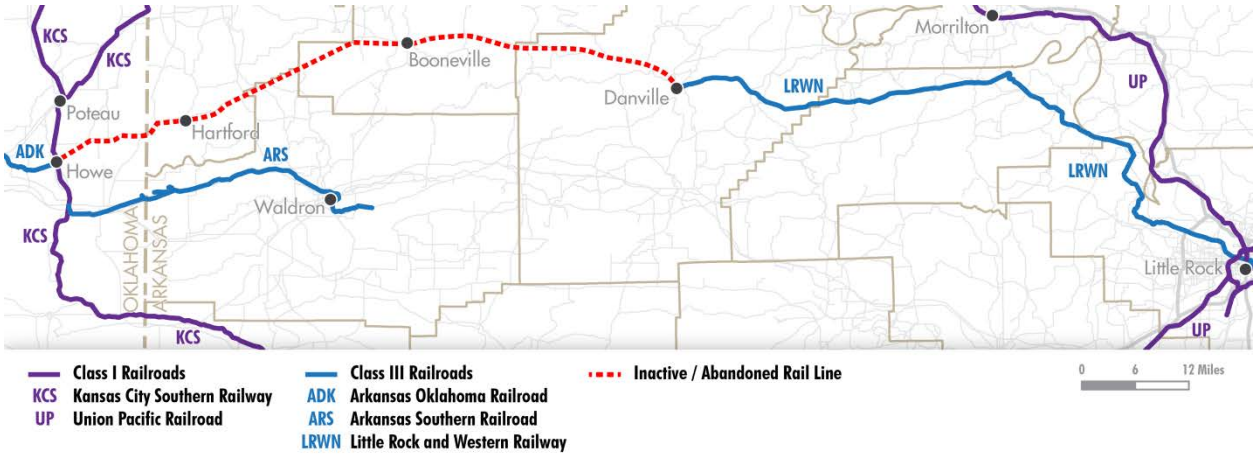
A number of stakeholders consulted for this Plan expressed interest in not only maintaining the existing rail network, but also extending the network to areas where it currently does not exist. Three projects that have been studied include the following:

- Western Arkansas Railroad Reconstruction
- Southeast Arkansas Industrial Rail-Port Connection
- Rail Access to an industrial area in Fayetteville
- Rail Access to the Northwest Arkansas Regional Airport

Western Arkansas Railroad Reconstruction

A recent study looked into the possibility of reconstructing a 76 mile segment of the former Chicago, Rock Island and Pacific Railroad (CRIP) line between Danville, Arkansas and Howe, Oklahoma.[35] The study evaluated the feasibility of restoring the line in two phases; an initial phase would restore the line (18.4 miles) between Hartford, Arkansas and an interchange with KCS in Howe, Oklahoma (Phase 1), and then a second phase that would restore the remaining 57.6 miles between Hartford, Arkansas and an interchange with the LRWN at Danville, Arkansas (Phase 2). A map of the line is shown in Figure 11-4.

Figure 11-4. Western Arkansas Railroad Reconstruction Map



Proponents believe that opportunities for coal and aggregate traffic near Hartford, Arkansas would create an immediate need for the line. Furthermore, the line's reconstruction would improve connectivity between rail lines in Oklahoma and Arkansas. The cost of the line's reconstruction is estimated to be $38.8 million for Phase 1 and $107.9 million for Phase 2.

The study estimates that Phase 1 would have a benefit/cost ratio above one regardless of ownership structure, meaning that the benefits of the project would outweigh the costs. Combined, Phase 1 and Phase 2 could have a benefit cost ratio above one if financed by public/private partnership but would have a benefit/cost ratio less than one if financed solely through private funds.

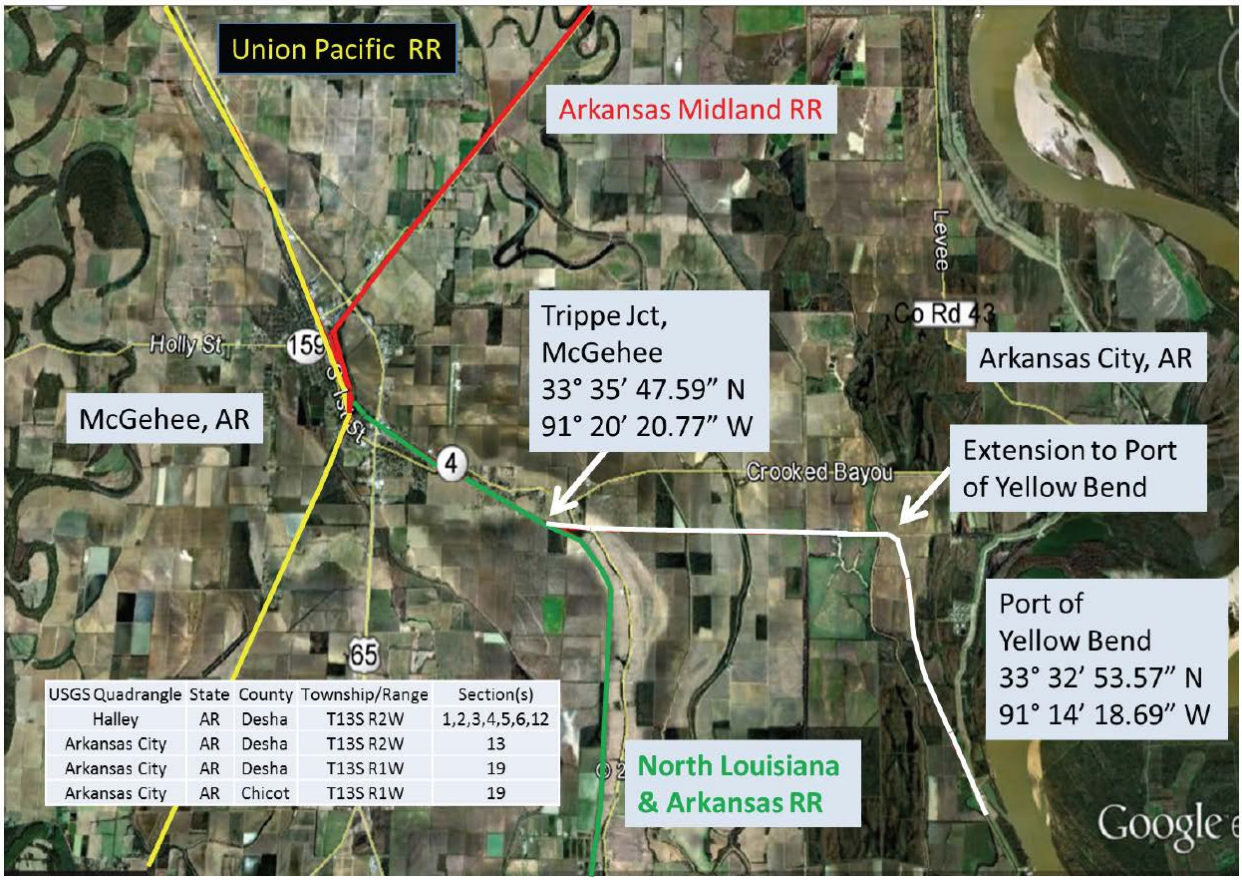
[35] South Logan County Chamber of Commerce, *Western Arkansas Railroad Reconstruction Economic Feasibility Study*, June 30, 2014.

Southeast Arkansas Industrial Rail-Port Connection

This project would provide rail access to the Port of Yellow Bend by constructing an 8.1 mile rail line from the Port to interchange with the NLA at Trippe Junction. Rail access would provide a rail-port connection that would enable shipments of forest products by rail through the port. In particular, the project would support proposed wood pellet plants. As discussed earlier, wood pellets have become a potential growth industry in Arkansas due to European requirements for renewable energy sources. Other shippers that would use the facility include a paper plant, crude oil trans-shippers, as well as agricultural shippers.

The National Environmental Policy Act (NEPA) process for this project has been completed, and in 2009 the U.S. Department of Transportation issued a Finding of No Significant Impact (FONSI) in response to an Environmental Assessment Technical Support Document, drafted by the Chicot Desha Metropolitan Port Authority in 2008. An application under the TIGER V grant program estimates that the project would cost $25 million to build. The estimated benefit/cost ratio is 11.1, and total additional output as a result of the project would be $74.8 million. The project would bring jobs to an area of economic distress. Figure 11-5 provides a map of the project.

Figure 11-5. Rail Line Extension to Yellow Bend



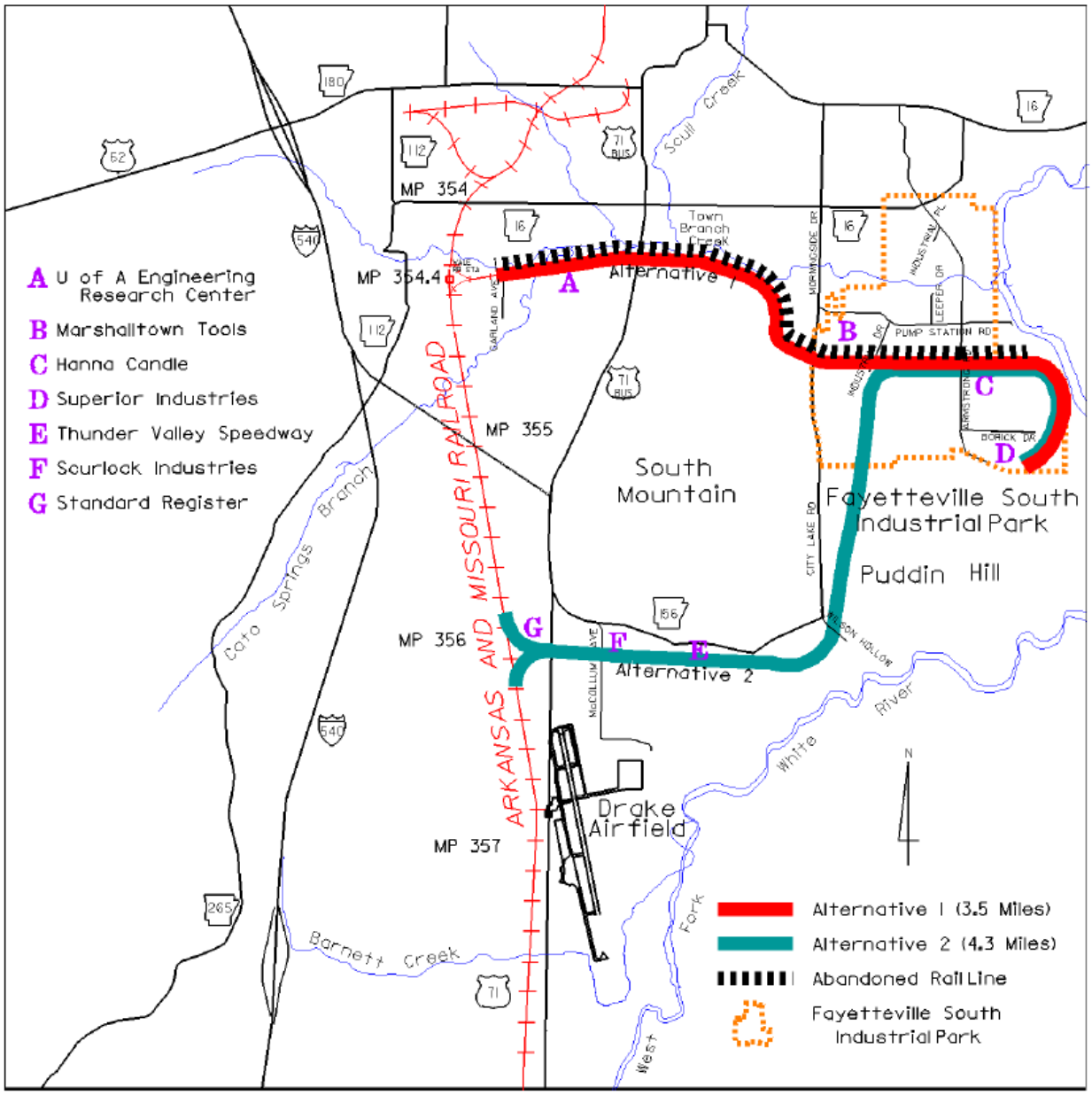
USGS Quadrangle	State	County	Township/Range	Section(s)
Halley	AR	Desha	T13S R2W	1,2,3,4,5,6,12
Arkansas City	AR	Desha	T13S R2W	13
Arkansas City	AR	Desha	T13S R1W	19
Arkansas City	AR	Chicot	T13S R1W	19

Rail Access to an Industrial Area at the Fayetteville South Industrial Park

The Fayetteville South Industrial Park hosts a number of tenants that could benefit from rail access. In 2003 AHTD prepared a study that identified two options for rail access to the park, a 3.5 mile route along an abandoned BNSF rail line (Alternative 1), or a 4.3 mile route (Alternative 2) that south of the abandoned BNSF route.[36] Alternative 1 could take advantage of a preexisting rail corridor, but would be subject to more constraints, such as waterways and existing development. The study authors estimated that Alternative 1 would cost between $2.7 and $3.5 million to construct, while Alternative 2 would cost between $2.9 and $4.3 million to construct. Indexed to today's dollars, using the AAR's Materials Prices, Wage Rates and Supplements (QMPW)—West index, this would translate to a cost range of $5.2 million to $6.7 million for Alternative 1 and $5.6 million to $8.2 million for Alternative 2.

[36] AHTD, *Fayetteville South Industrial Park Railroad Access Study*, October 2003.

Figure 11-6. Fayetteville South Industrial Park Rail Connection

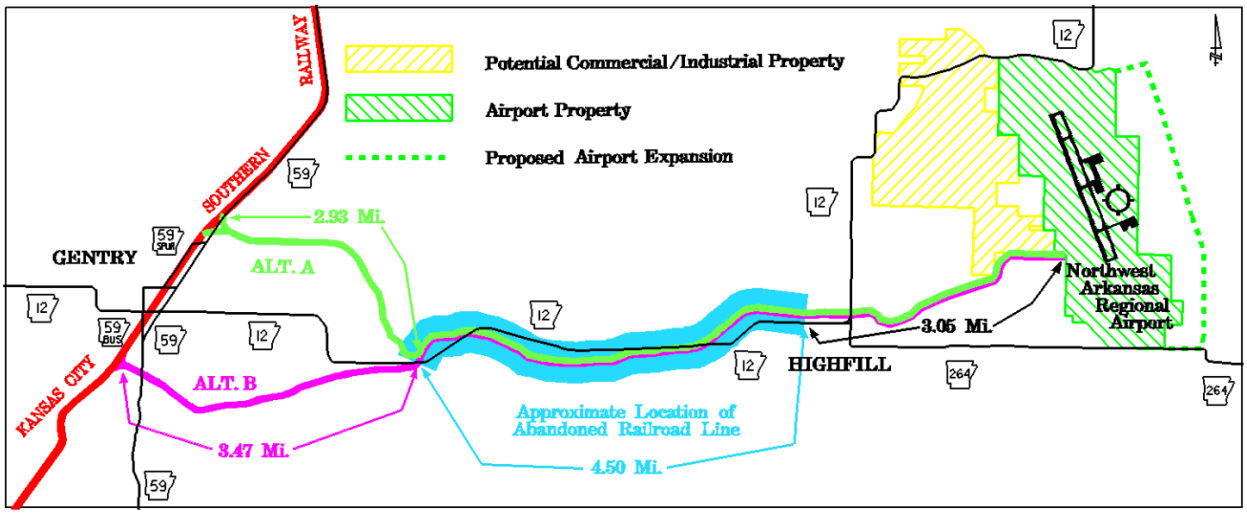


Source: AHTD

Rail Access to the Northwest Arkansas Regional Airport

In 2006, AHTD studied the possibility of rail access to the Northwest Arkansas Regional Airport and potential nearby commercial and industrial properties. Rail access would connect to the KCS Heavener Subdivision near Gentry, Arkansas. Two alternatives were considered, each of which involves rebuilding over 4.5 miles of abandoned rail line, plus an additional 3.0 miles into the airport. To connect with the KCS, Alternative A would follow a more northerly alignment of 3.0 miles, while Alternative B would follow an alignment further to the south of about 3.5 miles. Alternative A was estimated to cost between $8.6 and $10.5 million to build, while Alternative B was estimated to cost between $8.9 and $11.1 million. Indexed to today's dollars, using the AAR's Materials Prices, Wage Rates and Supplements (QMPW)—West index, this would translate to a cost range of $12.0 million to $14.6 million for Alternative A and $12.4 million to $15.4 million for Alternative B.

Figure 11-7. Rail Access to Northwest Arkansas Regional Airport



Source: AHTD

Beyond the four projects described above, other stakeholders expressed interest in extending portions of the rail network, including Entergy Arkansas which is a major owner of developable properties in Arkansas.

Multimodal Improvements

Some projects above include a multimodal component. For example, the Southeast Arkansas Rail-Port Connection is intended to better connect the rail and waterway networks. The Northwest Arkansas industrial park connection could also include multimodal facilities. Examples of projects specifically focused on multimodal improvements include the following:

- The Port of Little Rock handles more unit train cargoes than previously. It therefore would benefit from an expanded marshalling yard in the harbor area which would enable the Port to more easily handle unit trains;
- Rail infrastructure at the Port of Fort Smith needs to be upgraded, including upgraded rail, repairs to spur lines, and an extension of the rail line into the port;
- Several short line railroads have proposed transload projects;
- UP may in the future need to expand its intermodal terminal in Marion. Recommended related improvements are included in this Plan.
- Some shippers have expressed a desire for containerized intermodal service within Arkansas outside of the UP Marion facility. These services have been described as suffering from a "chicken and egg" conundrum. Railroads would like volumes to be adequate to justify intermodal service, while shippers would need time to build up intermodal volumes if the service were offered.

Upgrade/Rehabilitation Projects

Table 12-3 lists approximately $61.5 million worth of rehabilitation project that have been proposed by short line railroads in Arkansas. Many of these projects are aimed at bringing short lines back to a state of good repair, with track rated for FRA Class 2 operations or above. Frequently, these projects also allow rail lines to accommodate industry-standard 286,000 pound railcars. These projects have the benefit of not only improving the efficiency and operations of short lines, but also helping rail corridor preservation by ensuring that these rail lines can continue operations. Many short lines do not have the funds for major capital repairs or improvements. Rehabilitation projects include improvements to both track and structures.

Rehabilitation projects are not entirely limited to short lines railroads. KCS has proposed a project to upgrade the Fort Smith Subdivision to 286,000 pound capacity. Several UP branch lines are also not able to accommodate 286,000 pound cars.

If Arkansas were to develop a program to assist short lines, the process for further identifying and prioritizing needs may include the following steps:

1. On an annual basis, ask state short lines to submit projects for possible state funding, including:
   a. Track rehabilitation and improvements
   b. Bridge upgrades/improvements
   c. Operations/safety
   d. Economic development/new business

2. Develop details of each project
3. Develop formal submittal form
4. Prepare a cost/benefit analysis for each project (requiring details of capital cost estimates, proof of cost savings and confirmation of traffic/revenue or cost savings to be achieved)
5. Determine the short line's ability to fund the project or the portion of funding that the short line should shoulder, and identify alternative funding for remainder.
6. State should develop risks of each project.
7. Rate/rank each project based on the benefit per dollar spent.
8. Fund the projects that provide the most benefit to the state.

