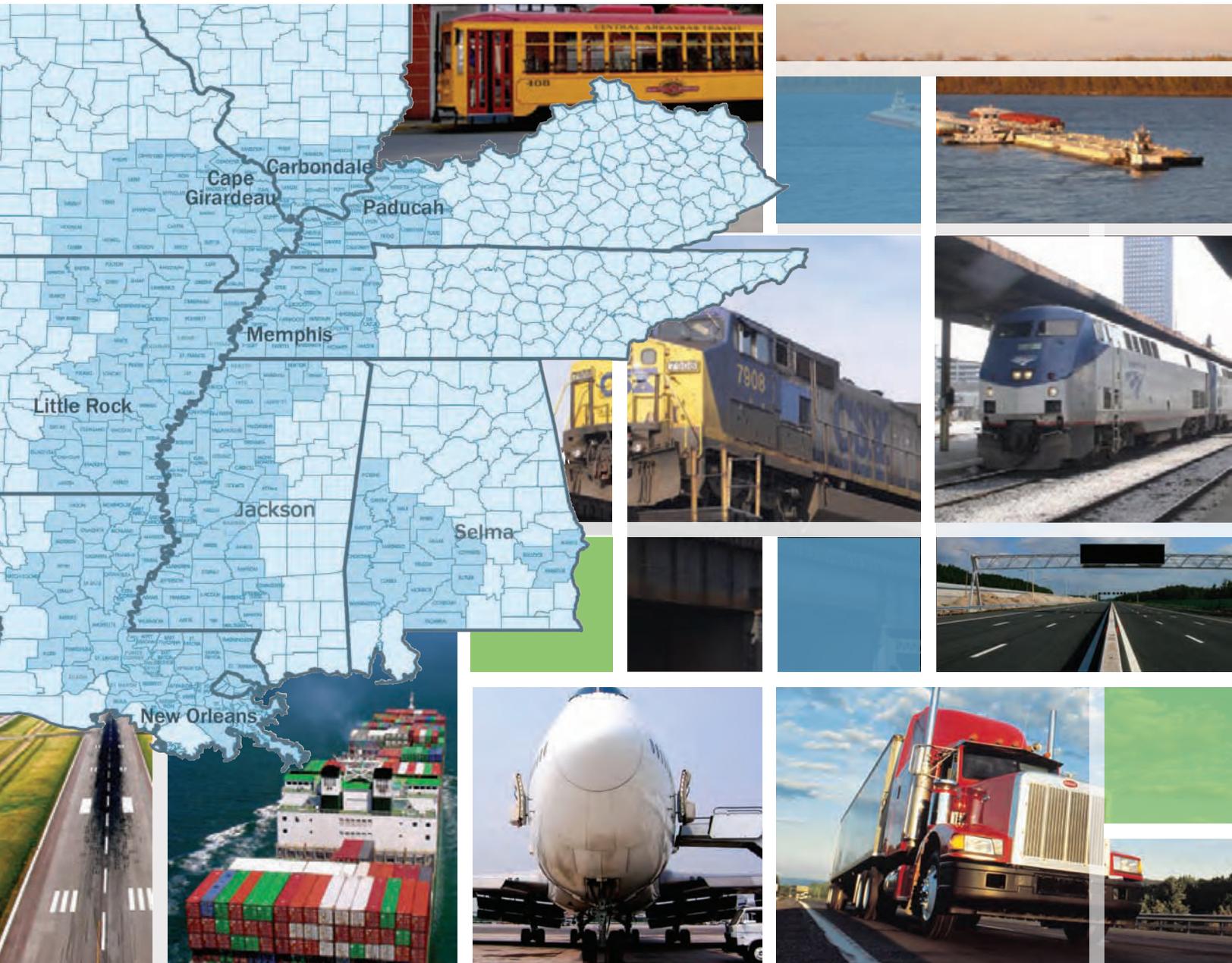




DELTA REGIONAL AUTHORITY

Multimodal Transportation

ASSETS, NEEDS AND RECOMMENDATIONS REPORT



Disclaimer:

Personnel from various agencies within the U.S. Department of Transportation provided information to the Delta Regional Authority during the study which led to this report. Similarly, personnel from such agencies may have made comments regarding factual assertions in various drafts of this report. However, neither the U.S. Department of Transportation nor any of its agencies necessarily endorse this report nor concur with any recommendation contained in the report.



DELTA REGIONAL AUTHORITY

236 SHARKEY AVENUE / SUITE 400 / CLARKESSDALE, MS 38614 / (662) 624-8600 / FAX: (662) 624-8537 / www.dra.gov

July 18, 2008

When Congress directed the Delta Regional Authority to prepare a report on the multimodal transportation assets and needs in our region, along with recommendations, we were delighted to take on the task. It fits perfectly into the DRA's role as a planner, coordinator of resources and advocate for the Delta.

We also will prepare a strategic plan that's designed to guide the implementation of the recommendations in this report. That task also was directed by Congress in section 1923 of the 2005 national highway act.

This report complements our Delta Development Highway System plan, which was released last year. When the DRA was created by Congress in 2000, one of the investment priorities outlined was the transportation infrastructure of the region. We've made numerous infrastructure investments in recent years.

With the help of state departments of transportation, the Federal Highway Administration and local stakeholders, the Delta Development Highway System plan was compiled. It identified 3,843 miles of highways slated for improvements at a cost of \$18.5 billion. We estimated that completion of the system would result in annual economic benefits of \$3.5 billion.

Next, we began work on the multimodal transportation report. During the past year, thousands of hours have been devoted to compiling this report. Eighteen meetings were held across the region, and input was received from more than 500 key players. We identified the assets and needs for highways, bridges, intelligent transportation systems, freight rail, passenger rail, waterways, public ports, locks and public airports in our region. Then, we made recommendations to improve the multimodal transportation system.

Our report is a definitive one because of this intense outreach effort. I want to thank all of those who played a role in the process. We worked closely with federal, state and local agencies to ensure that our report dovetails into their efforts.

We also received guidance from the National Surface Transportation Policy and Revenue Study Committee's "Transportation for Tomorrow" report, which was released in December. This effort provided guiding principles for our recommendations: safety, efficiency, congestion reduction, economic development, energy concerns and environmental concerns.

More than \$200 billion in investments will be needed during the next 25 years to ensure the efficient movement of people and goods in the Delta. This region has become a vital cog in the world logistics and distribution network. Our report shows why making these investments will be a wise move as this country competes in the increasingly complex global economy of the new century.

Sincerely,

Pete Johnson
Federal Co-Chairman
Delta Regional Authority



TABLE OF CONTENTS

- 1. Executive Summary 1
 - 1.1 Highway and Bridges..... 3
 - 1.2 Intermodal Facilities 3
 - 1.3 Intelligent Transportation Systems 3
 - 1.4 Freight Rail 4
 - 1.5 Passenger Rail..... 4
 - 1.6 Air Transportation..... 4
 - 1.7 Waterways..... 5
 - 1.8 Recommendations..... 5
- 2. Introduction..... 7
 - 2.1 Future Challenges to Transportation Infrastructure..... 7
 - 2.2 Global Trade and the DRA region’s Strategic Location..... 8
 - 2.2.1 The Memphis Logistics Hub..... 9
 - 2.2.2 The Inland Waterway System..... 10
 - 2.2.3 Public Water Ports 10
 - 2.2.4 Petroleum Industry..... 11
 - 2.2.5 Bio-Energy Industry..... 12
 - 2.3 Enhancing Mobility 12
 - 2.3.1 Highways and Bridges 13
 - 2.3.2 Intelligent Transportation Systems 14
 - 2.3.3 Freight Rail 14
 - 2.3.4 Passenger Rail..... 14
 - 2.3.5 Air Transportation..... 15
 - 2.3.6 Waterways, Ports and Locks..... 15
 - 2.4 Improving Intermodal Connectivity and Expanding Goods Movement..... 15
 - 2.5 Benefits of Intermodal Connectivity and Additional Options 16
 - 2.6 Benefits of Improving the Multimodal Transportation System..... 16
 - 2.7 Developing a Strategic Plan to Achieve Results..... 18
- 3. SAFETEA-LU Section 1923 19
- 4. Regional Coordination 21
 - 4.1 Round 1 Meetings..... 21
 - 4.2 Round 2 Meetings..... 22
 - 4.3 Regional Coordination 23
 - 4.4 Meeting Participants 24
 - 4.4.1 Round One 24
 - 4.4.2 Round Two..... 33
 - 4.5 Project Website 44
 - 4.6 Local Participation..... 44
- 5. Assets and Needs Methodology..... 45
 - 5.1 Modal Asset Methodology..... 45



5.1.1 Highways and Bridges	47
5.1.2 Intelligent Transportation Systems	51
5.1.3 Freight Rail	52
5.1.4 Passenger Rail	54
5.1.5 Aviation.....	56
5.1.6 Public Ports	61
5.1.7 Locks.....	63
5.2 Modal Needs Methodology	64
5.2.1 Highways	65
5.2.2 Bridges	66
5.2.3 Intelligent Transportation Systems	66
5.2.4 Freight Rail	67
5.2.5 Passenger Rail.....	71
5.2.6 Airports	71
5.2.7 Public Ports	74
5.2.8 Locks.....	76
6. Highways And Bridges	76
6.1 Introduction.....	77
6.2 Interstate System.....	77
6.3 National Highway System	78
6.4 Future Interstates and High Priority Corridors in the DRA Region	78
6.5 Intermodal Connectors.....	78
6.6 Major Bridge Crossings	80
6.7 Intermodal Facilities	83
6.7.1 Rest Areas and Weigh Stations.....	84
6.7.2 SAFETEA-LU Planning Factors	84
6.8 Highway and Bridge Needs	84
6.8.1 Highway Needs.....	84
6.8.2 Preservation and Maintenance Needs	85
6.8.3 Modernization Needs.....	85
6.8.4 Expansion Needs.....	85
6.8.5 Bridge Needs.....	86
6.8.6 Safety Needs	89
6.8.7 Congestion Relief.....	94
6.8.8 Improved freight mobility.....	96
6.8.9 Increased intermodal connectivity	104
6.8.10 Environmental protection.....	105
6.8.11 Economic Development.....	106
6.9 Modal Recommendations	107
6.9.1 Policy Recommendations.....	107
6.9.2 Project Recommendations	108
6.9.3 Intermodal Recommendations	115



6.9.4 Coordination Recommendations.....	119
6.9.5 Funding Recommendations	120
6.9.6 Priority Recommendations.....	123
7. Intelligent Transportation Systems	124
7.1 Introduction.....	125
7.1.1 ITS Architecture Plans.....	125
7.1.2 ITS Deployment Plans	125
7.2 ITS in the DRA Region.....	126
7.2.1 Traffic Management Centers	126
7.2.2 Closed Circuit Television Cameras	127
7.2.3 Dynamic Message Signs.....	127
7.2.4 Highway Advisory Radio	127
7.2.5 511 Toll Free Phone Service.....	127
7.2.6 Traffic Information Website	128
7.2.7 Fiber Optic Cable.....	128
7.2.8 Traffic Detectors	128
7.3 Intelligent Transportation System Needs.....	128
7.3.1 Safety and Security	128
7.3.2 Congestion Relief.....	130
7.3.3 Increased Intermodal Connectivity	131
7.3.4 Improved Freight Mobility	131
7.4 ITS Recommendations.....	132
7.4.1 Policy Recommendations.....	133
7.4.2 Project Recommendations	133
7.4.3 Coordination Recommendations.....	134
7.4.4 Funding Recommendations	134
7.4.5 Priority Recommendations.....	135
8. Freight Rail	136
8.1 Introduction.....	136
8.2 Rail Mainline System Growth Rate and Needs	137
8.2.1 Existing and Projected Rail Capacity Constraints on DRA Mainlines.....	142
8.3 State Rail Needs.....	145
8.3.1 Alabama	146
8.3.2 Arkansas.....	147
8.3.3 Illinois	148
8.3.4 Kentucky	149
8.3.5 Louisiana.....	150
8.3.6 Mississippi	151
8.3.7 Missouri	152
8.3.9 Tennessee.....	153
8.3.10 Needs Summary	154
8.4 Rail Freight Recommendations.....	154



8.4.1 Policy Recommendations.....	154
9. Passenger Rail.....	160
9.1 Introduction.....	160
9.2 Regional Intercity Passenger Rail Service.....	160
9.3 Light Rail Service.....	165
9.4 Passenger Rail Needs.....	169
9.5 Passenger Rail Needs for New Orleans.....	175
9.6 Modal Recommendations.....	175
10. Aviation.....	181
10.1 Introduction.....	182
10.1.1 Asset Inventory.....	182
10.1.2 Needs.....	187
10.1.3 Recommendations.....	201
11. Waterways, Ports and Locks.....	203
11.1 Introduction.....	203
11.1.1 Port and Terminal Assets.....	206
11.1.2 Deepwater Ports.....	207
11.1.3 Inland Water Ports.....	209
11.1.4 Petroleum Industry Ports.....	212
11.1.5 Port Security.....	212
11.1.6 Lock Assets.....	213
11.2 Barge vs. Truck and Rail Transportation.....	214
11.2.1 Energy Savings.....	214
11.2.2 Safety.....	215
11.2.3 Environmental Protection.....	215
11.2.4 Benefits to the Nation’s Highways.....	216
11.3 Waterway, Lock and Port Needs.....	216
11.3.1 Waterway Needs.....	216
11.3.2 Port Needs.....	217
11.3.3 Locks Needs.....	223
11.3.4 Container on Barge (COB) Services.....	225
12. Acknowledgements.....	232

LIST OF TABLES

Table 1: Multimodal Assets Comparison – DRA Region and United States.....	2
Table 2: NPIAS Airports.....	59
Table 3: Airports Eligible for AIP Federal Funding.....	60
Table 4: Asset Information.....	60
Table 5: DRA Region Roadway Miles and Number of Bridges by State.....	77
Table 6: DRA Region Intermodal Connectors.....	80



Table 7: Alabama Rail Freight Characteristics.....	146
Table 8: Arkansas Rail Freight Characteristics	147
Table 9: Illinois Rail Freight Characteristics	148
Table 10: Kentucky Rail Freight Characteristics.....	149
Table 11: Louisiana Rail Freight Characteristics.....	150
Table 12: Mississippi Rail Freight Characteristics	151
Table 13: Missouri Rail Freight Characteristics	152
Table 14: Tennessee Rail Freight Characteristics.....	153
Table 15: Station Standard Matrix.....	176
Table 16: DRA Air Transportation Facilities by Type	182
Table 17: NPIAS Airport Categories.....	184
Table 18: DRA Inland Waterway Needs	216
Table 19: DDHS by State (DRA Region only).....	C-3

LIST OF FIGURES

Figure 1: Multimodal Transportation Assets	46
Figure 2: Freight Rail Needs Survey	68
Figure 3: Aviation Needs Survey.....	72
Figure 4: Ports Needs Survey	75
Figure 5: Alabama Average Annual Daily Traffic - 2020.....	97
Figure 6: Arkansas Average Annual Daily Traffic - 2020	98
Figure 7: Illinois Average Annual Daily Traffic - 2020.....	99
Figure 8: Kentucky Average Annual Daily Traffic - 2020.....	100
Figure 9: Louisiana Average Annual Daily Traffic - 2020.....	101
Figure 10: Mississippi Average Annual Daily Traffic - 2020	102
Figure 11: Missouri Average Annual Daily Traffic - 2020	103
Figure 12: Tennessee Average Annual Daily Traffic - 2020.....	104
Figure 13: National ITS Program Plan	132
Figure 14: Primary Freight Corridors	139
Figure 15: Growth of Trains per Day (2005-2035)	140
Figure 16: Percent Growth of Trains per Day (2005-2035)	141
Figure 17: Current Level of Service Grade.....	143
Figure 18: Future Level of Service Grade	144
Figure 19: Amtrak Routes in the DRA Region.....	161
Figure 20: The City of New Orleans Route	162
Figure 21: The Crescent Route	163
Figure 22: Sunset Limited Route	163
Figure 23: Texas Eagle Route.....	164
Figure 24: Saluki Illinois Service Route.....	165
Figure 25: CAT System Routes	166
Figure 26: MATA System Routes	167



Figure 27: NORTA Streetcar Routes 168

Figure 28: National Map of High Speed Rail Corridor Designations 173

Figure 29: Gulf Coast High-Speed Rail Corridor 173

Figure 30: South Central High-Speed Rail Corridor 174

Figure 31: Midwest High Speed Rail Association Map 174

Figure 32: DRA Air Transportation Facilities by State 183

Figure 33: U.S. Inland Waterway System 204

Figure 34: Fuel Comparison by Transport Modes 214

Figure 35: Cargo Capacity Comparison by Transport Modes 215

Figure 36: Delta Development Highway System C-4

APPENDICES

Appendix A: Stakeholder – Reported Needs A-1

Appendix B: Certification Letters B-1

Appendix C: Delta Development Highway System (DDHS) C-1

ABBREVIATIONS

AADT	Average Annual Daily Traffic
AADTT	Average Annual Daily Truck Traffic
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AIP	Airport Improvement Program
AL	Alabama
ALDOT	Alabama Department of Transportation
AHTD	Arkansas State Highway Transportation Department
AR	Arkansas
ATR	Automatic Traffic Recorder
BNSF	Burlington Northern Sante Fe
BTS	Bureau of Transportation Statistics
CAT	Central Arkansas Transit
CCTV	Closed Circuit Television Cameras
COB	Container-on-Barge
COFC	Container-on-Flat-Car
CR	County Road
CN	Canadian National
CSX	CSX Corporation
CVISN	Commercial Vehicle Information Systems and Networks
CVO	Commercial Vehicle Operations
CY	Calendar Year



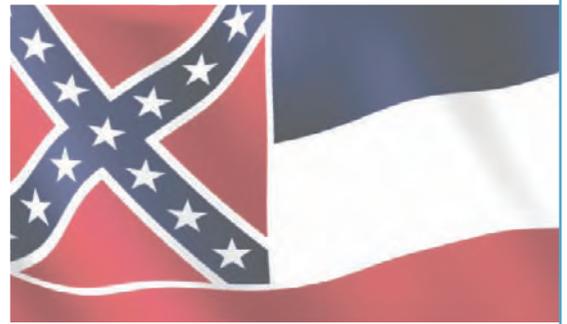
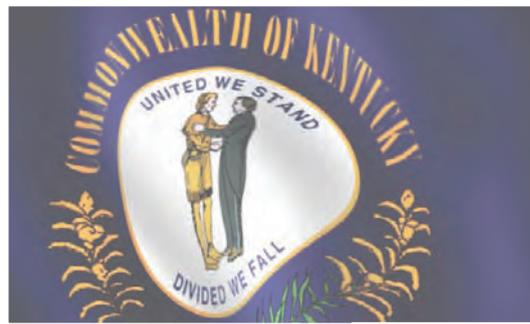
DDHS	Delta Development Highway System
DRA	Delta Regional Authority
DMS	Dynamic Message Signs
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FAF	Freight Analysis Framework
FCC	Federal Communication Commission
FEMA	Federal Emergency Management Agency
FRA	Federal Railroad Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GDP	Gross Domestic Product
GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
GRIP	Gulf/River Intermodal Partnership
HAR	Highway Advisory Radio
HERS-ST	Highway Economics Requirements System – State Version
HTF	Highway Trust Fund
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HSIP	Highway Safety Improvement Plan
ICIP	Intermodal Connector Improvement Program
IHNC	Inter Harbor Navigational Canal
IL	Illinois
IDOT	Illinois Department of Transportation
ITS	Intelligent Transportation System
ISTEA	1991 Federal Highway Bill. Intermodal Surface Transportation Efficiency Act
KCS	Kansas City Southern
KY	Kentucky
KYTC	Kentucky Transportation Cabinet
LDD	Local Development District
LA	Louisiana
LA DOTD	Louisiana Department of Transportation and Development
LANOIA	Louis Armstrong New Orleans International Airport
LTDMP	Long-Term Dredge Management Plan
LNG	Liquefied Natural Gas
LOS	Level-of-Service
LOOP	Louisiana Offshore Oil Port
MARAD	Maritime Administration
MATA	Memphis Area Transit Authority
MDA	Mississippi Development Authority



MS	Mississippi
MDOT	Mississippi Department of Transportation
MO	Missouri
MoDOT	Missouri Department of Transportation
MPO	Metropolitan Planning Organization
MTC	Minimum Tolerable Conditions
NADO	National Association of Development Organizations
NBI	National Bridge Inventory
NHPN	National Highway Planning Network
NORTA	New Orleans Regional Transit Authority
NS	Norfolk Southern
NTAD	National Transportation Atlas Databases
NTSB	National Transportation Safety Board
NHS	National Highway System
NPIAS	National Plan of Integrated Airport Systems
PPP	Public Private Partnerships
ROW	Right-of-Way
RPC	Regional Planning Commission
RPO	Regional Planning Organization
RRIF	Rehabilitation and Improvement Financing Program
RSA	Runway Safety Areas
SAFETEA-LU	2005 Federal Highway Bill. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SASTHO	Southern Association of State Highway and Transportation Officials
SDDCTEA	Surface Deployment and Distribution Command - Transportation Engineering Agency
SDOT	State Department of Transportation
SHSP	Strategic Highway Safety Plan
SR	State Route
STIP	State Transportation Improvement Program
STRAHNET	Strategic Highway Network
TEA-21	1998 Federal Highway Bill. Transportation Equity Act for the 21 st Century
TEU	Twenty-foot Equivalent Unit
TMC	Traffic Management Center
TN	Tennessee
TDOT	Tennessee Department of Transportation
UP	Union Pacific
US	United States
USACE	United States Army Corps of Engineers
U.S. DOT	United States Department of Transportation
WIM	Weigh-in-Motion



Executive Summary





1. EXECUTIVE SUMMARY

The Delta Regional Authority was created by Congress in 2000 to enhance economic development in parts of Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. The DRA now serves 252 counties and parishes in one of the most impoverished parts of the country. This area is referred to in this report as the DRA region. The 2008 Farm Act was enacted into law on June 18, 2008, and it added 10 parishes in Louisiana and two counties in Mississippi to the DRA region. These 12 new counties and parishes are not included in the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*; however, all future work will include the entire 252 county and parish region.

Despite a large number of economically distressed counties and parishes, the DRA region is a key player in the global movement of goods and people. As a logistics and distribution hub, the DRA region is vitally important to the nation's economy.

The DRA serves as a planner, an investment coordinator, and an advocate for the region. The DRA board consists of the governors of the eight states and Federal Co-Chairman Pete Johnson of Clarksdale, Mississippi, who was appointed by President Bush and confirmed by the U.S. Senate in 2001. The board and the DRA staff have worked hard to meet the congressional mandate that the authority compile a report containing multimodal transportation assets, needs, and recommendations.

The DRA region is the home of global air cargo facilities, 21 interstate highways, huge over-the-road trucking terminals, major rail lines, and rail intermodal complexes. This has resulted in the establishment of world-class warehouse and distribution facilities in the metropolitan areas of Memphis, Tennessee, Little Rock, Arkansas, Baton Rouge, Louisiana, New Orleans, Louisiana, and Jackson, Mississippi. The Mississippi River defines the region, meaning that river traffic is also a large component of the regional transportation system.

To keep pace with the global economy, additional multimodal transportation investments will be required across the region. The DRA region must have a system capable of moving goods in a reliable, efficient manner. Numerous infrastructure assets already exist and can be built upon to create an intermodal transportation system that will serve the region into the future while improving the economic prospects of those who call the Delta region home.

Table 1 compares the region's multimodal assets with the country as a whole. The region covers almost 148,000 square miles, representing about 4 percent of the U.S. landmass. With this as a benchmark, corresponding percentages for airports, highway miles, bridges, freight rail track miles, and intermodal facilities are outlined. Note the high percentage of port terminals and locks, which is due to the central role the DRA region plays in the nation's inland waterways



system. Because of the rural nature of the region, the percentage is low for passenger rail stations.

Table 1: Multimodal Assets Comparison – DRA Region and United States

Multimodal Assets	DRA	U.S.	Percent
Square Miles	147,585	3,537,441	4%
Aviation Facilities	993	20,323	5%
NPIAS Airports	192	3,431	6%
Highways Miles	230,395	4,000,000	6%
Bridges	44,538	594,101	7%
Public Port Authorities	48	360	13%
Locks	40	212	19%
Freight Rail Track Miles	9,674	140,490	7%
Intermodal Facilities	170	3,280	5%
Passenger Rail Stations	19	843	2%

Source: Federal Highway Administration, Federal Aviation Administration, U.S. Army Corps of Engineers, state Departments of Transportation, and Amtrak.

Once funding sources are identified, the DRA will complete a separate report identifying public transportation assets, needs, and recommendations.

During the past year, thousands of hours have been spent developing the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*. There were 18 public meetings held across the region so federal, state, regional, and local officials could join those who operate multimodal facilities in offering input. Almost 600 people attended these meetings.

This report documents assets, needs, and recommendations in the areas of highways, bridges, intelligent transportation systems, freight rail, passenger rail, airports, public ports, and locks. The assets and needs documented in the enclosed CD can be viewed using Adobe Acrobat software. The CD also contains interactive maps of the region. Users can simply click on a transportation facility or owner name to determine the assets and needs for airports, ports, and rail stations.

The report determined that the region has about \$202.5 billion in multimodal transportation needs.

This report represents the largest collection of multimodal assets and needs data for any region of the country. The DRA is grateful to the hundreds of people who contributed so the report can



present a comprehensive look at a region that serves as an important cog in the world transportation and distribution system.

1.1 Highway and Bridges

The highway system in the DRA region serves many functions, including commuting to jobs, moving freight and goods, intercity and Interstate business, personal travel, and recreational travel. There are approximately 230,395 miles of roadways and 44,538 bridges in the DRA region. Based on the needs analysis, the DRA region has over \$26 billion in preservation needs, over \$38 billion in modernization needs and over \$107 billion in expansion needs for a total of \$171 billion over the next 25 years. Each state DOT provided the DRA project team with a list of priority projects that are needed over the next five years.

There are 20 Mississippi River bridges in the DRA region, which were constructed between 1935 and 2003 and the average age is 44 years. There are four Ohio River bridges, which were constructed between 1929 and 1973 and the average age is 47 years. Over the next 25 years, many of the older bridges on the Mississippi and Ohio Rivers will need to be rehabilitated to ensure they can accommodate traffic safely over these natural river barriers. Based on the bridge needs assessment process, 11,175 of the 44,538 bridges (25 percent) in the DRA region are currently deficient but are fully operational. The total bridge needs in the DRA region total \$20.1 billion.

1.2 Intermodal Facilities

There are 170 intermodal terminals in the DRA region that are maintained by both the public and the private sector. The public sector provides the basic infrastructure (roads, bridges, transfer facilities, traffic signals, etc.). The private sector provides most of the vehicles, terminals, and related infrastructure necessary for transportation services. Thus, the public and private sectors must work together to provide an efficient, reliable, and competitive intermodal transportation system in the DRA region.

1.3 Intelligent Transportation Systems

The ITS assets and needs included in the DRA assets inventory were gathered directly from the 14 ITS providers in the DRA region. ITS infrastructure needs include traffic management centers, fiber optic cable, dynamic message signs, inter-connected signal systems, closed circuit television cameras, highway advisory radio, toll free 511 service, and traffic information web sites. The ITS needs in the DRA region totals \$408.1 million.



1.4 Freight Rail

Freight rail plays a critical role in the DRA transportation system. While this transportation mode is predominantly private, millions of tons of goods use rail to transport products to and from market. There are currently 9,674 miles of track in the DRA region and 7,228 miles are Class I, 190 miles are regional railroads (Class II) and 2,256 miles are local railroads (Class III). The DRA region is served by six Class I railroads and all six have rail yards in the DRA region, which allows for efficient intermodal operations. Memphis is a strategic location for freight rail in the DRA region. It is one of only three cities in the U.S. served by five Class 1 railroads.

Class I railroad companies intend to respond to future capacity constraints by adding track, building or lengthening mainline passing sidings (generally up to two-mile-long segments of parallel trackage), improving signal systems, and upgrading track to support increased traffic and heavier loads. These major railroads are expected to be able to meet approximately 80 percent of the infrastructure capacity needs over the next 20 years. However, Class I railroads will need federal financial and legislative assistance, as well as other public-private partnerships, to meet the remaining rail system needs in the DRA region.

There are approximately 45 local short-line railroad companies that serve the DRA region that operate over a relatively short distance and are independent of Class I railroads. Over the next 25 years, the freight rail needs in the DRA region total \$2.2 billion and include improvements to tracks, signal systems, and intermodal facilities.

1.5 Passenger Rail

Amtrak is the only major passenger rail service provider in the DRA region. This rail system is vital to the growth and prosperity of the region. There are currently 18 Amtrak stations and over 1,000 miles of track in the DRA region that are used for passenger rail service. Based on 2007 ridership numbers, Amtrak provided service for over 389,000 people in the DRA region. In FY 2007, Amtrak achieved its fifth consecutive year of record ridership. The cities of Little Rock, Memphis, and New Orleans have transit authorities that offer a street car public transportation rail system that has both a historical significance and provides a valuable service to their communities. Today, Amtrak and the three light rail providers in the DRA region provide a viable transportation option to many residents. The passenger rail needs total \$3.1 billion, which includes high speed rail improvements in the DRA region.

1.6 Air Transportation

Air transportation is an important transportation mode in the DRA region because these facilities transport people and cargo throughout the region and eventually the world. Aviation facilities provide quick response to critically ill residents accessing local and regional hospitals and trauma centers; provide recreational pilots access to hundreds of destinations; and provide



economic development opportunities to local and regional economies. There are a total of 993 public and private aviation facilities in the DRA region. There are 253 public airports and three public heliports in the DRA region. Of the 253 public airports located in the DRA region, 192 are included in the FAA *National Plan of Integrated Airport Systems* (NPIAS) and are therefore eligible for AIP federal funding. While every public air transportation facility serves a purpose, the 13 commercial airports that provide both passenger and freight service are vital to the quality of life and economy in the DRA region. The public air transportation needs in the DRA region total \$1.5 billion.

1.7 Waterways

Water ports are an integral component of the DRA region's transportation system. There are 1,210 public and private port terminals and 48 public port authorities that operate 192 public port commodity terminals in the DRA region. Locks play a vital role in the waterborne transportation system, especially in the DRA region in which there are 40 locks along 19 waterways. The oldest lock is 95 years old, while the youngest is 16 years old. The average lock age in the DRA region is 44 years old and due to this there are many lock needs in the DRA region.

Addressing the needs for waterways, public ports, and locks on the U.S. Inland Waterway System in the DRA region is crucial. The responsibility for maintaining a navigable channel on these waterways rests with the USACE and maintaining proper channel depths is of utmost importance to allow for waterborne commerce to traverse to and from the public and private ports in the DRA region. The public port needs in the DRA region total \$3.6 billion and the lock needs total \$477.6 million.

1.8 Recommendations

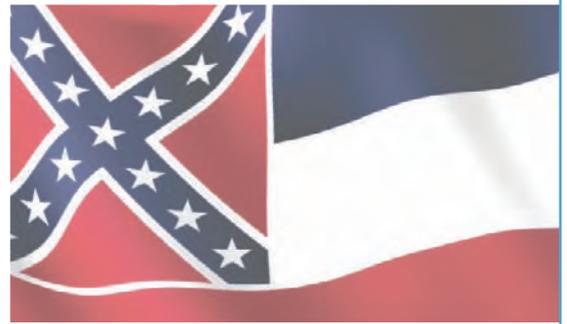
Based on the multimodal needs identification process completed in the DRA region, the current level of funding for transportation is not expected to keep pace with the = needs identified in the DRA region. With the growing gap between multimodal transportation needs and anticipated revenues, key policies and initiatives to ensure this gap is narrowed rather than expanded must be identified quickly. In the future, it is anticipated that transportation systems will not be able to rely as heavily on motor fuels taxes due to vehicles becoming more fuel efficient and because motor fuels tax revenue is not keeping pace with inflation. The *National Surface Transportation Policy and Revenue Study Commission* released its report to Congress in January 2008. The Commission was required under Section 1909 in SAFETEA-LU to conduct a comprehensive study of the current and future needs of the surface transportation system; short-term sources of Highway Trust Fund revenues; new and alternative sources of revenue; and develop a conceptual plan to ensure that the surface transportation system will continue to serve the needs of the U.S. The recommendations from this report, as well as other strategic recommendations, are referenced in the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*.



If multimodal transportation improvements are completed over the next 25-years, then the DRA region will be well positioned to increase its position in the global economy and contribute greatly to the U.S. economy. Preserving, maintaining, modernization and expanding the transportation system in the DRA region is crucial. If the system is not preserved, maintained, modernized, and expanded then safety, congestion relief, improved freight mobility, increased intermodal connectivity, economic development, and the other benefits will not be realized.



Introduction





2. INTRODUCTION

2.1 Future Challenges to Transportation Infrastructure

For much of the past half-century, a grid of highways, railroads, waterways, and transit lines provided an unparalleled fluidity of movement. The mobility offered by the surface transportation network gave Americans an unequalled degree of choice and freedom. The transportation network broadened opportunity, eliminating barriers and sustaining the most pluralistic society in world history. Unfortunately, the strong and dynamic American surface transportation system is becoming a thing of the past. The Nation's infrastructure may have appeared resilient to change in the 1970s and 1980s, but more recent forces have overwhelmed the system and threatened its basic functionality. Congestion was once just a nuisance. Today, gridlock is a way of life, and it has greatly eroded the quality of our transportation network. By the middle of the Twenty-First Century, social and economic forces will have altered the United States in ways that were unimaginable just 50 years ago. The Nation's population will swell to 420 million people. That is the equivalent of 11 new Los Angeles metropolitan areas spread out on a transportation grid already strained by congestion and disrepair. Many researchers believe this population growth will be accompanied by a doubling of the country's Gross Domestic Product (GDP), which is highly correlated with transportation demand.

National Surface Transportation Policy and Revenue Study Commission. January 2008

As noted by the *National Surface Transportation Policy and Revenue Study Commission*, the economic strength and competitiveness of the U.S. depends on a safe, efficient, sustainable, and secure transportation system. To compete effectively in the global marketplace, the multimodal transportation system must provide for the reliable, flexible, and economic movement of goods – bulk and consumer – from a diverse array of sources.

In the past 25 years, there has been a transition from a national to a global economy. In the past 40 years, the import share of Gross Domestic Product (GDP) has tripled and the export share has doubled in the U.S. Supply chains extend far beyond the U.S. borders stretching around the world. U.S. industries are continuing to seek new markets overseas and to produce goods internationally at lower production costs. This trend has severely taxed the capacity of the U.S. transportation infrastructure and major investments are needed in the U.S. multimodal transportation system.