Short Line Capability Improvements

Not all short line rail lines are in a poor state of repair, and not all short line projects are focused solely on rehabilitating these lines. Some projects seek to expand the capabilities of these rail lines. As shown in Table 12-3, the nature of these projects varies as do their benefits. These projects can be further subdivided into the following categories:

Operations and Safety

These projects are mainly designed to improve the existing operations on the line that could be unsafe to operating personnel, the public or to equipment, property and assets.

Capacity

Any improvement that increases capacity for the railroad, including both track and equipment is considered a capacity improvement. This could be additional railcars, locomotives, maintenance equipment or additional trackage, yards, turnouts or other facilities.

Cost Reduction and Efficiency

These projects reduce the costs for the railroad and/or make operations more efficient.

Some projects fit into multiple categories listed above and could, for example, improve operations and safety, while at the same time boosting economic development and capacity. Some short line railroads also recommended crossing safety improvement projects.

Class I Projects

Class I railroads have also proposed projects for the Arkansas State Rail Plan. These projects have the potential to divert freight from highway to rail transportation. Some projects focus on building capacity into the Class I rail network, while others focus on connections between rail lines, as well as a variety of other needs. These projects are categorized similarly to the short line projects. Namely, projects are grouped into the following categories:

- Upgrade/rehabilitation
- Operations and safety
- Capacity
- Cost reduction and efficiency

Crossing safety improvement projects were also recommended by the Class I railroads.

Institutional Issues

Organization

In 1977 the Arkansas legislature passed Act 192 which renamed the Arkansas State Highway Department to be the Arkansas State Highway and Transportation Department (AHTD). The Act stated that "*It is the declared transportation policy of the General Assembly of the State of Arkansas to enhance the social and economic well-being of citizenry of this State by requiring coordination of public and private transportation activities and the effective implementation of a safe, efficient total transportation system."* The Act then went on to authorize AHTD to *"exercise those powers necessary for the State to qualify for rail service preservation subsidies or other transportation assistance pursuant to the provisions of any federal act."* Among these duties would be to establish and coordinate a state rail plan to ensure proper disbursement of federal funds.

Although Act 192 established AHTD as a multimodal agency, some stakeholders have expressed concern over the relative emphasis on highway at the expense of other modes. During the outreach process, some stakeholders expressed desire for a "Department of Transportation" model, which would provide a more equal emphasis across modes and maintain a more active role in railroad transportation. This view has been reiterated by the findings of the Arkansas Intermodal Task Force. In 2013, the Arkansas legislature created the Intermodal Task Force to study and make recommendations to the General Assembly regarding intermodal issues. The Task Force released its findings in December 2014, among other findings, the Task Force found that:

- "Modal assets, such as abandoned or discontinued rail lines, are being lost due to a lack of adequately funded centralized administration, resulting in lost economic opportunity;
- In addition to highways, other states include within their Departments of Transportation responsibility for rail, waterways and ports, and aviation;
- Arkansas lacks a true Department of Transportation;
- Unified oversight of all modes of transport would help to create a more efficient and productive intermodal system."

The Task Force then recommended a transition to a new Department of Transportation, the establishment of a division or agency responsible for intermodal development and oversight, and the establishment of a Coordinating Council for regional intermodal transportation authorities. The Task Force also requested that it be reconstituted and allowed to study the matter further with a new set of recommendations to be delivered June 30, 2016.

Reviewing the organization and responsibilities of rail functions within the Departments of Transportation in surrounding states, differences between AHTD and the rail functions of these other states may be more a matter of emphasis and funding, rather than necessarily organization. Similar to the case of AHTD, rail planning and administration are often organized within a division that is responsible for multimodal transportation. Rail offices tend to occupy a more discrete and prominent role in those states that either administer state-funded rail assistance programs and/or own rail infrastructure.

In considering the organization of rail and highway transportation modes, some states have opted to separate rail from highway transportation in an attempt to preserve rail-related functions as

discrete, so that these functions will not be "swallowed up" by an organization more focused on highway transportation. For example, the Commonwealth of Virginia has established separate modal agencies. These include:

- The Virginia Department of Transportation (VDOT), which is the highway agency;
- The Virginia Department of Rail and Public Transportation;
- The Virginia Department of Aviation;
- The Port of Virginia

Table 11-1. Organization and Responsibilities of Rail Programs in Adjoining States

State	Organization	Responsibility
Louisiana	Marine & Rail is within the Multimodal Planning Division	The mission of this office is to continuously improve Louisiana's marine and rail infrastructure for passenger and freight movement to nurture economic development and enhance our quality of life through the development of an efficient, safe, and seamless intermodal transportation system.
Mississippi	The Rails Multimodal Program is currently administered through the Traffic Engineering Division's Rails Safety Section, as is the crossing safety function.	The Multimodal Program administers a fund which supports publicly-owned railroads in Mississippi. Projects are selected by the eight-member Rail Multimodal Committee, which is made up of representatives from each of the six publicly-owned railroads, a representative from the Mississippi Development Authority, and another from the Mississippi Department of Transportation. The Rails Safety Section is also responsible for roadway/rail grade crossing improvements.
Missouri	Rail program is within the Multimodal Operations Division, which is under the Chief Engineer	Rail program includes freight rail regulation, passenger rail, light rail safety regulation, roadway/rail crossing safety, rail/highway construction, and railroad safety inspection and outreach.
Oklahoma	The Rail Programs Division is under the Director of Capital Programs.	The Division is responsible for acquiring and administering federal and state funds used to support operation of the Heartland Flyer passenger service, highway construction projects affecting railroad property, railroad crossing safety improvements, and maintenance of state-owned rail lines.
Tennessee	The Office of Freight & Rail and Railroad Safety/Regulation Section are within the Division of Multimodal Transportation Resources	Office of Freight & Rail provides grants for track and bridge rehabilitation for Shortline Railroad Authorities who have applied for and have been accepted into the Shortline Railroad program. Funds are used for rail and track structure improvements. The goal of the Railroad Safety/Regulatory section is to reduce and eliminate dangerous/hazardous conditions for Railroad Employees and the General Public.
Texas	The Rail Division falls under Planning and Environment	The Rail Division oversees rail planning and inspection, management of the South Orient Railroad and rail public transit safety.

The Commonwealth Transportation Board (CTB) establishes administrative policies for the state's transportation system across agencies. VDOT maintains the planning functions that cross modes, such as responsibility for the state's long-range transportation plan.

The Ohio Rail Development Commission (ORDC) was created in 1994, as "*an independent agency of the state within the department of transportation*."[37] Although the agency's enabling legislation is somewhat self-contradictory, the creation of ORDC represents an attempt to maintain rail as a separate and discrete transportation activity within Ohio. While originally assigned a dedicated funding source, the agency's programs are now funded through the Ohio general revenue fund. Funding levels have varied considerably, ranging from a high of $10 million per year to closer to $2 million now. The commissioners serve on a voluntary basis and decide upon projects proposed by ORDC staff.

An example of an independent modal agency in Arkansas would be the Arkansas Waterways Commission, which was created by Act 242 of the Arkansas legislature in 1967, with powers and authorities modified by Act 414 in 1973.

Funding

Arkansas has no dedicated, consistent funding for rail projects. Stakeholders would like to find a consistent funding source for rail within the state. In some other states, rail programs are funded through the state's general revenue fund. It is uncertain whether this could be an option in Arkansas. Some stakeholders have proposed the possibility of establishing a dedicated revenue stream. This could potentially be analogous to the Arkansas Port, Intermodal, and Waterway Development Grant program, which provides funds to public ports and intermodal authorities for capital improvements and for dredging. This grant program is supported by a preexisting ad valorem tax. This tax is levied annually on waterway users and is based on the value of the cargo carried by that user. The grant benefits the same entities that pay the tax. Railroads pay a number of state taxes, including fuel taxes. Perhaps, one of the state taxes levied on railroads could form the revenue basis of a rail grant program.

Stakeholders also discussed financing alternatives. A development bank could provide loans for economic development projects, including rail. There has also been discussion about Arkansas Planning and Development Districts gaining bonding authority.

Rail Community Impacts

A number of stakeholders have proposed projects to lessen the impacts of railroads in communities. These include one project in Fort Smith that would move a rail yard to a different location, which would open the area, now occupied by the rail yard to development and would improve rail access to the Arkansas River. Another proposal in West Memphis would reroute rail traffic away from the town's central business district. To be successful, a key requirement for these types of projects is that they provide a "win-win" situation in which no party is made worse off. This is particularly important, since railroads are subject to federal laws, which can preempt state and local laws by which "*the action would have the effect of preventing or unreasonably interfering with railroad transportation.*"[38]

[37] Chapter 4981, Ohio Revised Code.
[38] *Emerson v. Kansas City S. Ry. Co.*, 503 F.3d 1126 (10th Cir. 2007).

Chapter 12 The State's Long-Range Rail Service and Investment Program

Funded Projects

Freight and passenger rail projects are currently being completed in Arkansas. Table 12-1 outlines currently funded projects. These can be considered a short-range investment program, since they will be completed within the next four years.

Table 12-1. Funded Rail Project in Arkansas (Short-Term Investment Program)

Project Description	Cost	Funding Mechanism	Project Benefits
Rail extension and rehabilitation at the Port of West Memphis	Total cost is $27.0 million	$10.9 million from 2012 TIGER grant, other local and private funds	Economic development and modal connectivity
Rail Rehabilitation of the North Louisiana and Arkansas Railroad	Total cost, including work within Louisiana, is $13 million	U.S. Economic Development Administration, State of Arkansas SEAEDD, Lake Providence Port Commission, State of Louisiana, Delta Regional Authority, Arkansas Short Line Railroads, Inc.	Economic development, rail system preservation/ state of good repair, freight system efficiency
City of Jonesboro Railroad Corridor Highway 18/BNSF Crossing Planning for environmental and designs	$1.5 million	$1.2 million from 2014 TIGER grant, $0.3 in local match	Safety, reduces community impacts
Arkansas Passenger Rail Study	$0.9 million	$0.4 from FRA HSR (pre HISPR), $0.5 from State of Arkansas	Investigates potential transportation options
AKMD Warren Branch Rail Line Rehabilitation	$3.4 Million	$2.7 million from FRA Rail Line Relocation and Improvement program, $0.7 million from AKMD	Rail system preservation/ state of good repair, freight system efficiency
Ouachita Railroad Bridge Rehabilitation	$370,000	$330,000 from FRA Rail Line Relocation and Improvement program, $40,000 from OUCH	Rail system preservation/ state of good repair, freight system efficiency

Funding Scenarios

Over the past six years, the TIGER Discretionary Grant program has been the most significant single public funding source for rail projects in Arkansas, accounting for around $12 million in total funding, or $2 million per year. Unfortunately, it is uncertain from year to year whether the TIGER

program will be funded, and at what level. The program is also highly competitive. While rail projects in Arkansas have been successful in the past, there is no guarantee of future success.

The FRA Rail Line Relocation and Improvement program has also been a significant source of funds, but this program is no longer funded. Discussions regarding the reauthorization of MAP-21 have included the possibility of adding a dedicated funding source for freight rail, but the prospects of such a measure are uncertain.

U.S. Economic Development Administration (EDA) funds have helped support rail projects in Arkansas. The NLA rehabilitation is in part funded by two grants from the EDA, one for $2 million and another for $1.2 million. Over the past several fiscal years, the EDA Public Works program has funded about $100 million to $150 million in projects across all states. Therefore, the average state would expect to receive $2 million to $3 million, although states with more economically distressed areas may receive a higher proportion. However, these investments are not only for rail, but for all public works to support economic development. They are competitive, discretionary grants, so there is no guarantee of being awarded these grants in a given year.

Arkansas state funding has supported rail projects in the past. The NLA rehabilitation is funded in part by about $1.1 million from Arkansas General Improvement Funds (GIF). Arkansas also provided $0.5 million in funding for the Passenger Rail Study. The study investigating the feasibility of restoring the former Chicago, Rock Island and Pacific Rail Line between Howe, Oklahoma and Danville, Arkansas was funded by GIF funds. However, as with other funding sources listed above, these are not consistent sources of funding.

The Delta Regional Authority (DRA) has been a relatively consistent source of funding for rail projects in Arkansas, but the typical grant has been around $200,000 so this source could not fund major rail projects. Furthermore, the DRA has in the past funded rail projects once every two or three years, not every year.

Table 12-2 below shows possible funding levels. Based upon the previous success of rail TIGER grant applications in Arkansas, the TIGER program could be the largest source of public funds.

Table 12-2. Arkansas Rail Funding Scenarios—Average Annual over Next Five Years

Source	Pessimistic Scenario	Base Scenario	Optimistic Scenario
TIGER Discretionary Grant program	$0	$2 million	$5 million
All FRA programs	$0	$0	$1 million
U.S. EDA	$0	$0.5 million	$0.7 million
Arkansas State Funding	$0	$0.3 million	$0.5 million
DRA funding	$50,000	$0.1 million	$0.1 million
Total	$50,000	$2.9 million	$7.3 million

Phasing

Traditionally, rail improvement initiatives in Arkansas have been stakeholder-led. For example, railroads in Arkansas have become aware of funding or financing opportunities, and have requested technical assistance from AHTD to pursue these funding opportunities. The Department

was able to assist with the RRIF loan application by the AM mentioned on Page 5-6 by preparing a study required for the loan application. AHTD has sponsored grant applications through the FRA Rail Line Relocation and Improvement program as listed in Table 12-1. Although AHTD cannot apply any funding of its own to these initiatives, AHTD staff have been able to provide technical assistance and a facilitating role. Project identification has been "bottom up," originating with the railroads.

Another set of projects sponsored by AEDC or Planning and Development Districts in Arkansas have similarly been "bottom up." In these cases, local economic development agencies or regional agencies have identified rail-related economic development opportunities.

TIGER grant applications have similarly been locally-generated. As of 2014 the eight rail-related TIGER grant applications that have been submitted within the state have been submitted by three entities:

- City of West Memphis
- Chicot-Desha Port Authority
- City of Jonesboro

As of late 2014, AHTD has submitted 16 TIGER applications; however, these have almost universally been for highway projects. The one exception is an application for the Arkansas Freight Plan, submitted during the most recent round of TIGER grant funding. Interestingly, rail-related TIGER grant applications from Arkansas have had a higher success rate than those submitted for highway projects. Only one of the 16 of the AHTD highway-related applications have been funded, whereas two of the eight rail applications have been funded. Given that the eight rail-related applications were effectively for three initiatives (multiple applications for the same project, or multiple applications for different project phases), two of three rail projects have received some funding.

The genesis of the Arkansas Passenger Rail Study is attributable to the South Central High Speed Rail (SCHSRC) corridor in Arkansas. PRIIA legislation required that a corridor study be conducted to evaluate the feasibility of extending the SCHSRC from Little Rock to Memphis. The study has also received active support from stakeholders, particularly in the Memphis region and Texarkana. Original funding was provided by the Consolidated Appropriations Act of Fiscal Year 2005 under the Next Generation High-Speed Rail program through the FRA, which provided funding for a Memphis Region high-speed rail study. This funding was later reallocated to the Arkansas Passenger Rail Study. The State of Arkansas matched federal funding, and then provided an additional $100,000 by the Arkansas General Assembly.

The opportunistic, stakeholder-lead approach to rail project selection generally reflects a lack of consistent, dedicated funding. When funding availability is unknown from year to year, it is not possible to set out a long-term program. Furthermore, the level of funding that is available discourages the development of long-range initiatives, which entail an entire program of improvements. Rather, opportunities must be seized as they arise. Each funding opportunity may be better suited to certain types of projects and not others.

Nevertheless, certain initiatives listed in Chapter 11 will occupy a higher priority than others.

- Safety is always a priority. AHTD will continue to maintain an active role in improving, closing, grade separating roadway/rail grade crossings.
- A number of stakeholders consulted for this study consider it critical that the state develop an approach to rail corridor preservation. Discussions regarding a rail corridor preservation policy should begin shortly after the completion of this Rail Plan. The specific approach or the combination of approaches to be taken should be an outcome of these discussions.
- Economic development is also a high priority. A number of marketing initiatives listed on Page 11-6 support rail and economic development without requiring major infrastructure investments. Some are already ongoing and others may have the potential to be initiated in the short-term.

Should Arkansas find itself in the position of evaluating multiple, potential rail projects that could be funded and having to decide the timing of funding among these projects, a number of options are possible.

- Rely on stakeholders to establish priorities. For example, railroad holding companies could help to evaluate which of the projects on their constituent railroads represent the highest priorities. Railroad operators themselves are usually in the best position to understand their needs and those projects that would provide the greatest boost to freight volumes and/or promote network efficiency and fluidity.
- Evaluating projects by panel. A panel of key stakeholders within Arkansas could evaluate the extent to which projects meet the vision, goals and objectives as listed on page 1-5. For freight rail projects, a freight advisory board could serve this role. AHTD intends to convene a freight advisory board in conjunction with the Arkansas Freight Plan now underway.
- Scoring by performance measures. Some indicators of probable project impacts are measurable, such as the number of carloads impacted, etc. For passenger rail projects, this could include the number of passengers impacted, travel time savings, etc.
- Benefit/cost analysis. Benefit/cost analyses apply monetary values to project benefits. This enables analysts to evaluate the efficiency of projects, comparing project benefits to the required investment and any ongoing cost requirements. Benefit/cost analyses enable dissimilar projects to be compared on a comparable monetary basis.
- Economic impacts. Economic impacts measure the impact of projects on the Arkansas economy, in terms of jobs created, employment earnings, gross state product, etc. These are not considered project "benefits" per se, but are important considerations.
- Considerations of project planning cycles. For more significant, long-term projects, advancement into the feasibility and/or environmental stages of the planning cycle with positive findings for each indicate that these projects have gained a certain level of momentum and support. The project has been studied and found to have merit.

- Public/private partnership. Significant private investment helps to bolster the cost-effectiveness of projects from the public sector's perspective. By combining public and private dollars, the funds of each party can support a more sizeable investment.

Table 12-3 below displays identified rail infrastructure needs in Arkansas. This can be considered the long-range investment program. These projects will be evaluated for funding when and if funding becomes available. As funding becomes available, these projects can be reclassified as "short-range" investments.

State Rail Plan Impacts

Although the extent to which initiatives listed in Chapters 10 and 11, as well as supporting infrastructure projects listed in Table 12-3 are dependent upon funding and the availability of funding is uncertain, the completion of these initiatives would have positive impacts, including the following.

- Rail Capacity. Capacity would be increased in several ways. A number of the projects listed in Table 12-3 are oriented toward increasing the weight capacity of Arkansas rail lines. Projects could also enable rail lines and yards to accommodate a higher total volume of freight, particularly those projects oriented toward high-volume Class I mainlines. Passenger rail initiatives would add track capacity to accommodate more frequent and/or faster passenger rail service.
- Transportation System Capacity. Most of the initiatives have the potential of diverting freight or passengers to rail. This could increase available capacity of other modes, particularly highway.
- Transportation System Congestion. Since the projects and initiatives of this Rail Plan would divert freight from highways to rail and thereby increase available highway capacity, roadway congestion would be reduced.
- Transportation System Safety. Many projects of this Rail Plan are directly oriented toward improving safety, particularly those related to roadway/rail grade crossings. As discussed in Chapter 7, rail is a relatively safe mode of transportation, so to the extent that freight and passengers are diverted to rail by the projects and initiatives of this Rail Plan, this will improve the safety of the Arkansas transportation network.
- Transportation System Resiliency. Rail can serve as an alternative to highway transportation in case of emergency. As this Rail Plan increases the quality and availability of railroad transportation, it also promotes the resiliency of the Arkansas transportation network. Furthermore, a rail network in a state of good repair is more resilient than a rail network in a poor condition.
- Environmental. As discussed in Chapter 7, rail is a relatively fuel and environmentally efficient mode of transportation. To the extent freight and passengers are diverted to rail by the projects and initiatives of this Rail Plan, the safety of the Arkansas transportation network will improve.

- Economic Efficiency. Projects and initiatives of this Rail Plan would improve the efficiency of the Arkansas rail network and therefore reduce costs to rail shippers. Railroad transportation could also be made available to shippers that would not otherwise have had access to rail, which would provide additional transportation options and potentially reduce shipping costs.
- Employment. As discussed previously, rail can help to attract and/or retain existing employers and thereby boost employment within the Arkansas. Many of the initiatives and projects of this Rail Plan would boost job creation.

Table 12-3. Proposed Investments for Freight Rail in Arkansas

Project Sponsor	Railroad	Project Description	Associated Initiatives	Cost
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Replace ten miles of Mainline rail	Upgrade/rehabilitation, Operations and safety, Cost reduction and efficiency	$2,220,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Arkansas River Bridge Rehab	Upgrade/rehabilitation	$3,000,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Replace Ft. Smith Scale	Upgrade/rehabilitation	$200,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Spur Line Track	Industrial access/economic development	$8,000,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Storage Yard Track	Operations and safety, Capacity	$1,200,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Purchase Railcars	Capacity	$7,500,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Warehouse facility	Multimodal improvements, industrial access/economic development	$2,000,000
Arkansas & Missouri Railroad	Arkansas & Missouri Railroad	Transload/Bagging Facility	Multimodal improvements	$2,000,000
Arkansas Shortline Railroads, Inc.	Camden & Southern Railroad	Track Rehab	Upgrade/rehabilitation	$500,000
Arkansas Shortline Railroads, Inc.	Dardanelle & Russellville Railroad	Signals to 4th St	Protection to the public	$200,000
Arkansas Shortline Railroads, Inc.	Dardanelle & Russellville Railroad	Signals to 16th St	Protection to the public	$200,000
Arkansas Shortline Railroads, Inc.	Dardanelle & Russellville Railroad	Signals to 19th St	Protection to the public	$150,000
Arkansas Shortline Railroads, Inc.	Dardanelle & Russellville Railroad	Upgrade of 75 lb rail to 115 lb rail	Upgrade/rehabilitation	$1,500,000
Arkansas Shortline Railroads, Inc.	Dardanelle & Russellville Railroad	Surfacing and ballast	Operations and safety	$450,000
El Dorado & Wesson Railway	El Dorado & Wesson Railway	Heavier Rail	Upgrade/rehabilitation	$5,500,000
El Dorado & Wesson Railway	El Dorado & Wesson Railway	Heavier Rail for Turnouts	Upgrade/rehabilitation	$2,500,000
Pioneer Railcorp	Fort Smith Railroad Co.	Transload Facility	Multimodal improvements	$2,000,000
Pioneer Railcorp	Fort Smith Railroad Co.	6,480 tons of Rail	Upgrade/rehabilitation	$16,000,000
Pioneer Railcorp	Fort Smith Railroad Co.	32,800 crossties	Upgrade/rehabilitation	$2,500,000
Pioneer Railcorp	Fort Smith Railroad Co.	20 switch crossties	Upgrade/rehabilitation	$100,000
Pioneer Railcorp	Fort Smith Railroad Co.	20,500 tons of ballast	Upgrade/rehabilitation	$500,000
Pioneer Railcorp	Fort Smith Railroad Co.	216,480 Surfacing	Upgrade/rehabilitation	$650,000
Pioneer Railcorp	Fort Smith Railroad Co.	Marshaling Yard	Industrial access/economic development, Capacity	$2,000,000

Project Sponsor	Railroad	Project Description	Associated Initiatives	Cost
Pioneer Railcorp	Fort Smith Railroad Co.	Lift Equipment	Capacity	$250,000
Genesee & Wyoming, Inc.	AKMD—Carlisle	5 Turnouts	Industrial access/economic development	$350,000
Genesee & Wyoming, Inc.	AKMD—Carlisle	Marshalling Yard	Industrial access/economic development, Operations and safety, Capacity	$1,724,000
Genesee & Wyoming, Inc.	AKMD—Carlisle	Storage Yard	Industrial access/economic development	$1,546,000
Genesee & Wyoming, Inc.	AKMD—Cypress Bend	Bridge Upgrades (2)	Upgrade/rehabilitation	$1,000,000
Genesee & Wyoming, Inc.	AKMD—Cypress Bend	Improve Drainage in McGehee Yard	Cost reduction and efficiency	$100,000
Genesee & Wyoming, Inc.	AKMD—Helena	Rail improvements (3,229 tons)	Upgrade/rehabilitation	$2,421,900
Genesee & Wyoming, Inc.	AKMD—Helena	20 Turnouts	Upgrade/rehabilitation	$1,400,000
Genesee & Wyoming, Inc.	AKMD—Helena	32,000 Crossties	Upgrade/rehabilitation	$1,888,000
Genesee & Wyoming, Inc.	AKMD—Helena	2,000 tons of Ballast	Upgrade/rehabilitation	$54,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	Bridge Upgrades (7)	Upgrade/rehabilitation	$5,000,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	12 Turnouts	Industrial access/economic development	$840,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	10,560 Ft. Marshalling Yard	Industrial access/economic development, Operations and safety, Capacity	$2,640,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	Transload Facility	Multimodal Improvements	$200,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	Maintenance Shop	Operations and safety, Cost reduction and efficiency	$2,000,000
Genesee & Wyoming, Inc.	AKMD—Hot Springs	Office	Operations and safety	$800,000
Genesee & Wyoming, Inc.	AKMD—Jacksonville	8 Turnouts	Industrial access/economic development	$560,000
Genesee & Wyoming, Inc.	AKMD—Warren	3,734 tons of Rail	Upgrade/rehabilitation	$2,800,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	345 tons rail	Upgrade/rehabilitation	$350,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	2 Bridges	Upgrade/rehabilitation	$500,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	4 Turnouts	Industrial access/economic development	$200,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	300 Bridge crossties	Upgrade/rehabilitation	$175,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	200 Switch crossties	Upgrade/rehabilitation	$175,000
Genesee & Wyoming, Inc.	Little Rock & Western Railway	3,000 tons of Ballast	Upgrade/rehabilitation	$65,000
Genesee & Wyoming, Inc.	Prescott & Northwestern Railroad	848 tons Rail	Upgrade/rehabilitation	$635,479
Genesee & Wyoming, Inc.	Prescott & Northwestern Railroad	14 Turnouts	Industrial access/economic development, Upgrade/rehabilitation	$980,000
Genesee & Wyoming, Inc.	Warren & Saline River Railroad	1,049 tons Rail	Upgrade/rehabilitation	$787,118
Genesee & Wyoming, Inc.	Warren & Saline River Railroad	11 Turnouts	Industrial access/economic development	$770,000
Little Rock Port Authority	Little Rock Port Railroad	1,200 ft Storage Yard	Industrial access/economic development, Capacity	$2,500,000

Project Sponsor	Railroad	Project Description	Associated Initiatives	Cost
Little Rock Port Authority	Little Rock Port Railroad	Expansion to marshalling yard in harbor area	Multimodal improvements, Capacity	$3,000,000
Five Rivers Distribution/ Port of Fort Smith	Fort Smith Railroad, Arkansas & Missouri Railroad	Repairs to Rail Spur Lines	Upgrade/rehabilitation	$1,150,000
Five Rivers Distribution/ Port of Fort Smith	Fort Smith Railroad, Arkansas & Missouri Railroad	Rail Line Extension	Multimodal improvements, Capacity	$1,050,000
Five Rivers Distribution/ Port of Fort Smith	Fort Smith Railroad, Arkansas & Missouri Railroad	Replace 85 lb rail with heavier rail	Upgrade/rehabilitation, Multimodal Improvements	$1,150,000
South Logan County Chamber of Commerce	Uncertain	Build 18.4 miles of track between Hartford, Arkansas and Howe, Oklahoma	Extend or reactivate rail network	$38,800,000
South Logan County Chamber of Commerce	Uncertain	Build 57.6 miles between Hartford, Arkansas and Danville, Arkansas	Extend or reactivate rail network	$107,900,000
Chicot Desha Metropolitan Port Authority	AKMD	Build an 8.1 mile rail spur to provide access to the Port of Yellow Bend	Extend or reactivate rail network, Multimodal improvements	$25,200,0000
City of West Memphis	Friday Graham Rail Spur	New Y track to access UP mainline	Industrial access/economic development, Multimodal improvements	Not Available
TBD	Uncertain	Build 3.5 or 4.3 mile rail spur to provide access to industrial park in Fayetteville	Extend or reactivate rail network	$5,600,000 - $8,200,000
TBD	Uncertain	Build 10 to 11 mile spur to Northwest Arkansas Regional Airport	Extend or reactivate rail network	$12,000,000 - $15,400,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	Track Rehab	Upgrade/rehabilitation	$3,000,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	US 65/82 Lake Village Signals	Crossings/safety	$400,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	AR Hwy 257 Lake Village Signals	Crossings/safety	$150,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	AR Hwy 8 Eudora Signals	Crossings/safety	$150,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	AR Hwy 160 Eudora, AR Signals	Crossings/safety	$150,000
Arkansas Short Line Railroads Inc.	North Louisiana & Arkansas Railroad	AR Hwy 35 Halley, AR Signals	Crossings/safety	$150,000
Arkansas Short Line Railroads Inc.	Ouachita Railroad	Bridge Rehabilitation	Upgrade/rehabilitation	$3,000,000
Arkansas Short Line Railroads Inc.	Ouachita Railroad	Tie Rehabilitation	Upgrade/rehabilitation	$2,080,000
Union Pacific Railroad	Union Pacific Railroad	Van Buren Yard Slots - Construct Slot at Van Buren	Capacity, Cost reduction and efficiency	$15,000,000
Union Pacific Railroad	Union Pacific Railroad	White Bluff Sub Connection to Pine Bluff Sub - Construct connection from White Bluff Sub to Pine Bluff Sub.	Cost reduction and efficiency	$8,000,000
Union Pacific Railroad	Union Pacific Railroad	Van Buren Sub Sidings - Construct 4-6 sidings between Little Rock and Van Buren on the Van Buren Sub.	Capacity	$50,000,000

Project Sponsor	Railroad	Project Description	Associated Initiatives	Cost
Union Pacific Railroad	Union Pacific Railroad	McGehee Sub Sidings - Construct 4-6 sidings south of Pine Bluff on the McGehee sub.	Capacity	$50,000,000
Union Pacific Railroad	Union Pacific Railroad	White Bluff Sub Sidings and Double Track - Construct 2-3 sidings between Little Rock and Pine Bluff, double track extensions extending 3-5 miles out of terminals of Little Rock and Pine Bluff.	Capacity	$70,000,000
Union Pacific Railroad	Union Pacific Railroad	3rd Main Track at North Little Rock - Construct additional mainline at North Little Rock yard to facility fueling, inspection, crew change activities.	Capacity	$17,000,000
Union Pacific Railroad	Union Pacific Railroad	Double Track Little Rock to Marche - Construct approx six miles of 2nd main track between Marion and Presley Jct	Capacity	$45,000,000
Union Pacific Railroad	Union Pacific Railroad	Double Track Marion to Presley Jct - Construct approx six miles of 2nd main track between Marion and Presley Jct.	Capacity	$30,000,000
Union Pacific Railroad	Union Pacific Railroad	Little Rock Area Transload facility - Develop new transload capability in the Little Rock/Central AR area	Multimodal improvements	$20,000,000
Union Pacific Railroad	Union Pacific Railroad	Brinkley Connection - Enhance connection at Brinkley.	Cost reduction and efficiency	$5,000,000
Union Pacific Railroad	Union Pacific Railroad	Little Rock & Hoxie Subs Double Track - Construct 150 - 200 miles of double track between Arkansas/ Missouri State Line and Texarkana	Capacity	$750,000,000
Union Pacific Railroad	Union Pacific Railroad	Centralized Traffic Control (CTC) Van Buren Sub - Install CTC signal system between Van Buren and North Little Rock.	Capacity	$35,000,000
Union Pacific Railroad	Union Pacific Railroad	Power McGehee Sub Sidings - Power all sidings on McGehee sub	Cost reduction and efficiency	$10,000,000
Union Pacific Railroad	Union Pacific Railroad	Expansion of Marion - Construct additional ramp capability (tracks, parking) to support intermodal growth	Multimodal improvements	$40,000,000
BNSF Railway	BNSF Railway	Improve road infrastructure to/from major BNSF served sites	Industrial access/economic development	Not available
BNSF Railway	BNSF Railway	Identify greenfield sites for dual UP, BNSF access	Industrial access/economic development	Not available
BNSF Railway	BNSF Railway	Identify at-grade rail crossing improvements, closures, and grade separations, including evaluation of grade separating BNSF line and Highway 18/Nettleton Ave in Jonesboro	Crossings/safety	Not available
Kansas City Southern Railway	Kansas City Southern Railway	Improve Connection between KCS and DQE	Cost reduction and efficiency	Not available
Kansas City Southern Railway	Kansas City Southern Railway	Upgrade Fort Smith Subdivision to 286K capacity	Upgrade/rehabilitation	Not available

Project Sponsor	Railroad	Project Description	Associated Initiatives	Cost
Kansas City Southern Railway	Kansas City Southern Railway	Crossing closures in Ashdown	Crossings/safety	Not available
TBD	KCS/TBD	New rail connection to Northwest Arkansas Regional Airport	Capacity/Multimodal Improvements/Efficiency	Not Available

Chapter 13 Coordination and Review

The Arkansas State Highway and Transportation Department (AHTD) is committed to engaging rail stakeholders and the public in the development of the Arkansas State Rail Plan.

Approach

Stakeholder and public input for the Arkansas State Rail Plan focused on complementing, integrating, and filling any gaps in the other activities. Input for the Rail Plan was gathered in a number of ways. Table 13-1 presents the methods used and the purpose of each.

Table 13-1. Outreach Approaches

Outreach Methods	Purpose
Stakeholder interviews	Individually inform stakeholders of the study and obtain their input by interview.
Railroad questionnaires	Questionnaires were distributed to railroads to gain information regarding their systems, as well as rail issues in Arkansas.
Stakeholder briefings/expert workshops	Meet with, inform and obtain input from stakeholder groups and agencies on the purposed of the statewide rail plan, as well as solicit specific issues which impact rail operations
Open houses	Meet with, inform and obtain input from the general public on the purpose of the State Rail Plan, as well as solicit views on specific issues which impact rail operations.
Government agency coordination	Inform government agencies in Arkansas of the study, its status and activities and provide them a forum for review and comment.
AHTD Website	Inform stakeholders about the Plan. The website included an online survey tool, a comment form, and a form by which users could sign up for an email distribution list

Identified Expert Stakeholders

Stakeholders that had an interest and/or insights relevant to railroad transportation in Arkansas were identified. These stakeholders included:

- Metropolitan Planning Organizations, Planning and Development Districts
- Railroads
- Amtrak

- A sample of railroad shippers
- Trade associations of railroads, passenger rail advocacy groups, or other entities that would have an interest in rail transportation
- Academics with a transportation focus
- Port authorities or port terminals
- Government officials
- State Chamber of Commerce
- Intermodal Authorities

Railroad Interviews/Requests for Information

Interviews/requests for information were conducted with railroads to gather key information on the rail network in Arkansas, rail needs, and overall rail strategy and policy issues. A single questionnaire was administered for all shortline railroads. Questionnaires specific to each railroad were administered for the Class I railroads. Many of the questions were the same for each railroad.

The consultant team developed and provided AHTD with copies of the questionnaires for review and approval. Each railroad was contacted and provided information.

Other Stakeholder Interviews

Some stakeholders were interviewed. Generally, these were organizations that are significant to rail in Arkansas but that did not attend one of the workshops.

Open Houses/Workshops

Five workshops and five public open houses were held. Workshops were limited to invited expert stakeholders, while open houses were for the general public. Workshops began with a presentation to describe the purpose of the Rail Plan. Attendees were then invited to discuss rail issues and opportunities in Arkansas. Individuals from 110 different organizations in Arkansas were invited to the workshops. For the open houses, information regarding the Rail Plan was made available to attendees, including display boards and a self-guided presentation. AHTD staff and members of the consultant team were available to answer questions and discuss rail topics. Table 13-2 details the workshops and public meetings held during September and October 2014. For each location an expert workshop was held in the morning, and a public open house was held in the afternoon. The North Little Rock public open house served as an open house for both the Rail Plan and the Arkansas Passenger Rail Study. Excluding AHTD and consulting team staff, 51 individuals attended the five open houses, while 33 individuals attended the five stakeholders meetings.

Table 13-2. Workshops and Public Meetings Held in September and October 2014

Date	City
Tuesday, September 23	North Little Rock
Thursday, September 25	Fort Smith
Tuesday, October 14	West Memphis
Wednesday, October 15	Monticello
Thursday, October 16	Texarkana, AR

Website

A website was developed to inform the public and stakeholders about the State Rail Plan and its content, and advise the public about developments. The website also included an online survey, a comment form, and a form whereby users could be added to an email distribution list, informing them of developments in the Arkansas State Rail Plan. The survey was developed to customize questions depending on users' interest in rail. Paper versions of the survey were also distributed at public open houses. A copy of the survey is provided as an appendix to this Plan. A total of 69 responses were received for the Arkansas State Rail Plan survey. Of these, 66 were completed online, while three were completed at the public open houses. Forty comments were received from the website's comment function.

State Rail Plan Review

The State Rail Plan will be made available for stakeholder review and comment between February 2016 and March 2016. It is anticipated that the primary vehicle for disseminating the Rail Plan will be the Rail Plan's website. All who provided input on the Plan and provided contact information, either in the form of a postal address or an email address, will be informed of the draft Rail Plan's availability.