Over the next 25 years, all transportation modes will experience significant growth and this growth will continue to constrain the multimodal transportation system if infrastructure investments are delayed. According to forecasts by Global Insight, Inc., economic output in the



U.S. is projected to grow by 150 percent over the next 30 years, while the total freight movement (measured by ton-miles) is projected to increase by 92 percent over that same period.¹ In fact, the *National Surface Transportation Policy and Revenue Study Commission* noted that as a result of this growing importance of international trade in the U.S. economy, international merchandise trade (especially from Asia) is growing faster than overall freight transportation. An increasing share of the domestic freight system is also serving international trade shipments. This is placing increasing pressure on international gateways (seaports, airports, and land border crossings) and the surface transportation infrastructure feeding into and leading out of those gateways.²

Without any additional improvements, it is projected that 55 percent of the U.S. rail system will be operating near or above capacity by the year 2035.³ Truck traffic contributes significantly to the congestion on the highway network and it directly translates into more costs for consumers. In the report, *Transportation – Invest in Our Future – America’s Freight Challenge*, prepared by AASHTO, 92 percent of the value of freight moved in the U.S. is carried by trucks. FHWA projections indicate that the percentage of interstate segments carrying 10,000 or more trucks per day will increase from 27 percent to 69 percent by 2020 and that the number of bottlenecks on the highway system will increase significantly. The growth in freight container traffic has overwhelmed some of the west coast ports and the volume of international container movements is projected to triple by 2025. This impact is felt, not only on the water side, but also on rail and highway intermodal linkage to ports.

The DRA region is situated in the heart of the U.S. multimodal transportation system, and future growth will impact the efficiency of this vast system of roadways, bridges, rail tracks, waterways, and airports. The DRA region is uniquely positioned to capitalize on its multimodal assets. The DRA region’s multimodal transportation system serves global, national, regional, and local markets. Without future strategic investments in highway, rail, waterway, and aviation infrastructure, the existing transportation system will not keep pace with the growing demand. Past multimodal transportation investments have served this region well, however additional investments are needed in the DRA region to ensure the projected growth can be efficiently accommodated and that the U.S. economy is bolstered.

2.2 Global Trade and the DRA region’s Strategic Location

Transportation infrastructure in the DRA region is critical to international and national trade. It is intrinsically tied to economic development in the region. East-west rail traffic, including the

¹ *National Surface Transportation Policy and Revenue Study Commission*. Chapter 2: What are the Future Demands on the Surface Transportation System. January 2008.

² *National Surface Transportation Policy and Revenue Study Commission*. Chapter 2: What are the Future Demands on the Surface Transportation System. January 2008.

³ Association of American Railroads



burgeoning volume of container traffic from the Pacific Rim, interchanges at two major locations in the region, Memphis and New Orleans. The Mississippi River, the main artery of the inland waterway system, carries grain from the heart of the country to export markets. Petroleum is transported from the Gulf of Mexico and oil producing regions on barges up the Mississippi River to the Midwest and points beyond. Trade between the U.S. and Latin America is escalating and more trade with Latin America passes through the southeastern states, which include much of the DRA region, than through the rest of the U.S. combined. The expansion of the Panama Canal will change transportation flows and bring more goods into the DRA region to be transloaded for distribution. Truck traffic flows through the region on three east-west interstate highways, I-10, I-20, and I-40, and one north-south interstate, I-55. These facilities, as well as the network of feeder highways, will experience increased congestion. In addition, air freight between China and the U.S. and Latin America and the U.S. will grow steadily over the next 25 years. The eight state Departments of Transportation, as well as other transportation agencies in the DRA region continue to plan for an integrated transportation system that will accommodate future projected growth, however multimodal transportation investments must be adequately funded in the DRA region to ensure these plans are realized in the near future.

The DRA region is home to thousands of multimodal transportation assets. In fact there are more than 230,000 miles of roadway, nearly 10,000 miles of freight rail track, thousands of miles of navigable waterways and 170 intermodal facilities in the DRA region. Some of the key strategic assets of the region are described below.

2.2.1 The Memphis Logistics Hub

Memphis is a focal point for intermodal transportation in the U.S. Strategically positioned with five Class 1 railroads, crossed by several Interstate highways, and home to the world's largest air cargo airport and the nation's fourth busiest inland waterway port, it is a major U.S. intermodal hub. The single largest economic engine in Memphis is the Memphis International Airport and it serves as a regional hub for Northwest Airlines and is home to a Federal Express Corporation Super Hub. The continued development of a powerful value-added air-cargo, logistics, and distribution industry in Memphis depends heavily upon air services. Memphis International Airport is ranked 37th of all U.S. airports in passenger enplanements and number one in cargo volume. Memphis International Airport has been the world's busiest cargo airport since 1992, and operations at the Federal Express Corporation Super Hub accounted for 93.6 percent of all cargo at the airport. Memphis International Airport is poised to become one of the few global transportation logistics hubs in the world due to the strategic improvements made and planned at the airport.

Goods of all types ranging from small, high-value products such as computer components and medical devices shipped by air, to low-value bulk commodities like coal, grain, and petroleum shipped via barge, either have origins or destinations in the region or pass through Memphis. The proposed I-69 corridor, connecting Canada and Mexico, will pass through the region and become



an important transportation asset. Plans are also underway to upgrade other major arterials (US 78 and US 61) connecting Memphis to the region.

The world headquarters of Federal Express is located in Memphis, and its presence has spawned a vibrant warehousing-distribution industry. Global companies such as Nike and Williams-Sonoma, as well as bio-medical firms like Medtronic and Wright Medical have established major facilities in Memphis. Due to the increase in freight movement (both highways and freight rail), as well as a growth in population, the Memphis area faces numerous transportation challenges that will require significant investments in highway, bridges, aviation, and freight rail infrastructure to keep with future demand.

2.2.2 The Inland Waterway System

The inland and intracoastal waterways system is a vital part of the U.S. multimodal transportation network. For only 2 percent of the U.S. freight cost, the inland waterways system moves 15 percent of the nation's commercial intercity freight tonnage (by volume) on 12,000 miles of commercially significant waterways. Twenty-four states are linked directly to the inland waterways system, which includes all eight states in the DRA region. The Mid-America waterways network extends from Brownsville, Texas to the Great Lakes and from Minneapolis, Minnesota to Pittsburgh, Pennsylvania. It is made up of the following two major subsystems:

- The Mississippi River system, the Ohio River system, the Illinois Waterway, and other commercially important rivers and tributaries
- The Gulf Intracoastal Waterway (GIWW)

This Mid-America waterways network serves the DRA region, including its industrial core and a large portion of its agricultural regions. Addressing the needs on the inland and GIWW system in the DRA region is crucial. The responsibility for maintaining a navigable channel and locks on these waterways rests with the USACE and adequate funding is required to ensure these vital waterways remain a viable transportation option.

2.2.3 Public Water Ports

There are 192 public port commodity terminals in the DRA region, however the Port of New Orleans is at the center of the world's busiest port complex – Louisiana's Lower Mississippi River. Its proximity to the American Midwest via a 14,500-mile inland waterway system, six Class I railroads and the interstate highway system makes New Orleans the port of choice for the movement of cargoes such as steel, rubber, coffee, containers, agriculture products, and manufactured goods. It serves as a major interchange point between the inland waterway system and ocean (deep water) shipping. The intermodal connections at the New Orleans Port must be maintained and expanded to ensure the projected growth can be efficiently accommodated and to strengthen the U.S. economy.



2.2.4 Petroleum Industry

The DRA region is home to a significant number of the nation's oil reserves and refining facilities. In fact, there are 16 oil refinery facilities in the DRA region. These facilities require major oil-related infrastructure, such as major crude oil trunk pipelines and transportation networks, to ensure products can be efficiently produced and transported across the country. The DRA region is a vital part of the U.S. petroleum industry. For instance, the Louisiana Offshore Oil Port (LOOP) is the only port in the U.S. capable of accommodating deep draft tankers; one of the four U.S. Strategic Petroleum Reserve facilities is located in the DRA region at Bayou Choctaw, Louisiana. It holds 72 million barrels of crude oil and is connected to the St. James terminal on the Mississippi River by a 37-mile, 36-inch diameter pipeline. The Excelerate Energy Gulf Gateway Deepwater Port/Energy Bridge, which came online in 2006, is the only offshore liquefied natural gas (LNG) terminal in the U.S. and is the first new LNG import facility constructed in more than 20 years. There are four oil seaport/import sites in the DRA region, which are located in Louisiana at New Orleans, Baton Rouge, Gramercy, and St. Rose.⁴

Of the eight states in the DRA region, Louisiana has the most petroleum-related infrastructure. The oil and gas industry is one of the leading industries in Louisiana in the terms of economic impact, taxes paid, and people employed. There are 19 active refineries in Louisiana that account for 15 percent of the total refining capacity in the country.⁵ Louisiana is the third leading producer of natural gas and the fourth leading producer of crude oil in the country. When including the oil and gas production in the Gulf of Mexico, Louisiana becomes the second leading natural gas producer in the country and the third leading crude oil producer.⁶

There are thousands of miles of pipelines in the DRA region that safely carry crude oil from the Gulf of Mexico to refineries in Louisiana and other states, as well as natural gas to all parts of the country. In addition, there are pipelines carrying refined products, such as gasoline, from and through Louisiana to other states in the DRA region and U.S.⁷ It is critically important that the transportation system that supports the petroleum industry in the DRA region be properly maintained and expanded to ensure that there are no interruptions in transporting crude oil, gasoline, and natural gas from the DRA region to other parts of the U.S. This will require investments that will preserve, modernize, and expand highways, bridges, waterways, locks, and pipelines.

⁴ U.S. Department of Energy, Energy Information Administration

⁵ Louisiana Mid-Continent Oil and Gas Association

⁶ U.S. Department of Energy, Energy Information Administration

⁷ Louisiana Mid-Continent Oil and Gas Association



2.2.5 Bio-Energy Industry

2.2.5.1 Ethanol Plants

Ethanol is a renewable fuel produced from corn and increased ethanol usage will boost farm incomes in the DRA region while, at the same time, reducing U.S. reliance on imported oil and reducing carbon monoxide emissions. Ethanol is characterized by the American Coalition for Ethanol as "a homegrown fuel that results in job creation, increased farm income, improved air quality, and greater independence by reducing imports of foreign oil." Based on the 2007 American Coalition for Ethanol, *STATUS*, there is one ethanol plant in the DRA region located in Hopkinsville, Kentucky. This ethanol plant is operated by Commonwealth Agri-Energy and was partially funded by the DRA. Additionally, there are three ethanol plants under construction in the DRA region. The first is a 100-million-gallon-per year ethanol plant near Obion, Tennessee and it is expected to be operational by the late summer or early fall of 2008.⁸ The second is a 60-million gallon-per year ethanol plant in Vicksburg, Mississippi and the third is a 50-million gallon-per year in Fulton, Kentucky.⁹

2.2.5.2 Biodiesel Plants

Biodiesel is a renewable fuel produced from vegetable oils or animal fats. Renewable feedstocks include soybeans, canola, cotton seed, mustard seed, sunflower seed, and restaurant grease, which are found throughout the DRA region. There are approximately two bio-diesel plants in the DRA region located in Batesville, Independence County, Arkansas and Counce, Hardin County, Tennessee.¹⁰ The DRA region is located in a prime area to develop additional bio-diesel plants, which would require transportation infrastructure investments to transport the raw materials to the facilities and the end product to market.

2.3 Enhancing Mobility

As noted by the *National Surface Transportation Policy and Revenue Study Commission*, today, traffic congestion restricts the mobility of much of this country's population. Congestion affects Americans in communities throughout the country, large and small, and is often as severe on weekends as it is during weekday commutes. With the anticipated steep increase in our population, the impacts will be beyond anything we have yet experienced.¹¹

⁸ U.S. Department of Energy, Energy Information Administration

⁹ *STATUS*, American Coalition for Ethanol. 2007.

¹⁰ Biofuels Marketplace

¹¹ *National Surface Transportation Policy and Revenue Study Commission*. Chapter 2: What are the Future Demands on the Surface Transportation System. January 2008.



Meeting the existing and future multimodal transportation needs in the DRA region, to satisfy both passenger and freight needs requires, a comprehensive multimodal approach and dedicated funding. The demands of system users in all of the eight DRA states – commuters, regional, and interstate travelers, and those moving goods through and to and from the region must be considered. In addition, the needs of each of the individual modes may benefit by implementing Intelligent Transportation Systems (ITS) to improve operation and efficiency. There are approximately 170 intermodal facilities in the DRA region and these critical interchange points must be expanded to provide efficient connections between modes throughout the DRA region.

The following are some of the key areas of concern for enhancing mobility for the region, grouped by mode.

2.3.1 Highways and Bridges

To satisfy future highway demand, an approach using three levels of analysis should be considered. The first is preservation and maintenance. If performed regularly, roadway maintenance can prolong the useful life of a transportation facility and can delay more costly reconstruction projects. The second is modernization. Modernization needs are related to upgrading the safety, functionality, and overall operational efficiency of a facility or service without adding major physical capacity. The third is expansion. Expansion needs are focused on adding lanes (capacity) or new facilities to the roadway system.

Bridges are an important component of the highway system in the DRA region. The major river bridges over the Mississippi and Ohio Rivers, as well as other inland waterway systems are integral parts of the U.S. and regional transportation system. Currently there are 20 roadway bridge crossings (two crossings provide two bridges) over the Mississippi River that provides a total of 74 travel lanes and four roadway bridge crossings over the Ohio River that provide a total of 10 travel lanes in the DRA region. All of the eight state DOTs place significant emphasis on improving bridge conditions in the DRA region to ensure these vital structures are safe and provide connectivity to accommodate the efficient movement of people and goods. Due to the condition of some bridges, there are several bridges in the DRA region that will require rehabilitation, widening and strengthening. Due to the and the projected growth in truck traffic in the next 25 years, new bridges across the Mississippi River will be constructed to ensure the projected growth can be efficiently accommodated and the U.S. and regional economy is bolstered. New bridges are needed to accommodate the projected growth in goods movement and traffic increases over the next 25 years. Some bridges are currently being constructed while other are being studied, but funding for new bridges is needed in order to bolster the U.S. and regional economies. The major bridge crossings in the DRA region must be maintained and modernized to provide adequate capacity and safety for the movement of people and goods. New bridges must also be constructed in strategic areas to ensure the DRA transportation system remains efficient and provides adequate connections over the inland waterway systems.



The proposed I-69, which is a Congressional High Priority Corridor, will connect the countries of Mexico, the United States, and Canada and traverse through Louisiana, Arkansas, Mississippi, Tennessee, and Kentucky within the DRA region. The increased trade created by this proposed new interstate will have a significant economic impact in the DRA region, generating opportunities for job creation and demand for additional services.

2.3.2 Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) can improve transportation safety and mobility and enhance productivity through the use of advanced information and communications technologies. Expansion of existing ITS infrastructure and implementation of new systems to provide congestion relief and to improve safety and security are necessary to increase mobility in the DRA region. There are 14 ITS providers in the DRA region and investments in ITS will assist in reducing congestion in areas of the region, improve freight mobility and improve emergency response during hurricane or other natural disasters in the region.

2.3.3 Freight Rail

A viable freight rail system is vital for job growth and economic development in the DRA region. There are six Class I railroads serving the region and Memphis and New Orleans serve as two major interchange points between the eastern and western railroads at the Mississippi River. The DRA region is also served by 45 local short-line railroad companies. As railroads carry the highest percentage of our nation's freight measured by ton-miles, it is critical that the freight rail system be maintained, modernized, and expanded to handle the projected freight growth. Key mobility needs include elimination of bottlenecks at bridges crossing the Mississippi River, investments in local short-line railroads to serve additional sites for industrial development, and access improvements to intermodal facilities.

2.3.4 Passenger Rail

There are five Amtrak routes serving the DRA region. In addition to the intercity Amtrak service, Memphis, New Orleans, and Little Rock have urban rail trolley line service. Intercity passenger service can provide an environmentally friendly and fuel efficient alternative to long distance auto travel. Maintaining and expanding the current system to serve growing population areas can assist in relieving congestion on DRA roadways. The existing Amtrak system routes should be maintained and opportunities to expand passenger rail service in the DRA region, such as from Memphis to Nashville and from New Orleans to Baton Rouge should be explored. In urban areas, feasibility and planning studies for light rail operations should be undertaken by the local public transportation agency and a service between New Orleans and Baton Rouge is currently being studied.



2.3.5 Air Transportation

The DRA region contains 13 airports that provide passenger and freight service. While these airports are critical to the movement of people and goods in the DRA region, there are 240 other airports that support general aviation services. A strong air transportation system is needed to support economic development opportunities in the DRA region. Memphis International Airport is a major intermodal freight hub in the U.S. Upgrading access to and from the airport and providing improved intermodal connections via the highway and freight rail networks are necessary for Memphis International Airport to remain a key economic engine in the DRA region.

2.3.6 Waterways, Ports and Locks

Water transportation plays an important role in the economy of the DRA region. Two major considerations in providing mobility within this system are the condition of the waterways and the network of ports and terminals along the system. The waterways must be maintained to adequate channel depth to support shipping. In addition, the locks located on the system must be maintained to provide sufficient capacity. Ports and terminals need to be positioned to support industries that rely on water transportation and intermodal connections to and from the ports via rail and highway are necessary. As noted earlier, the responsibility for maintaining a navigable channel and locks on the inland waterway system rests with the USACE and adequate funding is required to ensure these vital waterways remain a viable transportation option.

2.4 Improving Intermodal Connectivity and Expanding Goods Movement

The shift to a global marketplace has been made possible by the intermodal transportation system. This impact has been profound within the DRA region as it has supported the growth of the logistics and distribution sector of the economy. The hub of worldwide package distribution is located in Memphis and a complementary highway network has been responsible for the location and expansion of companies in the region. Container traffic has grown dramatically and recent railroad investments in the region are significant. However, highway improvements are needed to allow for container movement to other rail facilities, to warehouse/distribution/manufacturing facilities, and to access the interstate highway network.

To realize the benefits of waterway transportation, rail and highway connections to ports must be enhanced in the DRA region. The container on barge (COB) concept is dependant on these linkages. Greater implementation of this concept shows great promise in shifting container traffic from the congested highway and rail networks to the waterway system. Both the Port of Greater Baton Rouge and the International Port of Memphis currently support COB services. Sea Point is seeking shipper commitments that would support the construction of the ship to barge trans-loading facility in the Mississippi River downstream of New Orleans. Three factors critical to the



success of COB are: service reliability of transit within the Inland Waterway due to aging lock and bridge infrastructure; and navigation channels not maintained to authorized depths; and the lack of connectivity to existing roadway and rail infrastructure.

2.5 Benefits of Intermodal Connectivity and Additional Options

An efficient multimodal transportation system is necessary to support and stimulate economic development in the DRA region. Each mode has its strengths in serving the region's transportation needs, be it the capacity to move large quantities of bulk materials economically (waterways), to transport containers long distances at reasonable cost (rail), to provide high speed service over long distances (air), or to provide access to individual locations within the region (highways). The connection between each of these modes is critical if the overall system is to provide economical and efficient service.

A strong intermodal transportation system is necessary for the region to maintain a strategic position in the global marketplace. The existing mix of water, air, rail, and highway facilities has supported economic development in the DRA region. To maintain this position, future investments are needed to ensure that intermodal connectivity is strengthened to provide a foundation to support the projected freight growth in the DRA region and that system expansion be supported to extend beyond the major hubs. The implications of global trends, including transportation developments, must be addressed to maintain the DRA region's competitive advantages and to serve the global, national, regional, and local economies.

The multimodal transportation system within the DRA region and its connections to the larger U.S. system must be maintained, modernized, and expanded to satisfy existing transportation demands and to meet future demand. Elimination of existing capacity bottlenecks is one issue that must be addressed. In addition, the system must be positioned to create new development opportunities throughout the DRA region.

2.6 Benefits of Improving the Multimodal Transportation System

Based on the multimodal needs identification process completed in the DRA region, the current level of funding for transportation is not expected to keep pace with transportation needs identified in the DRA region. With the growing gap between multimodal transportation needs and anticipated revenues, key policies and initiatives to ensure this gap is narrowed rather than expanded must be identified quickly. In the future, it is anticipated that transportation systems will not be able to rely as heavily on motor fuels taxes due to vehicles becoming more fuel efficient and because motor fuels tax revenue is not keeping pace with inflation. The *National Surface Transportation Policy and Revenue Study Commission* released its report to Congress in January 2008. The Commission was required under Section 1909 in SAFETEA-LU to conduct a comprehensive study of the current and future needs of the surface transportation system; short-



term sources of Highway Trust Fund revenues; new and alternative sources of revenue; and develop a conceptual plan to ensure that the surface transportation system will continue to serve the needs of the U.S. The recommendations from this report were reviewed and referenced in the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*.

If multimodal transportation improvements are completed over the next 25-years, then the DRA region will be well suited to increase its position in the global economy and contribute greatly to the U.S. economy. Preserving, maintaining, modernization and expanding the transportation system in the DRA region is crucial. If the system is properly preserved, maintained, modernized, and expanded then safety, congestion relief, improved freight mobility, increased intermodal connectivity, economic development, and the other benefits will be realized.

Thus, if the growing gap between multimodal transportation needs and available revenue is addressed, the DRA region could experience the following:

- Increased ability to recruit and maintain industries;
- Increased access to higher paying jobs;
- Increased employment;
- Increased state and local tax revenues;
- Increased tourism;
- Increased safety and security; and
- Decreased traffic congestion.

The benefits of developing a comprehensive and integrated multimodal transportation system could assist in the following:

- Decreased cost of production;
- Decreased cost of distribution;
- Decreased personal cost of travel;
- Increased home values;
- Strengthened state, regional and local economies;
- Strengthened tourism industry; and
- Increased mobility of people and goods.

In many ways, the transportation system is the lifeblood of the DRA economy and an important component in the quality of life. Truck and vehicular traffic will continue to increase. This alone will place tremendous demand on the transportation system in the DRA region. *The DRA Multimodal Transportation Assets, Needs and Recommendations Report* highlights over a hundred of strategic modal recommendations that were provided and developed by regional stakeholders and the DRA project team that will strengthen the multimodal transportation system



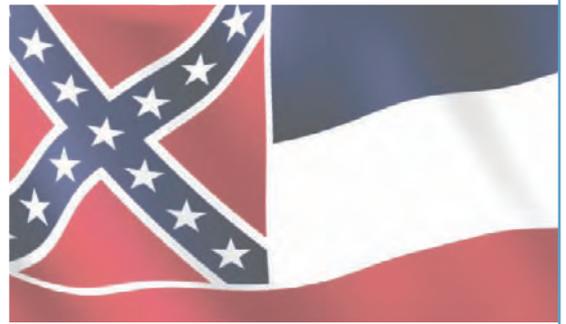
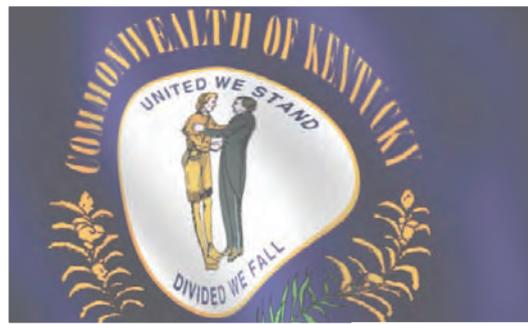
in the DRA region to assist in improving safety, recruiting and maintaining industries, increasing access to jobs, increasing tourism and reducing traffic congestion.

2.7 Developing a Strategic Plan to Achieve Results

Enhancing the transportation infrastructure within the DRA region will position the region to benefit from the global trade challenges of the next 25 years. Building on the available transportation resources and logistics facilities already in place, the goal of further economic development and growth can be stimulated with new multimodal transportation investments. To do so however, requires a strategic approach that requires coordination at the federal, state, and local levels throughout the region. A key element to achieving this report was constant coordination and consultation between the eight states in the region. The foundation has been set to ensure proper coordination is maintained to expedite multimodal transportation improvements in the DRA region. This effort will require the DRA to work with regional transportation partners to develop implementation priorities that will include all modes, as well as linkages between modes. The needs within each state must be considered in terms of their contribution to improving the overall multimodal transportation system. A DRA categorical funding program that includes highways and bridges, ITS, freight rail, passenger rail, airports and waterways, ports, and locks should be developed and federally funded so improvements can be made over the next 25 years to ensure great economic development opportunities are provided to the citizens of the DRA region and at the same time provide an efficient and responsive multimodal transportation system that meets future demand.



SAFETEA-LU Section 1923





3. SAFETEA-LU SECTION 1923

The Delta Regional Authority (DRA) was established by Congress in 2000 to enhance economic development and improve the quality of life for residents of this region. The DRA encompasses 252 counties and parishes in Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. Led by federal co-chairman Mr. Pete Johnson, who is appointed by the president and the governors of the eight states, the DRA fosters partnerships throughout the region as it attempts to improve the Delta economy. In DRA's enabling statute, Congress provided the Authority with four specific investment priorities, one of which is to help improve the transportation infrastructure in the region.

On August 10, 2005, President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. The following outlines the SAFETEA-LU Section 1923 law:

(a) AGREEMENT. – Not later than 180 days after the date of enactment of this Act, the Secretary shall enter into an agreement with the Delta Regional Authority (in this section referred to as the “DRA”) to conduct a comprehensive study of transportation assets and needs for all modes of transportation (including passenger and freight transportation) in the 8 States comprising the Delta region (Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee).

(b) CONSULTATION. – Under the agreement, the DRA, in conducting the study, shall consult with the department, state transportation departments, local planning and development districts, local and regional governments, and metropolitan planning organizations.

(c) REPORT. – Under the agreement, the DRA, not later than 2 years after the date of entry into the agreement, shall submit to the Secretary and the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a final report on the results of the study, together with such recommendations as the DRA considers to be appropriate.

(d) PLAN. – Under the agreement, the DRA, upon completion of the report, shall establish a regional strategic plan to implement the recommendations of the report.

(e) FUNDING. –

(1) AUTHORIZATION OF APPROPRIATIONS. – There is authorized to be appropriated out of the Highway Trust Fund (other than the Mass Transit Account), to carry out this section \$500,000 for each of the fiscal years 2005 and 2006.



(2) CONTRACT AUTHORITY. – Funds authorized by this section shall be available for obligation in the same manner and to the same extent as if such funds were apportioned under chapter 1 of title 23, United States Code; except that such funds shall remain available until expended and shall not be transferable.

In section 1923 of SAFETEA-LU, Congress charged the DRA with preparing two documents:

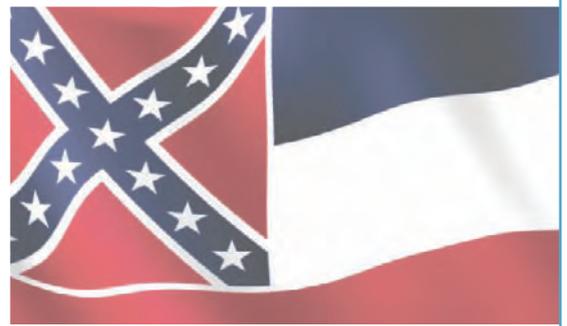
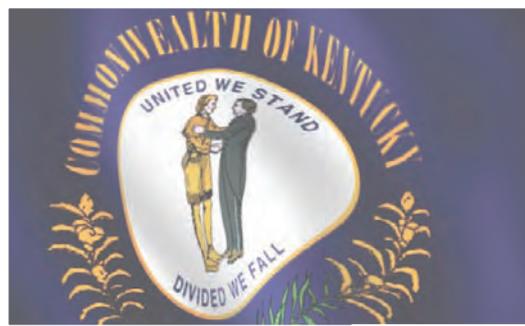
The first being a report of the region’s multimodal assets and needs, plus the Authority’s recommendations thereon this report will identify assets, needs and recommendations for highway and bridges, intelligent transportation systems, freight rail, passenger rail, ports, locks and airports throughout the DRA region. And to complete this report, the following three phases were developed:

- **Phase A - Inventory Multimodal Transportation Assets.** Produce a comprehensive report of multimodal transportation assets (aviation, passenger rail, freight rail, highways, ports, locks, and Intelligent Transportation Systems), that are available within the DRA region.
- **Phase B - Identify Multimodal Transportation Needs.** Produce a report identifying multimodal transportation needs within DRA region.
- **Phase C - Address Needs.** Address the needs of the DRA region by identifying potential processes and improvements (recommendations) to help satisfy the multimodal transportation needs.

And then the second report, the multimodal strategic plan, Phase D would be based upon work completed in Phases A, B, and C.



Regional Coordination





4. REGIONAL COORDINATION

To ensure all assets, needs, and recommendations were recorded and presented in the *DRA Multimodal Transportation Assets, Needs, Recommendations Report*, an intensive effort to engage stakeholders in the DRA region was completed. In the fall of 2007, the DRA project team conducted a regional kickoff meeting in Tunica, Mississippi that included representatives from each of the eight states and a meeting in Washington D.C. with federal agencies. Shortly after the regional kickoff meeting, the DRA project team conducted the first round of regional coordination meetings in each of the eight states. In the spring of 2008, the second round of regional coordination meetings were conducted in each of the eight states. All 17 regional meetings were well attended and participants provided numerous comments and suggestions related to multimodal assets, needs, and recommendations that are outlined below.

4.1 Round 1 Meetings

During the first of three rounds of state meetings, the DRA conducted 10 meetings to discuss this project with federal, state, regional, and local agencies, as well operators of multimodal facilities. The first round meetings included:

- Federal agency meetings in Washington DC on October 2, 2007 that included representatives from the Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), Federal Transit Administration (FTA), Bureau of Transportation Statistics (BTS) and the Maritime Administration (MARAD), (12 attendees);
- Eight State Kickoff Meeting – Tunica, Mississippi on October 19, 2007 (61 attendees);
- Alabama Meeting – Selma, Alabama on October 26, 2007 (31 attendees);
- Mississippi Meeting – Jackson, Mississippi on October 30, 2007 (42 attendees);
- Louisiana Meeting – Baton Rouge, Louisiana on October 31, 2007 (17 attendees);
- Tennessee Meeting – Memphis, Tennessee on November 8, 2007 (15 attendees);
- Illinois Meeting – Carterville, Illinois on November 13, 2007 (51 attendees);
- Arkansas Meeting – Jonesboro, Arkansas on November 14, 2007 (18 attendees);
- Missouri Meeting – Sikeston, Missouri on November 15, 2007 (29 attendees); and
- Kentucky Meeting – Paducah, Kentucky on November 16, 2007 (22 attendees).

Nearly 300 people attended these meetings. The regional meetings were very successful in obtaining input and feedback from a variety of stakeholders throughout the DRA region. Based on these meetings, public transportation and short-line railroads were added to the scope of work. For both of these modes, the DRA project team will be documenting assets, needs, and recommendations.



DRA Multimodal Plan meeting in Carterville, Illinois

After the first round of state meetings, the DRA project team collected aviation, passenger rail, freight rail, highways, ports, locks, and intelligent transportation systems plans, reports, studies, and databases from each of the eight states in the DRA region. To assist in the collection of assets and needs, an internet survey was completed for each mode and numerous press releases and emails were sent to alert stakeholders. The internet survey was provided on www.dramultimodal.com.

The DRA project team utilized the modal databases, plans, reports and studies, coordinated with regional partners, state DOTs, the United States Army Corps of Engineers (USACE), and Federal Aviation Administration (FAA), and incorporated responses from the internet survey to identify the multimodal assets and needs in the DRA region.

4.2 Round 2 Meetings

During the second of three rounds of state meetings, the DRA conducted eight meetings to discuss multimodal transportation needs and recommendations with federal, state, regional, and local agencies, as well operators of multimodal facilities. The second round meetings included:

- Louisiana Meeting – Monroe, Louisiana on March 24, 2008 (30 attendees);
- Mississippi Meeting – Jackson, Mississippi on March 25, 2008 (21 attendees);
- Alabama Meeting – Selma, Alabama on March 26, 2008 (51 attendees);
- Arkansas Meeting – Pine Bluff, Arkansas on March 28, 2008 (18 attendees);
- Tennessee Meeting – Memphis, Tennessee on March 31, 2008 (24 attendees);



- Missouri Meeting – Cape Girardeau, Missouri on April 8, 2008 (28 attendees);
- Kentucky Meeting – Mayfield, Kentucky on April 9, 2008 (32 attendees); and
- Illinois Meeting – Carterville, Illinois on April 18, 2008 (53 attendees).



Congressman Jerry F. Costello (Illinois 12th District) discussed the importance of the multimodal transportation system in the DRA region at the Carterville, Illinois meeting.

4.3 Regional Coordination

During the planning process, the DRA project team coordinated with hundreds of people representing highways, bridges, intelligent transportation systems, freight rail, passenger rail, ports, locks, and airports throughout the DRA region, which included state Departments of Transportation (SDOT), Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), Federal Transit Administration (FTA), Federal Railroad Administration (FRA), Bureau of Transportation Statistics (BTS), U.S. Department of Transportation Maritime Administration (MARAD), U.S. Army Corps of Engineers (USACE), Metropolitan Planning Organizations (MPOs), Rural Planning Organizations (RPOs), National Association of Development Organizations (NADO), Local Development Districts (LDDs), Association of American Railroads (AAR), economic development agencies, Chamber of Commerce, short-line railroad companies, Amtrak, transit agencies, port authorities, and airports. During this coordination hundreds of plans, reports, studies, and databases were collected to document the DRA region assets, needs and recommendations in this report.



4.4 Meeting Participants

At each of the 18 meetings, sign-in-sheets were provided and the following participants provided contact information.

4.4.1 Round One

SAFETEA-LU Section 1923 Project Kickoff Meeting

October 19, 2007

Tunica, Mississippi

1. Pete Johnson, Delta Regional Authority Federal Co-Chairman
2. Tracy Dewitt, ADWIRED
3. Diana Threatgill, Mississippi River Corridor
4. Amie Vanderford, Mississippi River Corridor
5. Jamie Williams, ADWIRED
6. Melissa Rivers, Memphis Chamber
7. Steve Kirly, PSI/UP
8. Henry Mosely, Office of Congressman Chip Pickering
9. Cliff Nash, Tunica Airport
10. Kent VanLauduyt, MoDOT
11. Mark Shelton, MoDOT
12. Kerry Ruby, Office of Congressman Chip Pickering
13. Kim Chamberlin, Office of Congressman Roger Wicker
14. Mary Lamie, IDOT
15. Martin Wade, Waggoner Engineering
16. Rebekah Conner, ADWIRED
17. Sandra Otto, FHWA
18. Ed Dust, City of Sikeston
19. Martha Lott, Memphis MPO
20. John Sicola, Memphis Area Association of Governments
21. Steve Andrews, Memphis Area Association of Governments
22. Lisa Ray, ALDOT
23. Wade Channell, U.S. Army Corps of Engineers



24. Wayne Parrish, MDOT
25. Scott Bennett, Arkansas Hwy and Transportation Department
26. Jon Moran, Office of Arkansas Governor
27. David Blakeney, FHWA-Arkansas Transportation Planning
28. Teresa Estes, TDOT
29. John Bucy, NWTDD
30. John Johnson, Mississippi Public Transit Association
31. Dan Broussard, LA DOTD
32. Mike Schiro, LA DOTD
33. Johnnie Bolin,
34. Samuel McCray, Office of Congressman Benny Thompson
35. Nicci Tiner, Garver Engineers
36. Tameka Macon, TDOT
37. Steven Edwards, MDOT
38. John Suskie, Arkansas Asphalt Pavement Association
39. Cecil Vick, FHWA
40. Sylvia Palmer, SWTDD
41. Mindy Maxwell, Office of Senator Cochran
42. Richard Broman, Design Tech
43. B. Immerto, Design Tech
44. Nick Kistenmacher, Office of Senator Corker
45. Josh Thomas, Office of Senator Alexander
46. Antionette Gray, AEH/ DARTS
47. Monique Hazlewood, Southwest Tennessee RPO
48. Richard Allen, MDOT
49. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Alabama Kickoff Meeting
October 26, 2007
Selma, Alabama

1. Mark Curl, ATRC
2. John Riggs, ATRC
3. Jerry Sailors, Caria
4. Cecil Williams, City of Demopolis
5. Eric Burks, Center for Rural Alabama
6. Lisa Ray, ALDOT
7. Yousaf Solan, Office of State Representative Wren
8. Vera Jordan, State Rep Office of U.S. Senator Richard Shelby
9. Danny Andrea, APCO
10. Sharon Jones, CCDF
11. Johnny D. Jackson, Montgomery Transportation Coalition
12. David Barley, Montgomery Transportation Coalition
13. Duane Poiroux, U.S. Army Corps of Engineers
14. Scott Farmer, SEANPHDC
15. Nancy Ekberg, LWVAL
16. Clint Andrews, FHWA
17. Jamie Wallace, Alabama-Tombigbee Commission
18. C. Ronny Pouncey, ALDOT
19. William Curry, City of Linden
20. Brenda Tuck, Alford and Associates, LLC
21. Alvin Lewis, Office of Congressman Mike Rogers
22. Michelle Tims, Office of U.S. Senator Jeff Sessions
23. Cecelia Meeks, Office of U.S. Senator Jeff Sessions
24. Tyson Howard, SCADC
25. Carolyn Powell, Office of Congressman Davis
26. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Mississippi Kickoff Meeting
October 29, 2007
Jackson, Mississippi

1. Brooks Earnest, Quitman County
2. Aubrey Collums, Quitman County
3. Robert Avant, Panola County
4. Randy Jansen, FHWA-Mississippi Division
5. Joyce Tillman, Jackson Municipal Airport Authority
6. Wanda Christian, NEMPDD
7. Hugh Jack Stubbs, Coahoma County
8. Timothy Burrel, Coahoma County
9. Wirt Peterson, SWMPDD
10. Lygannal Zen, Panola County
11. James Birge Panola County
12. Shelly Bumpas, Office of Congressman Chip Pickering
13. Clifton Johnson, Tunica County
14. Lyn Arnold, Tunica County
15. Billy Harvey, SDPDD
16. Aurelia Payne, Aaron E. Harvy CHC CEO
17. Charlie Horkin, Office of Congressman Thompson
18. John Johnson, Mississippi Public Transit Association
19. Thomas Hamby, NDPDD
20. Jeff Orr, FAA
21. Randy Whiticker, MDOT-ITS
22. Charles Carr, MDOT – Public Transportation
23. L.R. Monty Montgomery, MDA/Energy
24. Juan Flares, MDOT
25. Bill Hughes, MDOT
26. Steve Russell, NCPDD
27. Mike Caraway, MDOT



28. Mike Stokes, MDOT
29. Bo Bilbo, Office of U.S. Senator Trent Lott
30. Kurt Brummett, TRPDD
31. Jeff Pierce, MDOT
32. Jack Moody, MDA
33. Bruce Reynolds, CMPDD
34. Jill R. Brewer, City of Jackson
35. Robby Burt, MDOT
36. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Louisiana Kickoff Meeting
Wednesday October 31, 2007
Baton Rouge, Louisiana

1. Mike Schiro, LA DOTD
2. Ned Peak, Millennium Port Authority
3. Perry Felanse, Capitol Region Planning Company
4. John D. Denmaisr Sr., Capital Area Transit
5. Kevin Belanger, South Central Planning and Development
6. Brenda Clark, Office of U.S. Senator David Vitter
7. Genevieve Smith, FHWA
8. Heather Urena, Kisatchie-Delta RPDD Exec. Dir.
9. Bonnie Lemoine, Procter & Gamble
10. Barney Archuneuf, Congressman Charlie Melanor
11. Roly Quezaire, LA DOTD
12. Leslie Lee, Office of Governor Blanco
13. Jason M. Hughes, Office of U.S. Senator Mary Landrieu
14. Randy Miller, IMCAL
15. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Tennessee Kickoff Meeting
November 8, 2007
Memphis, Tennessee

1. Ralph Comer, TDOT Long Range Planning
2. Ken Thorne, Northwest Tennessee Development District
3. Monique Hazlensend, SWTDD
4. Rice Pritchard, TDECD
5. John Sicola, MAAG
6. David Pechin, ECDLPAC
7. Nick Kistenmacher, Office of U.S. Senator Bob Corker
8. Matt Varia, Office of U.S. Senator Lamar Alexander
9. Josh Thomas, Office of U.S. Senator Lamar Alexander
10. Paul Morris, Memphis MPO
11. Rob Goad, NWTN RPO
12. Sherman Greer, Office of Congressman Cohen
13. Scott Goldsen, Office of Congresswoman Blackburn
14. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Illinois Kickoff Meeting
Tuesday, November 13, 2007
Carterville, Illinois

1. Tess Ford, SIU Center for Rural Health
2. Grant Guthman, Jackson County Engineer
3. Steven Mitchell, ManTraCon Communications
4. Donna Raynalds, SIDEZ
5. Doug Grindberg, Rural Development
6. Roger Swartz, Soylutions, LLC
7. Deb Caliper, DCEO
8. Karl Maples, Office of Congressman Jerry Costello
9. Kim Guetersloh, Project Coordinator
10. Dan Shannon, Center for Rural Health SIV



11. Kim Watson, DCEO
12. Kathy Lively, Connect SI
13. David Phelps, IDOT
14. Mary Lamie, IDOT
15. Lisa Thurston, Southern Five RPC
16. John Pike, UIUC
17. Hugh Crane, Crab Orchard and Egyptian Railroad
18. Brandon Black, Illinois Transload
19. Brian Freeburg, Southern Illinois University Aviation Student
20. Ann Colborn, Ann Colborn and Associates LLC
21. Robert Colborn, Ann Colborn and Associates LLC
22. Doug Bishop, Perry County Highway
23. Matt Romero, Southern Illinois University – Aviation Management Flight
24. Susan Odum, USI Extension
25. Kappy Scates, Officer of U.S. Senator Dick Durbin
26. Doug Kimmel, IDOT
27. Brad Houseright, Ridgeview Tel.
28. Mike Keiard, SIUC
29. Darren Pulley, John A. Logan College
30. Rusty Wanstreet, USDA-Rural Development
31. Rex Duncan, Southern Illinois University
32. Gail West, Economic Development
33. Dan Holt, Southeastern Illinois College
34. Joan Wiehm, C.O.E.R.R.
35. Joseph Byrne, SIUC
36. Bob Campbell, REDCO
37. Robert Swenson, School of Architecture, Southern Illinois College
38. Danny Clayton, IDOT
39. Ike Kirkikis, GERPC



40. Cathy Dinn, City of West Frankfort
41. Bill Jung, CEO Rides Mass Transit
42. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Arkansas Kickoff Meeting
November 14, 2007
Jonesboro, Arkansas

1. Chris Masingill, Office of the Governor and DRA Alternate & Designee
2. Mike Gosha, J.A. Riggs Tractor Company
3. John T. Suskie, AR Asphalt & Pavement
4. Mike Newcomb, AHTD
5. Roger Fisher, Office of U.S. Senator Blanche Lincoln
6. Cliff McKinney, AHTD
7. Harold Carter, Retired
8. Curt Hodges, The Sun
9. Russell Hall, Office of U.S. Senator Mark Pryor
10. Everette Callaway, Office of Congressman Berry
11. Tracy Dewitt, ADWIRED
12. Sunny Morris, ADWIRED
13. Muhammad Amin Ulkarim, Jonesboro MPO
14. Paul Holmes, Northeast Arkansas Business Today
15. RuJay Booke, APAC
16. Rex Nelson, Delta Regional Authority Alternate Federal Chairman
17. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Missouri Kickoff Meeting
November 15, 2007
Sikeston, Missouri

1. Missy Marshall, Sikeston Area Chamber of Commerce
2. Jason Knipp, MoDOT Aviation
3. Don Ranson, MoDOT Department of Economic Development
4. Mike Dumery, MoDOT Department of Economic Development



5. John Ferguson II, Pemiscot County Port Authority
6. Larry Barton, City of Bonne Terre
7. Melinda Watson, City of Bonne Terre
8. Rick Murray, City of Malden
9. Shirley Tarwater, MoDOT
10. Channey Buckhect, SEMO Regional Planning
11. Bill Robison, MoDOT
12. Leon Steinbrueck, Mississippi County Port
13. Ed Dust, City of Sikeston
14. Kent Van Laundry, MoDOT
15. John Haynes, Office of Representative Jo Ann Emerson
16. Greg Batson, Bootheel Association
17. Steve Duke, Bootheel Regional Planning and Economic Development Commission
18. Mike Dumey, Bootheel Regional Planning and Economic Development Commission
19. Sabrina Harris, Enterprise Courier
20. Roger Wheeler, Mayor of Kennett
21. Ben Dyer, Office of U.S. Senator McCaskill
22. Shirley Allan, Mississippi County Transit
23. Katrina Hodges, Dunklin County Transit Service, Inc.
24. James Odom, MoDOT
25. Dan Overbey, SEMO Port
26. Mike Wake, MoDOT
27. Doug Friend, City Manager, City of Sikeston
28. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Kentucky Kickoff Meeting
November 16, 2007
Paducah, Kentucky

1. Keith Harpole, Green River Area Development District
2. Ken Canter, Paducah McCracken County Riverport Authority
3. Ted Walker, Hickman River City



4. Jack Gannor, Hickman River City
5. Fran Johnson, Paducah Chamber of Commerce
6. Gene Dowell, U.S. Army Corps of Engineers
7. Richard Bowman, Design-Tech KY
8. Bernadette Dupont, FHWA-KY
9. Allen W. Thomas, KYTC
10. Craig Morris, ADD Pennyrile Area Development District
11. Chris Sutton, ADD Pennyrile Area Development District
12. Bjarne Hanson, MCTA
13. Tom Hodges
14. Jeremy Edgeworth, KYTC Planning
15. David Gallaghen, Fulton County
16. Richard Roof, Barkley Regional Airport Authority
17. Mark Davis, Purchase Area Development District
18. Stacey Courtney, Purchase Area Development District
19. Steve Ervin, City of Paducah
20. Corey Arctchelf , City of Henderson
21. Joe Sheilley, KYTC
22. Lynn Soporowski, KYTC
23. Bill Triplett, Delta Regional Authority

4.4.2 Round Two

SAFETEA-LU Section 1923 Louisiana Meeting #2

March 24, 2008

Monroe, Louisiana

1. Congressman Rodney Alexander
2. Doyle Robinson, DRA Alternate, Governor's Office
3. Wyly Gilfoil, Lake Providence Port
4. Ryan McMillan, LA DOTD
5. Paul Colquetle, LA DOTD
6. Amy Giddens, LA DOTD



7. Nick Vernet, LA DOTD
8. Marshall Hill, LA DOTD
9. Pam Dixon, LA DOTD
10. David Creed, North Delta Regional Planning & Development District, Inc.
11. Melissa Rhodes, North Delta Workforce
12. Ricky Moon, LA DOTD
13. Linda Bardelon, Avoyelles Port
14. Tommy Maddie, Avoyelles Port
15. Robert Waxmum, Innwatia Com Inc.
16. Miriam Russell, LED
17. Mary Ann Newton, WMAO
18. Robbie George, S.E. Huey Company
19. Kevin Crosby, Lazenby and Associates
20. Johnnie Bolin, AGRTC
21. Tana Tridul, NorthEast Louisiana Economic Alliance
22. Key Kellogg, State Representative
23. Fred Franklin, NorthEast Louisiana Economic Alliance
24. Don Terry, Entergy
25. Heather Surena, Kisatchie Delta RPDD
26. David Hodnett, LA DOTD
27. Brad Brandt, LA DOTD
28. John H. Eason, LA DOTD
29. Louise Collins, North Delta RPDD
30. Tracy Sbey, North Delta RPDD
31. Ric Chaya, Self Employed
32. Wynn Lawrence, AT&T
33. Dwight Vines, City of Monroe
34. Rev. James Smith, Town of Rayville
35. Kim Golden, City of Monroe



36. Moses Williams, NELDCDC
37. Pat Regan, OEDC
38. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Mississippi Meeting #2
March 25, 2008
Jackson, Mississippi

1. Randy Sansen, FHWA
2. Margaret Morlino, Central Mississippi PDD
3. Larry Smith, Central Mississippi PDD
4. Kenny and Melissa Gober, Yellow Bend Port
5. Jim Murphy, MARAD
6. Susan Schaefer, U.S. DOT
7. Henry Cote, Yazoo County Port
8. Anthony Haller, Natchez Adams County Port
9. Wayne Mansfield, Warren County Port Commission
10. Kent Wyare, Delta County
11. Acey Roberts, MDOT
12. Charlie Bevil, Port of Greenville
13. Jay Moon, Mississippi Manufacturing Assoc.
14. Denny Barrentine, MDA
15. Jeffrey Altman, MDOT
16. Jeff Pierce, MDOT
17. Charles Carr, MDOT
18. Jamie Mortiner, Tate County Economic Development
19. Chris Pope, MDPDD
20. Heather Civil, Clarion Ledger
21. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Alabama Meeting #2
March 26, 2008
Selma, Alabama

1. Bill Johnson, DRA Designee, Director of the Alabama Department of Economic and Community Affairs
2. Beatrice Forniss, DRA Alternate, Alabama Department of Economic and Community Affairs
3. Mary O. Smith, Monroe County RPO
4. Billy G. Mims Sr., Conech County RPO
5. Lisa Ray, ALDOT
6. Norman Holmann, ALDOT
7. Lamar Hudson, Town of Grove Hill
8. Jill Hannah, West Alabama Regional Commission
9. Johnny Jackson, Montgomery Transportation Coalition
10. Gus Townes, Montgomery Transportation Coalition
11. Milton Ezella, Dallas County RPO
12. John Clyde Riggs, ATRC
13. Mark Bartlett, FHWA
14. Jamie Wallace, Alabama-Tombigbee Regional Authority
15. Jon Broadway, MTC
16. Raleigh Wilkerson
17. Dale Harris, FHWA
18. Wayne Vaudamer, Center for Commerce
19. Ashley Welborn, City of Livingston
20. Tom Piper, SARPC
21. Robert Maddox, ALDOT 9th Division
22. Johnny Stallworth, ALDOT
23. Lauri Cothran, Selma Chamber of Commerce
24. Rex Thompson, ALDOT
25. Eric Burks, AL Department of Agriculture



26. John Martin, Perry County Chamber of Commerce
27. Gebert Ridder, Dallas County
28. Tom Gordon, Birmingham News
29. Tim Sanderson, Perry County Commissioner
30. Keith Bryan, LRCOG
31. Menzo Daiskell, Craig Field Airport
32. Nancy Ekberg
33. Sarah W. Reed
34. Gwendolyn Denish
35. Carolyn Powell, Office of Congressman Davis
36. Shawn Jones, Clarke County Development Fundraiser
37. Judith Adams, Alabama State Port Authority
38. Jerry Sailors, Coosa Alabama River Association
39. Anthony Grear, Sumter County
40. Katrina Easley, Perry County Extension
41. Cecil Wilkoz, City of Demopolis
42. C. McCorvey, County Commissioner
43. Thomas Moore, West Alabama Public Transportation
44. Mayor James Perkins, City of Selma
45. Charles Singleton, Washington County Probate Judge
46. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Arkansas Meeting #2
March 28, 2008
Pine Bluff, Arkansas

1. Chris Masingill, Office of the Governor and DRA Alternate & Designee
2. Lou Ann Nisbett, Economic Development Alliance of Jefferson County
3. Truman Hamilton, Monticello Economic Development
4. Sammye Owen, Dumas Chamber of Commerce
5. Mike Murphy, Kinder Morgan, Inc.



6. Katherine Aufderheide, Office of Congressman Berry
7. Fred Toney, FMT & Associates
8. Andrew Morgan, Arkansas Municipal League
9. Charlene Cole, Judge Lincoln County
10. Paul Latture, Port of Little Rock
11. Joe Rogers, Mayor of Monticello
12. David Bush
13. Bill Ferren
14. Patricia Hargrove, Southeast Arkansas Economic Development District
15. Johnnie Bolin, Arkansas Good Roads Transportation Council
16. Rujay Burke, Arkansas Good Roads Transportation Council
17. Roy Ferrell, Simmons First National Bank
18. Milton Ezell, Office of Congressman Mike Ross
19. Richard Mills, Arkansas Department of Aeronautics
20. John Knight, Arkansas Department of Aeronautics
21. Sam E. Angel II, Yellow Bend Port
22. W.P. Webb, Good Roads Transportation of Arkansas
23. Donald Hatchett, Entergy
24. Steven Alexander, AHTD
25. Bill Henry, City of Little Rock
26. Jerry George, Southeast Arkansas Regional Planning, City of Pine Bluff
27. Gary Dalporto, FHWA-Arkansas
28. Renee Dycus, Southwest Arkansas Planning and Development District
29. Russell Hall, Office of U.S. Senator Pryor
30. Sunny Morris, Arkansas Delta Wired
31. Mark Bradley, AHTD
32. Dorothy Rhodes, AHTD
33. Damon Lampkin, Drew County Judge
34. Dennis Phillipi, Pine Bluff Sand and Gravel Company



35. Wanda Madera, Southeast Arkansas Planning and Development District
36. Gerry Chism, Arkansas Department of Aeronautics
37. Harvey Joe Sanner, Arkansas Waterway Association
38. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Tennessee Meeting #2
March 31, 2008
Memphis, Tennessee

1. Congressman Stephen Cohen
2. Ralph Comer, TDOT
3. Joe Warren, TDOT
4. Steve McGuire, Mississippi County Arkansas
5. Teresa Estes, TDOT
6. Clark Odem, Memphis Engineering
7. Cecil Sowell, A2H
8. John Lancaster, MATA
9. Sean Ellis, City of Memphis
10. Kenneth Monroe, Kimley-Horn and Associates
11. Josh Thomas, Office of U.S. Senator Alexander
12. Brian Pecon, A2H
13. Jim McDougal, Desoto City Mississippi
14. Bruce Young, Bridges USA
15. Bob Speth, Mississippi Rail Group
16. Alan McVey, ASU-Delta Center
17. Steve Andrews, Memphis Area Associates of Governments
18. Monique Hazlewood, SWTDD
19. Paul Morris, Memphis MPO
20. John Modzelewski, Smith Seckman Reid, Inc
21. Karen Greer, Northwest Tennessee Human Resource Agency
22. James Roberts
23. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Missouri Meeting #2

April 8, 2008

Cape Girardeau, Missouri

1. Shirley Allan, Mississippi County Transit System
2. Sherrie Martin, MoDOT
3. David Madison, Pemiscot County Port Authority
4. Katrina Hodges, Dunklin County Transit Service Inc.
5. Missy Marshall, Sikeston Area Chamber
6. Christy LeGrand, Missouri Research Corporation
7. Tammi Hutcheson, Mississippi County Port Authority
8. Leon Steinbruch, Mississippi County Port Authority
9. Ed Dust, City of Sikeston
10. Shirley Tarwater, MoDOT
11. Danielle Waiters, Cape County Transit
12. Denny Ward, SMTS, Inc
13. Bill Osborne, SMTS, Inc
14. Tom Mogelnicks, Cape County Transit
15. Margaret Yates, SEMO RPC
16. Scott Perry, BRPC
17. Jeff Glenn, Delta Companies
18. Bill Robison, MoDOT
19. Mike Wake, MoDOT
20. Rick Murray, City of Malden
21. Ben Dyer, Office of U.S. Senator McCaskill
22. Mitch Robinson, Cape Girardeau Area MAGNET
23. Bev Miller, SEMO Port
24. Dan Overbey, SEMO Port
25. Kent VanLauduyt, MoDOT
26. Bill Triplett, Delta Regional Authority



SAFETEA-LU Section 1923 Kentucky Meeting #2
April 9, 2008
Mayfield, Kentucky

1. Roger Treisand, City of Columbus
2. Richard Rouf, Barkeley Regional Airport
3. Vuhie Vmiard, Ballard County
4. Janice Everett, Office of Congressman Whitfield
5. Terry Anderson, Marshall County Commissioner
6. Danyelle Adams, Murray State University
7. Martie Wilson, Office of U.S. Senator McConnell
8. Rachel McCubbin, Office of U.S. Senator Jim Bunning
9. Wayne Bates, KYTC
10. Dr. Dick Bowman, Design Technology-KY
11. Matt Sawyer, GOLD
12. Lynn Littrell, GOLD
13. Mick Hall, KYTC
14. Craig Morris, Pennyrile ADD
15. Ben Peterson, City of Paducah
16. Stacey Courtney, Purchase ADD
17. Chuck Oliver, U.S. Army Corps of Engineers - Louisville
18. Jeff Monroe, City of Clinton
19. Jim McPherson, Carlisleco
20. Ken Canter, Port Director Paducah
21. David Gallagher, Fulton County
22. Tom Hodges, Fulton County
23. Bernadette Dupont, FHWA-KY
24. Melissa Rowland, Carlisle County
25. Gene Dowell, USACE
26. Daniel Key, I-66 Board, Paducah Chamber of Commerce
27. Ellen K. Thomas, GGA



28. Charlie Martin, Wickliffe River Port
29. Jeremy Breham, Purchase ADD
30. Jennifer Beck-Walker, Purchase ADD
31. Bill Triplett, Delta Regional Authority

SAFETEA-LU Section 1923 Illinois Meeting #2
April 18, 2008
Carterville, Illinois

1. Congressman Jerry Costello
2. Senator Larry Woolard, DRA Alternate, State Senator
3. Dan Shannon, Center for Rural Health-SIUC
4. John Pike, University of Illinois Extension
5. Linda Williams, Coldwell Barker Carterville
6. Doug Grindberg, USDA Rural Development
7. Hugh Crane, Crab Orchard and Egyptian Railroad
8. Dave Reis, Eastside Lumber Yard Supply
9. Grant Gutham, Jackson County Highway Department
10. Larry Glasco, Massac County
11. Enoch Paul, Southern Illinois Airport
12. Steve Cook, City of West Frankfort
13. Steve Mitchell, Man-Tra-Con Corporation
14. Jim Epplin, Perry County
15. Ike Kirkikis, Greater Egypt Regional Planning & Development Commission
16. Doug Williams, Coldwell Banker
17. Carrie Nelsen, IDOT
18. Tess Ford, SIUC, Center for Rural Health & Social Services
19. Darren Pulley, John A. Logan College
20. Stacey Thomas, Alexander County
21. Rob Beynon, InterVistas
22. Ron Duncan, Shawnee Community College
23. Doug Bishop, Perry County Highway Department



24. Doug Keirn, IDOT
25. Kevin Grammer, IDOT
26. Tom Emling, Independent Consultant
27. Bob Campbell, REDCO
28. William Dill, REDCO
29. Jack Kremers, Sill Architecture
30. Bob Swenson, SIUC School of Architecture
31. Kathy Lively, Connect SI
32. Donna Raynalds, Southernmost Illinois Delta Empowerment Zone
33. Rusty Wanstreet, USDA Rural Development
34. Lisa Thurston, Southern Five Regional Planning District and Development Commission
35. Kappy Scates, Office of U.S. Senator Durkin
36. Jane Adams, SIU- Center for Delta Studies
37. Kim Watson, Illinois Department of commerce and Economic Opportunity
38. Mike Weiard, Center for Rural Health and Social Service Development, SIU
39. Gordon Ingram, EnergyPlus
40. Jim Fowler, Saline City Board
41. John Wiehn, Crab Orchard & Egyptian Railroad
42. Karen Bunde, The Southern Illinoisian
43. Dennis White, JALC
44. Danny Clayton, IDOT
45. Mike Pierceall, City of Carbondale Development Services
46. Mary Laini, IDOT
47. Bob Mees, President of John A. Logan College
48. Rex Duncan, SIU
49. Katie Pennell, Office of U.S. Senator Obama
50. Brian Chapman, SIU Office of President
51. Jan Rash, IDOT
52. Bill Triplett, Delta Regional Authority



4.5 Project Website

A project website, www.dramultimodal.com, was developed to assist in the collection of multimodal transportation assets and needs in the DRA region. To encourage stakeholders to use the website, letters, emails, and phone calls were made to individuals and agencies that operate a transportation mode in the DRA region. Based on these communication efforts, hundreds of local stakeholders completed the multimodal transportation asset and need surveys. The responses are included in the CD that accompanies this report. The website also contains multimodal transportation maps for each of the eight states, and sign-in-sheets from the 17 regional coordination meetings.

4.6 Local Participation

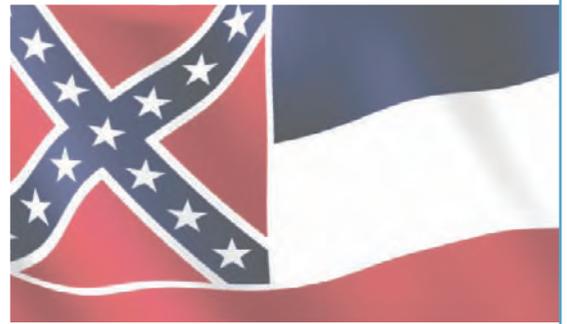
During the two meetings in each of the eight states, numerous participants formally spoke and provided written reports to the group highlighting important multimodal needs and recommendations, which included the following:

- Bootheel Regional Planning and Economic Development Commission Report to the DRA;
- Illinois Department of Transportation Report to the DRA;
- Missouri Department of Transportation Report to the DRA;
- Paducah Area Chamber of Commerce 2008 Priority Projects;
- Pine Bluff Intermodal Freight Transportation Facility;
- Wickliffe Port Authority Funding Request;
- The Southern Illinois Regional Aviation System Plan;
- Massac County Highway Department Report to the DRA; and
- Cairo Intermodal Demand Analysis.

Approximately 600 DRA regional partners attended the 17 regional meetings conducted throughout the region. All the local needs discussed during the state meetings were identified on DRA maps to ensure the needs were documented and included in the final *DRA Multimodal Transportation Assets, Needs and Recommendations Report*. **Appendix A** presents the non-prioritized local needs provided by stakeholders at the regional coordination meetings in each of the eight states or through correspondence after the meetings were completed. The local needs represent the opinions of local stakeholders concerning improvements needed to advance the multimodal transportation system.



Assets and Needs Methodology





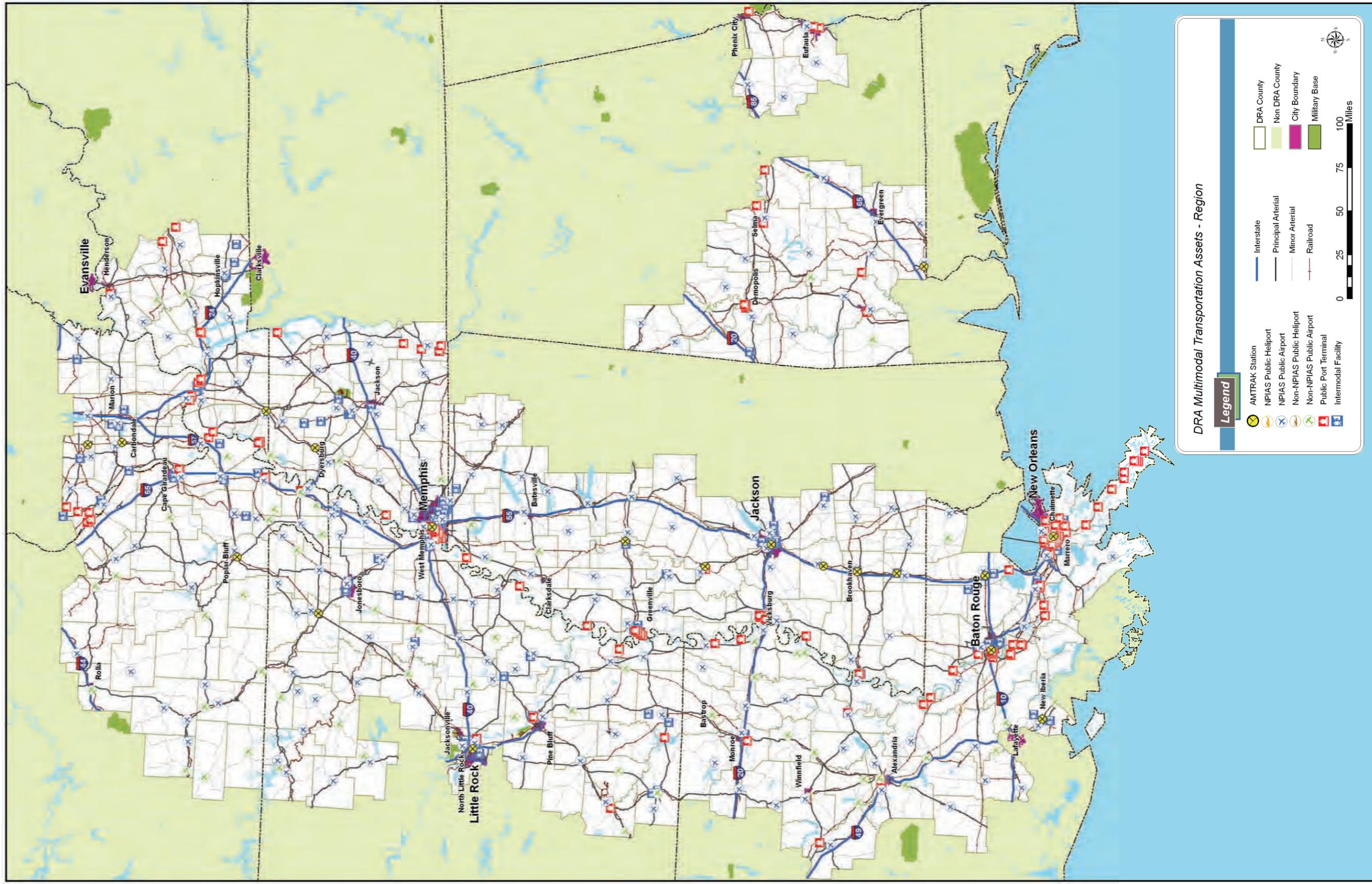
5. ASSETS AND NEEDS METHODOLOGY

This report provides asset and need information for highways miles and number of bridges, intelligent transportation systems, freight rail track and ownership, passenger rail stations, public ports, locks, and public airports in the DRA region. Identifying and collecting multimodal transportation assets and needs required continual coordination between federal, regional, state, and local agencies. This section of the report provides an overview and methodology used to collect the multimodal transportation assets and needs.

5.1 Modal Asset Methodology

Based on the asset collection process discussed in this chapter, **Figure 1** shows the multimodal transportation assets in the DRA region. The CD that accompanies this report provides additional multimodal transportation maps for each of the eight states, as well as assets and needs for each mode.

Figure 1: Multimodal Transportation Assets





5.1.1 Highways and Bridges

Highways and bridges are the life blood of the transportation system. There are 230,396 miles of roadways and 44,538 bridges in the DRA region, as certified by each of the eight state DOTs. This transportation network serves international, regional, and local markets and provides an efficient way of moving people and goods. The following provides the databases used to collect highway and bridge assets in the DRA region and the general process of collecting and certifying the highway and bridge assets in the DRA region.



I-10 over the Mississippi River in Baton Rouge, Louisiana

5.1.1.1 Methodology

All highway and bridge assets in the DRA region were initially identified through databases maintained by FHWA and then certified by each of the eight state DOTs. The following provides a description of each of the databases.

Highways – The National Transportation Atlas Databases 2007 (NTAD2007) is a set of nationwide geographic databases of transportation facilities, transportation networks, and associated infrastructure. These datasets include spatial information for transportation modal networks and intermodal terminals, as well as the related attribute information for these features. NTAD2007 is the result of cooperation throughout the U.S. Department of Transportation, the U.S. Army Corps of Engineers, the U.S. Bureau of the Census, the Environmental Protection Agency, the Surface Deployment and Distribution Command - Transportation Engineering Agency (SDDCTEA) and the National Park Service. NTAD2007 provided asset information for the following transportation modes and/or infrastructure:



National Highway Planning Network (NHPN) – The National Highway Planning Network is a comprehensive network database of the nation's major highway system. It consists of the nation's highways comprised of Rural Arterials, Urban Principal Arterials and all National Highway System routes. The data set covers the 48 contiguous states plus the District of Columbia, Alaska, Hawaii, and Puerto Rico. The data is maintained by the Federal Highway Administration (FHWA), 2006.

Highway Performance Monitoring System (HPMS) – The HPMS provides data that reflects the extent, condition, performance, use, and operating characteristics of the nation's highways. The HPMS database was used to identify the center line miles of roadway by area type (urban or rural) and functional classification in the DRA region for each of the eight states. HPMS is maintained by state Departments of Transportation and submitted to the Federal Highway Administration, 2006.

Weigh in Motion Stations – The data included in the GIS Traffic Stations Version database have been assimilated from station description files provided by FHWA for Weigh-in-Motion (WIM) stations, and Automatic Traffic Recorders (ATR). Location referencing information was derived from the National Highway Planning Network version 4.0 and state departments of transportation. The attributes on the point elements of the database have come from two primary sources, the Station Description Records and the National Highway Planning Network's Linear Referencing System.

Bridges – The NTAD2007 does not provide data on bridges. To identify bridge assets in the DRA region, the 2006 National Bridge Inventory (NBI) was used and each state verified the number of bridges in the DRA region. The U.S. Department of Transportation's Federal Highway Administration National Bridge Inventory database lists structural evaluations and codes for all bridges in the United States. This data was used to identify the number of bridges by functional classification in each DRA state.

5.1.1.2 Asset Information

The highway and bridge asset information gathered during the data collection process and provided for each of the eight state DOTs includes the following information.