AHTD will consider a variety of additional options to make the Rail Plan available for public review once a draft version of the Plan is released.

Interstate Coordination

The Arkansas State Rail Plan was coordinated with adjoining states, including the following:

- A representative of the Oklahoma Department of Transportation Rail Division attended the expert workshop held in Fort Smith. The Western Arkansas Railroad Reconstruction project is relevant to both Arkansas and Oklahoma, since it spans the border and impacts both states. This project would provide additional connectivity between Arkansas and Oklahoma.
- Issues regarding a third bridge across the Mississippi River in the Memphis area were discussed with representatives from the Memphis MPO, as well as a representative of the Tennessee Department of Transportation. An initiative to build a third bridge across the Mississippi River was studied in a previous report. The existing two rail bridges in the Memphis area are not rated to withstand earthquakes, and the Memphis area lies near the New Madrid fault line. This creates the risk that in case of an earthquake, all east-west rail connections across the

Mississippi River at Memphis could be severed. It is proposed that a new bridge across the Mississippi River be multimodal, carrying both highway and rail traffic. In addition, the nearest Mississippi River rail crossings are at Cape Girardeau, Missouri, 172 miles north of Memphis and at Vicksburg, Mississippi, 221 miles south of Memphis. No preferred alternative has been identified for the new bridge alignment, and advancing the project will be costly. The environmental process alone is estimated to cost around $50 million.

- The study team contacted representatives from the East Texas Corridor Council. This organization, sponsored by the East Texas Council of Government, is conducting a feasibility study investigating the possibility of passenger rail service along the I-20 corridor between the Dallas/Fort Worth area and Shreveport, Louisiana. This initiative would be relevant to the Texas Eagle service in Arkansas, since it would improve the portions of the Texas Eagle rail corridor between the Dallas/Fort Worth area and Longview, Texas. The quality of passenger rail service between Dallas/Fort Worth and Arkansas would be improved, due to improvements on the Dallas/Fort Worth to Longview segment.

Issues Raised During the Preparation of the Arkansas State Rail Plan

Below are issues raised by stakeholders during the preparation of the Arkansas State Rail Plan.

Freight Rail Issues

- Need to maintain or augment freight rail's availability to Arkansas businesses
- Should maintain existing rail system. Once lines are lost, they cannot be recovered, or recovering rail service is very expensive.
- Availability of multimodal options such as transload can serve to make rail available to more shippers and support economic development
- Need to communicate the value of freight rail service to stakeholders
- The state should address areas where there is a freight rail void
- Need for connectivity between Arkansas and neighboring states, across the river into Tennessee on the east side of the state, as well as with the Oklahoma Class I rail network
- Rail can help to amplify economic strengths of Arkansas, such as in natural resources, other modal logistics facilities such as ports, and low cost of production
- Rail can help Arkansas seize economic development opportunities
- Rail doesn't just provide transportation, but can drive economic development, help attract companies, and keep companies in Arkansas
- Need to communicate the role of short lines to stakeholders
- Need to support short lines in order to support economic development

- Rail plays an important role for the economies of rural areas, since these are often sources of raw materials, that frequently are not served by large highways, and are not as well served by cost-effective trucking services
- Rail-served industrial sites need to be documented. In general, opportunities associated with rail lines need to be better documented, including natural resources available along these lines. Stakeholders need to understand the value of these rail lines.
- The condition of rail lines in Arkansas and their ability to effectively serve customers is an issue, including load ratings of rail lines
- Local freight should not be crowded out by through freight
- Information should be made available to help stakeholders who would like to contact economic development agencies or logistics functions within Arkansas
- It would be good to have additional intermodal access available to Arkansas shippers, recognizing the "chicken and egg" issue regarding intermodal service and volumes
- Rail network capacity may be constrained in the future
- The inability to accommodate 286,000 pound railcars limits short lines in the state

Passenger Rail Issues

- Want/need passenger rail, particularly serving population centers such as Northwest Arkansas, Little Rock, Pine Bluff, and Memphis
- Importance of multiple transportation options, particularly for those who cannot drive or cannot drive long distances
- Desire for commuter rail

Community Impact Issues

- Rail operations should be consistent with adjacent land uses
- Rail should not hinder the mobility of other transportation networks, i.e. the road network at crossings
- Stress the environmental benefits of freight and passenger rail
- Rail as a reliever to highway congestion
- Concern over hazardous materials moving by rail through Arkansas
- Concern over blocked crossings, the ability of emergency vehicles to respond while blockings are crossed

Organizational Issues

- There is a need for a mode-neutral organizational structure for transportation in Arkansas, which will enable rail to receive adequate attention and funding, as well as facilitate and coordinate across modes
- Need to identify funding sources for rail, maybe an ad valorem tax, maybe granting Planning and Development Districts bonding authority for rail projects.
- Some municipalities support rail projects, but funding availability is limited, particularly for small municipalities.

Location-Specific Issues

The following specific concerns and issues were presented at the workshops:

- Build a third bridge across the Mississippi River in the Memphis area. It could potentially be multimodal and operate in two directions. Existing bridges are slow, though industry representatives did not think they were bottlenecks in the network. A study of this alternative is pending, waiting for funding. Operating passenger rail services on this bridge was considered since there are no passenger rail crossings of this River in Arkansas.
- The West Memphis MPO wants to build a turnaround to avoid trains traveling through West Memphis. The railroad company that operates this line has not expressed interest in this alternative. Grade separation of crossings on this line would cost significantly more than the proposed turnaround.
- Potential economic development surrounding the Friday Graham rail spur in West Memphis includes plans to build grain collection facilities near the Port of West Memphis, taking advantage of access provided by this rail line. This facility would collect corn from around the area, providing farmers access to wider markets from its strategic connection to various transportation modes. Additional handling facilities might also be needed.
- Discussed the opening and funding of the former Delta Southern line from McGehee to Lake Providence, Louisiana.
- The Weyerhaeuser Mountain Pine plant has closed, but a new tenant is aggressively being sought.
- Increased long distance train traffic through Texarkana, crowds out local trains.
- Around the Batesville area many economic development opportunities exist, including high silica frac sands. Chemical manufacturers have also located there because of many reasons, including the availability of brine fields for bromine production. Biodiesel producers have located there because of the nearby soybean production.
- A study about the economic impacts of the Russellville rail line highlighted its importance to the local economy. This approach could be copied elsewhere, to communicate to the public and policy makers the important economic impacts of rail.

- A local MPO is seeking funding for a container-on-barge terminal in the Fort Smith area. The city is also seeking to move the rail yard elsewhere to revitalize the downtown waterfront area.
- Stakeholders considered the restoration of Rock Island Line between Howe and Danville, connecting Class I railroads in Arkansas and Oklahoma. Mining operations could provide base traffic and a public/private partnership could provide funding to support the project. Studies have been conducted and funding is being sought.

How Issues Raised by Stakeholders Were Addressed in the Arkansas State Rail Plan

Issues raised by stakeholders are addressed in Chapters 10 through 12 of the Arkansas State Rail Plan.

Coordination between Rail Plan and Other Arkansas Planning Efforts

In 2015, AHTD initiated both the State Freight Plan and the Statewide Long Range Intermodal Transportation Plan. . The results of the Rail Plan will provide input to both of these planning efforts. This Rail Plan also considers regional plans, particularly the long-range transportation plans proposed by metropolitan planning organizations (MPO) within the state. Regional long-range plans were considered and reviewed during the preparation of this Rail Plan. Study authors met with MPO representatives at expert workshops as well as at the Arkansas Planning Conference, held in Little Rock during May 2013.

Appendix A—Minute Orders

05-17-08

ARKANSAS STATE HIGHWAY COMMISSION

MINUTE ORDER

District: Statewide

Page 1 of 1 Page

County: Statewide

Category: Miscellaneous

WHEREAS, the Arkansas State Highway and Transportation Department was designated by Arkansas Act 192 of 1977 as the State's multimodal transportation planning agency responsible for coordinating the development of statewide transportation plans that includes the Arkansas State Rail Plan and the Directory of Railroads; and

WHEREAS, the purpose of the Arkansas State Rail Plan is to satisfy Federal Railroad Administration rail planning requirements and to qualify the State's railroads for possible federal funding assistance; and

WHEREAS, the intent of the Directory of Railroads is to be a source of information which could be used for industrial recruitment and regional economic development; and

WHEREAS, significant changes have occurred to the State's rail freight transportation system since the last update to the Arkansas State Rail Plan and a new Arkansas State Rail Plan and Directory of Railroads are needed to document the changes in the State's freight railroad system.

NOW THEREFORE, the Director is authorized to initiate the preparation of a new Arkansas State Rail Plan and Directory of Railroads.

Approved:

Chairman

Vice-Chairman

Member

Member

Member

P&RSP:CM:3/20/08

Form 19-456
Rev. 11/29/2004

Submitted By:

Assistant Chief Engineer - Planning

Approved:

Director

Minute Order No. 2008 031

Date Passed MAR 5 2008

2008 031

ARKANSAS STATE HIGHWAY COMMISSION

MINUTE ORDER

District: Statewide

County: Statewide

Category: Miscellaneous

Page 1 of 1 Page

WHEREAS, the Arkansas State Highway and Transportation Department was designated by Arkansas Act 192 of 1977 as the State's multimodal transportation planning agency responsible for coordinating the development of statewide transportation plans, including the Arkansas State Rail Plan; and

WHEREAS, the purpose of the Arkansas State Rail Plan is to satisfy Federal Railroad Administration (FRA) rail planning requirements for freight and passenger rail and to qualify the State's railroads for possible federal funding assistance; and

WHEREAS, the Arkansas State Rail Plan must not only meet Federal requirements established under the Passenger Rail Investment and Improvement Act (PRIIA) of 2008, but also be based on Federal long-range rail transportation goals established in the National Rail Plan currently being developed by the FRA; and

WHEREAS, to ensure compliance with PRIIA requirements and FRA rail planning policy, a consultant is needed to supplement Department staff in preparing the Arkansas State Rail Plan; and

WHEREAS, the cost for this work was included in the State Fiscal Year 2012 State Planning and Research (SPR) Work Program and Cost Estimate that was approved by Minute Order 2011-074 on June 1, 2011.

NOW THEREFORE, the Director is authorized to engage the services of a qualified consulting firm to provide technical assistance with development of the Arkansas State Rail Plan.

Approved:

Chairman

Vice-Chairman

Member

Member

Member

P&R:SP:CM:MDW:saw:11-15-11

Form 19-456
Rev. 11/02/2005

Submitted By:

Assistant Chief Engineer - Planning

Approved:

Director

Minute Order No. 2011 173 RH

Date Passed DEC 14 2011

Appendix B—Railroad Glossary

Railroad Terminology

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

AMTRAK – the National Railroad Passenger Corporation, the nation's rail passenger service.

Automatic Block System (ABS) – a system of traffic controls where the presence of a train completes a circuit between the rails that causes the signal to indicate its presence to a following train.

Automatic Train Stop- A system on a train that will automatically stop a train if certain situations arise, such as an unresponsive train operator or a train running by a stop signal.

Ballast – material placed on the railroad roadbed for the purpose of holding the track in place.

Bill of Lading – a contact document between carrier and shipper.

Branch Line – the tracks of a railroad which extend from the principal lines of rail traffic to connect external shipping points.

Break Bulk – shipments that are neither bulk nor unitized (i.e. containers, trailers).

Bridge Terms:

- abutment – the main support at the ends of the bridge;
- deck – the driving surface of the bridge;
- foundation - the footings or pilings on which the piers and abutments are set;
- pier – the supports between spans;
- pin connection – a pin or bolt that connects the sections of a truss;
- stringers – longitudinal members going from truss member to truss member. The deck is placed on the stringers;
- span – a section of the bridge between two supports; and
- truss – the horizontal, vertical and diagonal members of a structure designed to hold large loads.

Block Signals – the traffic signals that govern the movement of trains so that a safe distance between them is maintained.

Car Mile – the movement of a rail car one mile.

Cargo – four types:

- bulk cargo – basic commodities in an unpacked condition (grains, coals, or other materials that voluminous and loose);
- general cargo – large units of semi-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; and
- 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.

Centralized Traffic Control System (CTC) – a signaling system where a dispatcher at a remote location controls signals and switches and the routing of trains.

CL – carload or container load.

Class of Track – refers to the condition of a section of track, as defined by the Federal Railroad Administration, in terms of the maximum speed at which trains may be operated safely.

Class of Track	Freight Train Operating Speed
1	0 – 10 MPH
2	11 – 25 MPH
3	26 – 40 MPH
4	41 – 60 MPH
5	61 – 80 MPH
6	81 – 110 MPH

Class of Railroad – refers to the classification of railroads by the Surface Transportation Board and is based on annual operating revenue.

Class of Railroad	Annual Operating Revenue
I	$467.0 million or more
II	$37.4 Million to less than $467.0 Million
III	Less than $37.4 million

COFC (Container on Flatcar) – an intermodal shipment that refers to the movement of a highway container on rail flatcar for the long-haul portion of the total freight trip.

Common Carrier – for hire carrier that serves the general public.

Consignee – party to whom freight is shipped.

Consignor – party by whom freight is shipped.

Container Terminal – area designated for the storage of containerized freight.

Contract Carrier – for-hire carrier that serves shippers through contract arrangements.

Demurrage – a fee levied by a shipping company when shipping equipment (railcar, container, etc.) is detained and not returned by a specified date agreed upon by contract.

Density – the amount of freight traffic moving over a segment of rail line measured in million gross ton miles per mile

Derailment – incident when one or more railcars or locomotives leave the tracks.

Direct Train Control – a traffic procedure wherein trains are operated in accordance with instructions that are received directly from a dispatcher.

Double Stack – the transport of two containers, one on top of the other, on a rail flatcar.

Drayage – pick-up or delivery by truck.

Excepted Track – a track with conditions below that allowed for Class 1 track standards. Limited operations are permitted.

FRA (Federal Railroad Administration) – a division of the U.S. Department of Transportation that is responsible for administering federal programs related to rail transportation.

Freight Forwarder – a person engaged in consolidating small shipments of goods for transport as a single shipment.

Gage – the distance between the two rails. Standard gage is 4 feet, 8 ½ inches.

Gateway – point where freight moving between territories is interchanged.

Gross Ton Mile – the movement of a ton of freight one mile, including the weight of the goods, railcars and locomotives.

Haulage Rights – permission by one railroad to another to provide for the movement of a customer's railcar in the grantor's train, usually for a fee.

Hazardous Material – substances that the U.S. Secretary of Transportation has determined are capable of posing an unreasonable risk to human health, safety and property when transported in commerce.

Interchange – the physical point where two or more railroads connect for the purpose of exchanging freight traffic.

Interlocking – an arrangement of switch, lock and signal devices located where railroad tracks cross, join or separate for the purpose of preventing conflicting movements.

Intermodal – commonly refers to the use of two or more modes of transportation to complete the movement of a shipment of freight from origin to destination. Within the context of this Plan, "intermodal" refers specifically to the movement of containers or trailers by multiple modes.

Intermodal Facility – a site consisting of tracks, lifting equipment and a control point for the receiving and dispatching of trailers and containers such as between rail and highway or between rail and marine modes of transportation.

Intermodal Transfer – commonly refers to transfer of commodities between two modes. For the purposes of this Plan, refers to the transfer of containers and trailers between truck and rail.

Interstate Shipment – freight traffic that originates in one state and terminates in another state.

Intrastate Shipment – freight traffic that originates and terminates in the same state.

LCL – a shipment of less than rail carload volume.

Line haul Railroad – a railroad principally involved in the movement of freight from one city to another.

Main Line –a line over which through trains pass with relatively high frequency.

Manifest Train- A freight train of mixed car types and cargoes.

Merger – the union of two or more railroads through the acquisition of assets of the other(s).

Net Ton-Mile – the movement of a ton of freight one mile.

Operation Lifesaver – a public education and information program designed to reduce collisions, deaths and injuries at rail/highway crossings.

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

Piggyback – shipment of truck trailer on rail flatcar; also called TOFC (trailer on flatcar).

Positive Train Control – a system of monitoring and controlling train movement to provide increased safety

Railcar – eight types:

- box car – closed railcar;
- compartmentalize car – box car equipped with moveable 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;
- flatcar – car without sides, top or ends, used for shipping 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; and
- multilevel flat – a flatcar with a superstructure supporting two decks above the deck of the car. Used for transporting motor vehicles.

Rail/Highway Grade Crossing – a location either at-grade or grade separated where one or more railroad tracks intersect a public or private highway, road or street.

Rail Weight – the weight of rail measured in pounds per yard.

RCR (Railroad Cost Recovery Index) – a measure of railroad inflation indicating the change in the price levels of inputs to railroad operations including wages, fuel, materials and supplies, and other expenses.

Route Miles – the length of a route, regardless of the number of parallel tracks.

Short-line Railroad – a railroad company which is typically less than 100 miles in length. The term is also used to describe the operation of Class III Railroads.

Side Track – rail track used for storage, loading or unloading which connect with other railroad tracks.

Spur Track – rail track extending from and connected at only one end with another track.

STB (Surface Transportation Board) – the federal agency charged with enforcing acts of Congress affecting rail traffic.

STRACNET (Strategic Rail Corridor Network) – an interconnected network of rail corridors important to national defense.

Switching or Terminal Railroad – a railroad involved in the shifting of railcars between two points for an industry, a group of industries or other customers.

Team Track – rail tracks on which railcars are placed for the use of the public in loading and unloading freight.

Transload – transfer of freight between truck and rail, not in containers or trailers.

TEU (Twenty Foot Equivalent Unit) – a TEU is equivalent to a 20-foot container.

Through Traffic – railroad traffic that originates and terminates on other railroads or outside of the state. Also known as overhead or bridge traffic.

TOFC – trailer on rail flatcar (also called piggyback service).

Track Miles – the collective length of all the tracks on a route or routes.

Trackage Rights – rights granted by one railroad to another to operate on the former usually with the tenant's crew and locomotive and usually without rights to serve customers along the line.

Tramp Loading Site – loading site that allows for transfers of bulk commodities and containers between trucks and trains.

Transit Time – total time that elapses from pickup to delivery of a shipment.

Transload – the temporary storage of a product which is transferred to or from a railcar for shipment.

Turnout – a track structure used to divert railcars and locomotives from one track to another.

Unit Train – a train consisting of one commodity (coal to a power plant) or of container/trailers.

Warehouse – a building in which goods may be stored over a period of time as necessary to make further distribution.

Warning Devices – signs, signals, markings and other devices placed along highways at the approach to an at-grade rail/highway crossing and used to direct vehicle operators and pedestrians for rail line crossing safety.

Weight Limit – the maximum gross weight per four-axle railcar that can be handled over a rail line. Includes the weight of equipment and goods.

Yard – trackage within a specified area used for storing railcars or for making up trains.

Appendix C—Process to Establish a New Railroad in Arkansas

New Railroad Company

A corporation must be established in order to provide rail transportation service in the State of Arkansas. Provided below are the steps in forming a new railroad company.