Roadway Miles by Functional Classification – Using the 2006 HPMS database, roadway miles in the DRA region for each of the eight states were collected for rural and urban areas and segmented by functional classification. Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service the roadway is intended to provide. There are five highway functional classifications: Interstates, Freeway/Expressways, Arterials, Collectors, and Local Roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access the roadway allows. Each of the eight state DOTs provided a letter certifying the roadway miles by functional classification and all letters are provided in **Appendix B**.



Roadway Miles by Ownership Type – Using the HPMS database, roadway miles by ownership were determined. Ownership identifies who is responsible for maintaining the roadway. The four ownership categories used were federal, state, county/local/municipality, or other. Each of the eight state DOTs provided a letter certifying the roadway miles by ownership.

Delta Development Highway System – Based on the report released in February 2007 by the DRA, the DDHS totals 3,843 miles of roadways throughout the region and the estimated cost to complete planned improvement projects on these roads totals \$18.5 billion.

Number of Bridges by Functional Classification – Using the 2006 NBI database, the number of bridges in the DRA region for each of the eight states were collected for rural and urban areas and segmented by functional classification. Each of the eight state DOTs provided a letter certifying the number of bridges by functional classification.

National Highway System (NHS) – The National Highway System (NHS) in the DRA region comprises of approximately 8,530 miles of roadway, which includes the Interstate Highway System, as well as other roads, which are important to the nation's economy, defense, and mobility. The NHS was developed by the U.S. Department of Transportation in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). Each of the eight state DOTs provided a letter certifying the NHS miles.

The NHS includes the following subsystems of roadways:

- **Interstates:** The Eisenhower Interstate System of highways retains its separate identity within the NHS.
- **Other Principal Arterials:** These are highways in rural and urban areas that provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.
- **Strategic Highway Network (STRAHNET):** This is a network of highways that are important to the United States' strategic defense policy and that provide defense access, continuity and emergency capabilities for defense purposes.
- **Major Strategic Highway Network Connectors:** These are highways that provide access between major military installations and highways that are part of the Strategic Highway Network.
- **Intermodal Connectors:** These highways provide access between major intermodal facilities and the other four subsystems making up the National Highway System.

Strategic Highway Network (STRAHNET) – This network of highways is important to the U.S. strategic defense policy and provides defense access, continuity and emergency capabilities for defense related purposes. Each of the eight state DOTs provided a letter certifying the number of STRAHNET miles, which total 3,129 miles in the DRA region.



Weigh Stations - Most states collect taxes based on the weight of transported goods. Truck weigh stations are used for these tax purposes, as well as to monitor the weight of a truck to ensure that it falls within the safety guidelines that each state has in place for its road system. Each of the eight state DOTs provided a letter certifying the number of weigh stations.

Rest Areas - To enhance traveler safety and comfort, state DOTs, maintain a system of rest areas on highways throughout the DRA region. Amenities at these rest areas vary, but the most common include parking, rest rooms, picnic areas, and visitor information. Each of the eight state DOTs provided a letter certifying the number of rest areas and welcome centers.



Missouri Highway 34 and Illinois Highway 146 bridge over the Mississippi River in Cape Girardeau, Missouri



US 60/US 62 bridge over the Mississippi River from Cairo, Illinois to Missouri



5.1.2 Intelligent Transportation Systems

Like other regions across the U.S., many urban areas in the DRA region are facing a growing congestion problem. Growth in traffic volumes in many regions is outpacing new road construction, resulting in more vehicles trying to squeeze into less space. Adding lane capacity and building new highways has traditionally been the remedy for congestion. However, an alternative to traditional capacity-adding projects is integrating Intelligent Transportation Systems solutions to improve traffic operations on existing roadways and enhance public transportation services. Capital infrastructure such as roadways, intermodal ports, airports, and transit facilities are extremely vital components of the transportation system in the DRA region. In order to manage these resources more efficiently, ITS solutions are being deployed throughout the region by state DOTs, as well as larger cities.

5.1.2.1 Methodology

The ITS assets included in the DRA assets inventory were gathered directly from the ITS managers from each of the eight state DOTs and the city engineers from each city in the DRA region with an ITS infrastructure currently in place. This information was gathered through an on-line internet survey and by contacting each stakeholder individually by phone and email.

5.1.2.2 Asset Information

The following ITS asset information was gathered during the data collection process from each of the 12 ITS providers in the DRA region:

Number of Weigh-In-Motion truck scales – Usually placed along interstate routes to capture and record truck axle weights and gross vehicle weights as the truck drives over a sensor.

ITS Traffic Management Centers (state and city) – The TMC is the hub of a transportation management system. This is where real time information about traffic conditions is gathered and using ITS assets, it allows engineers to identify incidents to more effectively manage traffic flow and reduce congestion in a timely manner.

Fiber optic cable – In ground cable used to link traffic signals, cameras, and message signs to the traffic management center.

Interconnected traffic signal systems – Traffic signals connected and working together to improve traffic flow through high volume, congested areas.

Closed Circuit Television (CCTV) Cameras – Cameras used for traffic surveillance along roadways and at intersections.

Dynamic Message Signs – Electronic traffic signs used on roadways to give travelers updated information and warnings on traffic congestion, construction zones, accidents, weather information, and any required actions to perform.



Availability of roadway weather information – Weather information available to travelers by means of dynamic message signs, radio, phone, or internet service.

Highway Advisory Radio – Low power AM radio stations set up by state or local transportation departments to provide bulletins to motorists and other travelers regarding traffic and other delays.

Availability of toll free cellular information to travelers – The 511 service designated by the FCC as the single 3-digit traffic information telephone number to be made available to states and local jurisdictions as a means of enhancing mobility and improving safety on roadways.

Travel information websites – Websites offering updated information on traffic conditions, construction zones, accidents, weather conditions, etc.

5.1.3 Freight Rail

Freight rail plays a critical role in the DRA transportation system. While this transportation mode is predominantly private, millions of tons of goods use rail to transport goods to and from market. Intercity passenger rail, AMTRAK, use the same tracks for moving passengers. There are currently 9,674 miles of track in the DRA region and 7,228 miles are Class I, 190 miles are Class II and 2,256 miles are Class III.



Class I train traveling parallel to the Mississippi River under the I-57 bridge in southern Illinois.

5.1.3.1 Methodology

The majority of the DRA railroad geography and quantification of assets came from the National Transportation Atlas Databases 2007 (NTAD2007). The NTAD2007 is a



nationwide geographic dataset that has been collected from various sources by the U.S. Department of Transportation - Research and Innovative Technology Administration, Bureau of Transportation Statistics. Specifically, the NTAD2007 sites its source for rail as data obtained from the Federal Railroad Administration (FRA).

During the first round of state meetings throughout the DRA region, several abandoned tracks were identified. To ensure active rail track was identified, the DRA freight rail database was updated by reviewing markups from individual state maps. This phase primarily involved the removal of abandoned lines, identifying line owners/operators, and documenting other rail line attributes (trackage rights, density range, signal system). The primary source for this information was the “North American Railroad Map” Version 3.0.

Discrepancies between the DRA database and North American Railroad Map, primarily line status and Class III railroad names, were cross-referenced with other sources such as individual state rail plans, Association of American Railroad (AAR) data or through internet research. For any remaining discrepancies, priority was given to the state maps and any changes were documented.

Using the state maps as the primary source, rail within the DRA region was then classified into Class I, Class II, or Class III rail. A “CLASS” field was created in the database and attributed accordingly. The next process involved calculating the total rail mileage based on the existing “MILES” field. The total mileage was then broken down by state and class.

Calculating total rail mileage by state or by railroad results in a closer approximation of total “track miles.” Track miles, in addition to accounting for track right-of-way mileage, also takes into account rail sidings and yard trackage. Track mileage is greater than the “route mileage,” which measures rail lines from endpoint to endpoint.

Intermodal Terminal Facilities are also included in the freight rail asset documents. Intermodal facility data was provided by the National Transportation Atlas Databases 2007 (NTAD2007), which is a set of nationwide geographic databases of transportation facilities, transportation networks, and associated infrastructure. The public database consists of four tables. One of the tables is a spatial table: FACILITY. The three other tables consist of attribute data for the database: SHIPMENT, COMMODITY, and DIRECTION.

5.1.3.2 Asset Information

The following freight rail asset information was gathered during the data collection process and provided for each of the eight state DOTs includes the following information.

Class I Railroad – A Class I railroad in the U.S. is one of the largest freight railroad, as classified based on operating revenue. As defined by the Association of American Railroads (AAR), a Class I railway is defined as a railway company with an operating revenue exceeding \$346.8 million (2006).

Class II Railroad – A Class II regional railroad in the U.S. is a mid-sized freight-hauling railroad, in terms of its operating revenue. As of 2006, a railroad with revenues greater than



\$40 million but less than \$346.8 million for at least three consecutive years is considered a Class II railroad. Switching and terminal railroads are excluded from Class II status. Railroads considered by the AAR as "Regional Railroads" are typically Class II railroads.

Class III railroad – A Class III local railroad is defined by the AAR as a railroad with an annual operating revenue of less than \$40 million. Class III railroads are typically local short-line railroads, serving a very small number of towns or industries; many Class III railroads were once branch lines of larger railroads that were spun off, or portions of mainlines that had been abandoned.

A short-line railroad is an independent railroad company that operates over a relatively short distance. Short-lines generally exist for one of three reasons:

- Link two industries requiring rail freight together;
- Interchange revenue traffic with other, usually larger, railroads; or
- Operate a tourist passenger train service.

Often, short-lines exist for all three of these reasons. Because of the small size and generally low revenues, the great majority of short-line railroads in the US are classified by the AAR as Class III.

Intermodal Facilities - Intermodal freight transport involves the transportation of freight in a container or vehicle, using multiple modes of transportation (air, rail, water, and truck), without any handling of the freight itself when changing modes. The method reduces cargo handling, security, and may allow freight to be transported faster. Reduced cost versus over the road trucking is the key benefit for intracontinental use. Intermodal assets identified in include the following:

- Air – Truck;
- Port – Truck;
- Rail – Port;
- Rail – Truck;
- Truck – Port - Rail – Air; and
- Truck – Port – Rail.

5.1.4 Passenger Rail

Passenger rail provides a valuable transportation service within the DRA region. Passenger rail reviewed during the asset collection process entailed identifying commuter and intercity passenger rail service. There is currently no commuter rail service in the DRA, however intercity passenger rail service is provided by Amtrak and Little Rock, Memphis and New Orleans operate passenger service on trolleys.

Amtrak train passenger services in the DRA region include the following routes:



- The City of New Orleans (New Orleans, LA to Chicago, IL);
- The Sunset Limited (Orlando, FL to Los Angeles, CA);
- The Crescent (New Orleans, LA to New York, NY);
- The Texas Eagle (Chicago, IL to San Antonio, TX); and
- The Illinois Network (Carbondale, IL to Chicago, IL).



AMTRAK train in New Orleans, Louisiana

5.1.4.1 Methodology

Passenger rail assets were provided by Amtrak's Southern Region Director of Government Affairs. Amtrak state fact sheets were provided by Amtrak and are available online at www.amtrak.com. The three main passenger rail asset groups collected were the Amtrak train service routes, station (terminal) information for each state, and pertinent data from Amtrak state fact sheets.

Central Arkansas Transit (CAT), Memphis Area Transit Authority (MATA) and New Orleans Regional Transit Authority (NORTA) provided the trolley asset information for these three downtown services.

5.1.4.2 Asset Information

The following passenger rail asset information was gathered during the data collection process and includes the following information for each of the Amtrak rail stations and light rail providers in the DRA region.



5.1.4.3 Amtrak Stations:

- Station code and physical mailing address of each station;
- Availability and hours of an Amtrak ticket office;
- Availability of Quik-Trak ticketing, a 24-hour automated ticket service;
- Availability of an enclosed waiting area, restrooms, payphones, and ATM;
- 2005, 2006 and 2007 ridership numbers (total number of arrivals and departures per station);
- 2005, 2006 and 2007 employment numbers per state, along with average salary per employee; and
- Procurement and contracts for goods and services per state.

5.1.4.4 Light Rail (Trolley)

Light rail assets in the DRA region are located in Little Rock, Memphis, and New Orleans and include the number of stations, number of routes and the number of streetcar trolleys.

5.1.5 Aviation

Aviation is a vital transportation mode in the DRA region. There are a total of 993 aviation facilities in the DRA region including both public and private use facilities. The types of aviation assets inventoried include Airports, Heliports, Seaplane Bases, STOLPorts, Ultralight Flight Parks, and Gliderports.



Memphis International Airport



Heliport at McGehee-Desha County Hospital in Arkansas

5.1.5.1 Airport

An airport is typically defined as a facility where aircraft operate with at least one runway greater than 3,200 feet in length. Airports may be used by a wide range of aircraft from small single engine aircraft to large multi-engine jet commercial aircraft. Airports may consist of several runways and have additional facilities for aircraft fueling, parking, storage hangars, air traffic control facilities, and navigational aids to assist landings in inclement weather. Airports may also have landside support facilities, such as terminal buildings and rental car facilities.

5.1.5.2 Heliport

A heliport is a small airport suitable for use only by helicopters. A heliport will typically have one or more paved helipads to provide a landing area for helicopters and may also have lighting, a windsock, and fueling facilities. A large number of hospitals and other medical facilities maintain a heliport to provide rapid access to healthcare for critical patients.

5.1.5.3 Seaplane Base

A seaplane base is an area on a body of water designated for use by amphibious aircraft. Seaplanes are most often used for offshore corporate use and transportation to small islands without a paved runway.

5.1.5.4 STOLPort

A STOLPort is an airport designed for “Short Take-Off and Landing” operations. A STOLPort will typically consist of a single runway less than 3,200 feet in length.



5.1.5.5 Ultralight Flight Parks

Ultralight flight parks are small airports designed for the use of small, slow flying, lightweight aircraft generally used for recreational purposes. The FAA defines ultralights as a single seat aircraft with less than a 5-gallon fuel capacity, empty weight of less than 254 pounds, maximum speed of less than 55 knots, and stall speeds of less than 24 knots. Ultralights are restricted to flying during daylight hours only over unpopulated areas.

5.1.5.6 Gliderport

A gliderport is a small airport designed for the use of unpowered aircraft (gliders). These facilities are typically used for recreational purposes only.

5.1.5.7 Methodology

Information regarding aviation assets located in the DRA region was obtained using several different sources, including federal, state, and local databases and reports. The data sources included the following:

- FAA Airport Master Records (SF 5010);
- FAA's 2007-2011 National Plan of Integrated Airport Systems (NPIAS) Report;
- State Aviation System Plans published by each state's Department of Transportation; and
- On-line Survey (www.dramultimodal.com).

The primary and most comprehensive source of information was the FAA Airport Master Records (SF 5010) obtained online through www.airnav.com. This database was downloaded in Microsoft Access and used in association with the 2007 FAA NPIAS database to analyze the existing aviation assets in the DRA region. Based on this process, a total of 993 aviation facilities were identified in the DRA region. Each facility was classified as an airport, heliport, gliderport, seaplane base, ultralight flight park, or STOLPort. Two-thirds of the facilities are classified as an airport and nearly one-third are classified as a heliport.

Aviation facilities were further analyzed to determine if the facility was open for public use or for private use only. Although all aviation facilities are recorded in FAA's database, many facilities are for private use only, such as runways owned by farmers for agricultural spraying, or heliports owned by private companies for transportation of employees. The following reports provide asset information for public aviation facilities in the DRA region.

The majority of heliports located at hospitals or other medical facilities are listed as private use only. Although these facilities are not open to the general flying public, heliports are vital to ensure available healthcare to the public.

The FAA recognizes the importance of a safe, efficient civil air transportation system, and has developed a national aviation system plan to identify airports significant to national air transportation. As noted above, this plan is known as the National Plan of Integrated Airport



Systems (NPIAS). The NPIAS includes all commercial service and reliever airports, and select general aviation airports. FAA uses the NPIAS to identify airports eligible to receive federal grants through the Airport Improvement Program (AIP). The AIP provides funding to improve the safety and capacity of the nation’s air transportation system.

5.1.5.8 Asset Information

The NPIAS categorizes airports into seven major categories, as shown in the following table.

Table 2: NPIAS Airports

Airport Type	Basic Description	Example Airport in DRA
Primary Commercial Service Airports <i>Large Hub</i>	Receive greater than 2,500 scheduled passenger service enplanements per year Account for at least 1 percent of total U.S. scheduled annual enplanements	None
<i>Medium Hub</i>	Account for between 0.25 percent and 1 percent of total U.S. scheduled annual enplanements	Memphis International Airport
<i>Small Hub</i>	Account for between 0.05 percent and 0.25 percent of total U.S. scheduled annual enplanements	Baton Rouge Metropolitan Airport
<i>Non-Hub</i>	Account for less than 0.05 percent of total U.S., but more than 10,000 annual enplanements	Barkley Regional Airport, West Paducah, KY
Non-Primary Commercial Service Airports	Between 2,500 and 10,000 scheduled annual enplanements	Cape Girardeau Regional, Cape Girardeau, MO
Reliever Airports	High capacity general aviation airports to relieve commercial airports in major metropolitan areas.	Olive Branch Airport, Olive Branch, MS
General Aviation Airports	Provide airport facilities to communities greater than 20 miles from nearest NPIAS Airport. Must have at least 10 based aircraft.	Benton Municipal Airport, Benton, IL

Source: Federal Aviation Administration

Of the 256 public use airports located within the DRA region, 192 of these are also included in the NPIAS and are therefore eligible for AIP federal funding. These 192 NPIAS airports are categorized in **Table 3**.



Table 3: Airports Eligible for AIP Federal Funding

FAA NPAIS Classification	Number Located in DRA
Primary Commercial Service Airports	10
<i>Large Hub</i>	0
<i>Medium Hub</i>	2
<i>Small Hub</i>	3
<i>Non-Hub</i>	5
Non-Primary Commercial Service Airports	3
Reliever Airports	4
General Aviation Airports	175
Total	192

Source: Federal Aviation Administration

The data collected for each public facility includes an inventory of the existing physical infrastructure, as well as operational data such as the number of based aircraft and the number of annual operations (takeoffs and landings) conducted at the airport. The asset information gathered during the data collection process is shown in **Table 4**:

Table 4: Asset Information

Physical Infrastructure Assets	
Item Inventoried	Relevance
Runway Length	Critical in determining types of aircraft that can use the facility
Taxiway Sizes	Provides additional capacity, safety
Apron Sizes	Provides storage space for aircraft
Number and Size of Hangars	Provides storage space for aircraft
Number and Size of Terminals	Provides facilities for traveling public
Control Tower	Increases capacity and safety
Available Fuel Types	Determines types of aircraft that can purchase fuel
Approach Type (Precision Instrument, Non-Precision Instrument, Visual)	Critical in determining weather conditions in which airport is usable
Operational Data	
Item Inventoried	Relevance
Facility Classification	Determines types of aircraft using the facility
Public or Private Use	Determines if facility is open to the public
NPIAS Status	Determines if facility is currently eligible for federal AIP funding
FAA Airport Classification (NPAIS Airports Only)	Used by FAA in determining funding amounts and priorities.
Number of Based Aircraft	Used by FAA in determining NPIAS status and can be a factor in priority airport receives for funding.
Number and Type of Aircraft Operations (Takeoffs + Landings)	Used to justify runway extensions and can be a factor in priority airport receives for funding.

Source: DRA project team



5.1.6 Public Ports

Due to the numerous rivers, such as the Mississippi, Ohio, and Tennessee, in the DRA region, water ports provide a viable transportation option in moving bulk commodities to and from markets. The assets inventory provides information on public and private docking terminals located within the DRA region, principally as identified by the U.S. Army Corp of Engineers. The asset database contains 281 public port terminals comprised of state and federal agency docks, as well as docks owned by public port authorities. There are 48 public port authorities serving the DRA region and these authorities operate a total 192 commodity terminals. Thus, many public port authorities contain multiple terminals. For example, the Port of New Orleans is comprised of 79 terminals located on multiple waterways.



Ohio River in Paducah, Kentucky

5.1.6.1 Methodology

The primary sources for DRA region port assets were identified through examining the *Port Series Reports* provided by the United States Army Corps of Engineers Navigation Data Center. The *Port Series Reports*, which is in a database, describe the physical and inter-modal infrastructure characteristics of individual port facilities and terminals. Facility asset data extracted from the database included, but was not limited to, location (latitude/longitude, mile, and bank); operations (name, owner, operator, purpose, handling equipment, and details of open and covered storage facilities); type and dimension of construction (length of berth space for vessels and/or barges, depth, etc.), and details regarding rail access.

Public port authorities were contacted via email and phone calls to encourage each facility to document asset data by completing the port survey located at www.dramultimodal.com.



The Corp develops numerous *Port Series Reports* based on different regions of the country. The following *Port Series Reports* contain ports located within the DRA region:

- *Port Series No. 20 The Port of New Orleans, LA*, Publication Date – 2001;
- *Port Series No. 20A Mississippi River Ports Below and Above New Orleans, LA*, Publication Date – 2002;
- *Port Series No. 21 The Ports of Baton Rouge and Lake Charles, LA*, Publication Date – 2002;
- *Port Series No. 63 The Port of Louisville, KY; and Ports on Ohio River (Miles 560-980), Cumberland, and Green Rivers*, Publication Date – 1992;
- *Port Series No. 64 Ports on Tennessee River; Tennessee-Tombigbee and Black Warrior-Tombigbee Waterways; and Alabama River*, Publication Date – 1997;
- *Port Series No. 68 Ports on the Arkansas, Red, and Ouachita River Systems and Missouri River*, Publication Date – 2000;
- *Port Series No. 70 The Port of St. Louis, MO and Ports on Upper Mississippi River (Miles 0-300 AOR)*, Publication Date – 2004;
- *Port Series No. 71 Ports of Memphis, TN; Helena, AR; and Ports on Lower Mississippi River (Miles 620-954 AHP)*, Publication Date – 2004; and
- *Port Series No. 72 Ports of Natchez, Vicksburg, and Greenville, MS; and Ports on the Lower Mississippi River (Miles 255-620 AHP)*, Publication Date – 2003.

The digital database associated with the *Port Series Reports* was sorted with a Geographic Information System (GIS) to extract port facilities and terminals located within the DRA region. Also, the GIS database was further coded to allow for the separation of terminals by public and private ownership. Interviews were conducted with larger public ports, such as Memphis and New Orleans, to consider the need for updating records of individual terminals owned by these public ports.

5.1.6.2 Asset Information

Port facility and terminal assets include the following:

- Port as identified by the U.S. Army Corps of Engineers;
- Terminal (name);
- Contact information;
- Location by place on waterway and lat/long;
- Waterway;
- Rail service;
- Port purpose served;



- Docking features; and
- Remarks documenting support infrastructure, storage and other features related to the capabilities of the port.

County boundaries sometimes track navigable waterways, and as a result, port facilities and terminals located in counties lying outside the DRA region may be situated across a navigable waterway from a port facility or terminal located in the DRA region. Although the facilities are served by a common navigable waterway, the facilities located outside the DRA region are not included in this report.

5.1.7 Locks

The U.S. Army Corps of Engineers is responsible for the operation and maintenance of the U.S. waterway system to ensure efficient and safe passage of commercial and recreational vessels. Locks play a vital role in the waterborne transportation system, especially in the DRA region in which there are 40 such devices. A lock is a device for raising and lowering boats or barges between stretches of water of different levels on a river. The distinguishing feature of a lock is a fixed chamber whose water level can be varied. Locks are used to make a river navigable and are crucial to waterborne transportation.



USACE lock in Illinois along the Ohio River

5.1.7.1 Methodology

The support and management of economically sound navigation projects is dependent upon reliable navigation data. The USACE, through the Institute for Water Resources Navigation Data Center, exercises its Federal responsibility for establishing and maintaining a variety of water transportation information systems. The source for lock related assets in the DRA region is the USACE Navigation Data Center. The lock data was first developed in 1992 and the database provides lock characteristics for the U.S. Inland Waterways.



The complete data set contains information on the physical aspects of all USACE built, maintained, owned or operated locks that includes six major characteristics: location, physical characteristics, site information, site characteristics, management information and historical changes. The data was sorted to extract locks located within the DRA region.

5.1.7.2 Asset Information

Data reported in the lock asset documents include the following characteristics:

- Lock name;
- Unique NDC dock & lock identification (ID);
- State;
- River name;
- River mile point of structure;
- Status of lock (operable or inoperable);
- Year structure opened;
- Last year of major rehabilitation;
- Highway connection near lock site; and
- Last date of data update.

County boundaries sometimes track navigable waterways, and as a result, navigation locks located in counties lying outside the DRA region may be situated across a navigable waterway from a from a DRA region county. Lock facilities located outside the DRA region are not included in this report.

5.2 Modal Needs Methodology

The DRA Federal Co-Chairman sent 453 personal letters to multimodal transportation agencies and providers requesting assistance on documenting the multimodal needs in the DRA region. Collecting the needs for highways, bridges, intelligent transportation systems, passenger rail, freight rail, airports, ports, and locks was completed by the following:

- Developing modal surveys and posting them on the project website;
- Developing modal surveys and emailing them to multimodal transportation providers;
- Reviewing hundreds of multimodal plans, reports and studies;
- Input from the DRA regional coordination meetings;
- Input received through numerous conference call with multimodal transportation provider; and
- Input received through phone interviews with modal providers and stakeholders.



5.2.1 Highways

In determining the DRA region highway needs, emphasis was placed on ensuring detailed and statistically valid data were utilized to provide credible results. Furthermore, appropriate methods and tools were employed to ensure a rigorous analytical approach yielding sound results for quantifying and understanding needs. To meet these objectives, the highway needs analysis utilized HERS-ST – Highway Economics Requirements System – State Version.

The HERS-ST model (version 4.3), developed by FHWA, is currently used by 20 state DOTs to assess state highway investment needs¹². At the national level, HERS has been used by FHWA's Office of Legislation and Strategic Planning for nearly 10 years to develop future National-level highway investment levels, to either improve the Nation's highway system or maintain user cost levels on the system. HERS provides cost estimates for achieving economically optimal program structures. HERS can also predict system condition and user cost levels resulting from a given level of investment. These estimates provide benchmarks from which Congress considers the highway budget. In the same way, HERS-ST entails assessment of expected changes in physical system conditions, as well as economic cost behavior determining highway economic requirements at the state level. The analysis is based on an application of engineering, economic and statistical methods to a standard sample of HPMS data.

The process to analyze highway needs using HERS-ST began by reviewing each state's minimum tolerable conditions (MTCs), design standards, and improvement costs. MTCs are based on levels at which congestion, safety risk, physical and structural deterioration are expected to adversely affect system performance and the public interest. Facilities falling below the specified MTCs in any given funding period are understood as needs for improvement in the time horizon of the plan. The MTCs were altered slightly from the national default values referencing recent state plan work in the DRA region. Design standards provide engineering details on how the facility should be improved once a need is identified. HERS-ST also provides default improvement costs and right-of-way (ROW) costs per mile for each improvement type by functional classification, based on historical costs in each state. The MTCs, design standards and improvements costs were the same for each of the eight states in the DRA region. Once the data was updated and imported into HERS-ST, each of the eight state HERS-ST runs were programmed to provide a full engineering needs analysis (unconstrained by dollars), over a 25-year period, so the results provided actual highway needs not withstanding budget levels.

The result was a complete statewide needs assessment for each of the eight states in the DRA region. To ensure highway needs for the DRA region were identified, centerline miles for each state were compared to the actual miles that are contained in the DRA region for each state. This percentage was used to allocate the total cost and lane miles improved for each improvement

¹² Ten other state DOTs are currently evaluating using HERS-ST in identifying their highway needs.



type (preservation, modernization, and expansion) by roadway functional classification. The highway needs are documented in the CD that accompanies this report.

5.2.2 Bridges

The bridge needs analysis was conducted by analyzing each of the eight states 2006 National Bridge Inventory (NBI) file. The NBI file is a compilation of data supplied by the state DOTs to the FHWA as required by the National Bridge Inspection Standards for bridges located on public roads. Since the NBI is a statewide database, a DRA bridge database was created that included bridges located in the DRA region and the bridges were verified by each of the eight state DOTs.

Bridge needs were determined by identifying all structurally deficient and functionally obsolete bridges in the NBI file. Structural deficiency does not necessarily imply that a bridge is unsafe. It does, however, mean that a structure is unable to carry the vehicle loads or tolerate the speeds that would normally be expected for that particular bridge in its designated system. Functional obsolescence means that the bridge has inadequate width or vertical clearance for its associated highway system. In some cases, bridges become functionally obsolete because of highway improvements on the approaches to the bridge, such as lane additions or widening of approaching roads. In other cases, a bridge may be classified as functionally obsolete through a redefinition of desired standards.¹³ The bridge needs are documented in the CD that accompanies this report.

5.2.3 Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) is becoming more and more important in today's growing transportation world. It is an integral part of traffic management at both the local and statewide level. With this in mind, the ITS needs throughout the DRA region were gathered by coordinating closely with each ITS Manager and City Traffic Engineer for each of the eight state DOTs and local municipalities that currently have an ITS infrastructure. These needs were collected by using a specially designed ITS needs survey that was emailed to each of the ITS stakeholders. The needs survey was specifically designed to cover all ITS needs in the DRA region. The survey included the following need categories:

- New or upgraded traffic management centers throughout each state;
- Fiber optic cable and wireless communication systems;
- Traffic monitoring and management systems;
- Traffic sensors;
- Dynamic message signs;
- Closed circuit television cameras;

¹³ FHWA. Bridge Research: Leading the Way to the Future.



- ITS infrastructure along the I-69/269 corridor; and
- ITS infrastructure associated with Homeland Security issues.

The ITS needs are documented in the CD that accompanies this report.

5.2.4 Freight Rail

To determine rail mainline system capacity needs in the DRA region, the *National Rail Freight Infrastructure Capacity and Investment Study*, published by the Association of American Railroads (AAR) in September, 2007 was utilized. This study was completed at the request of the National Surface Transportation Policy and Revenue Study Commission to assess the capacity of the nation's rail system to accommodate the estimated increase in freight-rail traffic.

The Class I railroads designated "Primary Rail Corridors" and these corridors were evaluated on the basis of both current rail volumes compared to current capacity and future (2035) volumes compared to current capacity. From this, current and future levels of service (LOS) from Level A to Level F, similar to that used for the highway system, were assigned to each of the corridors.

LOS grades were generally described as follows:

- LOS Grades A, B, C – Rail volumes are generally below current capacity. Train flows are low to moderate with capacity to accommodate maintenance and recover from incidents.
- LOS Grade D – Rail volumes are near capacity. Train flows are heavy with moderate capacity to accommodate maintenance and recover from incidents.
- LOS Grade E – Rail volumes are at capacity. Train flows are very heavy with very limited capacity to accommodate maintenance and recover from incidents.
- LOS Grade F – Rail volumes are above capacity. Train flows are unstable and service breakdown conditions exist.

To determine short-line (Class III) system needs in the DRA region, the DRA project team developed the on-line freight rail needs survey, as shown in **Figure 2**, and provided it on the project website (www.dramultimodal.com). The DRA project team contacted the short-line railroad companies that serve the DRA region via phone and email to request existing and future needs. The freight rail needs are documented in the CD that accompanies this report.



Figure 2: Freight Rail Needs Survey

1	<p>Railroad Name <input type="text"/></p> <p>FRA ARC ID <input type="text"/></p>																				
2	<p>State <input type="text"/></p>																				
3	<p>Type of Need:</p> <div style="background-color: #d9ead3; padding: 2px;">Rail Line Capacity Chokepoint</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Rail Line Name</td> <td><input type="text"/></td> </tr> <tr> <td>Miles Post</td> <td><input type="text"/></td> </tr> <tr> <td>Problem Description</td> <td><input style="height: 40px;" type="text"/></td> </tr> <tr> <td>Proposed Solution</td> <td><input style="height: 40px;" type="text"/></td> </tr> <tr> <td>When is improvement needed</td> <td> <input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years </td> </tr> <tr> <td>Estimated Cost</td> <td><input type="text"/></td> </tr> </table> <div style="background-color: #d9ead3; padding: 2px; margin-top: 10px;">Yard/Intermodal Facility Capacity</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Existing Facility</td> <td> <input type="checkbox"/> yes <input type="checkbox"/> no </td> </tr> <tr> <td>New Facility Required?</td> <td> <input type="checkbox"/> yes <input type="checkbox"/> no </td> </tr> <tr> <td>Facility Name</td> <td><input type="text"/></td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> </tr> </table>	Rail Line Name	<input type="text"/>	Miles Post	<input type="text"/>	Problem Description	<input style="height: 40px;" type="text"/>	Proposed Solution	<input style="height: 40px;" type="text"/>	When is improvement needed	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years	Estimated Cost	<input type="text"/>	Existing Facility	<input type="checkbox"/> yes <input type="checkbox"/> no	New Facility Required?	<input type="checkbox"/> yes <input type="checkbox"/> no	Facility Name	<input type="text"/>	Location	<input type="text"/>
Rail Line Name	<input type="text"/>																				
Miles Post	<input type="text"/>																				
Problem Description	<input style="height: 40px;" type="text"/>																				
Proposed Solution	<input style="height: 40px;" type="text"/>																				
When is improvement needed	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years																				
Estimated Cost	<input type="text"/>																				
Existing Facility	<input type="checkbox"/> yes <input type="checkbox"/> no																				
New Facility Required?	<input type="checkbox"/> yes <input type="checkbox"/> no																				
Facility Name	<input type="text"/>																				
Location	<input type="text"/>																				



Problem Description	<div style="border: 1px solid gray; height: 40px;"></div>
Proposed Solution	<div style="border: 1px solid gray; height: 40px;"></div>
When is improvement needed	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years
Estimated Cost	<div style="border: 1px solid gray; height: 20px;"></div>

Grade Crossing Safety/Elimination

Rail Line Name	<div style="border: 1px solid gray; height: 20px;"></div>
AAR Crossing #	<div style="border: 1px solid gray; height: 20px;"></div>
Location	<div style="border: 1px solid gray; height: 20px;"></div>
Problem Description	<div style="border: 1px solid gray; height: 40px;"></div>
Proposed Solution	<div style="border: 1px solid gray; height: 40px;"></div>
When is improvement needed	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years
Estimated Cost	<div style="border: 1px solid gray; height: 20px;"></div>

Other

Rail Line Name	<div style="border: 1px solid gray; height: 20px;"></div>
Location	<div style="border: 1px solid gray; height: 20px;"></div>



Problem Description	<input type="text"/>
Proposed Solution	<input type="text"/>
When is improvement needed	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years <input type="checkbox"/> 11 to 20 years
Estimated Cost	<input type="text"/>

4 Contact Information

Name

Agency

Address

Phone

Email

5 Track Structure Needs:

Excepted Track mi.