Statutory Policy

The policy for establishing a railroad company as a corporation are outlined in the *Railroad Incorporation Act, Act 30 of 1950, Arkansas Code 23-11-201* and supporting sections.

- An article of incorporation with an application must be filed with the Arkansas Highway Commission. The application should include:
  - ✓ Name, purpose and intended duration of the corporation;
  - ✓ Name and address of resident agent, number of stock shares issued, classes of stock, par value, etc.;
  - ✓ Information on the amount of stock shares, class of stock shares subscribed by each incorporator;
  - ✓ The amount of startup capital;
  - ✓ A sworn statement explaining how the railroad company will benefit the community; and
  - ✓ A survey of the railroad alignment and right-of-way to include names of all cities and counties to be served.
- The Arkansas Highway Commission reviews the application at a hearing and issues a finding.
- The finding order issued by the Arkansas Highway Commission and articles of incorporation are filed with the Arkansas Secretary of State's office.
- The Arkansas Secretary of State issues to the Railroad Company a charter granting incorporation.
- The articles of incorporation, the railroad charter from the Secretary of State and the Arkansas Highway Commission finding order are filed in the county clerk's office where the railroad company will maintain their records on railroad operations.
- All of the above are submitted to the U.S. Surface Transportation Board for their review and approval.

Appendix D—Outreach Survey

Findings of Survey

A survey was used to elicit comments and feedback from interested members of the public. Of the 69 people that completed the survey, around 72 percent indicated they were primarily concerned with passenger rail, 13 percent with at-grade crossings and other community impacts, 6 percent with freight, and the rest with a variety of other issues. Survey respondents came from all corners of the state, and over 42 percent identified as female. The age distribution of respondents was: 3 percent from the 18-25 bracket, 50 percent from the 26-50 bracket, 29 percent from the 51-65 bracket, and 18 percent from the 66 and over bracket. The Survey gave the option for people to self-identify. Many staff from local governments completed the survey (including 3 mayors), and several small business owners participated as well. However, the majority of respondents did not provide any identifying information.

In contrast to the stakeholder comments from the previous section, which related mostly to freight issues, public comments focused overwhelmingly on passenger rail issues and opportunities. However, the survey contained an equal amount of questions about passenger rail and freight rail, which led several of the freight questions to receive few comments. Fortunately, freight issues had already been discussed extensively in the stakeholder outreach.

Statewide Comments and Issues

Many respondents emphasized the numerous benefits of rail system development, including: reducing car congestion, pollution, road deterioration, vehicle accidents, and greenhouse gas emissions. They pointed out that passenger rail provides alternatives to driving and freight rail removes 'unsustainable' trucks from the roads. It was clear that the majority of respondents were very interested in seeing railroads succeed in Arkansas, and were appreciative of the state's efforts to improve rail transportation.

The following is a list of comments and suggestions that were provided in the public survey in the spirit of helping the state achieve this goal.

Mitigation of Impacts to Local Communities

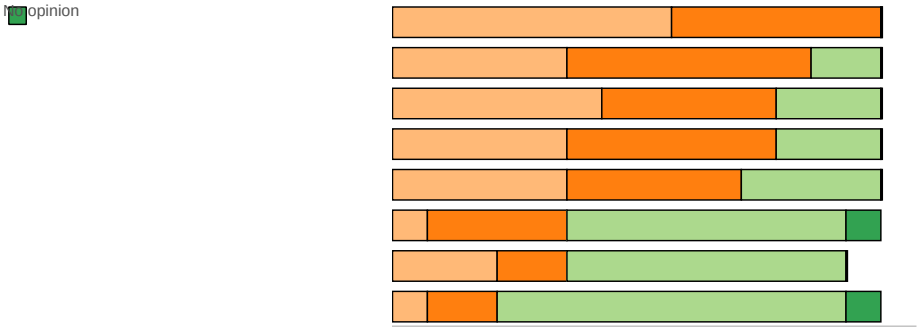
Many respondents were concerned about the duration and frequency of at-grade railroad crossings in their communities. One remarked that many trains appear to take longer than the 15 minutes allowed, and that train conductors often seem indifferent towards waiting vehicles. In Figure 1 it can be seen that everyone that responded to this question ranked the safety of at-grade crossing as their top rail concern. However, in a separate question, 80 percent of respondents indicated that that they "agree" or "strongly agree" that railroad crossings are safe in their area. This suggests that the survey takers cared a lot about the safety of these crossings, but at the same time believed that enough steps are being taken to reduce these safety risks. This is an area that railroad companies and the state should continue to emphasize to ensure public safety.

Overall, railroads were viewed as being safe. Around 88 percent of respondents "agreed" or "strongly agreed" that railroads were safe in their area. From the survey it became apparent that safety is an issue that the public cares deeply about. Three out of the top five concerns in Figure 1

related to safety. Questions relating to safety also received, by a large margin, the highest response rates in the survey.

Another community impact brought up by a couple of respondents related to their cities being "split in half" by railroad tracks. This was amplified by the high density of at-grade crossings and more frequent trains. Moreover, the payloads that trains carry were often viewed as dangerous. The passage of hazardous materials through communities was viewed as the third most worrisome concern. Dust from passing coal trains was less of a concern. One respondent commented that building pipeline infrastructure might reduce shipping oil by train, which he viewed as very risky.

Figure 1. Ranking of Community Impacts from Rail



Finally, a few respondents commented on how noise from trains and rail-yards bothered them; however from Figure 1 it is clear that the majority of people that responded to this question did not find this to be a main concern.

The results shown in Figure 1 should be interpreted with caution because of the relatively small proportion of survey takers that answered this question. However, not answering this question can be interpreted as a sign that neither of these concerns was particularly important.

Improvement of Passenger Rail

The overwhelming majority of survey respondents were eager to improve and expand passenger rail service in the state. However, as shown in Figure 2, most people indicated that the state should prioritize building new commuter and intercity services over improving existing ones. Follow-up questions asked respondents to identify particular segments and corridors that should be added. The suggestions included:

- The top responses consisted of adding new passenger lines between Memphis and Little Rock, and Fort Smith and Little Rock. The third response was adding a new passenger line along I-540 between Fort Smith and Bentonville. On the other hand, creating new train service between Jonesboro and Memphis and Little Rock and Pine Bluff was not seen as a priority. Figure 3 shows the results of ranking potential new services.
- In other sections of the survey, people indicated that passenger rail should be studied in the following corridors: the Delta region; between Hot Springs and Little Rock (tourist route with many commuters living along it); between northwest Arkansas and Little Rock, connecting Ft.

Smith; between Memphis TN and Oklahoma City through Arkansas (better connect the three states); between Jonesboro and Memphis; and commuter rail in Little Rock.

- Table 1 shows the cities that survey respondents thought should be prioritized to receive commuter rail service.
- Overall, people indicated that new passenger service should be established along strategic corridors to anticipate future population growth. One suggestion was to prioritize college towns and other communities that have much lower access to personal vehicles.

Figure 2. Ranking of Passenger Rail Priorities

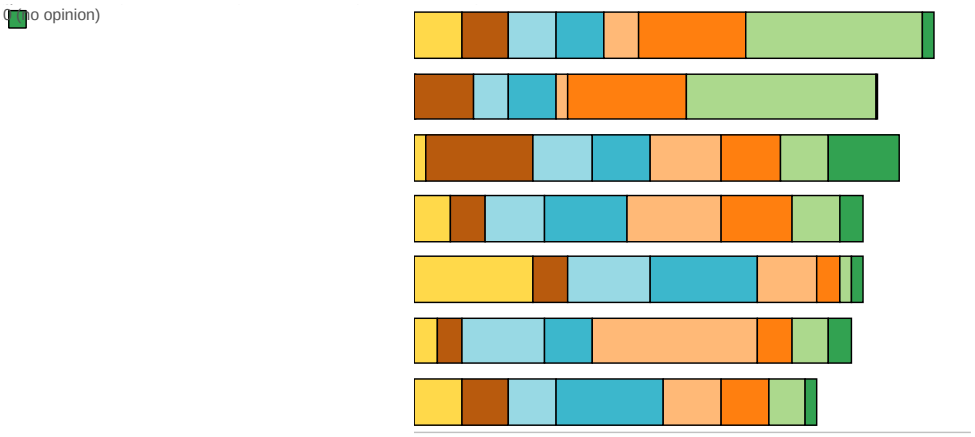


Figure 3. Ranking of Potential and Existing Passenger Rail Corridors

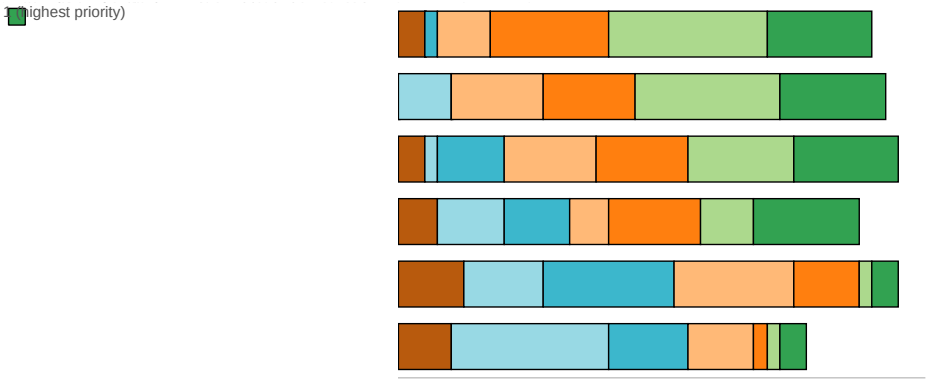


Table 1. Prioritization of Commuter Rail Service by City

City	Percentage Top Priority
Little Rock-North Little Rock-Conway	37.5%
Fayetteville Springdale-Rogers, Arkansas/Missouri	20.0%
Hot Springs	20.0%
Fort Smith, Arkansas/Oklahoma	5.0%
Texarkana Arkansas/Texas	2.5%
Jonesboro	2.5%

Pine Bluff	2.5%
Memphis-West Memphis Tennessee/Arkansas	2.5%

Making improvements to existing service ranked second to expanding service. However, respondents offered some suggestions for how to make existing trains run more efficiently and increase ridership. A couple of survey takers noted that Amtrak service is currently not competitive with other modes, and needs to be improved before service expansions are considered. Some of the suggestions included the following:

- Giving passenger trains higher priority than freight trains to improve reliability.
- Improving "last-mile" transit connections at Amtrak stations. One suggestion included the possibility of locating car rental businesses next to the Amtrak stations.
- Improving the comfort and safety of Amtrak stations, especially in Little Rock. This resonates with the findings in Figure 2, which show that over half of the people thought that improving Amtrak stations should be at least within the top four priorities in passenger rail in the state.

Funding Rail

After stating their needs and wants, respondents were asked about how they would fund the improvements they suggested. Foremost, 81 percent of respondents indicated that the state of Arkansas should fund additional passenger rail service, while only 49 percent thought the state should fund improvements to existing service. This finding parallels the results of the previous section. Respondents were then asked to provide ideas for how the state could funds these services. Some of the most frequent responses were:

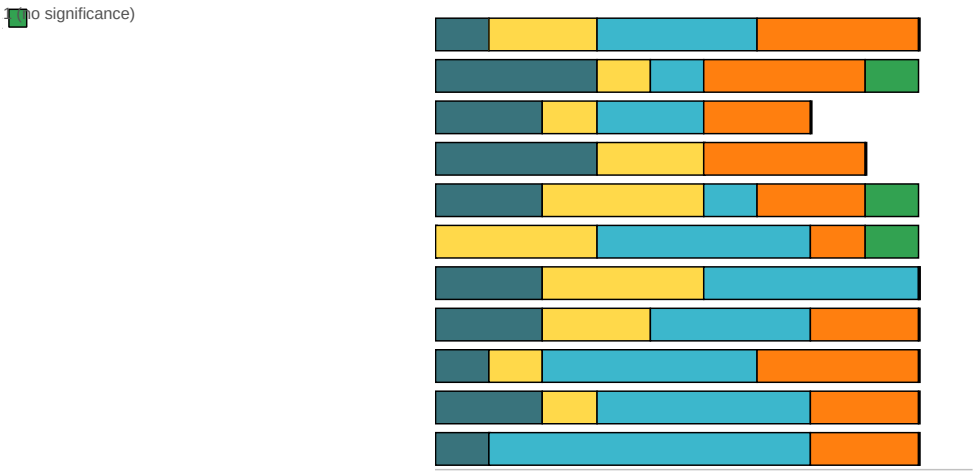
- Additional taxes on gasoline, diesel (for locomotives and trucks), vices (e.g. cigarettes and alcohol), truck highway use, and freight trains. These were by far the most frequent responses. Surprisingly, cigarette taxation was mentioned almost as often as gasoline taxation. A common thread was the desire to tax activities that are undesirable.
- There was also agreement that some of these expenses could be paid for by reducing "waste" and making the government operate more efficiently—making better use of existing tax-payer dollars.
- A smaller set of respondents indicated that investments in passenger rail should be funded through taxes on ticket prices. In other words, passenger rail should pay for itself.
- And finally, a few respondents proposed other ideas, such as: using Public Private Partnerships to elicit private capital, requesting additional federal funds, and introducing a sales tax (suggested at 0.25 cents per dollar).

From Figure 4 it is clear that respondents were concerned about the safety and quality of at-grade crossings. Currently most improvements at crossings are financed by the railroad companies, but there also exists a dedicated program in the state to help finance the more critical ones. Around 58 percent of survey takers agreed that this program should be continued.

Freight and Economic Development

About eight or nine of the survey takers were interested in freight transportation issues and responded with related questions. While this figure is small, the responses provide interesting insights. Figure 4 shows how respondents ranked a variety of freight issues. The responses were very varied, with people caring about all the issues to one degree or another. The issues that got the highest attention were the availability of rail served industrial locations for new shippers, availability of truck-rail intermodal terminals, and availability of marine-rail intermodal connections. In particular, the issue relating to the availability of locations that are served by rail was brought up multiple times throughout many parts of the survey. This resonates with the comments received in the stakeholder workshops, who also agreed this was a critical issue in the state.

Figure 4. Ranking of Rail Issues



According to state forecasts, the demand for moving freight on rail in Arkansas is expected to increase. Survey takers shared in this assessment, with all of them stating that they expect the demand to continue to increase. To meet this growth, respondents indicated that there are infrastructure needs in building new intermodal ramps, transload facilities, and industrial parks with rail access. Intermodal traffic along I-40 between Little Rock and Memphis appears to be congested. In the comments section, it was suggested that reopening rail connections to South Sebastian County would facilitate the extraction of metallurgical coal from the Arkoma Basin, revitalizing the local economy and providing well-paying jobs.

Location Specific Comments and Issues

Table 2: Location Specific Comments from Public Survey

Locations	Concerns
Cherokee St., Morrilton, Conway Co.	Low underpass
Chestnut St., Rogers, Benton Co.	No traffic control arms
Morrill, Morrilton, Conway Co.	No traffic control arms
Highway 62 in Corning, Clay Co.	Rough crossing
All crossings, Corning, Clay Co.	No warning signals/gates
State Ar. Highway 11 crossing, Higginson, White Co.	Blocked at numerous times. Blocking Emergency vehicles
Walker St. Crossing, Higginson, White Co.	Blocked at numerous times. Blocking Emergency vehicles
Second and Porter, Stuttgart, Arkansas Co.	No crossing arms
Donaghey-Tyler intersection in Conway, Faulkner Co.	Difficult crossing angle makes it hard to safely cross
Arkansas Highway 264 near N Oak St. in Bethel Heights, Benton Co.	Issues with intersections too close to the tracks; very hard to see at night
Arkansas Highway 94 (N 2nd St) near W Easy St in Rogers, Benton Co.	Issues with intersections too close to the tracks; very hard to see at night
US 62 near Bekaert Drive in Rogers, Washington Co.	US 62 is a heavily traveled roadway. Trains often come through there. An underpass/ overpass should be considered.

State Rail Plan Survey

Company/Organization name (optional):

_____

Survey contact person's name/position (optional)

_____

Home city/county: _____

Place of work city/county: _____

Would you like to be on a mailing list to receive study updates? If so, please provide your email address.

_____

_____

Gender

- ☐ Male
- ☐ Female

Age range

- ☐ Under 18
- ☐ 18-25
- ☐ 26-50
- ☐ 51-65
- ☐ 66 and over

Railroads in my area are safe.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

Railroad crossings in my area are safe.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

How would you describe your interest in rail in Arkansas? (check as many as apply)

- ☐ Interested in freight rail (Skip to Page 3)
- ☐ Currently ship product(s) by rail (Skip to Page 7)
- ☐ Interested in passenger rail (Skip to Page 9)
- ☐ Concerned about highway/rail at-grade crossings and other issues regarding trains in my community (Skip to Page 13)
- ☐ Other (Please specify below)

Freight Rail

In the future, do you expect that the volume of goods shipped by rail in Arkansas to: (check one)

- ☐ Increase
- ☐ Decrease
- ☐ Stay the same

Why?

If you currently work for a company that purchases freight transportation, would you consider freight rail a reliable source of transporting goods for your company?

- ☐ Yes
- ☐ No

Why or why not?

- ☐ Lower transportation costs
- ☐ Ability to ship in large quantities
- ☐ Adequate on-time performance
- ☐ More environmentally-friendly option than others
- ☐ It is not a good option, or I do not use it because:

Some states fund freight rail infrastructure projects through grants or low interest loans. The State of Arkansas does not currently have any programs to fund railroad infrastructure improvements. The following is a list of possible state-funded rail programs that could be created. Please rate how you think each program would benefit Arkansas.

	Strongly Agree it would benefit Arkansas	**Agree it would benefit Arkansas**	**Disagree it would benefit Arkansas**	**Strongly Disagree it would benefit Arkansas**	**No Opinion**
A rehabilitation program where public and private entities can apply for assistance to rehabilitate rail lines.					
An industrial access program to provide assistance to improve or construct new rail connections to industrial or commercial sites.					
Rail line acquisition or assistance program for the acquisition of rail lines to prevent service ending or to preserve the line or right of way for future rail development.					
Program to pay for highway/rail at-grade crossing maintenance, so rail carriers can spend capital funds on other projects.					
Other					

The following is a list of potential rail issues. On a scale of 1-5 (with 1 being not significant to 5 being very significant), how significant are these issues in the State of Arkansas? A comment box is provided if you'd like to share any thoughts about your rankings.

	1 (not significant)	2	3	4	5 (very significant)	Comments
Condition of rail lines in the state						
Abandonments/shrinkage of the rail network						
Mainline capacity/rail bottlenecks						
Competition, competitive access impacting rates and service for shipping freight						
Weight restrictions on rail lines (e.g. rail lines unable to accommodate 286,000 pound railcars)						
Height or width restrictions on rail lines (e.g. rail lines unable to accommodate double stack intermodal, automobile carrier, or hi cube boxcars)						
Availability of rail-served industrial locations for new shippers						
Availability of truck/rail intermodal container terminals						
Availability of other truck/rail multimodal connections, such as transload						
Availability of maritime/rail multimodal connections						
Connectivity between two or more rail lines						
Other _____						

Comments

_____

_____

For the issues identified above, are there any particular locations, areas of opportunities or areas of concern?