Estimated Cost

Other Track Safety Needs

Estimated Cost

6 Is 286,000 lb weight capability required to accommodate existing future traffic?

Estimated cost – Track **Bridges**



5.2.5 Passenger Rail

The passenger rail providers in the DRA region are Amtrak, Central Arkansas Transit (CAT), the Memphis Area Transit Authority (MATA) and the New Orleans Regional Transit Authority (NORTA).

Amtrak is the only major rail service provider in the DRA region, and this rail system is a vital component to the growth and prosperity. Working closely with the Southern Director of Governmental Affairs for Amtrak, future needs and goals for the Amtrak rail service in the DRA region were identified. These needs were gathered from working with Amtrak staff, as well as gathering future needs from the draft version of *Amtrak's Station Program and Planning: Standards and Guidelines*.

The CAT, MATA, and NORTA transit authorities each offer a street car rail system that has both a historical significance and provides a valuable service in each community. These rail systems offer a service that contributes to local business development, serves as a public transportation system for residents and the local work force, and helps boost the tourism industry for each city. The needs for each of the rail providers were gathered by working closely, through emails and phone calls, with the executive director of each organization. Also, a questionnaire was emailed to each executive director that requested future needs and planning level costs over the next 25 years. The passenger rail needs are documented in the CD that accompanies this report.

5.2.6 Airports

To determine public airport needs in the DRA region, the DRA project team developed an on-line airport needs survey, as shown in **Figure 3**, and provided it on the project website (www.dramultimodal.com). The DRA project team contacted each airport that serves the DRA region via phone and email to collect these needs. The public airport needs are documented in the CD that accompanies this report.



Figure 3: Aviation Needs Survey

1	Airport Location ID <input style="width: 400px; height: 20px;" type="text"/>																																																																						
2	Site Number <input style="width: 450px; height: 20px;" type="text"/>																																																																						
3	Airport Name <input style="width: 450px; height: 20px;" type="text"/>																																																																						
4	Airport Owner <input style="width: 450px; height: 20px;" type="text"/>																																																																						
5	<p>Airport Location</p> <p>Zip Code <input style="width: 250px; height: 20px;" type="text"/></p> <p>City <input style="width: 250px; height: 20px;" type="text"/></p> <p>County <input style="width: 250px; height: 20px;" type="text"/></p> <p>State <input style="width: 250px; height: 20px;" type="text"/></p>																																																																						
6	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d9ead3;"> <th style="width: 25%;">Runway Need</th> <th style="width: 10%;">0 to 5 years</th> <th style="width: 10%;">6 to 10 years</th> <th style="width: 10%;">11 to 20 years</th> <th style="width: 10%;">Cost Estimate</th> <th style="width: 10%;">Project Justification</th> <th style="width: 15%;">Eligible for FAA's Program?</th> </tr> </thead> <tbody> <tr> <td>Pavement Rehabilitation</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Pavement Strengthening</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Runway Extension</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Runway Widening</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Runway Lighting/Signage</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Visual Aids</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>New Runway</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Safety Improvements Area</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Drainage Improvements</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input style="width: 50px;" type="text"/></td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> </tbody> </table>	Runway Need	0 to 5 years	6 to 10 years	11 to 20 years	Cost Estimate	Project Justification	Eligible for FAA's Program?	Pavement Rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Pavement Strengthening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Runway Extension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Runway Widening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Runway Lighting/Signage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Aids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	New Runway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Safety Improvements Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Drainage Improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Runway Need	0 to 5 years	6 to 10 years	11 to 20 years	Cost Estimate	Project Justification	Eligible for FAA's Program?																																																																	
Pavement Rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Pavement Strengthening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Runway Extension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Runway Widening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Runway Lighting/Signage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Visual Aids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
New Runway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Safety Improvements Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	
Drainage Improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																																	

DRA MULTIMODAL TRANSPORTATION



Navigational Aids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No

Taxiway Need	0 to 5 years	6 to 10 years	11 to 20 years	Cost Estimate	Project Justification	Eligible FAA's Program?	for AIP
Pavement Rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Pavement Strengthening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
New Taxiway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Taxiway Lighting/Signage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Taxiway Widening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Safety Improvements Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
New Runway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Safety Improvements Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Apron Need	0 to 5 years	6 to 10 years	11 to 20 years	Cost Estimate	Project Justification	Eligible FAA's Program?	for AIP
Pavement Rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Pavement Strengthening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Apron Expansion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
New Apron	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Landside Need	0 to 5 years	6 to 10	11 to 20	Cost Estimate	Project Justification	Eligible FAA's	for AIP
---------------	--------------	---------	----------	---------------	-----------------------	----------------	---------



		years	years			Program?
Hangars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fuel Farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Commercial Passenger Terminal Building	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
General Aviation Terminal/Public Use Building	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Site Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Automobile Parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No

5.2.7 Public Ports

The focus of the public port needs centered on collecting information from the 48 public port authorities in the DRA region. Needs for individual public terminals were reported by the owning port authority. To collect a comprehensive list of public port needs, the following was completed:

- Developed a public ports needs survey, as shown in **Figure 4**, and provided it to each of the 48 port authorities in the DRA region. The following methods were utilized to gather public port needs in the DRA region;
- Contacted each Port Authority to assist in completing the port needs survey; and
- Reviewed numerous national, regional, state, and local waterway plans, reports or studies to identify public port and waterway needs.

The public port authority needs are documented in the CD that accompanies this report.



Figure 4: Ports Needs Survey

Delta Regional Authority Needs Survey						
Name						
Agency						
State						
Email						
Phone						
Date						
Needs	Yes/No	Explanation	Planning Priority with Planning Level Cost Noted			
			Less than 5 Years	6-10 Years	11-20 Years	
Landside Access to Port Roadway Rail Note, each category could represent multiple investments made in the noted planning periods						
Waterways Maintenance Dredging Access channel widening/deepening Note, each category could represent multiple investments made in the noted planning periods						
Maintenance of Port Infrastructure Equipment, Cranes, etc. Docks Warehousing/Storage Roadway Rail Other Note, each category could represent multiple investments made in the noted planning periods						
Upgrades to Port Facilities New Terminal (All inclusive) Other Facilities Other - Equipment, Cranes, etc. Other - Docks Other - Warehousing/Storage Other - Roadway Other, Rail Other, explain Note, each category could represent multiple investments made in the noted planning periods						
Investment Summary Total Investment, by Period Total Investment Needs			\$0	\$0	\$0	
Improvements to Inland Waterway Network Need 1 Need 2 Need 3		Describe Need				



5.2.8 Locks

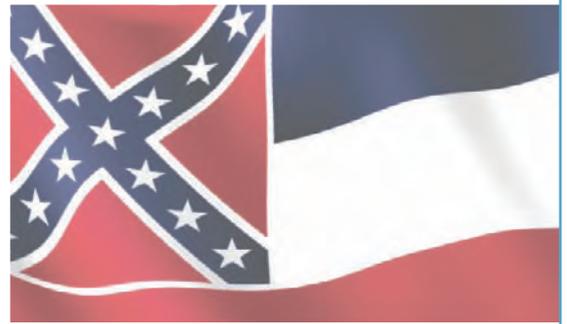
There are 40 locks on navigable rivers in the DRA region, which are operated and maintained by the following U.S. Army Corps of Engineers Districts:

- Little Rock District - Seven Locks;
- Louisville District - Five locks;
- Mobile District - Seven locks;
- Nashville District – Five locks;
- New Orleans District - Six locks;
- St. Louis District – One lock; and
- Vicksburg District – Nine locks.

Operation managers at each of the U.S. Army Corps of Engineer Districts provided the lock needs in the DRA region. The individual lock needs are documented in the CD that accompanies this report.



Highways and Bridges





6. HIGHWAYS AND BRIDGES

6.1 Introduction

The highway system in the DRA region serves many functions, including commuting to jobs, moving freight and goods, intercity and Interstate business, personal travel, and recreational travel. There are approximately 230,395 miles of roadways and 44,538 bridges in the DRA region. **Table 5** shows the roadway miles and number of bridges for each of the eight states in the DRA region.

Table 5: DRA Region Roadway Miles and Number of Bridges by State

	Alabama	Arkansas	Illinois	Kentucky	Louisiana	Mississippi	Missouri	Tennessee	DRA
Highways Miles	19,550	53,576	12,186	15,501	39,616	39,786	28,261	21,919	230,395
Bridges	3,908	6,862	2,547	3,593	8,561	8,841	4,477	5,749	44,538

Source: Highway Performance Monitoring System, National Bridge Inventory and each of the eight state Departments of Transportation.

6.2 Interstate System

The Dwight D. Eisenhower National System of Interstate and Defense Highways, commonly called the Interstate Highway System, serves a national purpose in moving people and goods through the U.S. The following 21 interstates traverse through the DRA region:

- I-10
- I-12
- I-20
- I-30
- I-24
- I-40
- I-44
- I-55
- I-57
- I-69
- I-110
- I-155
- I-220
- I-240
- I-310
- I-430
- I-440
- I-510
- I-530
- I-610
- I-630

Currently, Mississippi is the only state in the DRA region with a section of I-69 complete (I-55 to Tunica, Mississippi). Other sections of I-69, such as those in Kentucky and Tennessee, exist but are yet to be signed because these freeways do not provide Interstate design standards. Once funding becomes available, these freeways will be upgraded to Interstate standards. After completion, the I-69 corridor will pass through five DRA states (Louisiana, Arkansas, Mississippi, Tennessee and Kentucky), which will link Mexico and Canada. The transportation network in the DRA region is a tremendous asset and it serves international, regional, and local markets and provides an efficient way of moving people and goods.



6.3 National Highway System

The National Highway System (NHS) was developed by the U.S. Department of Transportation (U.S. DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). It includes Interstates, other Principal Arterials, Strategic Highway Network and intermodal connectors. There are a total of 8,530 NHS miles and 3,129 STRAHNET miles in the DRA region.

6.4 Future Interstates and High Priority Corridors in the DRA Region

There are five High Priority Corridors identified as future interstates mandated by Congress that will traverse through portions of the DRA region.

- **Interstate 69** will traverse through Louisiana, Arkansas, Mississippi Tennessee, and Kentucky.
- **US 90** in Louisiana from I-49 in Lafayette to I-10 in New Orleans
- **Corridor V** of the Appalachian Development Highway System from I-55 near Batesville, Mississippi, to the intersection with Corridor X of the Appalachian Development Highway System near Fulton, Mississippi.
- **US 78 Corridor and Corridor X of the Appalachian Development Highway System**, when completed, will follow the US 78 corridor along a 213-mile route from Memphis, Tennessee to Birmingham, Alabama. Future I-22 will connect I-55 and I-40 in the northwest to I-65 and I-20 in the southeast.
- **East-West Transamerica Corridor**, extends from Virginia to West Virginia, Kentucky, Illinois, Missouri, Arkansas, Kansas, Oklahoma, Texas, Colorado, New Mexico, Utah, Arizona, Nevada, and California, but only a portion in Kentucky is designated as a future interstate.

There are also an additional 15 Congressional High Priority Corridors (non-interstate) in the DRA region and these corridors are extremely important to improving the movement of people and goods, as well as economic development opportunities.

6.5 Intermodal Connectors

Intermodal connectors are the freight linkages between the private intermodal transfer points or terminals and the public carriers or transportation routes. Therefore, these connectors are the



interface between private and private, or private and public infrastructure elements.¹⁴ The National Highway System intermodal connectors are crucial public roadways that serve the following major facilities:

- Public Transit Station;
- Ports;
- Airports;
- Truck/Rail Terminals;
- Intercity Bus Stations;
- Amtrak Stations;
- Pipeline/Truck Terminal;
- Ferry Terminals; and
- Multi-modal Passenger Sites.

Intermodal connectors were designated in cooperation with state DOTs and Metropolitan Planning Organizations (MPOs) based on criteria developed by the FHWA and the U.S. Department of Transportation. NHS connectors are typically short, averaging less than two miles in length and are usually local, county or city streets with lower design standards than mainline NHS routes, which are primarily interstate and arterials. Intermodal connectors serve heavy truck volumes moving between intermodal freight terminals and mainline NHS, primarily in major metropolitan areas.¹⁵

Table 6 shows the intermodal connectors in the DRA region defined by FHWA. There are a total of 51 intermodal facilities and 111.3 miles of intermodal connectors in six of the eight DRA states (Alabama and Illinois do not have any intermodal connectors in the DRA region).

¹⁴National Surface Transportation Policy and Revenue Study Commission. *Commission Briefing Paper 3J-01 Current Financing and Future Needs of Other Components of the Surface Transportation System*. TranSystems, Mach 2007.

¹⁵ NHS Intermodal Freight Connectors: Report to Congress. U.S. DOT, December 2000.



Table 6: DRA Region Intermodal Connectors

State	Type	Facility
Arkansas	Truck/Rail Facility	Union Pacific Rail/Truck Ramp
Arkansas	Airport	Little Rock National Airport
Arkansas	Truck/Pipeline Terminal	Central AR Pipeline/Fuel Storage Complex
Arkansas	Port Terminal	Little Rock Port Complex
Arkansas	Intercity Bus Terminal	Greyhound Lines, North Little Rock
Arkansas	Truck/Pipeline Terminal	Lion Oil Pipeline/Refinery/Fuel Storage
Arkansas	Truck/Rail Facility	Union Pacific Ebony Terminal, W Memphis
Arkansas	Truck/Rail Facility	St. Louis Southwestern Railroad Complex
Arkansas	Port Terminal	Port of Pine Bluff
Arkansas	Public Transit Station	Central Arkansas Transit, Little Rock
Arkansas	Truck/Pipeline Terminal	Truman Arnold Fuel Storage Complex - West Memphis
Arkansas	Truck/Rail Facility	Burlington Northern & Santa Fe Intermodal Terminal - Sunset
Arkansas	Truck/Rail Facility	Blytheville/Mississippi County Industrial and Transportation Complex - Blytheville
Kentucky	Amtrak Station	Amtrak Station - Fulton
Louisiana	Airport	England Industrial Airpark
Louisiana	Airport	Baton Rouge Metropolitan Airport
Louisiana	Intercity Bus Terminal	Baton Rouge Bus Station
Louisiana	Port Terminal	Port of Baton Rouge
Louisiana	Airport	New Orleans International Airport
Louisiana	Truck/Rail Facility	Union Pacific- Avondale Terminal
Louisiana	Truck/Rail Facility	Union Pacific - Westwego Terminal
Louisiana	Truck/Rail Facility	Kansas City Southern - Metairie Ter.
Louisiana	Truck/Rail Facility	CNIC - New Orleans Terminal
Louisiana	Ferry Terminal	Canal Street Ferry
Louisiana	Multipurpose Passenger Facility	Union Passenger Terminal
Louisiana	Truck/Rail Facility	Norfolk Southern - New Orleans Ter.
Louisiana	Port Terminal	Port of New Orleans - Downtown Wharves
Louisiana	Port Terminal	Port of New Orleans - Jourdan Road Ter.
Louisiana	Port Terminal	Port of New Orleans - France Road Ter.
Louisiana	Truck/Rail Facility	CSX - New Orleans terminal
Louisiana	Port Terminal	Port of New Orleans - Miss. River Term.
Louisiana	Airport	Monroe Airport
Louisiana	Port Terminal	Port Fourchon
Mississippi	Port Terminal	Port of Vicksburg (north)
Mississippi	Port Terminal	Port of Vicksburg (south)
Mississippi	Port Terminal	Port of Greenville
Mississippi	Port Terminal	Port of Natchez
Mississippi	Port Terminal	Port of Yazoo
Mississippi	Airport	Jackson International Airport
Mississippi	Truck/Rail Facility	IC Railroad
Mississippi	Intercity Bus Terminal	Jackson Greyhound Bus Facility
Mississippi	Port Terminal	Port of Rosedale
Mississippi	Amtrak Station	Jackson Amtrak Rail Facility
Missouri	Port Terminal	Semo Port, Scott City
Tennessee	Truck/Rail Facility	Forrest Yards - Memphis Norfolk Southern
Tennessee	Port Terminal	President's Island - Memphis
Tennessee	Airport	Memphis International Airport
Tennessee	Truck/Rail Facility	Leewood Yards - Memphis CSX
Tennessee	Truck/Rail Facility	Tennessee Yards Memphis Burlington Northern
Tennessee	Truck/Rail Facility	Johnston Yards - Memphis Illinois Central
Tennessee	Intercity Bus Terminal	Greyhound Bus Terminal - Memphis

Source: Federal Highway Administration

6.6 Major Bridge Crossings

The Mississippi River forms the continental division between the eastern and western U.S. and it bisects between seven of the eight DRA states. The Ohio River also traverses through a portion of the DRA region. Currently there are 20 roadway bridge crossings (two crossings provide two bridges) over the Mississippi River that provides a total of 74 travel lanes in the following areas of the DRA region:



- **Chester Bridge**
 - Illinois 150 and Missouri 51 connecting Perryville, Missouri to Chester, Illinois.
 - Truss bridges that provides 2-travel lanes.
 - Open for traffic in 1942.
- **Bill Emerson Memorial Bridge**
 - Missouri 34/74 and Illinois 146 connecting Cape Girardeau, Missouri to East Cape Girardeau, Illinois.
 - Cable-stay bridge that provides 4-travel lanes.
 - Open for traffic in 2003.
- **Cairo, Illinois I-57 Bridge**
 - I-57 connecting Charleston, Missouri and Cairo, Illinois.
 - Arch bridge that provides 4-travel lanes.
 - Open for traffic in 1978.
- **Cairo Mississippi River Bridge**
 - US 60/US 62 connecting Birds Point, Missouri and Cairo, Illinois.
 - Cantilever bridge that provides 2-travel lanes.
 - Open for traffic in 1929.
- **Caruthersville Bridge**
 - I-155 connecting Caruthersville, Missouri and Dyersburg, Tennessee.
 - Cantilever bridge that provides 4-travel lanes.
 - Open for traffic in 1976.
- **Hernando de Soto Bridge**
 - I-40 connecting West Memphis, Arkansas and Memphis, Tennessee.
 - Arch bridge that provides 6-travel lanes.
 - Open for traffic in 1973.
- **Memphis-Arkansas Memorial Bridge**
 - I-55 connecting West Memphis, Arkansas and Memphis, Tennessee.
 - Cantilever through truss bridge providing 4-travel lanes.
 - Open for traffic in 1949.
- **Helena Bridge**
 - US 49 connecting Helena-West Helena, Missouri to Lula, Mississippi.
 - Cantilever bridge providing 2-travel lanes.
 - Open for traffic in 1961.
- **Benjamin G. Humphreys Bridge**
 - US 82/US 278 connecting Lake Village, Arkansas to Greenville, Mississippi.
 - Cantilever bridge providing 2-travel lanes.
 - Open for traffic in 1940.



- Vicksburg Bridge
 - I-20 connecting Delta, Louisiana to Vicksburg, Mississippi.
 - Cantilever bridge providing 4-travel lanes.
 - Open for Traffic in 1973.
- Natchez-Vidalia Bridge
 - US 65/US 84/US 425 connecting Vidalia, Louisiana and Natchez, Mississippi.
 - Two twin cantilever bridges providing 4-travel lanes.
 - Westbound bridge opened for traffic in 1940 and eastbound open for traffic in 1988.
- Huey P. Long Bridge (Baton Rouge)
 - US 190 connecting West Baton Rouge Parish, Louisiana and East Baton Rouge Parish, Louisiana.
 - Truss Cantilever bridge providing 4-travel lanes and one rail track.
 - Open for traffic in 1940.
- Horace Wilkinson Bridge
 - I-10 connecting Port Allen, Louisiana to Baton Rouge, Louisiana.
 - Cantilever bridge providing 6-travel lanes.
 - Open for traffic in 1968.
- Sunshine Bridge
 - LA 70 in St. James Parish Louisiana.
 - Cantilever bridge providing 4-travel lanes.
 - Open for traffic in 1964.
- Gramercy Bridge/Veterans Memorial Bridge
 - LA 3213 connecting Gramercy, Louisiana and St. John the Baptist Parish, Louisiana.
 - Cantilever bridge providing 4-travel lanes.
 - Open for traffic in 1995.
- Luling Bridge/Hale Boggs Memorial Bridge
 - I-310 in St. Charles Parish, Louisiana.
 - Cable-stayed bridge providing 4-travel lanes.
 - Open for traffic in 1983.
- Huey P. Long (Jefferson Parrish)
 - US 90 in Jefferson Parish, Louisiana.
 - Cantilever through truss bridge providing 4-travel lanes and 2-rail tracks.
 - Open for traffic in 1935.
- Crescent City Connection
 - US 980 Business in New Orleans, Louisiana.
 - Twin cantilever bridges providing 8-lanes of traffic lanes and 2-High Occupancy Vehicle (HOV) lanes.



- Eastbound open for traffic in 1958 and westbound open for traffic in 1988.
- \$1.00 toll.

There are four roadway bridge crossings over the Ohio River that provide a total of 10 travel lanes in the following areas of the DRA region:

- Cairo Ohio River Bridge
 - US 51/US 60/US 62 connecting Cairo, Illinois and Wickliffe, Kentucky.
 - Cantilever Bridge providing 2-travel lanes.
 - Open for traffic in 1937.
- Interstate 24 Bridge
 - I-24 connecting Metropolis, Illinois and Paducah, Kentucky.
 - Two-span twin arch bridge providing 4-travel lanes.
 - Open for traffic in 1973.
- Irvin S. Cobb Bridge
 - US 45 connecting Brookport, Illinois and Paducah, Kentucky.
 - Ten-span truss bridges providing 2-travel lanes.
 - Open for traffic in 1929.
- Old Shawneetown Bridge
 - IL 13 and KY 56 connecting Old Shawneetown, Illinois to Kentucky.
 - Cantilever truss bridge providing 2-travel lanes.
 - Open for traffic in 1955.

Traversing east and west through the DRA region over the Mississippi River requires crossing one of these bridges via an interstate, highway, or local roadway. These are vital transportation assets in the DRA region that provide a linkage to international, regional, and local markets.

6.7 Intermodal Facilities

Intermodal services allow for cargo to be transported by a combination of modes that optimize the time and cost of moving freight. The DRA region has 170 intermodal facilities whereby port, airport, rail, and highway infrastructure are integrated to provide a timely transfer of cargo from one transportation mode to another. These operations allow for transfers such as container-on-barge to truck (Fullen Dock and President’s Island), truck to plane (Memphis International Airport), ship to rail (President’s Island), and truck to rail (Intermodal Gateway Memphis).¹⁶ Intermodal Facilities reduce cargo handling, improves security, and may allow freight to be transported faster. Reduced cost versus over the road trucking is the key benefit for intracontinental use.

¹⁶ Memphis Long Range Transportation Plan.



6.7.1 Rest Areas and Weigh Stations

A rest area is a public facility, usually located along interstates or other major highways that provide travelers areas to park, rest and eat. There are a total of 73 Rest Area or Welcome Centers in the DRA region.

A weigh station is a checkpoint along a highway to inspect truck and commercial vehicle weights. There are a total of 50 permanent weight stations in the DRA region.

6.7.2 SAFETEA-LU Planning Factors

The current law – Safe, Accountable, Flexible, Effective Transportation Efficiency Act: A Legacy for Users (SAFETEA-LU) – requires each state to carry out a continuing, cooperative and comprehensive statewide transportation planning process that provides for projects, strategies, and services that will address the following eight factors:

1. Support the economic vitality of the U.S., the states, metropolitan areas, and non-metropolitan areas, especially by enabling global competitiveness, productivity and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes throughout the state, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

Each of the eight state DOTs in the DRA region have met this SAFETEA-LU requirement and the process has developed numerous plans, reports, and studies that were utilized during the development and documented in this report.

6.8 Highway and Bridge Needs

6.8.1 Highway Needs

As noted earlier, determining highway needs in the DRA region, emphasis was placed on ensuring detailed and statistically valid data were utilized to provide credible results.



Furthermore, appropriate methods and tools were employed to ensure a rigorous analytical approach yielding sound results for quantifying and understanding needs. To meet these objectives, the highway needs analysis utilized the Highway Economics Requirements System – State Version (HERS-ST).

FHWA provided each of the eight states Highway Performance Monitoring System (HPMS) database from which HERS-ST used to identify preservation, modernization and expansion highway needs in the DRA region. Based on the HERS-ST needs analysis, the DRA region has over \$26 billion in preservation needs, over \$38 billion in modernization needs, and over \$107 billion in expansion needs for a total of \$171 billion over the next 25 years. Each state DOT also provided the DRA project team with a listing of priority projects that are needed over the next few years.

6.8.2 Preservation and Maintenance Needs

One of the requirements set forth by SAFETEA-LU is to ensure the preservation of the existing transportation system. If performed regularly, roadway maintenance, such as roadway resurfacing, can prolong the useful life of a transportation facility and can delay more costly reconstruction projects. Based on the HERS-ST needs analysis, the DRA region has over \$26 billion in preservation needs over the next 25 years.¹⁷

6.8.3 Modernization Needs

Modernization needs are related to upgrading the safety, functionality, and overall operational efficiency of a facility or service without adding major physical capacity. Modernization needs include widening roadways to provide adequate lane and shoulder widths. Based on the HERS-ST needs analysis, the DRA region has over \$38 billion in modernization needs over the next 25 years.¹⁸

6.8.4 Expansion Needs

Expansion needs are focused on adding lanes (capacity) or new facilities to the roadway system. Based on the HERS-ST needs analysis, the DRA region has over \$107 billion in expansion needs over the next 25 years.¹⁹

¹⁷ Needs calculated by HERS-ST v4.3 using the 2006 HPMS database.

¹⁸ Needs calculated by HERS-ST v4.3 using the 2006 HPMS database.

¹⁹ Needs calculated by HERS-ST v4.3 using the 2006 HPMS database.



6.8.5 Bridge Needs

6.8.5.1 Current Deficient Bridges

As noted earlier in this section, there are 20 Mississippi River bridges at 18 locations along the Mississippi River and four Ohio River bridges in the DRA region. All bridges play a vital role in the transportation system in the DRA region because bridges link people, employers, goods, markets, and services at critical points. However, the major river bridges over the Mississippi and Ohio Rivers, as well as the inland waterway system are integral parts of the national transportation system. If one of these bridges were removed from service, it would have a devastating impact on the DRA region and the national economy. For instance, when several bridges were washed away during the Mississippi River flood in 1993, many lives, jobs, and businesses were lost.

During the bridge needs assessment process, The 2006 National Bridge Inventory (NBI) file was used to generate information on the number of deficient bridges in the DRA region. The data within the NBI file was used to identify bridge deficiencies within the DRA region for all bridges classified as structurally deficient or functionally obsolete. A functionally obsolete bridge is one on which the deck geometry, load-carrying capacity (comparison of the original design load to the current state legal load), clearance, or approach roadway alignment no longer meets the usual criteria for the system of which it is an integral part. A structurally deficient bridge is one that has been restricted to light vehicles, is closed, or requires immediate rehabilitation to remain open. Based on this evaluation, 11,175 of the 44,538 bridges (25%) in the DRA region are currently deficient.²⁰

In 1995, FHWA completed the report entitled *Linking the Delta Region to the Nation and the World*. During the development of this report, FHWA identified functionally obsolete and structurally deficient bridges in the DRA region using the NBI file. Based on the 1995 FHWA analysis, 13,474 of the 40,604 bridges (33%) in the DRA region were either functionally obsolete or structurally deficient. Based on the same methodology, there are 2,299 less deficient bridges in the DRA region today than in 1995 even when analyzing an additional 3,934 bridges. Each state DOT deserves credit for improving bridges conditions in the DRA region. Over the next 25 years, the state DOTs will continue to improve existing bridge conditions in the DRA region to ensure bridges are properly and safely maintained. The total bridge needs in the DRA region total \$20.1 billion.²¹

The following provides state DOT major bridge initiatives in the DRA region for bridges currently under construction, bridge widening projects, bridge rehabilitation projects, future planned bridges, and proposed new bridges.

²⁰ Needs calculated by consulting each state DOT and using the 2006 NBI file.

²¹ Needs calculated by consulting each state DOT and using the 2006 NBI file.



6.8.5.2 Bridges under Construction

GREENVILLE BRIDGE

The new Greenville Bridge, connecting Arkansas and Mississippi, is currently the longest cable-stayed bridge crossing the Mississippi River. The main span of the bridge was completed April 2006, but the bridge is currently not open to traffic. When the approach roads are completed in the spring of 2009, the bridge will carry US 82 between Lake Village, Arkansas and Greenville, Mississippi. The total length of the project (bridge, approaches and new roadway) is 3.84 miles. When opened to traffic in 2009, the new bridge will carry four lanes of traffic (two in each direction). Each lane will be 12 feet wide; the bridge will have a 12-foot outside shoulder and an 8-foot inside shoulder.

JOHN JAMES AUDUBON BRIDGE

The John James Audubon Bridge project is a new Mississippi River crossing, between Pointe Coupee and West Feliciana parishes in south central Louisiana. The bridge will be the longest cable-stayed bridge in North America when complete and will replace an existing ferry between the communities of New Roads and St. Francisville. The John James Audubon Bridge will also serve as the only bridge structure on the Mississippi River between Natchez, Mississippi and Baton Rouge, Louisiana (approximately 90 river miles). The 2.44-mile John James Audubon Bridge will provide four 11-foot travel lanes with 8-foot outside shoulders and 2-foot inside shoulders. The John James Audubon Bridge and approaching roadways is expected to be complete by summer 2010 at a cost of \$406 million. As a gateway, it is intended to provide highway traffic where centuries of ferry crossings and longer commutes have been the rule.

HUEY P. LONG BRIDGE

The Huey P. Long Bridge widening project in Jefferson Parish, Louisiana is currently underway. The Huey P. Long Bridge was opened to traffic in 1935 and has served the New Orleans area residents and visitors in the same capacity for more than 72 years. This widening project will add an additional travel lane and inside and outside shoulders to each side of the bridge- providing a safer, more reliable Mississippi River crossing. This four-phase project, as noted below, has been long-awaited by local communities and is vital to the recovery of the Greater New Orleans area from Hurricane Katrina²².

- Phase I: Main Support Widening (piers) - began April 2006;
- Phase II: Railroad Modifications - began October 2006;
- Phase III: Main Bridge Widening (truss) - began early 2008; and
- Phase IV: New Approaches Construction - anticipated to begin mid 2008.

²² Louisiana TIMED Program.



I-10 TWIN-SPAN WIDENING

The I-10 Twin Span Bridge is the primary connection between the Slidell/ Eastern St. Tammany areas and the City of New Orleans. The bridge, consisting of two separate directional spans with two lanes in each direction and breakdown lanes, was severely impacted by Hurricane Katrina. The westbound span in particular suffered significant damage during the storm and now operates with a temporary prefabricated steel bridge. The purpose of this project is to repair damage to the existing I-10 bridge. The project, which is currently under construction, will also mitigate damage from future storms by raising the elevation of the roadway to avoid tidal surge, as well as to expand capacity of the facility to accommodate significant projected traffic growth on the roadway.

6.8.5.3 Future New Bridges

GREAT RIVER BRIDGE

The Great River Bridge will be a cable-stayed bridge carrying Interstate 69 and US 278 across the Mississippi River between Arkansas City, Arkansas and Benoit, Mississippi. The location has been approved, however, construction has not begun. The Arkansas State Highway and Transportation Department (AHTD) began land acquisition for the project in October 2006. Once completed, the bridge will provide four travel lanes along the 4.25-mile bridge. Based on AHTD estimates, the Great River Bridge will cost over \$1 billion (\$730 million in Arkansas and \$310 million in Mississippi) to complete and to date no funding has been identified to construct this new bridge over the Mississippi River.

6.8.5.4 Proposed New Bridges

MEMPHIS THIRD BRIDGE

The Tennessee Department of Transportation completed the *Mississippi River Crossing Feasibility and Location Study* in June 2006. Some of the key findings from the analysis of existing conditions are as follows²³:

- Existing bridges in Memphis may be susceptible to earthquake damage. While the I-40 bridge has been seismically retrofitted, it appears that the I-55, Frisco Railroad Bridge, and Harahan Railroad Bridge were not adequately designed for earthquake resistance.
- Average daily traffic in 2004 was 54,420 vehicles per day on the I-40 Bridge and 49,800 on the I-55 Bridge, an almost 50 percent increase in the last 10 years, or an annual 4 percent growth rate.

²³ TDOT, *Mississippi River Crossing Feasibility and Location Study*. June 2006



- Portions of I-40, I-55, and US 61 near the bridges were identified as part of the Memphis MPOs 2004 *Existing Congested Network*, and all sections had at least one year with crash rates greater than the statewide average crash rate for Interstates.
- There is major freight activity in Memphis, including many intermodal and freight facilities, such as the Port of Memphis, FedEx headquarters, five Class I railroads, and other air, port, rail, and truck systems and facilities. Currently, the third Memphis bridge is not included in any programming plans.
- Major planned highway projects or improvements include I-69, I-269, I-55, and I-22, as well as improved access to riverport facilities along the Jack Carley Causeway and Riverport Road.

Based on the analysis of the corridor alternatives, Project Advisory Committee input, public input, and guidance from the Tennessee DOT, the study found that providing a new Mississippi River Bridge Crossing is feasible. Additional location studies are needed to develop a potential alignment for a new bridge in Memphis.

The new river crossing bridges being constructed, as well as the improvements to existing river crossing bridges, are significant to the economic and mobility needs for the DRA region. These crossings are not only important to the people in the DRA region, but are of strategic importance to the national economy and transportation system. It should be noted also, that as important as the highway bridges are, the rail bridges have a critical importance to the country too. Due to the small number of Mississippi River bridges, it is critical that these assets are maintained and preserved to ensure rail freight mobility.

6.8.6 Safety Needs

6.8.6.1 Strategic Highway Safety Plans

All eight state DOTs in the DRA region are taking positive steps to improve highway safety. State DOTs are required to develop Strategic Highway Safety Plan (SHSP) because of the Federal requirement in SAFETEA-LU, 23 USC 148, which is a major part of the core Highway Safety Improvement Program (HSIP). The purpose of the SHSP is to identify the state's key safety needs and guide investment decisions to achieve significant reductions in highway fatalities and serious injuries on all public roads. The SHSP allows all highway safety programs in the state to work together in an effort to align and leverage its resources and positions the state and its safety partners to collectively address the state's safety challenges on all public roads.²⁴ The DRA supports all safety initiatives developed and outlined in each of the eight state's Strategic Highway Safety Plans.

²⁴ Federal Highway Administration



The mission, vision, goal, and emphasis areas of each DRA state's SHSP can be summarized as follows:²⁵

Mission: Through coordination of education, enforcement, engineering, and emergency response initiatives reduce the number of crashes that result in fatalities, injuries, and related economic losses on roadways.

Vision: All roadway users arrive safely to desired destination.

Goal: Reduce the fatality rate.

EMPHASIS AREAS:

- Improve decision making process and information systems;
- Keep vehicles in the proper lane and minimize the effects of leaving the travel lane;
- Improve intersection safety;
- Improve work zone safety;
- Improve motor carrier safety;
- Improve driver behavior;
- Develop legislation;
- Develop and provide public education training programs;
- Reduce impaired driving;
- Curb aggressive driving;
- Increase seat belt usage; and
- Reduce Interstate median cross over crashes.

Specific best practices to resolve safety related problems vary based on the facility type and location. Best practices for urban and rural roadways differ based on the traffic volume, area type, driver's expectations, and travel speeds. Examples of best practices include the following:^{26, 27}

- Conduct Roadway Safety Audits;
- Identify and eliminate roadside hazards;
- Implement speed management policies;
- Account for elderly drivers, pedestrians, and persons with disabilities;
- Improve work zone safety;

²⁵ *Tennessee Strategic Highway Plan*. Tennessee Department of Transportation.

²⁶ *Memphis Long Range Transportation Plan*. March 2008

²⁷ *Arkansas Statewide Long-Range Intermodal Transportation Plan*. Arkansas Highway and Transportation Department. August 2007.



- Perform traffic conflicts analyses;
- Identify areas to install median cross over barriers on the Interstate; and
- Enforcement in work zones;
- Enactment of a primary seat belt law;
- Continue to increase seat belt use through enhanced enforcement of all occupant protection laws and public information and education;
- Expand the installation of shoulder and centerline rumble strips, edge lines, median cable barriers and passing lanes;
- Expand, improve and maintain roadway visibility features such as markings, signs, lightings and signals;
- Identify and deter high-risk drivers such as nonusers of seat belts, impaired drivers, speeders and younger/older drivers;
- Continue to improve work zone safety through innovative design, increased enforcement and public information and education;
- Improve accuracy of identifying the location of crashes and in the timeliness of entering and accessing crash data into the state database;
- Improve timely access for emergency medical personnel and first responders; and
- Continue highway safety improvements as recommended and identified through crash analyses and on-site investigations focusing on rural 2-lane roadways.

6.8.6.2 Mississippi River Corridor Safety and Security Needs

Bridges are critical linkages to the DRA region's transportation system and economy. The importance of the existing interstate and rail bridges over the Mississippi River in Memphis to the region's economy, mobility, and security cannot be understated. There are a number of potential threats to the security of these structures including the threat of a sizable seismic event. The Memphis region is located in the southeastern edge of the New Madrid Seismic zone. This seismic zone is considered to have the highest earthquake risk in the U.S. outside of the West Coast. Realizing this risk, TDOT, FHWA, the Arkansas Highway and Transportation Department joined together to enhance the I-40 Hernando Desoto Bridge to withstand a sizable earthquake. Since the initiation of the project, many other structures on the Interstate system in the Memphis area have been seismically retrofitted.²⁸

Each of the eight state DOTs in the DRA region are continually working to improve the condition of the regions' bridges. Major safety needs include the following:

- Providing adequate vertical clearance;

²⁸ Memphis Long Range Transportation Plan. March 2008



- Providing adequate horizontal clearance (lane widths);
- Installing cameras on major bridges across the Mississippi and Ohio rivers;
- Strengthen bridges to withstand seismic activity;
- Replacing structurally deficient bridges; and
- Replacing functional obsolete bridges.

As shown above, the 20 Mississippi River bridges were constructed between 1935 and 2003 and the average age is 44 years. The four Ohio River bridges were constructed between 1929 and 1973 and the average age is 47 years. Due to the Mississippi River Bridge collapse in Minneapolis, Minnesota, U.S. DOT and state DOTs have increased attention on major river bridges throughout the county. Over the next 25 years, many of the older bridges on the Mississippi and Ohio Rivers will need to be rehabilitated to ensure the structures can accommodate traffic safely over these natural river barriers. Each state DOT evaluates bridges and the DRA supports all DOT efforts to maintain and preserve the existing bridges over the Mississippi River, Ohio River, and the other inland waterways in the DRA region.

Southeast Louisiana in general and the Mississippi River corridor in particular can be seen as vulnerable to a security threat for numerous reasons, among them:²⁹

- New Orleans is home to numerous petrochemical and industrial activities;
- A large nuclear power facility;
- The ports of South Louisiana and New Orleans are the busiest in the world in terms of tonnage, and ports have been deemed vulnerable to terrorist infiltration via falsified or poorly documented cargo manifests; and
- The strategic importance of the railroads in New Orleans, particularly as a rail gateway and the use of the Huey P. Long Bridge over the Mississippi River.

To address safety and security concerns, AHTD has installed cameras and other monitoring equipment on the I-40, I-55, Helena (US 49) and Greenville (US 82) bridges crossing the Mississippi River. AHTD has also installed equipment around the I-540 Bobby Hopper Tunnel for emergency and security purposes. In addition to this equipment, Department has enhanced police patrols at these and other important locations.³⁰

6.8.6.3 Emergency Evacuation Routes

The DRA region must be prepared to meet various types of natural and manmade disaster threats. Although the most likely is hurricanes along the Gulf Coast, additional possibilities

²⁹ Regional Planning Commission. *Metropolitan Transportation Plan New Orleans Urbanized Area*. June 2007.

³⁰ *Arkansas Statewide Long-Range Intermodal Transportation Plan*. Arkansas Highway and Transportation Department. August 2007.



to be considered apply to areas surrounding nuclear power facilities and for other events, such as chemical spills, which could occur anywhere in the DRA region. A hurricane evacuation route is a highway that is a specified route for hurricane evacuation. Along the Gulf Coast, hurricane evacuation routes lead north through the DRA region for hundreds of miles to the safest major city. During mass evacuations, these roads (and especially interstate highways) have been setup by state DOTs with paved crossover lanes so that both north and southbound lanes flow north and west and eastbound lanes flow west.

Alabama, Mississippi, and Louisiana have hurricane evacuation plans, which include the following roadways in the DRA region:

- Alabama
 - I-65 north;
 - I-20 east and west;
 - US 98 west to I-59;
 - US 43 north to I-20;
 - SR 5 and SR 22 to I-65; and
 - US 45 north to Mississippi.
- Mississippi Primary Evacuation Routes
 - I-20 east and west;
 - I-55 north; and
 - US 49 north.
- Mississippi Alternate Evacuation Routes
 - US 61 north to I-20;
 - SR 33 north to US 61;
 - SR 27 north to I-55 and I-20;
 - US 84 east/west connecting I-55 and US 49;
 - SR 43 and SR 13 north connecting to US 84 and I-20; and
 - SR 28 east to US 49.
- Louisiana
 - I-10 east and west to I-49 north;
 - I-10, I-110, and I-610 to I-55 north;
 - I-12 east and west to I-55 north;
 - I-12 east and west to I-55 north;
 - I-49 north;
 - US 51 north;
 - US 61 north;



- US 65 north;
- US 71 north;
- US 80 east and west;
- US 84 east and west;
- US 165 north; and
- US 425 north.

In an effort to assist the state of Louisiana, Mississippi DOT will implement contraflow (lane reversal) for both I-59 and I-55 when requested by Louisiana and approved by the Governor of Mississippi. Category III, IV or V hurricanes in the Gulf of Mexico are situations that might cause a mandatory evacuation of the greater New Orleans area and contraflow lanes will expedite the evacuation process.³¹

6.8.7 Congestion Relief

Most roadway congestion in the DRA region is concentrated in the urbanized areas or at intersections in smaller towns. The following section discusses the general congestion problems in major cities in the DRA region.

MEMPHIS, TENNESSEE

The Memphis Metropolitan Planning Organization includes municipalities in three counties in Tennessee and Mississippi. Growth in the Memphis MPO region, along with insufficient increases in roadway capacity, has resulted in peak hour traffic congestion on many major area roadways in the Memphis metro area. During morning and afternoon peak travel periods, sections of commuter travel corridors are frequently congested. In some cases, travel speed is even reduced to a crawl. The most notable congestion occurs on I-240 especially between Mt. Moriah and I-40 East, as well as on I-40, I-55, and US 61.³²

BATON ROUGE, LOUISIANA

The Baton Rouge Metropolitan Area is a large, complex area with approximately 500,000 people producing or attracting approximately 1.4 million vehicle trips a day. Situated on the Mississippi River, the urban area encompasses a large part of East Baton Rouge Parish, the northern portion of Ascension Parish, the eastern portion of West Baton Rouge Parish, the Northeast portion of Iberville Parish and the western portion of Livingston Parish. Travel throughout the area is vital, given the wide diversity of governmental, industrial, and service industries located within the

³¹ *Mississippi Hurricane Evacuation Guide*. Mississippi Department of Transportation. February 2007

³² Memphis Long Range Transportation Plan.



area.³³ Future congestion relief will be needed on I-10, I-12 and along numerous roadways in Baton Rouge.

JACKSON, MISSISSIPPI

The Jackson Metropolitan Area is located 40 miles east of the Mississippi River and 160 miles north of New Orleans. The area is bisected by the Pearl River which divides Hinds and Madison counties on its west bank from Rankin County to the east. These three counties collectively comprise the Jackson Metropolitan Area. The essential framework of the existing transportation network in Jackson is a radial system of major through-routes, including I-20, I-55, and US 49. Interstate 220 provides an additional connection between I-20 West and I-55 North, establishing a closed loop around the core urban area of Jackson. Future congestion relief will be needed on I-20, I-55, I-220, US 80, U.S. 51.³⁴

JONESBORO, ARKANSAS

The Jonesboro Area Transportation Study (JATS) Metropolitan Planning Organization developed the 2030 Long Range Transportation Plan to be responsive to the challenges of anticipated growth and economic changes. The MPO study area includes the Cities of Jonesboro, Brookland, Bay, and Bono, and the unincorporated areas of Craighead County that are expected to become urbanized in the next 20 years. Future congestion relief will be needed on US 49, AR 1, AR 18.³⁵ Interstate 555 will be the official designation for 44 miles of US 63, between I-55 at Lake David and US 49 in Jonesboro, once it has been completely upgraded to interstate standards. Until this is complete, "Future I-555" signs will mark the highway. Currently, 26 miles of US 63, from Jonesboro southeastward, are already fully upgraded to interstate standards; the remaining 18 miles are scheduled for future improvement.

LITTLE ROCK, ARKANSAS

The Little Rock-North Little Rock Metropolitan area covers approximately 2,909 square miles and includes Faulkner, Lonoke, Pulaski, and Saline counties. Considered a mid-south transportation hub, passenger and freight service to the local area is provided via a variety of modes. Little Rock-North Little Rock Metropolitan area is served by radial Interstates 30, 40, 530 and US Highways 64, 65, 67, 70, 165, and 167. Future congestion relief will be needed on I-30, I-40, and I-530.

³³ Baton Rouge Metropolitan Area Transportation Plan Update, 2004.

³⁴ 2030 Jackson Urbanized Area Transportation Plan.

³⁵ Jonesboro Area MPO 2030 Long Range Transportation Plan.



NEW ORLEANS, LOUISIANA

The Regional Planning Commission is the Metropolitan Planning Organization for the New Orleans, Slidell, and Mandeville Covington Urbanized areas and it is the only MPO in the state representing three urban areas. The New Orleans, Slidell, and Mandeville Covington Urbanized areas are served by radial Interstates 10, 12, 55, 510, 610 and US Highways 11, 61, 90 and 190. The LA DOTD and MPO have identified major widening improvements on I-10 and I-12 to eliminate bottlenecks and reconstruction interchanges.

PADUCAH, KENTUCKY

Paducah is the largest city in western Kentucky and serves as the county seat of McCracken County. Paducah is served by I-24, which traverses to the south and west of Paducah, as well as US 45, US 60 and US 62. Interstate 24, US 60, and US 45 have designated business routes that pass through the central business district of Paducah. The *Paducah-McCracken County Transportation Study* identifies several highway improvements, which include widening US 60 and constructing the Paducah Outer Loop, which is a new 6-mile connector from US 45 to US 60 west of I-24. The study also mentions improvements to I-24 to accommodate future I-66 and constructing I-66, which would be a new interstate connecting to I-24 in Paducah.

6.8.8 Improved freight mobility

Trucking dominates freight movement while rail is critical to the movement of bulk, lower-value commodities and heavy shipments over a long distance in the DRA region. Understanding future freight activity is important for matching infrastructure supply to demand and for assessing potential investment and operational strategies. To help decision-makers identify areas in need of capacity improvements, the U.S. DOT developed the Freight Analysis Framework (FAF2), a comprehensive national data and analysis tool, including freight flows for the truck, rail, water, and air modes. FAF2 also forecasts freight activity in 2010 and 2020 for each of these modes.³⁶ The following provides a highway freight summary for each state in the DRA region.

6.8.8.1 Alabama

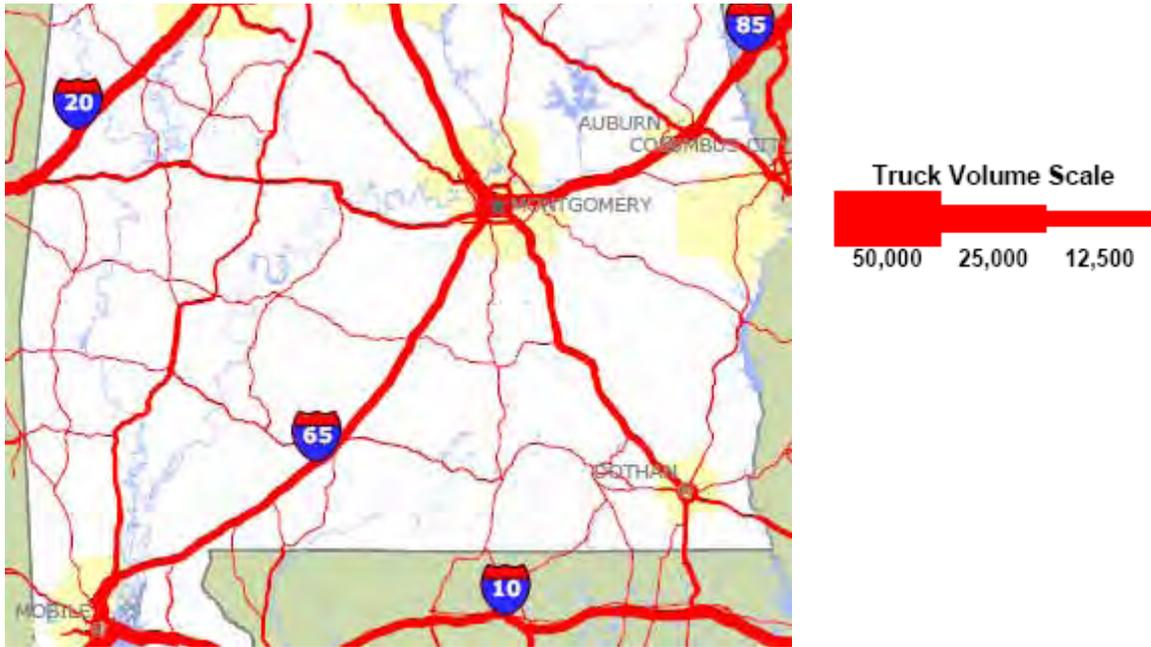
Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-20, I-65 and US 80, as shown in **Figure 5**. About 18 percent of truck traffic involved in-state shipments. Thirty percent involved trucks traveling across the state to other markets. Approximately 40 percent of the average annual daily truck traffic (AADTT) were not identified with a route-specific origin or destination.³⁷

³⁶ Federal Highway Administration. *Freight Analysis Framework*. November 2002.

³⁷ Federal Highway Administration. *Freight Analysis Framework - Alabama*. November 2002.



Figure 5: Alabama Average Annual Daily Traffic - 2020



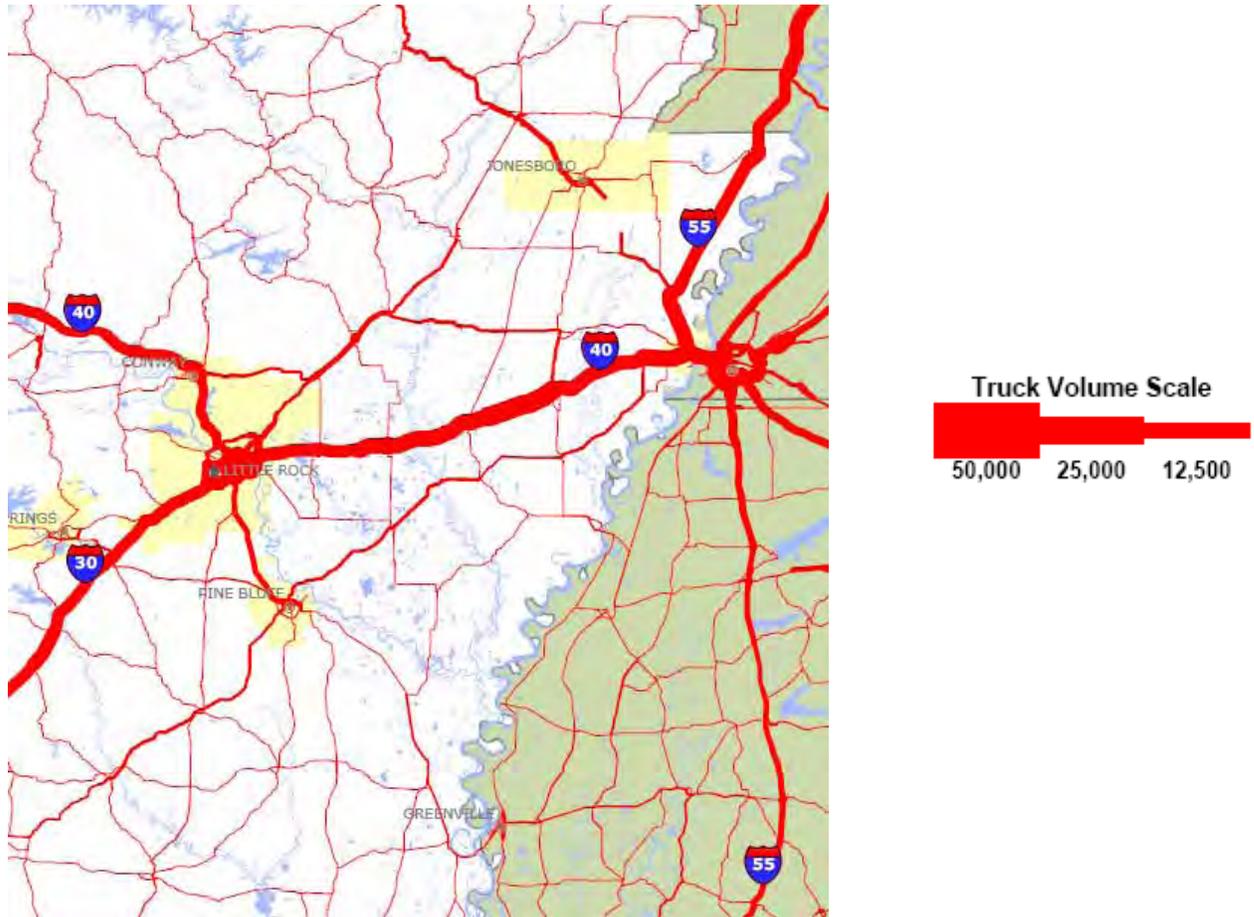
Source: Federal Highway Administration

6.8.8.2 Arkansas

Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-30, I-40, I-55, and I-530, as shown in **Figure 6**. Approximately 9 percent of truck traffic involved in-state shipments, and 36 percent involved trucks traveling across the state to other markets. About 43 percent of the AADTT were not identified with a route-specific origin or destination.³⁸

³⁸ Federal Highway Administration. *Freight Analysis Framework - Arkansas*. November 2002.

Figure 6: Arkansas Average Annual Daily Traffic - 2020



Source: Federal Highway Administration

6.8.8.3 Illinois

Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and I-24 and I-57, as shown in **Figure 7**. Approximately 13 percent of truck traffic involved in-state shipments, and 33 percent involved trucks traveling across the state to other markets. About 39 percent of the AADTT were not identified with a route-specific origin or destination.³⁹

³⁹ Federal Highway Administration. *Freight Analysis Framework - Illinois*. November 2002.

Figure 7: Illinois Average Annual Daily Traffic - 2020



Source: Federal Highway Administration

6.8.8.4 Kentucky

Truck traffic is expected to grow throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-24 and the Julian M. Carroll Purchase Parkway (future I-69) as shown in **Figure 8**. Approximately 12 percent of truck traffic involved in-state shipments, and 30 percent involved trucks traveling across the state to other markets. About 46 percent of the AADTT were not identified with a route-specific origin or destination.⁴⁰

⁴⁰ Federal Highway Administration. *Freight Analysis Framework - Kentucky*. November 2002.

Figure 8: Kentucky Average Annual Daily Traffic - 2020



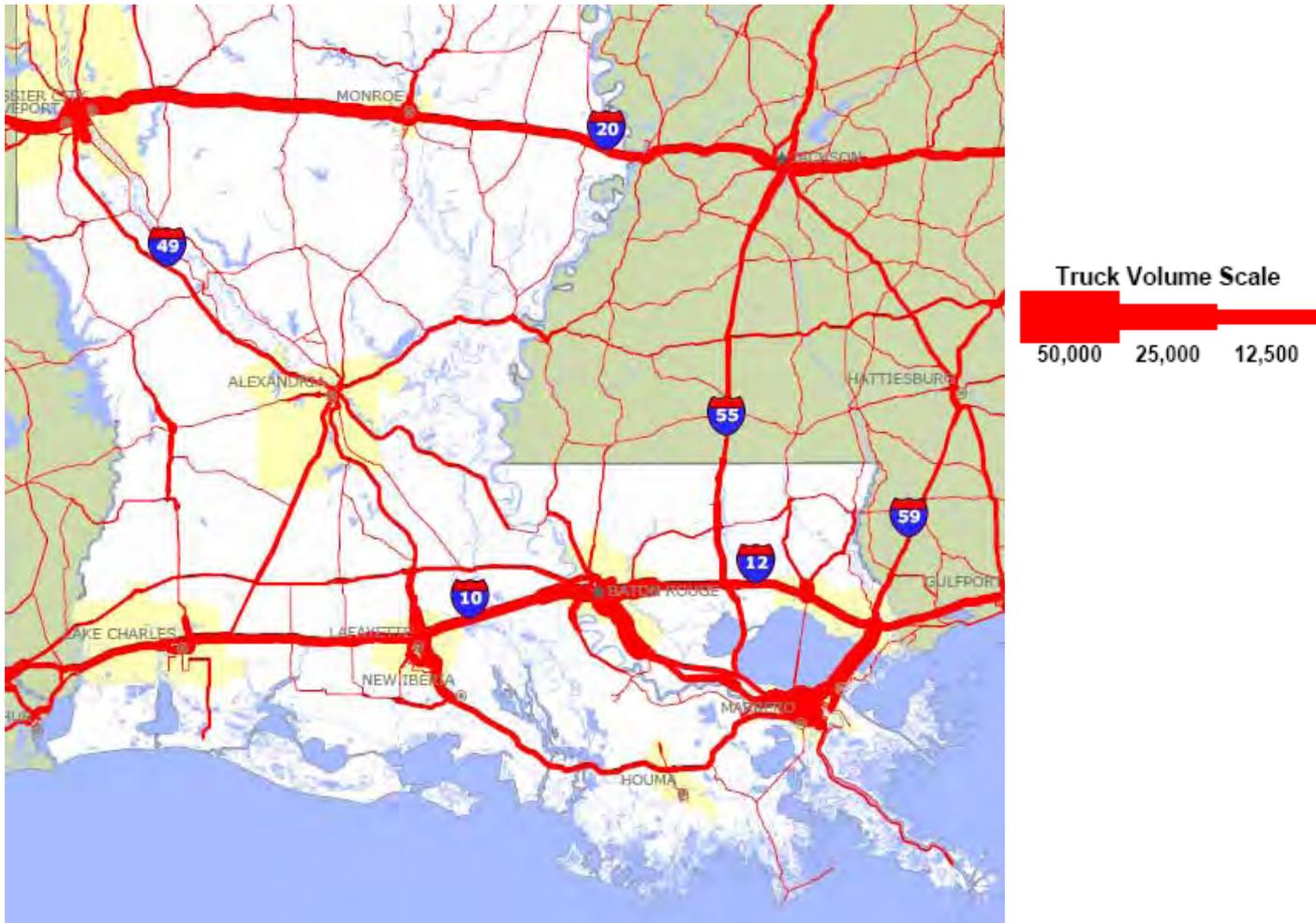
Source: Federal Highway Administration

6.8.8.5 Louisiana

Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-10, I-12, I-20, I-55, and I-110, as shown in **Figure 9**. Nearly 16 percent of truck traffic involved in-state shipments, and 18 percent involved trucks traveling across the state to other markets. Approximately 49 percent of the AADTT were not identified with a route-specific origin or destination.⁴¹

⁴¹ Federal Highway Administration. *Freight Analysis Framework - Louisiana*. November 2002.

Figure 9: Louisiana Average Annual Daily Traffic - 2020



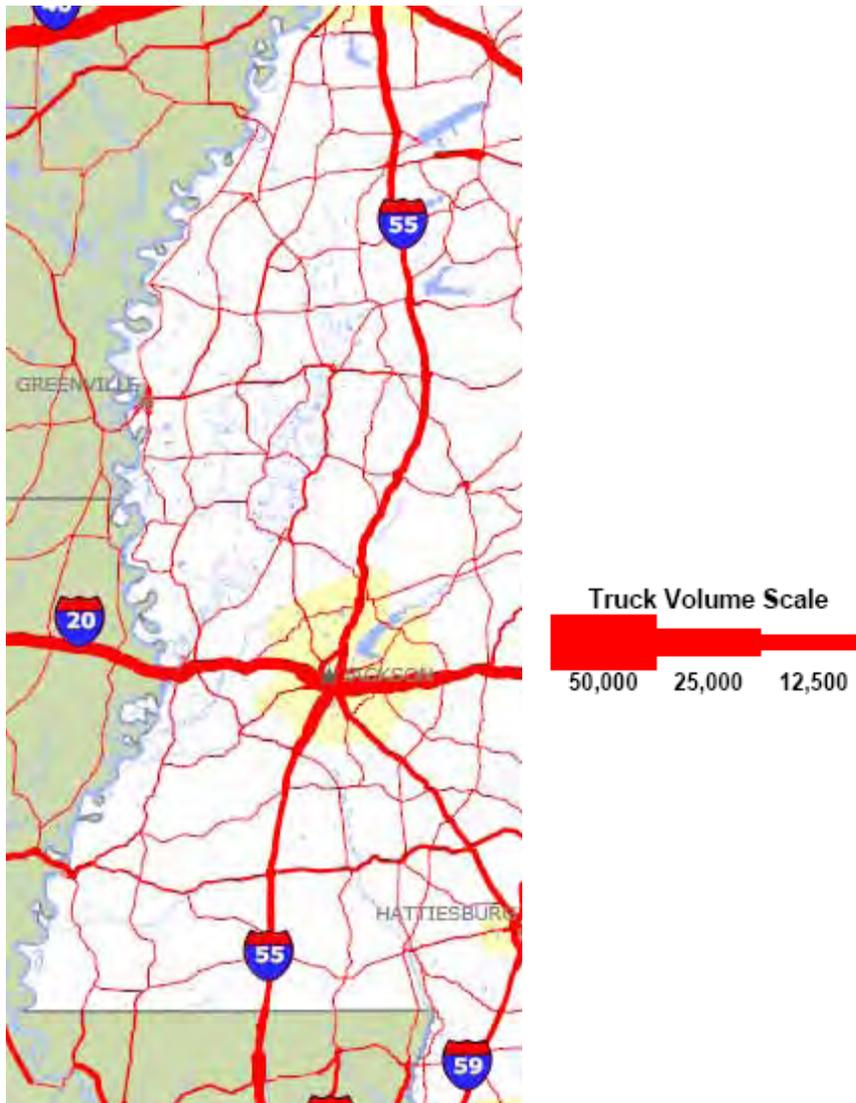
Source: Federal Highway Administration

6.8.8.6 Mississippi

Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-20 and I-55, as shown in **Figure 10**. Approximately 8 percent of truck traffic involved in-state shipments, and 33 percent involved trucks traveling across the state to other markets. Nearly 47 percent of the AADTT were not identified with a route-specific origin or destination.⁴²

⁴² Federal Highway Administration. *Freight Analysis Framework - Mississippi*. November 2002.

Figure 10: Mississippi Average Annual Daily Traffic - 2020



Source: Federal Highway Administration

6.8.8.7 Missouri

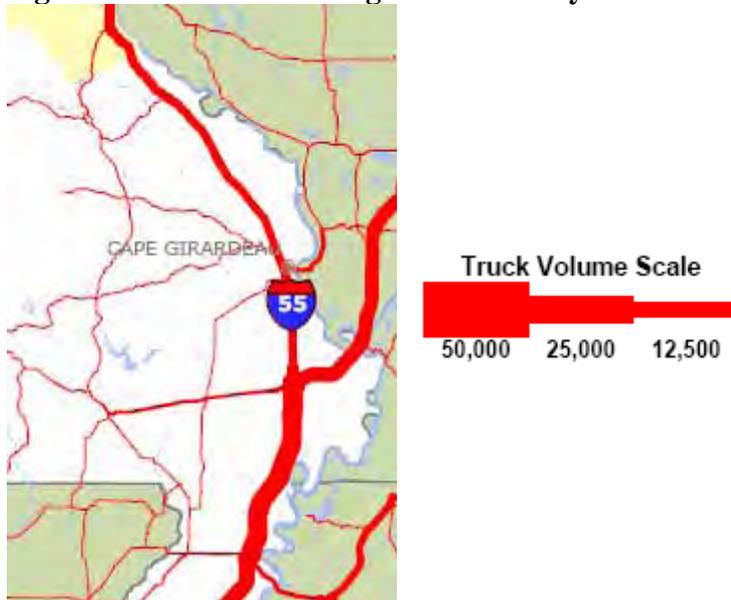
Truck traffic is expected to grow throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-55 and I-57, as shown in **Figure 11**.

Approximately 13 percent of truck traffic involved in-state shipments, and 37 percent



involved trucks traveling across the state to other markets. About 35 percent of the AADTT were not identified with a route-specific origin or destination.⁴³

Figure 11: Missouri Average Annual Daily Traffic - 2020



Source: Federal Highway Administration

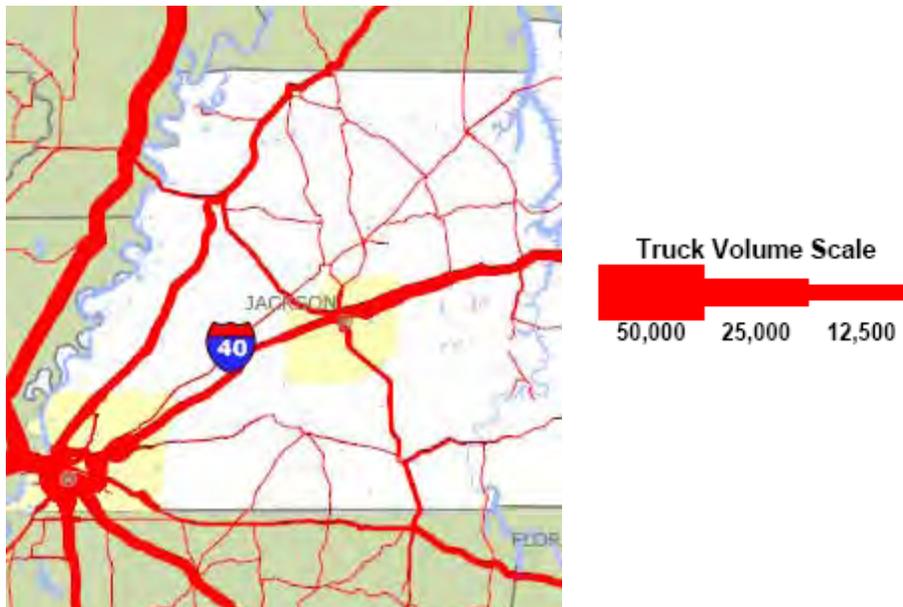
6.8.8.8 Tennessee

Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-40, I-240 and US 51 (future I-69), as shown in **Figure 12**. Approximately 5 percent of truck traffic involved in-state shipments, and 56 percent involved trucks traveling across the state to other markets. About 18 percent of the AADTT were not identified with a route-specific origin or destination.⁴⁴

⁴³ Federal Highway Administration. *Freight Analysis Framework – Missouri*. November 2002.

⁴⁴ Federal Highway Administration. *Freight Analysis Framework – Tennessee*. November 2002.

Figure 12: Tennessee Average Annual Daily Traffic - 2020



Source: Federal Highway Administration

Currently, roadway bottlenecks pose a problem because large numbers of truck freight shipments are delayed, which increases the cost of transporting goods. Based on the projected growth of truck traffic in the DRA region, bottlenecks will become increasingly problematic in the future as the U.S. economy grows and generates more demand for truck freight shipments.⁴⁵ Fixing bottlenecks in urban areas and on Interstates requires a combination of strategies, such as reconstruction, demand management, improved operations, and investment in other modes to divert demand and eliminate the bottleneck.⁴⁶ Ensuring truck freight traffic can move efficiently through the DRA region will require adequate funding to implement and construct the needed improvements to alleviate the bottlenecks that impedes truck movements.

6.8.9 Increased intermodal connectivity

Efficient intermodal transportation connectivity is critical to the DRA region in the 21st century. The DRA region requires an intermodal transportation system that is fully capable of high efficiency and reliability for the movement of goods. There are numerous transportation

⁴⁵ National Surface Transportation Policy and Revenue Study Commission. Commission Briefing Paper 4L-03 Implications of Investments Targeted at Reducing Highway Passenger and Freight Bottlenecks. Cambridge Systematics, January 2007.

⁴⁶ Commission Briefing Paper 4L-03



infrastructure assets in the DRA region that can be built upon to create a sustainable intermodal transportation system that will serve the DRA region well into the future and that will create great economic opportunity.

Intermodal terminals are provided and maintained in the DRA region by both the public and the private sector. The public sector provides the basic infrastructure (roads, bridges, transfer facilities, traffic signals, etc.). The private sector provides most of the vehicles, terminals, and related infrastructure necessary to provide transportation services. Thus, the public and private sectors must work together to provide an efficient, reliable and competitive intermodal transportation system in the DRA region.

For the DRA region to build upon and create an efficient intermodal system it will require the development of policies and programs outlining comprehensive operating guidelines. Intermodal transportation is complex and it is impacted by numerous political and economic issues. There are numerous on-going efforts to improve the intermodal transportation system in the DRA region and these efforts are highlighted later in this report and in the CD that accompanies this report.