_____

_____

Could the State benefit from any of the following additional facilities? Please select all that apply.

- ☐ Additional containerized intermodal ramps
- ☐ Additional rail-served river port facilities
- ☐ Additional truck/rail transload facilities
- ☐ Improve rail access to industrial parks with existing rail access
- ☐ Other _____

What types of multimodal or intermodal facilities and locations would benefit Arkansas shippers?

_____

_____

Do you have any additional questions or comments regarding freight rail issues and opportunities?

_____

_____

Ship Product(s) by Rail

Are you currently using rail for inbound or outbound shipping? (Check as many as apply)

Inbound _____ Outbound _____

What commodities do you ship outbound by rail?

Commodity #1: _____

Commodity #2: _____

Commodity #3: _____

What commodities do you receive by rail?

Commodity #1: _____

Commodity #2: _____

Commodity #3: _____

What type of rail service do you currently use? (Check as many as apply)

- ☐ Carload (manifest)
- ☐ Unit train
- ☐ Intermodal

In the future, do you expect your usage of rail to:

- ☐ Increase
- ☐ Decrease
- ☐ Stay the same

Why? _____

What would encourage you to increase your rail usage?

_____

_____

How would you rank the rail service you receive based on the following performance factors? A comment box is provided if you'd like to share thoughts about any of your rankings.

1. Cost (rates) Poor…….Fair…….Good……Excellent
2. Service reliability Poor…….Fair…….Good……Excellent
3. Service Speed (i.e. cycle time) Poor…….Fair…….Good……Excellent
4. Loss and damage Poor…….Fair…….Good……Excellent
5. Equipment availability Poor…….Fair…….Good……Excellent
6. Service flexibility Poor…….Fair…….Good……Excellent
7. Other: Poor…….Fair…….Good……Excellent

Comments:

Do you have any additional comments or questions regarding your rail service?

Passenger Rail

How would you rank the following priorities for passenger rail in Arkansas? (1 = highest rank, 7 = lowest rank, 0 = no opinion)

Corridor	Rank: 1=highest rank, 7=lowest rank, 0=no opinion
Improve scheduling of Amtrak Texas Eagle service, so that trains pass through Arkansas at more convenient times	1...2...3...4...5...6...7....0
Increase frequency of Amtrak Texas Eagle service	1...2...3...4...5...6...7....0
Improve speed of Amtrak Texas Eagle service so that travel time is more competitive with bus or automobile travel	1...2...3...4...5...6...7....0
Improve reliability of Amtrak Texas Eagle service	1...2...3...4...5...6...7....0
Improve existing Amtrak stations in the state	1...2...3...4...5...6...7....0
Provide intercity passenger rail service to other population centers in Arkansas beyond the current Amtrak Texas Eagle route	1...2...3...4...5...6...7....0
Reduce congestion and provide transportation alternatives by making commuter rail service available in one or more of Arkansas' larger cities	1...2...3...4...5...6...7....0

The State of Arkansas currently does not fund intercity passenger rail. The Amtrak Texas Eagle service is funded through ticket revenues and by the Federal government. The railroad tracks on which the service is provided are owned and maintained by the Union Pacific Railroad. Should the State of Arkansas pay for capital improvements on the Union Pacific Railroad lines to improve the speed and reliability of the Texas Eagle service? Yes__ No __. If "Yes," how should this be funded?

_____

Current Federal regulations would require Arkansas to pay the operating and allocated capital expenses for any new intercity passenger rail services in the state beyond the existing Texas Eagle service. Should the State fund additional intercity passenger rail services? Yes__ No__. If "yes," how should this be funded? _____

If the State of Arkansas were to fund new Amtrak intercity rail services, which corridors should have the highest priority? Please rank the following corridors from 1 through 7 with 1 being the highest priority and 7 being the lowest priority.

Corridor	1 (highest priority), 7 (lower priority), 0=no opinion
New trains on existing Amtrak Texas Eagle route roughly paralleling I-30/U.S. 67 between Texarkana, Little Rock, Walnut Ridge, paralleling I-55 north of Arkansas	1...2...3...4...5...6...7...0
New train service between Little Rock and Memphis	1...2...3...4...5...6...7....0
New train service between Little Rock and Fort Smith	1...2...3...4...5...6...7....0
New train service on the I-540 corridor between Fort Smith and Bentonville	1...2...3...4...5...6...7....0
New train service on the I-530 corridor between Little Rock and Pine Bluff	1...2...3...4...5...6...7....0
New train service on the I-55/U.S. 63 corridor between Jonesboro and Memphis	1...2...3...4...5...6...7...0
Other _____	1...2...3...4...5...6...7...0

Commuter rail refers to passenger trains operated on mixed use rail corridors to carry riders to and from work in city centers. Commuter rail lines normally extend 10 to 50 miles from their downtown terminus. If commuter rail service were established in Arkansas, which area do you think should receive the highest priority for commuter rail service? Please choose one.

Little Rock-North Little Rock-Conway

Fayetteville Springdale-Rogers, Arkansas/Missouri

Fort Smith, Arkansas/Oklahoma

Texarkana Arkansas/Texas

Jonesboro

Pine Bluff

Hot Springs

Other _____

Do you have any additional comments or questions regarding passenger rail?

_____

_____

Highway Crossing

Please indicate your level of concern in regards to the following issues. A comment box is provided if you'd like to share any thoughts about your ranking.

Issue	Very concerned	Somewhat concerned	Not concerned	No opinion	Comments
Safety of highway/rail at-grade crossings					
Trains blocking intersections at highway/rail at-grade crossings					
Poor surface at highway/rail at-grade crossings, or surface elevated so that some vehicles "bottom out"					
Safety of rail right of way, risk that trespassers could be struck by trains					
Noise from train horns					
Noise from train operations, such as rail yards, passing trains					
Coal dust from passing trains					
Hazardous materials passing through my community					
Other					

Are there any particular locations that are of concern?

Location(s) _____ Concern(s) _____

The State of Arkansas currently administers a Federal program that enables the state to add or upgrade warning signals/gates for about 12 highway/rail at-grade crossings in Arkansas per year. Some states provide funding for highway/rail at-grade crossing improvements beyond the Federal program. Should the State of Arkansas maintain a dedicated funding program for upgrading highway/rail at-grade crossing improvements? Yes__ No __. If "yes" how should this be funded?_____

Do you have any additional comments or questions regarding rail safety and community impacts?

_____

_____

Thank you for completing the survey. The survey results will be included in the Arkansas State Rail Plan.

Arkansas State Highway and Transportation Department
Transportation Planning and Policy Division

2015

Arkansas State Rail Plan

Executive Summary

Arkansas State Highway and Transportation Department
Transportation Planning and Policy Division

August 2016

Arkansas State Rail Plan

Executive Summary

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
NOTICE OF NONDISCRIMINATION

The Arkansas State Highway and Transportation Department (Department) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, the Department does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier Safety Administration Title VI Program), disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the Department's programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden Section Head - EEO/DBE (ADA/504/Title VI Coordinator), P. 0. Box 2261, Little Rock, AR 72203, (501)569-2298, (Voice/TTY 711), or the following email address: joanna.mcfadden@ahtd.ar.gov Free language assistance for Limited English Proficient individuals is available upon request. This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape and in Braille.

Contents

Purpose of the Arkansas State Rail Plan 1
Arkansas Rail System 1
Railroad Funding in Arkansas 5
Rail Issues and Opportunities/ Initiatives 6
Summary 16

Figures

Figure ES–1. Arkansas Freight Rail System 2
Figure ES–2: Summary of Freight Originating and Terminating in Arkansas by Commodity Tonnage 3
Figure ES–3. Texas Eagle Route through Arkansas 4
Figure ES–4. South Central High-Speed Rail Corridor 7
Figure ES–5. Weight Restrictions on Arkansas Rail Corridors 12
Figure ES–6. Funded Arkansas Rail Projects with Public Investment 14
Figure ES–7. Unfunded Arkansas Rail Needs 15

Abbreviations

AASHTO ..... American Association of State Highway and Transportation Officials
AAR ..... Association of American Railroads
AEDC ..... Arkansas Economic Development Commission
AHTD ..... Arkansas State Highway and Transportation Department
AKMD ..... Arkansas Midland Railroad
ALM ..... Arkansas Louisiana & Mississippi Railroad
AM..... Arkansas & Missouri Railroad
ARS ..... Arkansas Southern Railroad
ASR ..... Arkansas Short Line Railroads, Inc.
ASLRRA ..... American Short Line and Regional Railroad Association
AVO ..... Average Vehicle Occupancy
AWC ..... Arkansas Waterways Commission
BCG ..... Boston Consulting Group
BNSF ..... BNSF Railway
BTU..... British Thermal Unit
BXN ..... Bauxite & Northern Railroad
C&S..... Camden & Southern Railroad
CTC ..... Centralized Traffic Control
CAIDC ..... Camden Area Industrial Development Corporation
COFC..... Container-on-Flatcar
DoD ..... U.S. Department of Defense
DQE ..... DeQueen & Eastern Railroad
DR..... Dardanelle & Russellville Railroad
DVS..... Delta Valley & Southern Railway
EACH ..... East Camden & Highland Railroad
EDW ..... El Dorado & Wesson Railway
EIA ..... U.S. Energy Information Administration
FAF ..... Freight Analysis Framework
FAF3 ..... Freight Analysis Framework-3
FAK ..... Freight-All-Kinds
FGRS ..... Friday-Graham Rail Spur
FHWA ..... Federal Highway Administration
FP .....Fordyce & Princeton Railroad
FRA.....Federal Railroad Administration
FSR .....Fort Smith Railroad
HSIPR .....High-Speed Intercity Passenger Rail
HSR.....High-Speed Rail
IRPLP .....International Rail Port Logistics Park Project
ITTS .....Institute for Trade and Transportation Studies
KCS .....Kansas City Southern Railway
KRR.....Kiamichi Railroad
LNW .....Louisiana & North West Railroad
LRPA.....Little Rock Port Authority Railroad
LRWN .....Little Rock & Western Railway
LOS.....Level of Service
M&LR .....Memphis & Little Rock Railroad
MNA.....Missouri & Northern Arkansas Railroad
MPO.....Metropolitan Planning Organizations
MPP .....Multimodal and Project Planning Section
NAAQS .....National Ambient Air Quality Standards
NEARIFA.....Northeast Arkansas Regional Intermodal Facilities Authority
NHPN .....National Highway Planning Network
NLA .....North Louisiana & Arkansas Railroad
OUCH .....Ouachita Railroad
PNW.....Prescott & Northwestern Railroad
PIP.....Performance Improvement Plan
PRIIA .....Passenger Rail Investment and Improvement Act
PTC.....Positive Train Control
RITA.....Regional Intermodal Transportation Authority of Western Arkansas
RRIF.....Railroad Rehabilitation and Improvement Financing Program

RSIA ..... Rail Safety Improvement Act
SAEDD ..... Southeast Arkansas Economic Development District
SCHSRC..... South Central High-Speed Rail Corridor
SCORT..... Standing Committee on Rail Transportation
STB ..... Surface Transportation Board
STRACNET ... Strategic Rail Corridor Network
TC ..... Transport Canada
TIFIA ..... Transportation Infrastructure Finance and Innovation Act
TIGER..... Transportation Investment Generating Economic Recovery
TIH ..... Toxic Inhalation Hazards
TIP ..... Transportation Improvement Program
TOE ..... Texas, Oklahoma & Eastern Railroad
TPP ..... Transportation Planning and Policy Division
TSA ..... Transportation Security Administration
UP..... Union Pacific Railroad
USDOT..... U.S. Department of Transportation
VMT..... Vehicle Miles Traveled
WSR..... Warren & Saline River Railroad

Executive Summary

Purpose of the Arkansas State Rail Plan

Arkansas Act 192 of 1977 designated the Arkansas Highway and Transportation Department (Department) to serve as the State's multimodal transportation planning agency responsible for coordinating the development of statewide transportation plans, including the Arkansas State Rail Plan. In 2008, the United States Congress passed the Passenger Rail Investment and Improvement Act (PRIIA), which requires each state to have an approved rail plan as a condition of receiving future federal rail funding for either passenger or freight improvements.

In 2011, the Arkansas Highway Commission authorized the Department to initiate the update of the 2002 Arkansas State Rail Plan through Minute Order 2011-173. This Plan has been prepared to conform to the requirements of PRIIA. It has also been prepared to reflect changes that have occurred to the Arkansas rail network since the last state rail plan in 2002.

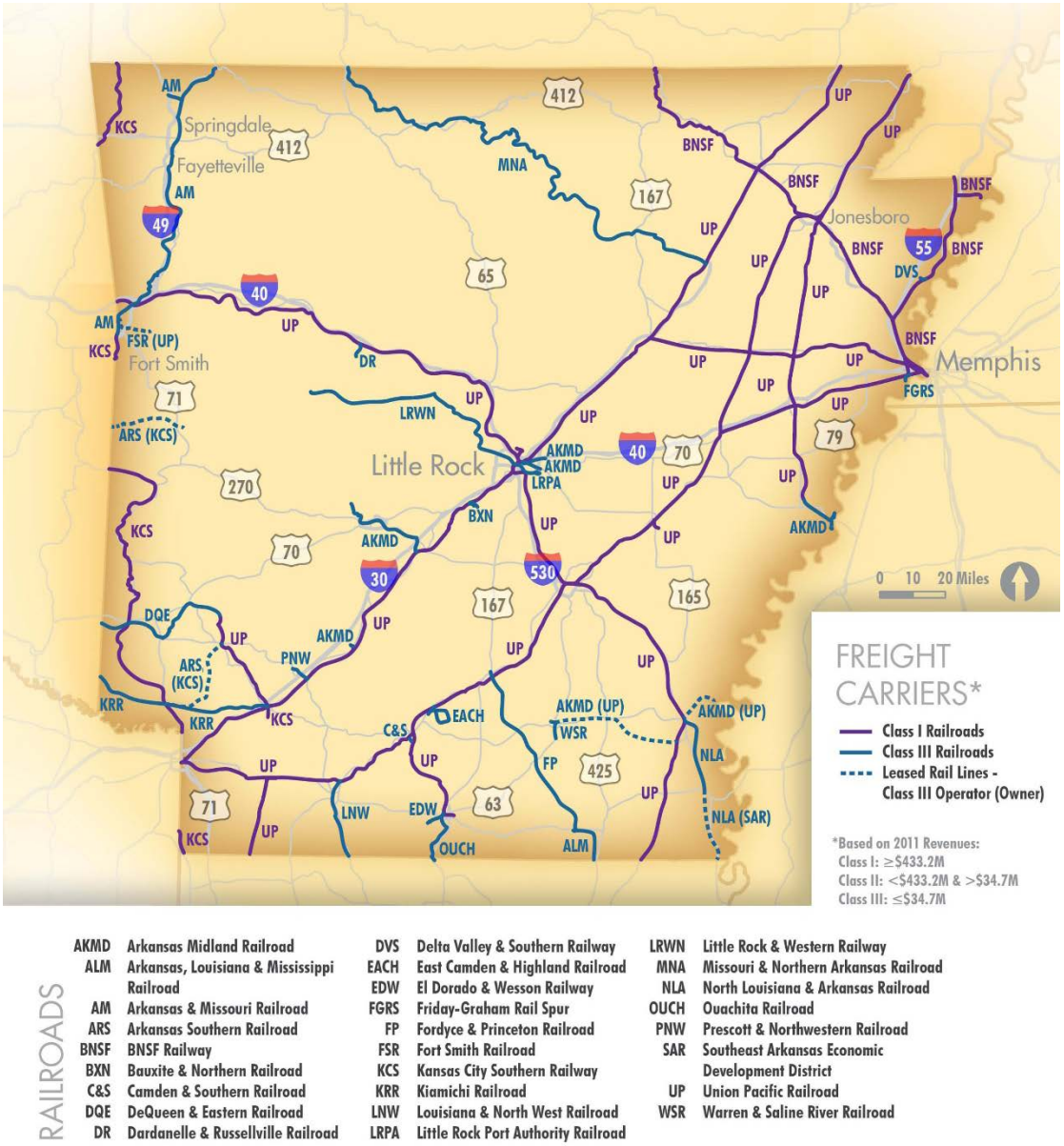
The Plan focuses on freight rail, intercity passenger rail, and commuter rail. Freight rail focuses on the movement of goods. "Intercity passenger rail" refers to passenger rail transportation between metropolitan areas. "Commuter rail" refers to passenger rail transportation in a metropolitan area, between a central city and its suburbs, with morning and evening peak period operations and running on a railroad right of way. "Commuter rail" is usually considered mass transit service.

Arkansas Rail System

Arkansas has 2,662 miles of active rail lines, predominantly owned by private companies. The few exceptions are several industrial spurs that are owned by port authorities or municipalities, as well as a segment of rail line owned by the Southeast Arkansas Economic Development District (SEAEDD). Rail lines in Arkansas are primarily used for hauling freight. There are no dedicated passenger rail corridors within Arkansas. The single passenger rail service that operates within Arkansas, the Amtrak Texas Eagle Service, operates over rail lines owned by a freight railroad company, the Union Pacific Railroad.

There are three classifications of railroads: Class I, II, and III. Per definition by the United States Surface Transportation Board (STB), Class III or short line railroads are those with annual operating revenues of $37.4 million or less. Railroads with revenues between $37.4 and $467.0 million are classified as Class II railroads and are considered regional operators. Class I railroads are those with revenues of $467.0 million or more. Currently, no Class II railroads operate in Arkansas. Short line railroads usually play a gathering role in the freight rail system. They originate and terminate individual or groups of railcars and then make railcars available to Class I rail carriers. The Class I carriers then provide long-distance transportation, carrying cars between regional markets across North America.