6.8.10 Environmental protection

The DRA region is a beautiful place to live and protecting the environment is a key consideration for all state DOTs in the DRA region. Certain environmental issues directly or indirectly affect transportation, or are affected by transportation. The objective in addressing environmental issues is to minimize impacts on the environment while maintaining the economic health of the DRA region. As transportation projects are implemented near or through these areas, special considerations are necessary to minimize adverse environmental impacts. In the transportation planning and construction process, appropriate levels of environmental review and permitting (historic preservation, wetland permits, archeological surveys, etc.) take place within each state DOT to minimize adverse impacts. In addition, there are certain environmentally sensitive areas that state DOTs either avoid, minimize, or mitigate adverse environmental impacts.⁴⁷

6.8.10.1 Air Quality

Air quality is a major concern for all residents in the DRA region, since it can affect health, as well as the environment. Most transportation modes contribute to air pollution with the main impact being increased ground level ozone. The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air

⁴⁷ *Arkansas Statewide Long-Range Intermodal Transportation Plan*. Arkansas Highway and Transportation Department. August 2007.



Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The Clean Air Act of 1990 also defines a “non-attainment area” as a locality where air pollution levels persistently exceed National Ambient Air Quality Standards or that contribute to ambient air quality in a nearby area that fails to meet standards. Designating an area as non-attainment is a formal process and EPA normally takes this action only after air quality standards have been exceeded for several consecutive years. EPA designations of non-attainment areas are only based on violations of national air quality standards for carbon monoxide, lead, ozone (1-hour), particulate matter (PM-10), and sulfur dioxide. The following counties and parishes in the DRA region have been designated a non-attainment area by the EPA:

- Ascension Parish, Louisiana;
- Christian County, Kentucky;
- Crittenden County, Arkansas;
- Iberville Parish, Louisiana;
- East Baton Rouge Parish, Louisiana;
- Livingston Parish, Louisiana;
- Shelby County, Tennessee; and
- West Baton Rouge Parish, Louisiana.

Each state DOT continually coordinates with MPOs, State Environmental Agencies, FHWA, and EPA to ensure that long and short range transportation plans include transportation improvements and activities that reduce congestion to improve air quality throughout the DRA region.

6.8.11 Economic Development

Transportation in the DRA presents great opportunities to improve the economic vitality of the region. The development of an intermodal transportation system that supports the economic growth of region through the safe and efficient movement of people and goods is a core goal of the DRA.



6.9 Modal Recommendations

6.9.1 Policy Recommendations

HIGHWAY SYSTEM

- Fund and complete the Delta Development Highway System (DDHS).
- Preserve the public's capital assets by adequately maintaining the transportation system.
- Add system capacity in urbanized areas to improve the movement of people and goods.
- Ensure EPA air quality ozone and particulate matter standards are met.
- Reduce highway bottlenecks at locations where the available capacity cannot meet traffic demand for extended periods of time.
- Integrate the transportation systems of the U.S., Canada, and Mexico to compete as a North American Market.
- Invest in projects of national significance, such as I-69 and I-22.
- Provide a multimodal transportation system that provide reasonable access to services and jobs to all DRA citizens, without regard to age, income or disability by providing many transportation choices.
- Build a multimodal transportation system that provides critical intermodal freight connections in order to improve competition and service and lower transportation costs to businesses and consumers in the DRA region.
- Maximize the capacity of existing roadway facilities on "regionally significant routes" through use of intelligent transportation system (ITS) technology, access management and land use practices that protect roadway capacity.
- Continue to coordinate and support the region's Local Development Districts, Metropolitan Planning Organizations and Rural Planning Organizations as improvements are identified and multimodal transportation plans are developed.

SAFETY

- Design and operate transportation systems to reduce the likelihood of crashes and correct dangerous situations.
- Invest in safety improvements, deploy advanced technology for vehicles, and roadways to save lives.

ENVIRONMENT

- Protect and enhance the environmental quality of the DRA region.
- Reduce development impacts on sensitive environmental areas (wetlands, aquifer recharge areas, surface stream buffers, etc.) that can be attributed to transportation facilities through better transportation facility location and design.



- Maintain a transportation system and support transportation system improvements that are environmentally responsible and support conservation of the DRA region’s natural, cultural, historic and aesthetic resources.

QUALITY OF LIFE

- Improve the quality of life in the DRA region by minimizing congestion, providing modal choice, encouraging high quality design in transportation facilities, and providing an adequate and well-maintained public infrastructure.
- Promote and support public transportation, passenger and freight rail, carpools, vanpools, bicycles, walking and telecommunications to reduce transportation related energy consumption. As fuel cost continue to rise, the impacts on citizens is direct. In order for citizens to have access to transportation for jobs, education, or health care, public transportation can play a more important role in transportation options for the region.
- Enhance quality of life by increasing access to transportation options for both passengers and freight.

ECONOMIC DEVELOPMENT

- Provide adequate access to attract industrial development and economic expansion in all areas of the DRA region by:
 - Connecting all urbanized areas with a multi-lane facility.
 - Connecting all cities with population over 10,000 by a 4-lane facility.
 - Connecting the remainder of the DRA region with a safe, efficient 2-lane highway system with passing lanes as needed.
- Develop and fund an intermodal transportation system that strives to support and promote economic development goals.
- Continue to coordinate with rural area economic development authorities as well as urban economic development organizations to identify transportation programs and projects that will support economic development.
- Develop an intermodal transportation system that supports the economic growth of DRA region through the safe and efficient movement of people and goods.

6.9.2 Project Recommendations

The following provides a list of major roadway and bridge project recommendations that were confirmed by the eight state DOTs in the DRA region.

6.9.2.1 Fund the Delta Development Highway System

The Delta Development Highway System (DDHS) is a designated system of highway segments, corridors, and connectors that once complete will serve and enhance the DRA region economy. The DDHS is an integrated system that connects important transportation



facilities such as the Interstate Highway System, regional Principal Arterial Highways, the National Highway System (NHS), ports, airports, and rail facilities to population, health care, intermodal facilities, educational and economic activity centers throughout the region.

The DDHS totals 3,843 miles of roadways throughout the region and the estimated cost to complete planned improvement projects on these roads totals \$18.5 billion. Of the 3,843 miles, approximately 1,025 miles (27%) are already multi-laned (provide four or more travel lanes) leaving a total of 2,818 miles of 2-lane roads. Once completed, the DDHS will provide many positive impacts to the region that will improve economic activities and the quality of life for residents of the region. It is estimated that when fully completed, the DDHS will have an economic impact on the region of over 130,000 additional full-time equivalent jobs annually and nearly \$3.5 billion in additional income annually. **Appendix C** provides additional information about the DDHS, as well as a map identifying the system throughout the region.

6.9.2.2 I-55 to I-69 to I-40 Connector

Memphis is acknowledged as America's distribution center. It is the third largest rail center in the U.S., the fourth largest inland port and home to the world's largest air cargo airport. This success as an international intermodal hub continues to bring businesses to the area. A portion of the truck traffic traveling across the river in Memphis is from outside the area. An improved 4-lane connection between I-55 and I-40 through Mississippi and Arkansas would give this thru traffic a good alternative around Memphis, easing congestion and improving air quality in the Memphis metropolitan area. The new roadway would also provide a connection to the proposed I-69. Portions of the DRA region reside within the New Madrid Fault Seismic Zone, which represents a 150-mile long-fault system extending through four DRA states (Illinois, Missouri, Arkansas, and Tennessee). Earthquakes cause great damage to structures and if a strong earthquake occurred along the New Madrid Seismic Zone structural damage would be significant to the transportation system and to the U.S. economy. In the event of a major earthquake, the I-55 to I-69 to I-40 Connector would provide connectivity to major markets to the east and west because the connector and the bridge over the Mississippi River would reside outside of the New Madrid Seismic Zone where the greatest structural damage would occur.

Currently, Tennessee DOT and Arkansas Highway and transportation Department are coordinating on completing a feasibility study for this potential new corridor. The DRA supports all efforts to construct the I-55 to I-69 to I-40 Connector.

6.9.2.3 Construct New Bridges

The following three bridges are critical to improving transportation system connectivity in the DRA region, which will improve freight movement and local and regional economies.



- Greenville Bridge, connecting Arkansas and Mississippi (under construction)
- John James Audubon Bridge project connecting Pointe Coupee and West Feliciana parishes in south central Louisiana (under construction).
- The Great River Bridge connecting Arkansas City, Arkansas and Benoit, Mississippi.

6.9.2.4 Build a Third Road/Rail Seismic Bridge across the Mississippi River⁴⁸

Of the various alternatives being proposed for protecting the crossings against potential earthquake, building a new, third combination road and rail bridge would produce the greatest results for the [Memphis] region. Strengthening and upgrading the road and rail linkage between Arkansas and Tennessee/Mississippi are necessary to maintain the [Memphis] region's role as a continental hub. The advantages of a third bridge are clearly apparent if Memphis is to achieve its goal of becoming a globally competitive hub.

Potential economic benefits of building a third bridge include increased communication and exchange across the river, better trucking access, reduction in congestion and lessening of air pollution. Another beneficial result generated by the new bridge's connection to a southern loop to Union Pacific Railroad Intermodal Terminal linking ISS-SOUR and north with a loop to the west Mississippi and Arkansas through Tennessee and stimulation of the east Arkansas/West Memphis economy.⁴⁹

6.9.2.5 Rehabilitate Existing Bridges

- Replace SR 12 (US 84) Tombigbee River Bridge with relief bridges in Choctaw County, Alabama.
- The Huey P. Long Bridge widening project in Jefferson Parish, Louisiana (under construction).
- The I-10 Twin Span bridge widening project connecting Slidell/ Eastern St. Tammany areas and the City of New Orleans (under construction).
- Cairo Mississippi River Bridge, connecting Birds Point, Missouri and Cairo, Illinois
- Cairo Ohio River Bridge, connecting Cairo, Illinois and Wickliffe, Kentucky

6.9.2.6 Construct Future Interstates and High Priority Corridors

- Interstate 69 through Louisiana, Arkansas, Mississippi, Tennessee, and Kentucky.

⁴⁸ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics.* www.memphisregion.com.

⁴⁹ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics.* www.memphisregion.com.



- US 90 in Louisiana from I-49 in Lafayette to I-10 in New Orleans
- Corridor V of the Appalachian Development Highway System from I-55 near Batesville, Mississippi, to the intersection with Corridor X of the Appalachian Development Highway System near Fulton, Mississippi.
- Interstate 22 when completed, will follow the US 78 corridor along a 213-mile route from Memphis, Tennessee to Birmingham, Alabama. Future I-22 will connect I-55 and I-40 in the northwest to I-65 and I-20 in the southeast.
- East-West Transamerica Corridor (I-66) through Kentucky, Illinois, and Missouri. While the western alignment over the Mississippi River has not been determined, the DRA supports completing a feasibility study to determine the best alignment to construct I-66 through the DRA region. MoDOT is not pursuing improvements for the I-66 corridor at this time, but will continue to coordinate with Illinois and Kentucky on this important project.

6.9.2.7 Interstate Improvements

- **Interstate 10**
 - **Interstate 10 Bottleneck Elimination & Interchange Reconstruction in New Orleans.** The I-10 widening is a bottleneck elimination project on the primary western access route to the New Orleans Urbanized Area. The project adds an additional through travel lane in each direction from the Metairie Road interchange in Orleans Parish to the Veterans Interchange in Jefferson, as well as provides for redesign and reconstruction of the Bonnabel, Causeway, and Williams Boulevard interchanges. The purpose of this project is to alleviate severe congestion and improve access to the urban area from the west. At the project location, I-10 is still the most heavily traveled roadway in the state of Louisiana, even after Hurricane Katrina. Typical weekday traffic totals over 170,000 for a 24-hour period, and recurring delays in the a.m. and p.m. peaks are significant with cars backed up for miles. The a.m. peak movement, when even the slightest incident can effectively shut down the interstate for more than six miles, is particularly critical.⁵⁰
 - **I-10 East Widening, Elysian Fields to Bullard.** The widening of the I-10 between Elysian Fields and Bullard Road, including the High Rise Bridge over the Inter Harbor Navigational Canal (IHNC) is a project that will alleviate a severe traffic bottleneck that has hampered mobility in the eastern corridor for many years. The project entails widening the High Rise Bridge to an 8-lane section. The purpose of this project is to alleviate severe congestion and improve access to the urban area to and from the east. Typical weekday traffic totals over

⁵⁰ Regional Planning Commission. *Metropolitan Transportation Plan New Orleans Urbanized Area*. June 2007.



150,000 for a 24-hour period, and recurring delays in the a.m. and p.m. peaks are significant with cars backed up for miles. The a.m. peak movement, when even the slightest incident can effectively shut down the interstate for miles, is particularly critical. Due to the grade of the bridge, (a substandard 6% for an interstate highway), and the severe grade of the Downman and Louisa on ramps (over 7%) traffic is severely hindered, and levels of service of the roadway diminishes very quickly. Moreover, both on-ramps serve the industrial land uses associated with the Inner Harbor Navigation Canal. A high number of heavy trucks entering the highway at very steep grades causing safety problems as trucks merge into traffic in addition to the upstream affect of vehicles on the mainline slowing down precipitously to allow heavy vehicle onto the roadway. Furthermore, levels of traffic remain high in the off-peak direction during peak hours, as well as during the midday and evening off-peak times.⁵¹

- **I-10 Twin-Span Widening.** The I-10 Twin Span Bridge is the primary connection between the Slidell/ Eastern St. Tammany areas and the City of New Orleans. The bridge, consisting of two separate directional spans with 2-lanes in each direction and breakdown lanes, was severely impacted by Hurricane Katrina. The westbound span in particular suffered significant damage during the storm and now operates with a temporary prefabricated steel bridge. The purpose of this project, which is currently under construction, is to repair damage to the existing I-10 bridge. The project will also mitigate damage from future storms by raising the elevation of the roadway to avoid tidal surge, as well as to expand capacity of the facility to accommodate significant projected traffic growth on the roadway.⁵²
- The *Louisiana Statewide Transportation Plan* identifies widening I-10 from 6-lanes to 8-lanes between I-110 and I-12 in Baton Rouge. The Environmental Impact Statement (EIS) will begin in 2008/2009, but no funding for construction has been identified at this time.
- The *Louisiana Statewide Transportation Plan* identifies widening I-10 from 4-lanes to 6-lanes between I-12 and LA 22 in Baton Rouge. A portion of this project, I-12 to LA 3245 (Siegen Lane) will be let to construction in 2008. The remainder of the project will undergo a feasibility study in 2008 and funding for engineering and construction has not been identified.
- **Interstate 12**
 - The *Louisiana Statewide Transportation Plan* identifies widening I-12 from 4-lanes to 6-lanes between O'Neal Lane to LA 16 in Baton Rouge. A design-build

⁵¹ Regional Planning Commission. *Metropolitan Transportation Plan New Orleans Urbanized Area*. June 2007.

⁵² Regional Planning Commission. *Metropolitan Transportation Plan New Orleans Urbanized Area*. June 2007.



contract will be executed in early 2009 with 100 percent state funds from recent legislative action.

- The *Louisiana Statewide Transportation Plan* identifies widening I-12 from 4-lanes to 6-lanes between LA 16 and I-55 in Hammond.
- The *Louisiana Statewide Transportation Plan* identifies widening I-12 from 4-lanes to 6-lanes between I-55 and LA 21 in the North Shore area.
- **Interstate 40**
 - The Tennessee Department of Transportation (TDOT) is conducting a study to identify improvements for the 550-mile Interstate 40/81 corridor between Memphis and Bristol. In September 2007, TDOT held a series of regional public meetings to present a project overview, describe identified transportation deficiencies, and offer an initial range of potential solutions for discussion. In April 2008, TDOT held a series of regional public meetings to present the recommended results that have been identified to improve operations and safety along the I-40/I-81 corridor. Due to the large truck volumes on I-40 in the DRA region, improving roadway operations and safety along this important freight corridor is a high priority and the DRA supports all efforts to improve this vital interstate corridor.
- **I-20 Improvements**
 - The *Louisiana Statewide Transportation Plan* identifies widening I-20 from 4-lanes to 6-lanes between LA 546 and LA 594 in Monroe.

6.9.2.8 US and State Route Improvements

- Widen SR 8 (US 80) to 4-lanes, including bridge, from SR 17 to County Road 71 Bellamy Road, in Sumter County, Alabama.
- US 43 from 1.14 miles south of SR 69 to SR 28 EAST, grade, drain, and bridge Linden/Chickasaw State Park Bypass, in Marengo County, Alabama.
- Widen US 80 to more than 4-lanes from US 11 to SR 17, in Sumter County, Alabama.
- Extend SR 263 from SR 21 at Braggs to US 80, in Dallas County, Alabama.
- US 31 from east of Atmore to US 29 in Flomation, in Escambia County, Alabama.
- Enhance US 63, \$630 million, (Phelps, Texas, Howell, and Oregon counties). The Route 63 Corridor is one of the highest unfunded corridor needs in Missouri's DRA counties and MoDOT could use funds immediately to enhance this important corridor.
- Enhance US 67, Butler County to Arkansas state line, \$40 million, (Butler County)
- Enhance Interstate 44, St. Louis to Oklahoma state line, \$4.1 billion (Phelps and Crawford counties)



- IL 146 from IL 3 to East Cape Girardeau, Illinois. When Missouri constructed the new bridge at Cape Girardeau, a 4-lane expressway from the bridge to I-55 was constructed. The Illinois approach to the bridge is a 2-lane rural cross section from IL 3 to East Cape Girardeau, Illinois. Illinois would like to construct a 4-lane facility from the bridge to IL 3 to match Missouri's cross section. Plans are complete and right-of-way has been purchased for this improvement. Illinois has received Delta funding for part of the grading of this expressway. This would provide the transportation infrastructure to attract business and spur economic development.
- Phase I Engineering Study for a proposed I-66 segment between Paducah, Kentucky and Cape Girardeau, Missouri. Interstate 66 is a proposed east-west interstate across the U.S. from Washington D.C. to the San Diego-Los Angeles area. The corridor goes through the DRA region near Cairo, Illinois in the Kentucky, Illinois, and Missouri tri-state area. Illinois is proposing an alignment between Paducah, Kentucky and Cape Girardeau Missouri using the existing major river bridges near these two cities. An engineering study is needed to determine if the alignment is feasible and get a construction cost estimate.
- Upgrade IL 13/127 from a rural 2-lane cross section to a 4-lane expressway between Murphysboro and Interstate 64. Illinois 13 and US 45 are 4-lane expressway facilities between Murphysboro and Eldorado. Illinois would like to upgrade IL 13/127 from Murphysboro to Interstate 64. A phase 1 engineering study on IL13/127 between Murphysboro and Pinckneyville is almost complete with design approval expected soon. A corridor protection hearing was held and the corridor protection plan was approved but has not been recorded yet. The project will be constructed in segments and funding for the first segment is needed. This would provide the transportation infrastructure to attract business and spur economic development.
- Upgrade US 45 from IL 142 to IL 141 north of Eldorado from a rural 2-lane cross section to a 4-lane Expressway. US 45 has recently been upgraded to a 4-lane expressway between Harrisburg and Eldorado. Illinois wants to construct a 4-lane expressway through the DRA region. Illinois 13 and US 45 are 4-lane expressway facilities between Murphysboro and Eldorado and there is a long range plan to construct an expressway on the east end near Eldorado to either I-64 or Indiana Route 62 near Evansville. Phase 1 engineering is funded and will begin soon. Construction funds are needed to construct the entire route or a usable segment of this highway in the 6 to 10-year timeframe. This would provide the transportation infrastructure to attract business and spur economic development.
- Phase II engineering plans for the proposed I-66 between Paducah, Kentucky and Cape Girardeau, Missouri. Once the Phase I engineering study is complete, final construction plans need to be prepared.
- Upgrade IL 13/127 from a rural 2-lane cross section to a 4-lane expressway between Murphysboro and I-64. Illinois wants to construct a 4-lane expressway through the



DRA region. Illinois 13 and US 45 are 4-lane expressway facilities between Murphysboro and Eldorado. IDOT proposes to upgrade IL 13/127 from Murphysboro to Interstate 64. A phase 1 engineering study on IL13/127 between Murphysboro and Pinckneyville is almost complete with design approval expected soon. A corridor protection hearing was held and the corridor protection plan was approved but has not been recorded yet. The project will be constructed in segments and funding for the individual segments is needed to complete. This would provide the transportation infrastructure to attract business and spur economic development in this portion of the DRA region.

6.9.3 Intermodal Recommendations

The DRA region is well positioned to become one of the few transportation logistics centers in the world. However, to realize this goal the public and private sectors must work together to improve the intermodal transportation system in the DRA region. Many of the most pressing and costly problems associated with the transportation system have to do with locations where modes meet and transfers of goods or people must take place. Proper provision of facilities at these critical locations can significantly improve mobility and economic competitiveness.⁵³

An intermodal connectivity point is best described as a facility where transportation services transferred between one or more modes is practical and cost-effective, or can be made so. The physical consideration is the infrastructure which has a wide range of features, including quality of access from the user's point of view, transportation network linkages, availability of surrounding land use for complementary development and improvements, and the quality of the surrounding area. To gain an understanding on how to develop intermodal facilities, the following guidelines were outlined for Dubai and these guidelines can also serve the DRA region:⁵⁴

1. Serve the heaviest point-to-point demand without mode transfer (direct and as fast as possible).
2. Existing routes and services should be adjusted to offer cost-and time-effective interchange opportunities.
3. Attention should be given to improving or creating connectivity points where high demand routes meet.
4. Traffic and congestion management measures should be adopted to provide improved access.

⁵³ Regional Planning Commission. *New Orleans Metropolitan Transportation Plan 2032*.

⁵⁴ *Guidelines for Intermodal Connectivity and the Movement of Goods for Dubai*. Logistics Spectrum, July-September 2006.



5. Major connectivity points should be located at or near major destinations.
6. Interlinking of schedules should be emphasized in relation to overall travel time and improving predictability of the total trip.
7. Connectivity arrangements should be tightly specified, and all operators should cooperate and respect the schedules of each service.
8. Planning of schedule and schedule changes should be a matter of policy consistent with commercial considerations.
9. At each connectivity point, one organization should be responsible to ensure connections are made.
10. Information to assist the system users is needed at every stage of the goods movement, whether a transfer is involved or not.
11. Connectivity points should be located to allow for convenient interchange between the different modes involved, where there is sufficient land to accommodate the facility.

Public and private entities in the DRA region are planning, developing, and expanding intermodal facilities to ensure the region's mobility and economic competitiveness improves over the next 25 years. As shown in the CD that accompanies this report, numerous port authorities and short-line rail companies need improved intermodal access. The following provides a summary of some of the areas in the DRA region that are planning, developing, or expanding intermodal facilities in the DRA region:

- Pine Bluff, Arkansas;
- Little Rock, Arkansas;
- McGehee, Arkansas;
- Cairo, Illinois;
- Marion, Illinois;
- Paducah, Kentucky;
- Wickliffe, Kentucky;
- New Orleans, Louisiana;
- Baton Rouge, Louisiana;
- Alexandria, Louisiana;
- Monroe, Louisiana;
- Vicksburg, Mississippi;
- Yazoo City, Mississippi;
- Cape Girardeau, Missouri;
- Scott City, Missouri;



- Tiptonville (Cates Landing), Tennessee;
- Memphis, Tennessee; and
- Other areas of western Tennessee;

The following recommendations were identified by the Memphis Regional Chamber in *Creating a Strategic Regional Future, Transportation and Logistics*.⁵⁵

DEVELOP AN INTEGRATED MULTIMODAL SUPER-HUB TO STRENGTHEN MEMPHIS' FUNCTION AS A GLOBAL LOGISTICS CENTER.

An integrated multi-modal super-hub would link the Memphis International Airport to other logistics systems, including trucking, rail and water for efficient movement of goods in and out of the region. An important part of this plan should be the further development of a high-capacity communications infrastructure. The development of an integrated three-state port strategy including DeSoto County and West Memphis ports, as well as the Union Pacific intermodal rail facility in Marion, should be linked to the rail and other logistics components of the multi-modal hub.

A logistics corridor connecting the Memphis International Airport and the Super Terminal would further facilitate the use of air shipment containers for shipping high-value products. Several study groups have focused on expanding the river port system to provide the region with even greater water access to world markets.

*The Memphis International Airport zone is a specialized sub-market that cannot be replicated in any other part of the region. Creation of a multi-modal hub will increase the development pressures in this zone, especially around the airport. Available industrial land around the airport is rapidly running out. Protecting the airport land envelope from deterioration, and surrounding land for long-term future expansion and economic development, is an essential part of the concept. Growth of airport/multi-modal generated economic activity will expand industrial land use into northern Mississippi and east Arkansas within a 100-mile radius. Many business and supplier relationships extending to other parts of the region will depend on the health of this zone.*⁵⁶

⁵⁵ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics*. www.memphisregion.com.

⁵⁶ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics*. www.memphisregion.com.



DEVELOP A REGIONAL LOGISTICS AUTHORITY

Continuing to build a stronger transportation, logistics and communications infrastructure is the foundation for the region's future. The [Memphis] region's air, water, road, rail and communications must keep pace with the demands of the expanding world economy. The goal of the Regional Logistics Authority would be to ensure that logistics, planning, development and investments link the three-state area into one integrated economic unit through a global logistics strategy for the region. Many opportunities, such as integrating a highway and a new rail line into the same corridor as in the planned Highway 304, should be addressed by the Authority. Evaluating the potential of utilizing existing military and other regional airports should be part of a regional transportation strategy.⁵⁷

The following recommendations were identified in the Central Arkansas Transportation Study (CATS), which covers the Little Rock-North Little Rock Metropolitan area.

- Truck/rail intermodal shipments from/to central Arkansas must now move by truck along I-40 to/from major intermodal terminals located at Memphis, Tennessee or Marion, Arkansas, adding \$300 per load to shipping costs. This makes the CARTS area less competitive in world markets.
- Provide a good container-on-flat-car (COFC) rail/truck intermodal terminal in the CARTS area.
- Encourage other Class I railroads to serve the CARTS area, e.g., at the Little Rock Port.
- Set up a statewide short-line rail service with Little Rock Port as its hub.
- Improve rail/truck/water intermodal system/facility at the Little Rock Port.
- Investigate container-on-barge concept.
- Use the \$2.3 million in METRO 2020 to improve barge capacity and truck access at the Little Rock Port.
- Improve truck access to intermodal facilities.

The *Tennessee Long Range Transportation Plan*, identifies improving the Intermodal feeder system for Western Tennessee by constructing a large intermodal collection facility in South Fulton to serve as a primary cargo collection facility, as well as upgrades to the Western Tennessee Railroad from Union City, Tennessee – Jackson, Tennessee - Corinth, Mississippi to create a core intermodal feeder route.⁵⁸

⁵⁷ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics*. www.memphisregion.com.

⁵⁸ Tennessee Long Range Transportation Plan. June 2005.



During the public participation process throughout the DRA region in the fall of 2007 and the spring of 2008, the following two intermodal facility studies were presented.

In Illinois, the Cairo Intermodal Demand Analysis study was recently completed. The study concluded that Cairo, Illinois is strategically positioned to support intermodal exports of cotton, soy and other products due to access to Class I railroads, the Mississippi and Ohio Rivers and access to I-57.

In Arkansas, the Pine Bluff Intermodal Freight Transportation Study was recently completed. The study concluded that Pine Bluff's location along the Arkansas river via Lake Langhofer, direct access to two mainline Union Pacific Railroad tracks and access to I-530, US 65, US 63 and US 79 is ideally suitable to develop a large intermodal facility.

6.9.4 Coordination Recommendations

Since the DRA region encompasses portions of eight states, it is essential that state DOTs, state Economic Development Agencies, MPOs, RPOs and LDDs coordinate regularly to ensure multimodal transportation improvements are prioritized and coordinated properly. The following provide coordination recommendations that will assist the DRA region in moving its multimodal transportation system forward to create and sustain a local, regional, and global network.

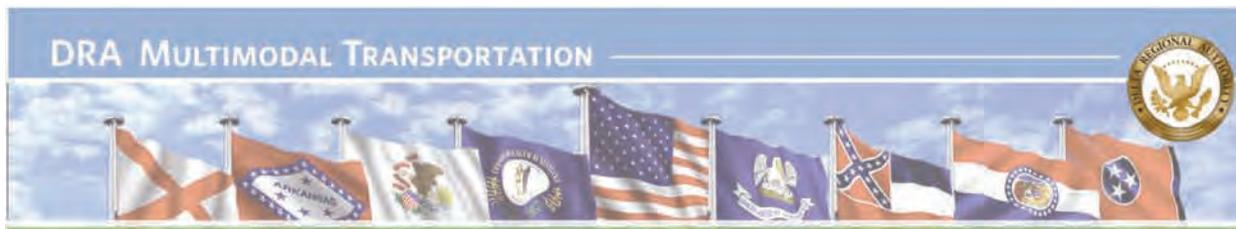
- Develop a DRA Highway and Bridge Working Group, which would have representatives from federal, state and local transportation agencies in the DRA region and would meet twice a year.

The following recommendations were identified by the Memphis Regional Chamber in *Creating a Strategic Regional Future, Transportation and Logistics*.⁵⁹

CREATE AN INTEGRATED METRO TRANSPORTATION STRATEGY LINKING BOTH SIDES OF THE MISSISSIPPI.

The region's two Metropolitan Planning Organizations (MPOs) could more effectively coordinate planning efforts. There are two MPOs in the metro that create transportation plans (West Memphis MPO and Memphis Urban Area MPO). Currently, these MPOs do not regularly work together. While extensive plans to develop individual road, rail, air, and water transportation modes are under way, there is no regionally integrated metropolitan transportation plan. An integrated transportation strategy and plan would reduce truck transfer across the metro grid, help to lessen traffic congestion and improve air quality. These

⁵⁹ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics*. www.memphisregion.com.



two MPOs must work together in an integrated and synergistic manner to establish the transportation future for the region.⁶⁰

REGIONAL CONSENSUS ON A METROPOLITAN SURFACE TRANSPORTATION PLAN IS NEEDED.

The construction of [I-69] will add an important north-south continental connection to the Memphis region extending from Canada to Mexico. This connection would strengthen the appeal of the Memphis region as a location with premier connections to the continental and global marketplace and play a significant role in the region's multi-modal strategy. Regional understanding and consensus on the impacts of the I-69 corridor in Arkansas, Mississippi and Tennessee are vital to maximize its economic potential.⁶¹

COORDINATE LAND USE POLICIES WITH TRANSPORTATION STRATEGIES TO MANAGE GROWTH PATTERNS.

A variety of [Memphis] metro land use policies need to be established ahead of development. The [Memphis] region has the opportunity to build additional coordination between land use and transportation improvement. Quality long-term growth depends on the level of coordination between land use and transportation improvements. Regional transportation plans that are not coordinated with local and regional land use policies will lead to low-density auto-oriented urban growth, as opposed to transit-oriented growth and development. The area around the airport (MIA), particularly along its western edge, needs a plan so it may be transitioned into a vital and healthy area.⁶²

6.9.5 Funding Recommendations

Due to the many competing priorities for government funds and slow growing dedicated transportation revenue sources that are not keeping pace with rising construction costs for both roadway and bridge construction, it is not surprising that funding for transportation improvements has not kept pace with the growing multimodal transportation demands nor the growing needs of an aging system. All state DOTs are faced with a growing challenge of meeting the high demands and expectations on the state's transportation system with limited

⁶⁰ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics.* www.memphisregion.com.

⁶¹ Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics.* www.memphisregion.com.

⁶² Memphis Regional Chamber. *Creating a Strategic Regional Future, Transportation and Logistics.* www.memphisregion.com.



dollars and the eight state DOTs in the DRA region cannot solve the transportation funding challenge alone.

The Federal Highway Trust Fund, Highway Account (HTF) – the primary source of revenue for the Federal-aid Highway program – is projected to have a \$5.7 billion deficit in FY 2009 that could result in a reduction of hundreds of millions of dollars in Federal-aid funds to the eight states in the DRA region. Transportation policy makers, at both the state and nation level, have identified a number of threats that will affect motor fuels tax revenue for decades to come, including more stringent fuel economy standards, a probable increase in the market share for alternative fuel and hybrid vehicles, declining purchasing power of motor fuel tax revenues, and new environmental and energy regulations. Thus, the purchasing power of revenue from user fees such as the motor fuels tax is declining and this has major implications on the each of the eight state DOTs in the DRA region transportation capital program.

Another issue each state DOT is facing is the growth in construction and maintenance costs since 2001. These increasing costs have had a direct effect on each of the DOTs ability to improve the transportation network. As costs escalate, purchasing power goes down, and this ultimately reduces the number of transportation projects that can be completed.

Based on the multimodal needs identification process completed in the DRA region, the current level of funding for transportation is not expected to keep pace with transportation needs identified in the region. With the growing gap between multimodal transportation needs and anticipated revenues, key policies and initiatives to ensure this gap is narrowed rather than expanded must be identified quickly. In the future, it is anticipated that transportation systems will not be able to rely as heavily on motor fuels taxes due to cars becoming more fuel efficient and because motor fuels tax revenue is not keeping pace with inflation.

Thus, new revenue sources must be identified to ensure the multimodal transportation system in the DRA region can meet future demand, support economic development opportunities, and improve the quality of life for all residents. The following provides some funding and potential revenue recommendations that may assist in bridging the gap between the multimodal transportation needs and available funding sources:

- DRA will continue to coordinate with each of the eight state DOTs and participate in meetings to address transportation funding options and recommendations.
- Appropriate funding to the DRA to establish and construct the Delta Development Highway System.
- Appropriate funding to the DRA to fund multimodal transportation improvements in the region, without lowering each state's Highway Trust Fund apportionment, to develop categorical funding programs to assist in the construction of connectors to economic development sites and intermodal facilities.



- Develop and fund categorical grant programs for all modes of transportation to assist in the development and construction of the multimodal transportation system in the DRA region.
- Maintain DRA’s ability to continue as a state/local match for such transportation projects as it does with its highly successful grant program.
- Increase funding for core highway programs and ensure solvency of the Highway Trust Fund.
- Generate net new funding for strategic national investments from sources outside the Highway Trust Fund for Highway projects of national significance.
- Develop tax credit incentives to encourage private entities involvement in developing and constructing the multimodal transportation system in the DRA region.
- AHTD identified the following potential new revenue sources to assist in funding transportation projects:⁶³
 - Portions of general revenues;
 - Development impact fees;
 - Mileage or tonnage-based user fees;
 - Public Private Partnerships (PPPs);
 - Regional mobility authorities;
 - Transportation improvement districts;
 - Revolving loan programs;
 - State sales taxes dedicated to transportation programs;
 - Variable motor fuels/vehicle taxes and fees; and/or
 - Toll facilities.
- The *National Surface Transportation Policy and Revenue Study Commission* (majority report) identified the following innovative financing techniques to assist in highway funding:⁶⁴
 - Remove barriers to private investment
 - Encourage the use of new revenue streams, particularly tolls
 - Reduce financing costs, thus freeing up savings for transportation system investment
 - Identify projects that are suited for Public Private Partnerships.
- Successful financing mechanisms for significant intermodal freight transportation projects should include the participation of both public and private entities. This

⁶³ *Arkansas Statewide Long-Range Intermodal Transportation Plan*. Arkansas Highway and Transportation Department. August 2007.