Figure ES–1. Arkansas Freight Rail System



RAILROADS

AKMD	Arkansas Midland Railroad	DVS	Delta Valley & Southern Railway	LRWN	Little Rock & Western Railway
ALM	Arkansas, Louisiana & Mississippi Railroad	EACH	East Camden & Highland Railroad	MNA	Missouri & Northern Arkansas Railroad
AM	Arkansas & Missouri Railroad	EDW	El Dorado & Wesson Railway	NLA	North Louisiana & Arkansas Railroad
ARS	Arkansas Southern Railroad	FGRS	Friday-Graham Rail Spur	OUCH	Ouachita Railroad
BNSF	BNSF Railway	FP	Fordyce & Princeton Railroad	PNW	Prescott & Northwestern Railroad
BXN	Bauxite & Northern Railroad	FSR	Fort Smith Railroad	SAR	Southeast Arkansas Economic Development District
C&S	Camden & Southern Railroad	KCS	Kansas City Southern Railway	UP	Union Pacific Railroad
DQE	DeQueen & Eastern Railroad	KRR	Kiamichi Railroad	WSR	Warren & Saline River Railroad
DR	Dardanelle & Russellville Railroad	LNW	Louisiana & North West Railroad		
		LRPA	Little Rock Port Authority Railroad		

Of the 2,662 miles of active rail lines in Arkansas, the breakdown of rail operations are as follows:

- 1,327 miles operated by the Union Pacific Railroad (UP), a Class I railroad
- 198 miles operated by the Burlington Northern – Santa Fe Railroad (BNSF), a Class I railroad
- 158 miles operated by the Kansas City Southern Railroad (KCS), a Class I railroad
- 979 miles operated by 23 short line railroads

The Arkansas rail network is projected to carry 167 million tons of freight in 2015, of which 70 percent will be passing through the state moving between other states. Rail transportation is primarily used to carry heavy, bulky products long distances, in contrast to trucking which

dominates the transportation of high value goods and freight moving over short distances. Coal has traditionally been by far the highest tonnage commodity carried on the Arkansas rail network, and is projected to account for 57 percent of tons terminating in the state in 2015 and 36 percent of the tons passing through the state. However, strict new environmental regulations on coal-fired power plants have created uncertainty as to future volumes of coal movements.

The largest destinations of rail freight originating in Arkansas are Texas, Louisiana, and California. Much of the freight shipped to California is containerized freight from the UP intermodal ramp in Marion, while much of the freight shipped to Texas and Louisiana consists of gravel. The largest origins of freight shipped to Arkansas are Wyoming (primarily coal), California (intermodal containers to Marion), Iowa, Nebraska and Illinois (grain and food-related), and Texas (much of which relates to chemicals or plastics). Figure ES–2 displays a summary of originating and terminating freight traffic to and from Arkansas.

Figure ES–2: Summary of Freight Originating and Terminating in Arkansas by Commodity Tonnage

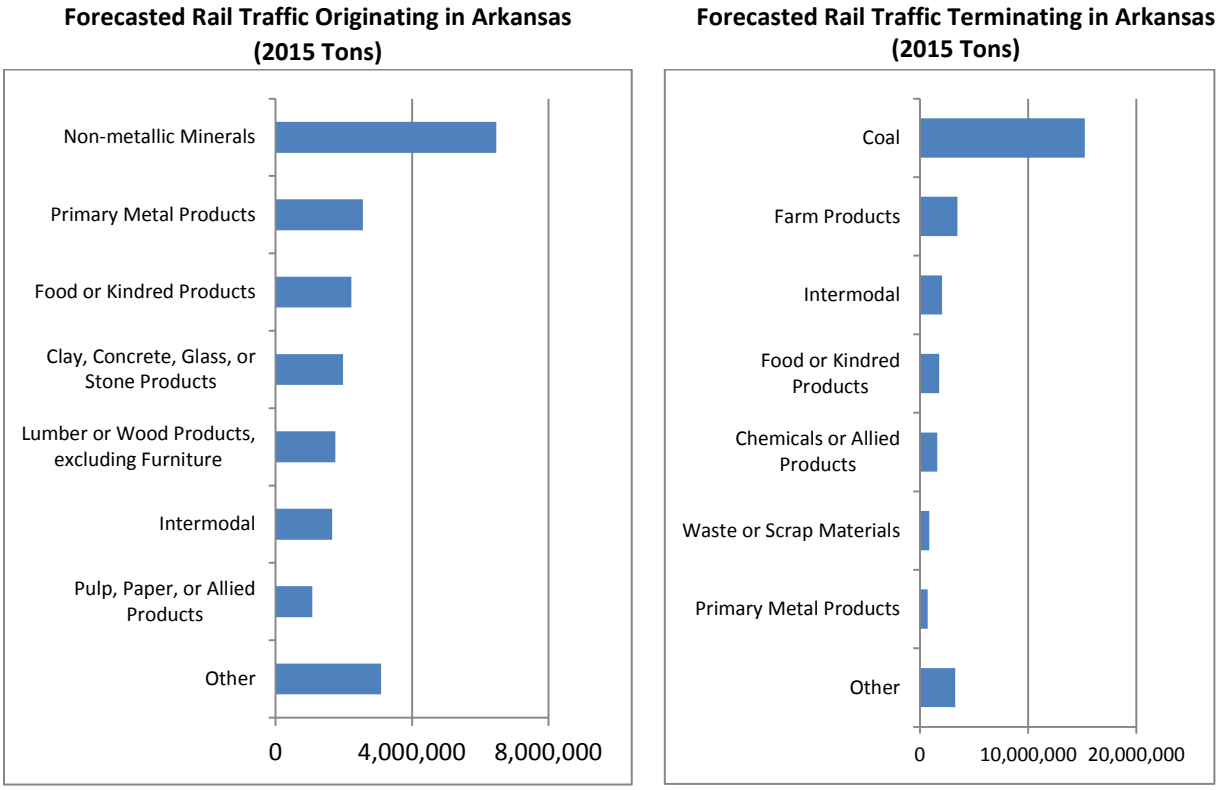


Figure ES–3. Texas Eagle Route through Arkansas

Passenger rail service in Arkansas is provided by the Amtrak, Texas Eagle service, a long-distance train that runs between Chicago and Los Angeles with a transfer at San Antonio, Texas. A single train in each direction passes through Arkansas each day, making six stops each at night. The northbound train makes its first stop in Arkansas at Texarkana at 8:43 PM and makes its last stop in Arkansas at Walnut Ridge at 1:41 AM. The southbound train makes its first stop in Arkansas at Walnut Ridge at 12:37 AM and its last stop in Texarkana at 5:58 AM.

By far the most heavily used Arkansas station on the Texas Eagle route is in Little Rock, accounting for 56 percent of passengers who got on or off Amtrak trains in Arkansas in 2013. The most common origins and destinations for travelers to and from Arkansas are Chicago and Saint Louis. These two stations account for over 38 percent of the ridership at Arkansas Amtrak stations. Dallas, Houston, and San Antonio are also significant origins/destinations.

In addition to inconvenient arrival and departure times, the Texas Eagle service is slower and less reliable than automobile travel. As an example, about six hours are required to drive between Little Rock and Saint Louis while seven hours and 40 minutes are required on Amtrak. Little Rock to Chicago is a ten hour drive but is over 14 hours on Amtrak. During the third quarter of 2013,

Texas Eagle trains were only on time about 54 percent of the time. On the other hand, Amtrak by some measures is a less expensive mode of travel than automobile travel, at least when compared with single occupancy automobiles.

Despite its limitations, Texas Eagle ridership to/from Arkansas has significantly increased in recent years. The number of passengers boarding and getting off Amtrak trains increased from 20,789 in 2003 to 41,358 in 2013. The increase in passengers using Amtrak in Arkansas nearly doubled in this period while the State's population grew roughly nine percent.

Railroad Funding in Arkansas

There is no dedicated, reliable public funding source for rail in Arkansas. Traditionally, freight railroads have been responsible for paying the cost of operating, maintaining, and performing any upgrades to their rail lines, structures, and equipment. The cost of the Amtrak Texas Eagle service is paid through ticket revenues and subsidies from the federal government.

Although public funding is inconsistent, there are examples of public funds being used to pay for projects involving rail in Arkansas, such as:

- The U.S. Federal Highway Administration (FHWA) funds about $3.7 million worth of improvements to roadway/rail grade crossings per year.
- Additional discretionary funding has been provided by FHWA for crossing improvements within High Speed Rail Corridors.
- The U.S. Department of Transportation (USDOT) Transportation Investment Generating Economic Recovery (TIGER) program has funded about $12 million in rail projects since the program began in 2009, including a rail line improvement/extension project in West Memphis and design/environmental work for a roadway/rail grade separation project in Jonesboro.
- The Federal Railroad Administration (FRA) Rail Line Relocation and Improvement program has funded rail projects, such as the rehabilitation of an Arkansas Midland rail line, and rehabilitation of bridges on the Ouachita Railroad. This program is currently unfunded.
- State funds have from time to time been used to fund rail projects. Generally, these are provided by the General Improvement Fund (GIF), which is contingent upon actual versus expected state general revenues in any given year.
- The U.S. Economic Development Administration (EDA) has sometimes provided funding for Arkansas rail projects through its Public Works program. One example is the partial funding for rehabilitation of the North Louisiana and Arkansas Railroad.
- The Delta Regional Authority has helped to fund at least four projects in eastern Arkansas since 2002, providing around $200,000 for each project.
- The federal government's low interest loan program, the Railroad Rehabilitation & Improvement Financing (RRIF) was used by Arkansas & Missouri Railroad to purchase property from BNSF in 2003.

Generally, public investment in railroad infrastructure or passenger services is justified by public benefits that result from rail such as:

- Passengers and freight that move by rail do not move by highway and thereby decrease highway maintenance expense, required investment, and congestion.
- Rail is a relatively fuel efficient mode of transportation and thereby generates less greenhouse gas and other emissions.
- Rail is a relatively safe mode of transportation, causing fewer fatalities and injuries relative to highway transportation.

Rail can also support economic development by lowering transportation costs for existing and prospective companies in Arkansas. Rail can also provide a vital transportation link to rural areas.

Rail Issues and Opportunities/ Initiatives

Based on data gathered and discussions with stakeholders, a number of issues and opportunities, as well as potential initiatives to address those issues and opportunities, have been identified.

Passenger Rail Initiatives

As described above, the Texas Eagle service is slow compared to automobile travel, to some degree unreliable, and provides relatively infrequent service at inconvenient times of the day. Furthermore, stakeholders have reported that some stations are in a poor state of repair.

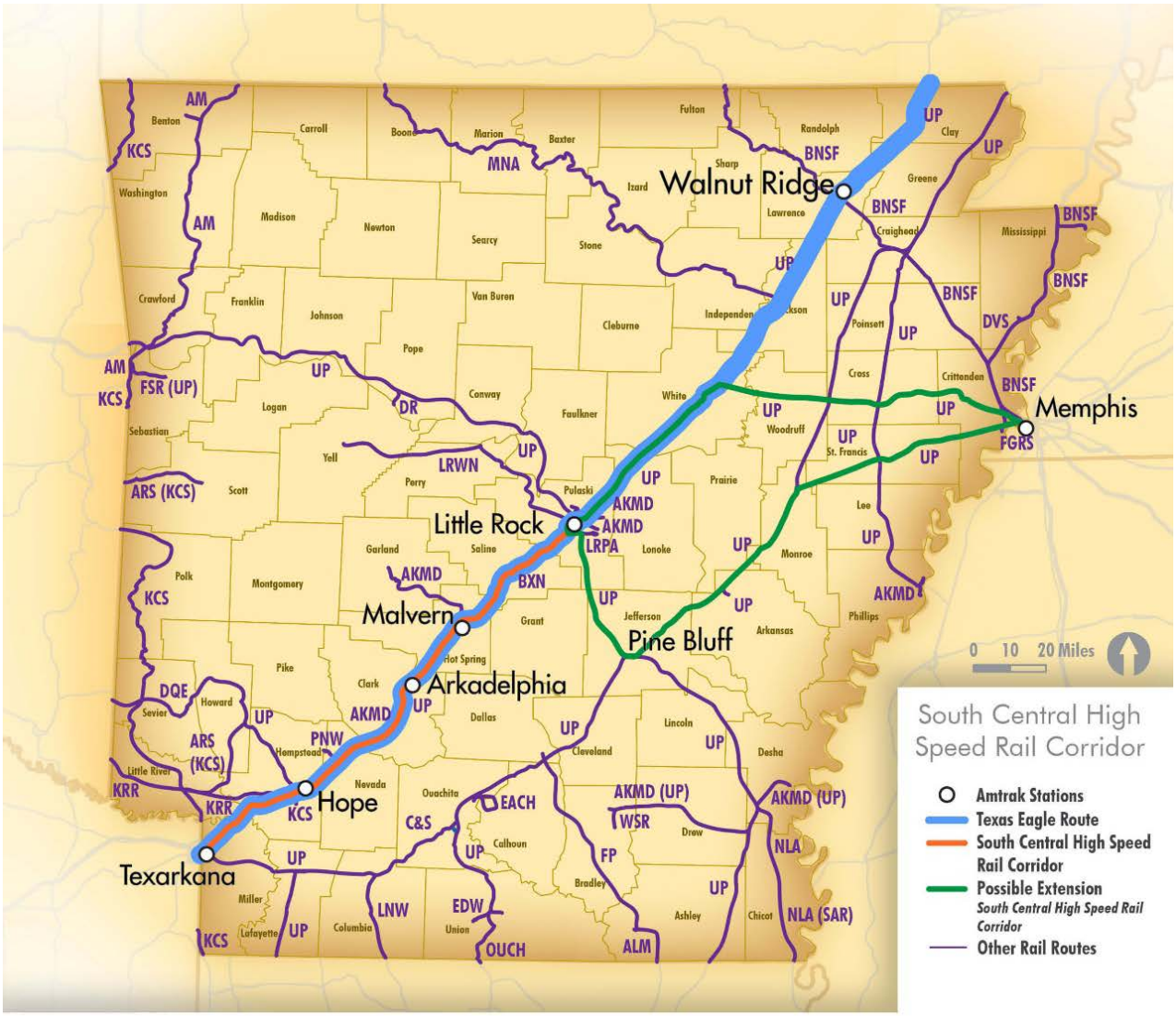
The U.S. Congress has designated a series of High-Speed Rail Corridors, which would be the focus of investment for improving intercity passenger rail train speeds. A portion of one of these corridors, the South Central High Speed Rail Corridor (SCHSRC), lies between Dallas and Little Rock through Texarkana. As part of the PRIIA legislation, the U.S. Congress requested an investigation of whether the SCHSRC could be extended to Memphis from Little Rock. Arkansas is currently studying the possibility of improving service between Texarkana and Little Rock, as well as the feasibility of passenger rail service between Little Rock and Memphis. This effort is collectively referred to as the Arkansas Passenger Rail Study. The study is funded by about $0.4 million from the FRA, matched by about $0.4 million from AHTD, and $0.1 million from the Arkansas General Improvement Fund.

The Arkansas Passenger Rail Study focuses on passenger rail service on existing freight railroad lines. Most freight trains operate at speeds below 50 miles per hour (MPH). This could limit the top speeds contemplated for passenger rail service. It would be impossible, for example, for 160 MPH passenger trains to share a busy freight corridor with many slow-moving freight trains. More likely, the focus of this study will be on achieving travel speeds competitive with automobile travel. In this sense, the term “high-speed rail” is misleading, since it conjures images of bullet trains in Europe or Japan, which is not what is being contemplated.

While Arkansas currently pays nothing for the existing Amtrak Texas Eagle service, if the state were to add or modify intercity passenger rail service, the state would need to compensate Amtrak for the service. In contrast to freight service, passenger rail service is not self-supporting. Not only

would any infrastructure improvements need to be publicly-funded, but Arkansas would need to pay for the usage of the passenger rail equipment and cover any operating losses.

Figure ES–4. South Central High-Speed Rail Corridor



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SAR	Southeast Arkansas Economic Development District
UP	Union Pacific Railroad
WSR	Warren & Saline River Railroad

During the development of this Plan, a number of stakeholders expressed interest in additional passenger rail corridors. The most frequent requests were for passenger rail services between

Little Rock and Hot Springs or for service from central Arkansas to northwest Arkansas. From a purely demographic perspective, Northwest Arkansas would be a logical location for passenger rail service, since the area around Bentonville and Fayetteville is forecast to become the most populous area in Arkansas, surpassing the Little Rock metropolitan area in the coming decades.

Safety/Crossings

While rail is a relatively safe mode of transportation when compared to highways, railroad transportation nevertheless still generates risks. Typically, risks include the potential for collisions at roadway/rail grade crossings; trespassers, others being struck by trains on railroad right of ways; and general occupational hazards of railroad employees doing their jobs. Public agencies in Arkansas are best equipped to mitigate risks at roadway/rail grade crossings, since these are the areas over which agencies have the most control. A total of 2,464 public roadway/rail grade crossings are located in Arkansas, of which about 35 percent have train-activated signals (flashing lights, and/or gates alert drivers that a train is coming), while the other 65 percent rely on signage, such as crossbucks to warn motorists of the crossing.

According to FRA statistics, a total of 144 crashes occurred at Arkansas crossings between 2012 and 2014, resulting in 54 injuries and 18 fatalities. The accident rates at Arkansas crossings have trended downward. For example, FRA data reports 225 accidents, 102 injuries, and 29 fatalities at Arkansas crossings between 2005 and 2007, a higher rate than the more recent years of 2012 to 2014. Evidence also suggests that Arkansas may lag behind other parts of the country in crossing safety. For example, the 11 fatalities at roadway/rail grade crossings in Arkansas represent about 2.5 percent of all roadway/rail grade crossing fatalities nationwide between 2012 and 2013. However, vehicle miles traveled (VMT) in Arkansas were only about 1.1 percent of national VMT during that time period. The frequency of fatalities at crossings was higher than the national average on a per VMT basis. Arkansas also lags in crossing protection technology. Fifty-two percent of roadway/rail grade crossings nationwide have train-activated signals compared to 35 percent in Arkansas. The *Arkansas Strategic Safety Highway Plan* set a goal of reducing the number of annual railroad crossing fatalities to six or fewer by 2017.

Crossings are not only a safety concern, but also an inconvenience. There is a cost to the time that motorists must wait for trains to clear crossings. Trains in many cases must also slow for crossings. There are numerous instances throughout Arkansas of trains blocking crossings for extended periods of time.

Arkansas continues to address the issue of roadway/rail grade crossings through a number of means.

- Crossing improvements. Arkansas upgrades the safety countermeasures, such as installing train-activated signals, at eight to ten crossings per year on average.
- Grade separations. Grade separations consist of the construction of an underpass or an overpass, so that roadways and rail lines are vertically separated. Grade separations usually cost above $15 million to complete and can cost significantly more. AHTD completes on average one rail/grade separation per year.
- Crossing closure. If feasible, crossings can be closed, thus removing their associated risk.

- Siding extensions. Sometimes railroads can avoid blocking crossings over extended periods of time if the location where trains wait can be moved so that crossings are not blocked.

- Improved passive measures. In addition to active control devices that give advance notice of the approach of a train, passive control devices indicate that a crossing is present and that a highway user must look for an approaching train and take appropriate action. These include crossbucks, stop signs, approach warning signs, pavement markings, etc. The USDOT *Manual on Uniform Traffic Control Devices for Streets and Highways* provides guidance on appropriate passive measures. AHTD is working to ensure that passive measures at crossings in the state meet these standards.

- Public Education. Most accidents at crossings happen as the result of driver behavior. According to data by the FRA between January 1999 and July 2015, 92 percent of crossing accidents in Arkansas have resulted when drivers did not stop at crossings, stopped on the crossing, stopped and then proceeded over the crossing, or went around crossing gates. Operation Lifesaver is a national nonprofit organization whose mission is to end collisions, injuries and deaths at roadway/rail grade crossings and on rail property, through public education and awareness of rail safety.

- Improved crossing safety on passenger rail routes. Crossing improvements are a component of the Arkansas Passenger Rail Study. If passenger service were to be extended from Little Rock to Memphis, or if passenger rail service between Texarkana and Little Rock were to be improved, commensurate improvements to roadway/rail crossings on the corridor would be required.

Some communities in Arkansas are essentially bisected by railroad tracks, and roadways in these communities cross tracks at numerous locations. In these cases, a "corridor" approach to addressing crossing issues can be established, where a combination of approaches are used to reduce the risk and inconvenience of crossings.

Crossing safety improvements in Arkansas are primarily funded through the FHWA Rail-Highways Crossing (Section 130) Program. Some states fund crossing improvements beyond the FHWA program. Other states also actively enforce state regulations for crossing safety, in areas such as maintaining sight lines to crossings (enables motorists to see trains approaching), maintaining pavement markings, etc. Based upon the relatively high risks of crossings in Arkansas, the state could consider increasing the level of resources devoted to crossing issues, depending upon future funding capacity.

Roadway/rail crossings are not the only safety concern within Arkansas. More than five percent of carloads of rail nationwide are carrying hazardous materials, including about 75,000 carloads of toxic inhalant substances (TIH).[1] Railroad transportation of hazardous materials has come under increased scrutiny as of 2015 due to the growth of crude oil shipments by rail, which increased from 9,500 carloads nationwide to 540,383 carloads in 2014.[2] As the railroad industry points out,

[1] David Hunt, David Friedman, Mark Meketon, Carl Van Dyke, "Transporting Hazardous Materials by Rail: Identifying Feasible, Lower-Risk Routes," *TR News*, May-June 2013.
[2] Association of American Railroads, *Moving Crude Safely by Rail*, July 2015.

99.99 percent of carloads since 2000 have arrived at their destination without incident.[3] The railroad industry has sought to minimize risks by routing certain traffic away from high risk areas, voluntary increased inspections and speed limits on trains carrying hazardous materials, as well as general investment in infrastructure to reduce the risks of derailments. In May 2015, the U.S. Department of Transportation (USDOT) has promulgated new requirements for high hazard flammable trains. The rule,

- presented new standards for tank cars, plus required retrofitting for older tank cars;
- new brake standards for certain trains;
- new operational protocols for trains transporting large volumes of flammable liquids, such as routing requirements, speed restrictions, information for local governments; and
- better classification standards for energy products placed into transport.

Rail Corridor Preservation

The number of route miles of the U.S. railroad network has generally declined since reaching its peak in 1916. Decreases were highest in the 1970s due the industry's financial crisis during that decade, and in the 1980s due to railroads' ability to divest unprofitable lines per industry deregulation following the passage of the Staggers Rail Act of 1980. In many parts of the country, the rail network has generally stabilized, but in recent years, some relatively significant segments of the Arkansas rail network have either been threatened or abandoned. The abandonment of the 52 mile Caddo Valley Railroad was finalized in late 2014. The Delta Southern Railroad filed to abandon its line between McGehee, Arkansas, to Lake Providence, Louisiana in 2008 and 2011. The Arkansas Short Line Railroads Inc., the Southeast Arkansas Economic Development District (SAEDD), and the Lake Providence Port Commission purchased the 62 mile rail line before it could be abandoned. A major effort is currently underway to rehabilitate this line. A number of measures could address the issue of abandonment in the future:

- Develop a state rail corridor preservation policy;
- Establish a fund to support purchases of at-risk rail lines by third parties;
- Establish a legal/funding basis whereby the state can acquire rail corridors that would otherwise be abandoned;
- Provide grant or loans to support short line infrastructure investment to prevent their operations from declining to such an extent that continued operations are at risk;
- Reduce the costs to rail carriers of owning inactive rail corridors;
- Establish a rail-banking program (This is a legal means of maintaining an intact rail corridor. Rather than being abandoned, the corridor is assigned an "interim use" status, as a recreational trail);
- Use state law to discourage full abandonment of rail corridors, if such a law would be consistent with the state constitution.

[3] Ibid.

Rail and Economic Development

Stakeholders consulted for this Rail Plan have stressed that rail can help drive economic development in Arkansas. Rail access can help attract employers to the state and improve/maintain the competitiveness of employers currently within the state. For many companies, the landed or total cost of receiving or shipping goods is a key consideration in location decisions. Rail can help to reinforce competitive advantages of Arkansas as a business location, by reducing costs and providing transportation access to material resources. Rail can be particularly important to rural communities that produce raw materials but do not have high-capacity highway networks because of their remote location. Some initiatives that have been proposed or are underway to improve rail's role in economic development in Arkansas include:

- Cataloguing developable rail-served sites, particularly on low-density rail lines;
- Mapping of rail assets and raw materials;
- Developing and disseminating a handbook on multimodal facilities (currently underway);
- Evaluating transload facility feasibility and location guide;
- Creating a logistics directory for the State of Arkansas;
- Complete industrial rail access projects (a number of specific projects are presented in the investment program of this Rail Plan);
- Establishing an industrial rail access funding mechanism that can receive applications from any existing or new business.

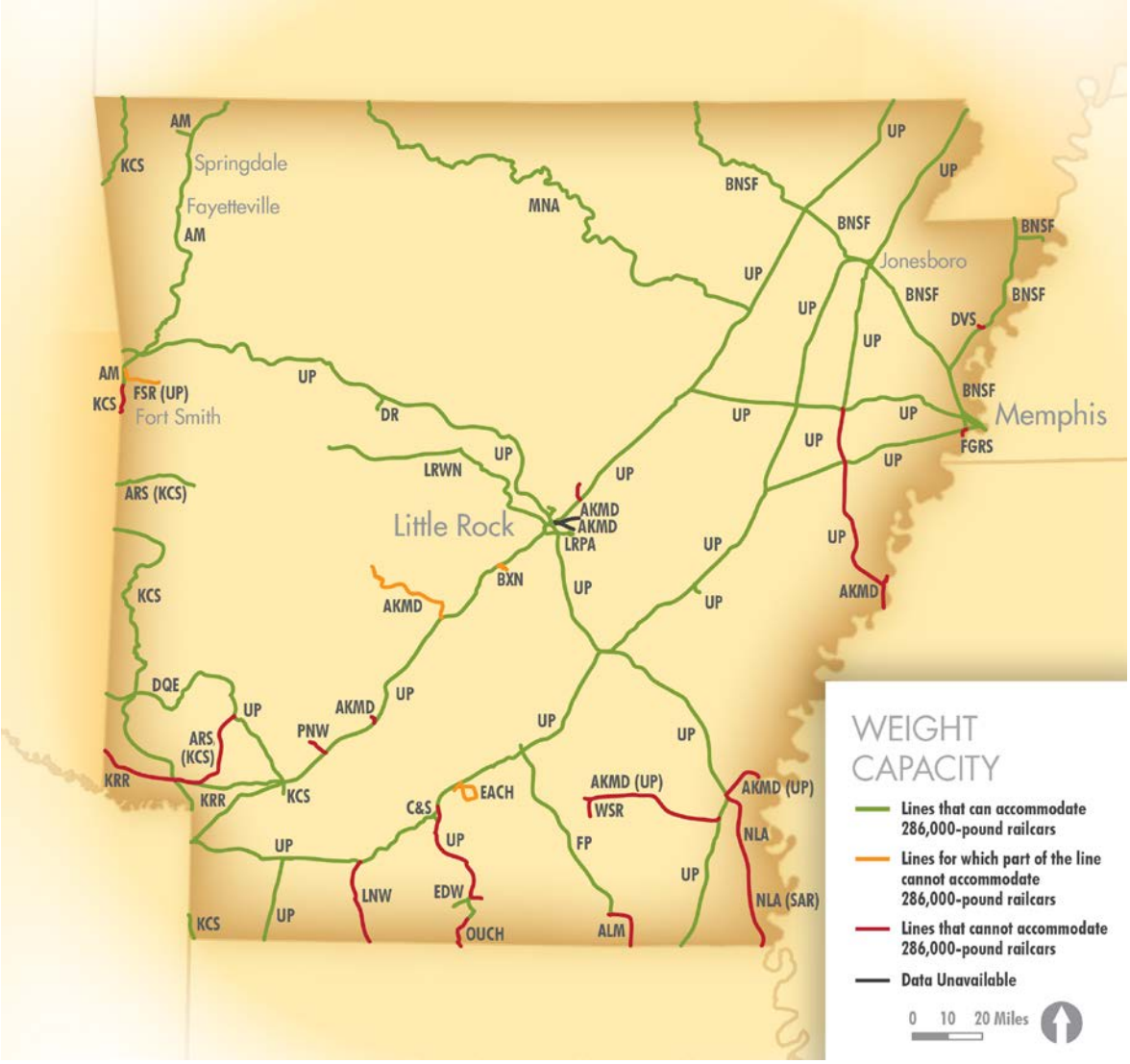
Rail Line Condition, Rail Line Rehabilitation

Currently, many of the Arkansas short line railroads are in a poor state of repair. Railroad operations are capital intensive, and track maintenance requires large investments in materials, equipment and construction labor on a regular basis. When traffic declines and revenues are marginal, maintenance often is deferred and maintenance requirements accumulate. Many short line railroads were created from rail lines previously owned by Class I railroads, which deferred maintenance for years before selling the lines. Two hundred and eighty-six miles of rail line in Arkansas are rated by the FRA as having an "excepted" track condition, which means that these track segments are in poor state of repair and in need of upgrade. Five hundred and forty-five miles of rail line are limited to ten MPH or less for freight operations. This slow speed of operations may hinder the competitiveness of rail services offered. The total mileage operated by Class III railroads is 979.

When rail lines cannot accommodate the industry standard 286,000-pound railcars, shippers must "light load" their railcars or use smaller cars, a practice that is inefficient. Thirteen of the Arkansas short line railroads have limited capacity to haul industry standard 286,000-pound carloads. A total of 396 track miles in Arkansas are unable to handle 286,000-pound railcars. Of these, 310 miles are on short line railroads, and 86 miles are on rail lines owned by Class I carriers. These restrictions limit these railroads' ability to attract new business, and to remain competitive with other rail lanes and modes of transportation.

Over $61 million worth of rail line rehabilitation/upgrade needs have been identified in the investment section of this Rail Plan. The completion of these projects will depend upon available funding or financing.

Figure ES–5. Weight Restrictions on Arkansas Rail Corridors



Expanding Access to Rail in Arkansas

Stakeholders consulted for this Rail Plan have expressed interest not only in preserving the existing rail system, but also in extending or reactivating some previously abandoned lines. Proposed initiatives include the following:

- The Chicot-Desha Metropolitan Port Authority sponsors a project to build an 8.1-mile rail line from the Port of Yellow Bend to the interchange with the NLA at Trippe Junction, Arkansas. This project would cost about $25 million. Environmental work has been completed, and several TIGER grant applications have been submitted to seek funding for the project.

- A recent study looked into the possibility of reconstructing a 76-mile segment of the former Chicago, Rock Island and Pacific Railroad (CRIP) line between Danville, Arkansas and Howe, Oklahoma.[4] The study evaluated the feasibility of restoring the line in two phases. An initial phase would restore the line (18.4 miles) between Hartford, Arkansas and an interchange with KCS in Howe, Oklahoma (Phase 1). A second phase would restore the remaining 57.6 miles between Hartford, Arkansas and an interchange with the Little Rock & Western Railway at Danville, Arkansas (Phase 2). The cost of the line's reconstruction is estimated to be $38.8 million for Phase 1 and $107.9 million for Phase 2.
- In Washington County, the Department completed the Fayetteville South Industrial Park Railroad Access Study focusing on the identification of possible rail line routes, determination of roadway/rail at-grade crossings, water features to be bridged, other potential constraints, design considerations, and cost estimates.
- The Department completed the Northwest Arkansas Regional Airport – Air Cargo Study and Freight Transportation Access Assessment. This study investigated the feasibility of constructing a rail line to the Northwest Arkansas Regional Airport, connecting to either the KCS or the Arkansas and Missouri Railroad (AM). Both alternatives included roughly 10 miles of rail construction.

Other rail access projects would improve the connection between rail and other modes of transportation. The Port of Little Rock and the port operator at the Port of Fort Smith have identified about $6 million in improvements that would improve rail access to these facilities. Transload facilities are areas where freight is transferred between truck and rail. Rail carriers have identified over $26 million worth of improvements to support transload facilities in Arkansas. Some stakeholders are interested in additional intermodal service (shipping containers or trailers on rail) within Arkansas, since the sole intermodal terminal within Arkansas at Marion is costly to access for shippers in other parts of the state. In order for a new intermodal service to be established in the state, providing this service would need to be worthwhile to the rail carrier. Rail carriers would require the following:

- A sufficient demand for trainload volumes of intermodal freight multiple days per week;
- A reasonable balance between empty and loaded containers; and
- A logical "fit" in the carriers' intermodal network, so that the service does not disrupt other intermodal services, and shipping distances are long enough to compete effectively with trucking.

Summary of Rail Infrastructure Needs

Figure ES–6 displays rail projects in Arkansas for which, as of 2014, funding has been identified. At least some of the funding has been provided by public sector sources. These projects represent

[4] South Logan County Chamber of Commerce, *Western Arkansas Railroad Reconstruction Economic Feasibility Study*, June 30, 2014.

about $46 million in public and private investment. Some are planned, while others are being designed or are under construction.

Figure ES–6. Funded Arkansas Rail Projects with Public Investment

Project Description	Cost	Funding Mechanism	Project Benefits
Rail extension and rehabilitation at the Port of West Memphis	Total cost is $27.0 million	$10.9 million from 2012 TIGER grant, other local and private funds	Economic development and modal connectivity
Rail Rehabilitation of the North Louisiana and Arkansas Railroad	Total cost, including work within Louisiana, is $13 million	U.S. Economic Development Administration, State of Arkansas SEAEDD, Lake Providence Port Commission, State of Louisiana, Delta Regional Authority, Arkansas Short Line Railroads, Inc.	Economic development, rail system preservation/ state of good repair, freight system efficiency
City of Jonesboro Railroad Corridor Highway 18/BNSF Crossing Planning for environmental and designs	$1.5 million	$1.2 million from 2014 TIGER grant, $0.3 in local match	Safety, reduces community impacts
Arkansas Passenger Rail Study	$0.9 million	$0.4 from FRA HSR (pre HISPR), $0.5 from State of Arkansas	Investigates potential transportation options
AKMD Warren Branch Rail Line Rehabilitation	$3.4 Million	$2.7 million from FRA Rail Line Relocation and Improvement program, $0.7 million from AKMD	Rail system preservation/ state of good repair, freight system efficiency
Ouachita Railroad Bridge Rehabilitation (OUCH)	$370,000	$330,000 from FRA Rail Line Relocation and Improvement program, $40,000 from OUCH	Rail system preservation/ state of good repair, freight system efficiency

Throughout the preparation of the Arkansas State Rail Plan, a much larger set of rail needs have been identified that are not funded. Projects have been put forth by short line railroads, public agencies, and Class I railroads. Of the Class I railroads, UP provided project cost estimates, while BNSF and KCS put forward recommended project needs but not cost estimates. Some projects put forward are for new rail lines or rebuilds of rail lines that had once been in place. It is not certain who would operate these lines. Project needs have been categorized as follows:

- Capacity. Increases to rail line capacity that will allow more trains per day to operate over rail lines.
- Extend or reactivate rail lines. Major construction of rail lines to serve areas not recently served by rail.
- Multimodal Improvement. Construction or improvement to transload, port, or intermodal container facilities.
- Rehabilitation/Upgrade. Projects to return rail lines and structures to a state of good repair and to modern standards.
- Yard. Improvements to rail yards in order to bring yards to a state of good repair, to improve efficiency, or to expand capacity.

- Industrial Access. Construction of turnouts, sidings, and spur tracks to serve rail customers.
- Rail Line Connections. Improved connections between two rail lines, sometimes of different railroads, but sometimes of the same railroad.
- Equipment. Needed purchase of new rail rolling stock.
- Safety. Improved safety at roadway/rail grade crossings or crossing closures.

As shown in Figure ES–7, identified unfunded rail needs exceed $1.6 billion. Most of these are the $1.1 billion that UP has identified in capacity needs. The second largest set of needs relate to extending the Arkansas rail network to locations that have not recently had rail access. This includes extending rail access to the Port of Yellow Bend, the reactivation of a rail line between Hartford, Arkansas and Howe, Oklahoma, and the extension of rail lines to multimodal/industrial facilities in Northwest Arkansas. Compared to extending the rail network, it is far less costly to maintain the existing rail network. More than $63 million in needs have been identified for rehabilitating and upgrading existing rail facilities.

Figure ES–7. Unfunded Arkansas Rail Needs

Type of Project	Class I Railroad	Class III Railroad	Railroad Uncertain	Grand Total
Capacity	$1,057,000,000			$1,057,000,000
Extend or reactivate rail line		$252,000,000	$167,300,000	$419,300,000
Multimodal Improvement	$60,000,000	$7,500,000		$67,500,000
Rehabilitation/Upgrade		$63,251,497		$63,251,497
Yard	$15,000,000	$15,510,000		$30,510,000
Industrial Access		$13,700,000		$13,700,000
Rail Line Connections	$13,000,000			$13,000,000
Equipment		$7,500,000		$7,500,000
Safety		$1,550,000		$1,550,000
Grand Total	**$1,145,000,000**	**$361,011,497**	**$167,300,000**	**$1,673,311,497**

Institutional and Funding Issues

By Act 1430 of 2013 the Arkansas General Assembly created a Task Force to investigate and make recommendations regarding intermodal transportation and commerce policy. The findings of the Task Force expressed concern over recent losses to the Arkansas rail network and recommended greater unified oversight, not just over highway, but also rail, waterways, ports, and aviation. As mentioned above, there is no consistent, dedicated funding source for rail in Arkansas, either through federal or state funding sources. Task Force members would like to find such a funding source.

In 2015, Arkansas Act 166 reestablished the Legislative Task Force on Intermodal Transportation and Commerce and expanded the membership to include representatives of the Arkansas Department of Aeronautics, the Metropolitan Planning Organizations in Arkansas, and the Arkansas Economic Development Commission. The charge of the Task Force was also modified in 2015. The

revised charge of the Task Force is to review and consider constitutional and legislative constraints related the creation of an Arkansas Department of Transportation, including consideration of existing agencies, agency funding, and oversight protocol.

Summary

Rail has traditionally served Arkansas well, from the time of high passenger volumes to the current trend of massive cross-country unit trains. The changing economy and the need for economical shipments have had an impact on the rail system in Arkansas. Transfer from Class I railroads to Class III railroads has made a significant impact on the viability of many local and regional businesses. Enhancement of the rail system in Arkansas will have a positive impact on the economy by providing more opportunities for receiving and shipping materials and goods into and out of Arkansas.

Arkansas State Highway and Transportation Department
Transportation Planning and Policy Division