⁶⁴ National Surface Transportation Policy and Revenue Study Commission. Commission Briefing Paper 3A-01, 2006 C&P Findings: Highway and Bridge Finance. Section 1909 Commission Staff, March 2007.



combination will reduce reliance on public debt while ensuring a sustainable commercial operation.⁶⁵

- Develop public and private ventures since private operating entities have a strong financial incentive to minimize capital investment in long-term infrastructure and public entities have land and other assets that can be contributed to a joint development of the site.⁶⁶
- Encourage the use of Private Activity Bonds and Certificates of Participation that give private-public partnerships access to debt at low government rates.⁶⁷
- SAFETEA-LU does not provide funding categories specifically for Intermodal projects. The new federal Highway Transportation Act should consider identifying funding a pilot program to support the construction and/or expansion of strategic intermodal transportation facilities in the DRA region.

6.9.6 Priority Recommendations

Preserving, maintaining, modernization and expanding the transportation system in the DRA region is crucial. If the system is preserved, maintained, modernized and expanded then safety, congestion relief, improved freight mobility, increased intermodal connectivity, economic development and the other benefits will be realized and it will assist in the following:

- Increase ability to recruit and maintain industries;
- Increase access to higher paying jobs;
- Increase employment;
- Increase state and local tax revenues;
- Increase tourism;
- Increase safety and security; and
- Decrease traffic congestion.

In many ways, the transportation system is the lifeblood of the DRA economy and an important component in the quality of life. Truck and vehicular traffic will continue to increase and this alone will place tremendous demand on the transportation system in the DRA region. The following are priority recommendations that if completed will strengthen the multimodal transportation system in the DRA region to assist in improving safety, recruiting and maintaining industries, increasing access to jobs, increasing tourism and reducing traffic congestion:

⁶⁵ National Surface Transportation Policy and Revenue Study Commission. Commission Briefing Paper 3J-01 Current Financing and Future Needs of Other Components of the Surface Transportation System. TranSystems, Mach 2007.

⁶⁶ National Surface Transportation Policy and Revenue Study Commission. Commission. Briefing Paper 3J-01

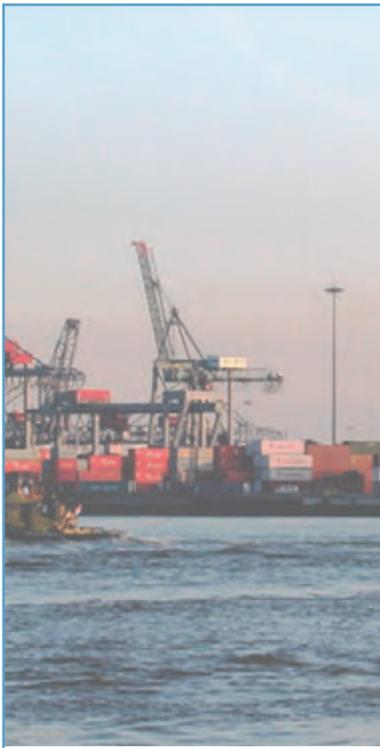
⁶⁷ National Surface Transportation Policy and Revenue Study Commission. Commission. Briefing Paper 3J-01



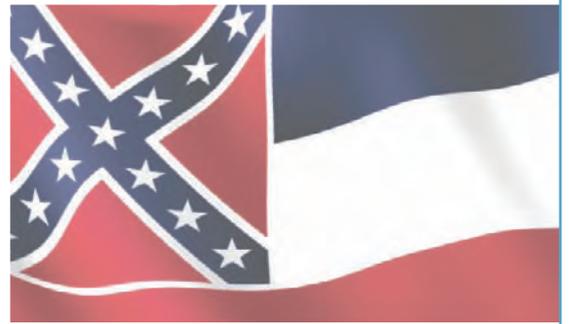
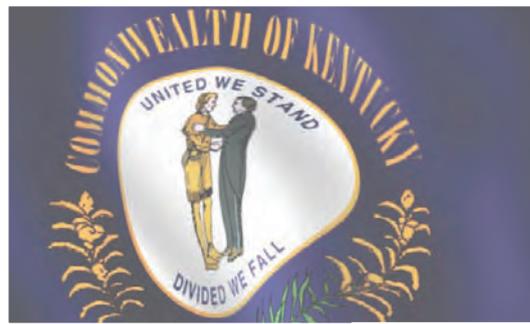
- Construct the Delta Development Highway System;
- Construct I-55 to I-69 to I-40 Connector;
- Construct I-69;
- Construct I-66;
- Construct I-22;
- Remove bottlenecks from interstates;
- Construct Greenville Bridge, connecting Arkansas and Mississippi;
- Construct Great River Bridge connecting Arkansas City, Arkansas and Benoit, Mississippi;
- Rehabilitate the Cairo Mississippi River Bridge;
- Rehabilitate the Cairo Ohio River Bridge;
- Construct third bridge in Memphis over the Mississippi River; and
- Construct intermodal facilities at strategic locations in the DRA region.

Continued transportation improvements along the main DRA trade corridors (I-10, I-12, I-20, I-30, I-24, I-40, I-55, I-57, I-69) can be expected to generate significant rates of return from state, national and global perspectives. Identifying locations and construction intermodal facilities at strategic locations in the DRA region will also generate significant rates of returns from state, national, and global perspectives.

The DRA region is ideally suited to become one of the few global transportation logistics centers in the world. Through continual coordination, strong leadership and adequate funding, the multimodal transportation system in the DRA region can serve local, regional and global markets and in return local residents will enjoy access to quality jobs and an improve quality of life.



ITS





7. INTELLIGENT TRANSPORTATION SYSTEMS

7.1 Introduction

Intelligent Transportation Systems (ITS) improve transportation safety and mobility and enhance productivity through the use of advanced information and communications technologies. ITS include a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance American productivity.⁶⁸ Before ITS technologies are deployed, ITS Architecture Plans and ITS Deployment Plans are completed by providers.

7.1.1 ITS Architecture Plans

ITS Architecture Plans provide a framework for implementing ITS projects, encouraging resource sharing among agencies, identifying applicable standards to apply to projects, and allowing cohesive long-range planning among regional stakeholders. The following stakeholders have an ITS Architecture Plan in place:

- Illinois Department of Transportation;
- City of Jackson, Tennessee;
- Kentucky Transportation Cabinet;
- Mississippi Department of Transportation;
- Missouri Department of Transportation; and
- Tennessee Department of Transportation – Statewide Plan and the City of Memphis.

7.1.2 ITS Deployment Plans

ITS Deployment Plan identify specific projects for deployment in order to implement the architecture and build on the ITS Architecture by outlining specific ITS project recommendations and strategies and identifying deployment timeframes so recommended projects and strategies can be implemented over time. The following ITS stakeholders have an ITS Deployment or Strategic Plan in place:

- Arkansas Highway and Transportation Department;
- Illinois Department of Transportation;
- Kentucky Transportation Cabinet;

⁶⁸ U.S. DOT Research and Innovative Technology Administration (RITA).



- City of Jackson, Tennessee;
- Louisiana Department of Transportation and Development – Statewide Plan, City of New Orleans and City of Baton Rouge;
- Mississippi Department of Transportation; and
- Tennessee Department of Transportation – Statewide SmartWay System and SmartWay for the City of Memphis.

7.2 ITS in the DRA Region

Currently, there are 14 Intelligent Transportation System providers in the DRA. Each of the eight states, along with six cities and municipalities, provides some type of ITS service along its interstate system, state highways, and city streets. These systems include Traffic Management Centers (TMCs), closed circuit television cameras, dynamic message signs, highway advisory radio, 511 toll free traffic phone service, roadway weather information, and websites specific to traffic information.

7.2.1 Traffic Management Centers

The Traffic Management Centers are the center of a transportation management system, where transportation network information is collected and combined with other operational information to efficiently manage the transportation network and provide the public critical traveler information. A TMC links different aspects of ITS, such as dynamic message signs, closed circuit video equipment, traffic signals and roadside count stations, which allows decision-makers to identify and respond to a highway incident in a timely manner. A TMC also has the capability to communicate important transportation information to the media and public in a quick and efficient manner. There are currently 12 Traffic Management Centers in the DRA region and these are located in the following areas:

- Arkansas Highway and Transportation Department, Little Rock, Arkansas;
- Illinois Department of Transportation, Collinsville, Illinois;
- Louisiana Department of Transportation and Development, Baton Rouge, Louisiana;
- Mississippi Department of Transportation, Jackson, Mississippi;
- Tennessee Department of Transportation, Jackson, Tennessee;
- Tennessee Department of Transportation, Memphis, Tennessee;
- City of Little Rock, Arkansas;
- City of Jackson, Mississippi;
- City Jackson, Tennessee;
- City of Ridgeland, Mississippi;



- City of Southaven, Mississippi; and
- Pearl River Valley Water Supply District, Ridgeland, Mississippi.

7.2.2 Closed Circuit Television Cameras

Closed Circuit Television Cameras (CCTV) are an integral part of a traffic management system and these cameras provide traffic engineers with live, visual information that is crucial for making informed decisions on traffic control and incident management. CCTV cameras have the ability to monitor roadway conditions, traffic incidents, weather conditions, and provide security surveillance on major bridges. CCTV cameras are also becoming more helpful in the coordination and communication between state DOTs, MPOs, Homeland Security, local emergency management, and law enforcement offices in cases of major incidents and other unforeseeable events. Furthermore, CCTV cameras are being used by travel information websites and by local television stations to inform the public of current travel conditions. There are currently 570 CCTV cameras located throughout the DRA region.

7.2.3 Dynamic Message Signs

Dynamic Message Signs (DMS) are electronic message signs used on roadways to give travelers updated information and advanced warnings on traffic congestion, construction zones, lane closures, traffic accidents, and any required actions to perform. DMS can also be very useful in handling special events that tend to cause heavier traffic volumes such as sporting events and concerts, as well as during times of natural disaster, such as where contra-flow traffic is being implemented. There are approximately 194 dynamic message signs, which includes both permanent and portable signs, being used the DRA region

7.2.4 Highway Advisory Radio

Highway Advisory Radio (HAR) are licensed low-powered AM radio stations set up by state and local transportation departments to provide bulletins to motorists and other travelers regarding traffic conditions and other delays. HARs can be linked to a traffic management center so that traffic managers can provide up-to-date information, or HARs can provide a loop of prerecorded information. Currently there are only eight HARs being used in the DRA region, with more planned in the future.

7.2.5 511 Toll Free Phone Service

On July 21, 2000, the Federal Communications Commission (FCC) designated "511" as the single traffic information telephone number to be made available to states and local jurisdictions across the U.S. A great deal of traffic information is collected via intelligent transportation systems. Providing access to this traffic information via one nationwide, three-digit telephone number is a means to make the most of the ITS investment. That is, to get that information to the



driver and shipper by this country's most common means of communication – the telephone.⁶⁹ The 511 toll free phone service is currently available in Kentucky, Tennessee, Louisiana, and portions of Missouri.

7.2.6 Traffic Information Website

Travel information websites offer updated information on traffic conditions, such as construction zones, traffic accidents, weather conditions, lane closures, etc. These websites can also be linked to CCTV cameras to allow the public users to see actual traffic conditions and plan accordingly. There are 22 traffic related websites throughout the DRA region available to the public offering real time traffic information.

7.2.7 Fiber Optic Cable

Fiber optic cable is the backbone of an Intelligent Transportation System. It is used to link traffic signals, CCTV cameras, dynamic message signs, and traffic detectors to the traffic management center. There is currently over 1,600 miles of fiber optic cable being used for ITS purposes in the Delta Regional Authority.

7.2.8 Traffic Detectors

Traffic detectors can be found in various forms, from in-ground loop detectors, video detection, and radar detection, and offer a wide range of capabilities, such as gathering traffic counts, vehicle classification, speed, and weight. This information assists traffic engineers to better understand current and future traffic conditions, as well as help alleviate congestion. There are approximately 580 traffic detectors in the DRA region being used for traffic monitoring and traffic control.

7.3 Intelligent Transportation System Needs

ITS needs were grouped into safety, congestion relief, increased intermodal connectivity, improved freight mobility and economic development categories. The following provides an overview of the ITS needs identified by the 14 providers in the DRA region.

7.3.1 Safety and Security

An explicit objective of the transportation system is to provide a safe environment for travel while continuing to strive to improve the performance of the system. The total ITS needs in the

⁶⁹ Federal Highway Administration (FHWA).



DRA region totals \$408.1 million.⁷⁰ The following ITS needs were identified in the DRA region and once completed will assist in enhancing safety and security.

- Install Dynamic Message Signs to warn motorists of traffic incidents and construction zones. The following is a list of the some of the more heavily traveled roadways in the DRA region that needs Dynamic Message Signs:
 - I-55, I-20, and US 49 in Jackson, Mississippi;
 - I-55, I-40 and I-240 through Memphis, Tennessee;
 - I-40 through Jackson, Tennessee;
 - I-10 through New Orleans and Baton Rouge, Louisiana; and
 - I-40 and I-30 through Little Rock, Arkansas.
- Provide Toll free 511 phone service to provide motorists updated traffic information. The following is a list of states in the DRA that do not have a 511 phone service in place:
 - Alabama;
 - Arkansas;
 - Mississippi;
 - Illinois; and
 - Missouri.
- Install video surveillance cameras on major river bridge crossings throughout the DRA region. The following is a list of major river crossings in the DRA region that needs cameras:
 - I-10 over Lake Pontchartrain in New Orleans, Louisiana;
 - I-310 over the Mississippi River in New Orleans, Louisiana;
 - US 90 over the Mississippi River in New Orleans, Louisiana;
 - I-10 over the Mississippi River in Baton Rouge, Louisiana;
 - US 84 over the Mississippi River in Natchez, Mississippi;
 - I-20 over the Mississippi River in Vicksburg, Mississippi;
 - US 82 over the Mississippi River in Greenville, Mississippi;
 - US 49 over the Mississippi River in Helena, Arkansas;
 - I-55 over the Mississippi River in Memphis, Tennessee;
 - I-40 over the Mississippi River in Memphis, Tennessee;
 - I-155 over the Mississippi River in Caruthersville, Missouri;
 - MO 34, MO 74, and IL 146 (Bill Emerson Bridge) over the Mississippi River in Cape Girardeau, Missouri; and
 - I-24 over the Ohio River in Paducah, Kentucky.
- Install video surveillance cameras in public transit vehicles and at transit stations in cities such as New Orleans, LA; Baton Rouge, LA; Jackson, MS; Memphis, TN; Jackson, TN; and Little Rock, AR.

⁷⁰ Needs calculated by consulting each state DOT and ITS provider in the DRA region.



- Install red light running monitoring systems at traffic signals in the larger metropolitan areas to help control and monitor traffic.

7.3.2 Congestion Relief

In 2003, over 39,000 miles of highways in the United States had peak period congestion, and of these, over 6,800 miles were in rural areas⁷¹. Demand for highway travel by Americans continues to grow as population increases, particularly in metropolitan areas. Construction of new highway capacity to accommodate this growth in travel has not kept pace due to funding limitation and environmental concerns. Congestion is largely thought of as a big city problem in the DRA region, but delays are becoming increasingly common in small cities and some rural areas. Congestion will continue to worsen, especially since freight movement is forecasted to nearly double by 2020. One major effort to reduce congestion is through installing ITS technologies, which can be used to aid in getting travelers real-time traffic information, managing traffic incidents by increasing cooperation between public agencies, and through coordinated traffic signal timings to help prevent unnecessary delays. ITS elements such as upgraded traffic management centers, 511 phone service, dynamic message signs, etc. are all valuable components in relieving traffic congestion. The following provides some ITS solutions to assist in reducing congestion in the DRA region:

- Upgrade existing and construct new Traffic Management Centers throughout the region to allow the states and MPOs to better handle the ever-growing traffic conditions. This includes ITS elements such as local and regional traffic signal coordination, CCTV cameras, fiber optic cable, traffic detectors, highway advisory radio, dynamic message signs, etc. The following is a list of areas that have been provided by the ITS stakeholders where a new traffic management center is needed or an existing one needs to be upgraded:
 - Little Rock, North Little Rock, and West Memphis, Arkansas;
 - Collinsville and Carbondale, Illinois;
 - New Orleans, Houma, Lafayette and Baton Rouge, Louisiana;
 - Paducah and Madisonville, Kentucky;
 - Jackson, Ridgeland, McComb, and Southaven, Mississippi; and
 - Memphis and Jackson, Tennessee.
- Install Dynamic Message Signs to warn motorists of traffic incidents and construction zones in the following areas:
 - I-55, I-20, and US 49 in Jackson, Mississippi;
 - I-55, I-40 and I-240 through Memphis, Tennessee;
 - I-40 through Jackson, Tennessee;

⁷¹ Federal Highway Administration.



- I-10 through New Orleans and Baton Rouge, Louisiana; and
- I-40 and I-30 through Little Rock, Arkansas.

7.3.3 Increased Intermodal Connectivity

Intermodal connectivity has been an important issue in transportation since the Intermodal Surface Transportation Efficiency Act (ISTEA) was passed in 1991. With policies outlined in ISTEA, then in the Transportation Equity Act for the 21st Century (TEA-21) in 1998, and now with the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU) in 2005, the federal government has sought to encourage intermodal connections – the links that allow passengers to switch from one mode of public transportation to another.⁷² SAFETEA-LU addresses the many challenges facing the U.S. transportation system today – challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment – as well as laying the groundwork for addressing future challenges.⁷³

Intelligent Transportation Systems can help overcome these challenges of increasing intermodal connectivity through a number of ways. ITS infrastructure can be integrated into an existing public transportation network through GPS vehicle tracking systems, video surveillance, electronic payment, and customer real-time information systems. These systems can address problems such as inefficient routes, poor vehicle scheduling and connections, long transfer or wait times, and safety issues. Together, these elements would help improve the entire operation of a public transit system.

7.3.4 Improved Freight Mobility

Freight volumes are forecasted to increase significantly in the DRA region by 2020. Improvements in speed, accuracy and visibility of information transfer in a freight exchange could reap large rewards for the U.S. and DRA region economy. The U.S. DOT has developed a National ITS Program Plan for ITS which provides a new vision for surface transportation in America. One of the major elements of this program is Commercial Vehicle Operations (CVO). The scope of CVO includes the operations associated with moving goods and passengers via commercial vehicles over the North American highway system and the activities necessary to regulate these operations. As shown in **Figure 13**, CVO includes activities related to safety assurance, commercial vehicle credentials and tax administration, roadside operations, freight and fleet management, and vehicle operation.⁷⁴

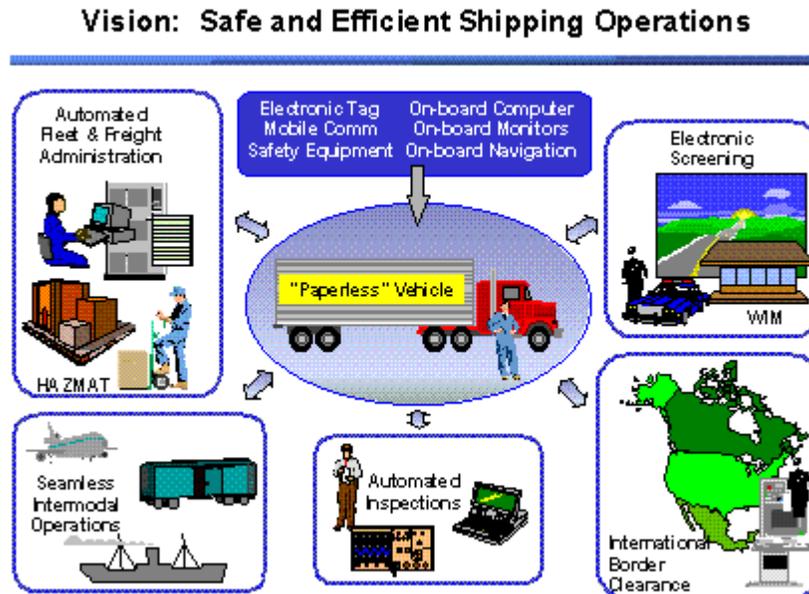
⁷² Goldberg, Making Connections: Intermodal Links in the Public Transportation System, Bureau of Transportation Statistics, September 2007.

⁷³ SAFETEA-LU, Federal Highway Administration, 2005.

⁷⁴ The Federal Motor Carrier Safety Administration.



Figure 13: National ITS Program Plan



Source: U.S. Department of Transportation

The term commercial vehicle information systems and networks (CVISN) refers to the ITS information system elements that support CVO. Carriers are able to equip vehicles with a variety of productivity and safety improvements such as mobile communications systems, navigation and tracking systems, on-board vehicle monitors, collision avoidance devices, crash restraints, and vision enhancement equipment.⁷⁵ These elements will help eliminate en-route delays caused by weigh stations and by inspections, and increase the efficiency of freight movement throughout the region.

7.4 ITS Recommendations

The expected installation of new ITS technologies has great potential to benefit trucking by reducing common delays for weighing, safety, and credentials inspection as well as indirect benefits through improved safety, congestion management, and incident communication and response. The following provides ITS policy, project, coordination, funding and priority recommendations.

⁷⁵ The Federal Motor Carrier Safety Administration.



7.4.1 Policy Recommendations

- Promote the development and deployment of ITS technologies including incident management techniques and procedures to reduce congestion on the transportation system throughout the DRA region.
- Promote the development and deployment of ITS technologies to improve safety along the interstate system in the DRA region.
- Promote the development and deployment of ITS technologies to improve security at ports, airports and major Mississippi and Ohio River bridge crossings in the DRA region.
- Connect the fiber optic cables across state lines to provide a seamless and integrated system.
- Fund and develop a DRA Regional ITS Deployment Plan in coordination with the 14 ITS providers.

7.4.2 Project Recommendations

- Include ITS elements such as fiber optic cable, DMS, and CCTV cameras in the construction of I-69 and I-269 through Arkansas, Louisiana, Mississippi, Tennessee, and Kentucky.
- Install fiber optic cable, CCTV cameras and DMS on bridges of major river crossings, such as the Mississippi River and Ohio River bridges, to improve safety, traffic awareness, and security.
- Connect the Traffic Management Centers in New Orleans, Baton Rouge, and Jackson, Mississippi so these centers will be able to coordinate with each other in hurricane evacuation procedures and contra-flow lane operations.
- Install virtual weigh stations, weigh-in-motion stations, electronic information exchange, and electronic over-height detection warnings along major truck routes to improve freight movement and commercial vehicle operations in the DRA region.
- Install Commercial Vehicle Operations (CVO), which include elements such as automated vehicle inspection, electronic information exchange, virtual weigh-in-motion sites, and over-height vehicle detection, in large metropolitan areas, across state lines, and along major freight corridors such as I-40, I-20, I-24, and I-55 through the DRA region.
- Provide a single statewide toll free phone number in each of the eight states to supply the public up-to-date travel information. The states of Kentucky, Tennessee, Louisiana, and Missouri currently have a 511 phone service in place.
- Construct a Traffic Management Center at I-10 near West End in New Orleans. This regional center will monitor traffic conditions and alert emergency responders of an incident on interstate and principal arterial roadways for all parishes in the region.
- Install CCTV cameras along key corridors in the New Orleans region. The New Orleans RPC intends to devote significant resources toward installing surveillance cameras along



Congestion Management System corridors in the region to monitor traffic flow and alert local emergency responders of problems along the network. Access to the cameras will be given as a priority to first responders to an incident per agreements outlined in the ITS Deployment Plan.

- Install new or upgrade existing traffic management centers throughout the region. The following is a list provided by the ITS stakeholders where a traffic management center is needed or an existing one needs upgrading:
 - Little Rock, North Little Rock, and West Memphis, Arkansas;
 - Collinsville and Carbondale, Illinois;
 - New Orleans, Houma, Lafayette and Baton Rouge, Louisiana;
 - Paducah and Madisonville, Kentucky;
 - Jackson, Ridgeland, McComb, and Southaven, Mississippi; and
 - Memphis and Jackson, Tennessee.

7.4.3 Coordination Recommendations

- Develop a DRA ITS Working Group, which would have representatives from each of the 14 ITS providers in the DRA region, as well as FHWA and Homeland Security and would meet twice a year.
- Improve coordination and communication between all the stakeholders (DOTs, cities, FHWA, Homeland Security, utility companies, etc) on the front end of an ITS construction project to avoid any problems with the management and integration of the ITS elements.
- Connect Traffic Management Centers in neighboring states to aid in coordination and maintenance of traffic at major river crossings and in the event of natural disasters where regional coordination is needed. This will be extremely beneficial in the states of Mississippi, Louisiana, and Alabama in hurricane evacuation and contra-flow lane operations.
- Use of ITS elements to provide communication between major government agencies such as Homeland Security, Federal Emergency Management Agency (FEMA), Federal Highway Administration (FHWA), and state DOTs.
- Use ITS integration between state DOTs, local MPOs, local news stations, law enforcement, fire departments and emergency medical responders to improve response times for traffic incidents.

7.4.4 Funding Recommendations

- Develop and fund an ITS categorical grant program to assist in the development and construction of the ITS infrastructure in the DRA region.



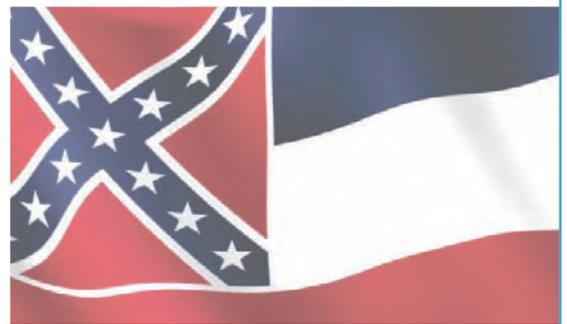
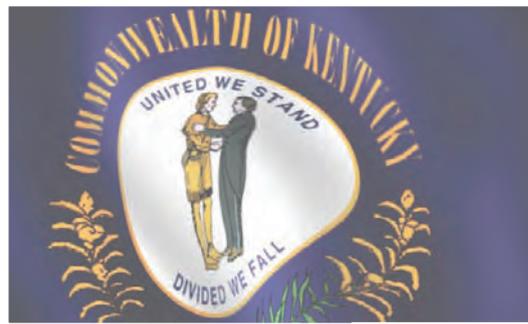
- Fund all ITS elements and installation in the initial construction of new highway, rail and bridge projects. These types of ITS projects would be most beneficial along new interstate routes such as the I69/269 Corridor.
- With stand alone ITS projects, such as upgrading Traffic Management Centers or installing fiber optic cable, funding may be handled by dividing these large ITS projects in smaller pieces and completing them over a period of time. Since some of these projects are very costly, it may be difficult to secure adequate funding for large ITS projects. While it is desirable to be able to expedite the implementation of the overall systems, it may be more realistic to phase the overall implementation.

7.4.5 Priority Recommendations

- Develop and fund an ITS categorical grant program to assist in the development and construction of the ITS infrastructure in the DRA region.
- Develop a DRA ITS Working Group.
- Update Traffic Management Centers in the DRA region. This can include traffic incident management that will help develop appropriate response times for emergency management, maintenance, and construction personnel.
- Install fiber optic cable system along interstates and connect to neighboring Traffic Management Centers.
- Connect fiber optic and other ITS equipment to provide communication links and signal control at the state and city levels.
- Install video surveillance cameras on major bridges to support homeland security and to monitor traffic operations.
- Coordinate regional commercial vehicle operations consistent through each state to improve freight mobility.
- Install CCTV cameras, dynamic message signs, and vehicle detection units along interstates, highways, and major intersections.
- Install a 511 telephone system in each state that does not currently have a system.



Freight Rail





8. FREIGHT RAIL

8.1 Introduction

Freight rail transportation plays an important role in the overall transportation system in the DRA region. There are approximately 7,228 miles of Class I railroad track, 190 miles of Class II (regional railroads) track and 2,256 Class III (local railroads) track for a total of 9,674 freight rail track in the DRA region. There are five rail bridge crossings over the Mississippi and Ohio Rivers and the region is served by six Class I railroads:

- CSX Corporation (CSX);
- Norfolk Southern (NS);
- Burlington Northern Sante Fe (BNSF);
- Union Pacific (UP);
- Canadian Nations (CN); and
- Kansas City Southern (KCS).

All six Class I railroads have rail yards in the DRA region, which allows for efficient intermodal operations. The Mississippi River is the dividing line between western and eastern railroad companies and Memphis serves as a major freight rail transfer center for Class I railroads. Thus, Memphis is a strategic location for freight rail in the DRA region and it is one of only three cities in the U.S. served by five Class 1 Railroads, which are BNSF, CN, CSX, NS, and UP.⁷⁶

A short-line railroad company operates over a relatively short distance and are operated independent of Class I railroads. Short-lines typically link two industries requiring rail freight together, interchange revenue traffic with other railroads and operate a passenger train service for tourism. Due to the small size and low revenue, short-lines are classified by the American Associate of Railroads (AAR) local railroads. There are approximately 45 short-line companies that serve the DRA region and needs for these local independent railroad companies are included in the CD that accompanies this report.

The rail freight system operating within the DRA region serves the following functions:

- The Class I railroads which provide mainline rail service within the DRA states connect the region with the rest of the United States.
- The mainline rail systems that operate parallel to the Mississippi River serve as a growing rail intermodal corridor as port capacity constraints on the west and east coasts make Gulf of Mexico ports more attractive. Class I railroads also move bulk commodities such as

⁷⁶ American Association of Railroads



coal and grain and other heavy goods such as autos, which provide relief to the highway system and lower transportation costs to the region's industries.

- A number of north-south rail routes in the region also serve as major *NAFTA* routes for trade with Canada and Mexico.
- Due to the geographic constraints imposed by the Mississippi River, existing river crossings in the region provided critical linkages to the national rail system. The Mississippi River is also the interchange point where western railroads (BNSF, UP) interchange traffic with eastern railroads (NS, CSX). Therefore major cities at or in the proximity of these crossing points, namely Memphis, Jackson (MS), and New Orleans serve as major rail and intermodal hubs.
- Short-line or Class III railroads provide a number of functions to the DRA region and act as intermodal connections at port facilities where goods are transferred from water to rail and eventually linked to the mainline rail system. Class III railroads also serve local communities and industries in areas where the larger railroads have found direct rail service not to be cost-effective.

Freight railroads in the DRA region are generally privately-owned. However, state DOTs in the DRA region support and fund grade separation projects and other initiatives to reduce traffic congestion, improve freight mobility and improve safety. Freight railroads and local government authorities also coordinate intermodal improvement efforts. Recently, Canadian National and CSX Intermodal entered into a public/private partnership with the City of Memphis, Shelby County, and the Memphis & Shelby County Port Commission and developed the Memphis Super Terminal. The Memphis Super Terminal is a 155-acre intermodal facility built in the Frank C. Pidgeon Industrial Park in southwest Memphis, located just south of President's Island. Railroad investments totaled \$25 million to complete this project. The terminal has an annual capacity of 200,000 lifts and is equipped with five tracks, with a total pad length of 20,000 feet, for rail/truck trailer and container transfers and provides parking spots for 1,800 trailers or container chassis.

8.2 Rail Mainline System Growth Rate and Needs

The DRA rail system is impacted by the condition of the system within the region, as well as outside its boundaries. Because the region's rail traffic is affected by its proximity to major rail hubs and interchange points such as Chicago and St. Louis, service levels within the region can be impacted by physical or operational problems at these locations or elsewhere on the rail network. This analysis, however, will focus on areas or segments of the system that affect the fluidity and reliability that the rail network requires to remain competitive with other modes of transportation.

As there is no national rail-conditions database comparable to FHWA's Highway Performance Monitoring System database, there is no uniform and comprehensive data for assessment of the physical condition of the national rail system. To determine rail mainline system capacity needs



for the overall DRA region, the *National Rail Freight Infrastructure Capacity and Investment Study*, published by the Association of American Railroads (AAR) in September, 2007 was utilized. This study was completed at the request of the *National Surface Transportation Policy and Revenue Study Commission* to assess the capacity of the nation's rail system to accommodate the estimated increase in freight-rail traffic.

The Class I railroads designated "Primary Rail Corridors" and these corridors were evaluated on the basis of both current rail volumes compared to current capacity and future (2035) volumes compared to current capacity. From this, current and future levels of service from Level A to Level F, similar to that used for the highway system, were assigned to each of the corridors.

As shown in **Figure 14**, a number of Primary Corridors lie within the DRA region. Union Pacific (UP) lines comprise a major north-south corridor west of the Mississippi River from southern Illinois to New Orleans. Likewise, the Canadian National (CN) corridor, which was formerly the Illinois Central RR, operates east of the Mississippi River along the entire length of the DRA region. A portion of a north-south CSX corridor in Western Kentucky is also within the DRA region. All six Class I railroads in the DRA region maintain east-west corridor operations. The UP and Burlington Northern Santa Fe (BNSF) railroads connect with CSX and Norfolk Southern (NS) railroads at Memphis. The Kansas City Southern RR (KCS) maintains an east-west corridor across Louisiana and Mississippi. In the New Orleans area, UP, KCS and BNSF lines approach the City from the west and join CSX and NS, which extend eastward. Finally, in Alabama both CSX and NS operate rail-lines within the region.

A number of the primary corridor mainlines, or segments of the lines, were cited in the *National Rail Freight Infrastructure Capacity and Investment Study* as having high projected growth rates. Growth rates, both in terms of the number of trains per day and the percentage increase in trains per day, were projected for the period between 2005 and 2035. The growth rates for segments within the DRA region are shown on **Figures 15 and 16**.

Projected growth rates in terms of trains per day are relatively moderate (0 to 30 trains per day) for most north-south rail corridors in the DRA region. In the northern portion of the DRA region, rail lines linking and proximate to the Chicago and St. Louis hubs are projected to increase by 30 to 80 trains per day. Heavier increases in trains per day are projected along east-west routes and at Mississippi River crossings. East of Memphis traffic is projected to increase 30 to 80 trains per day and the KCS line across Mississippi is projected to increase between 80-200 additional trains per day.

On the basis of percentage of increase in projected trains per day, the largest increases – over 100 percent – are projected over lines connecting to the major Chicago and St. Louis markets and also on lines crossing the Mississippi River.

Figure 14: Primary Freight Corridors

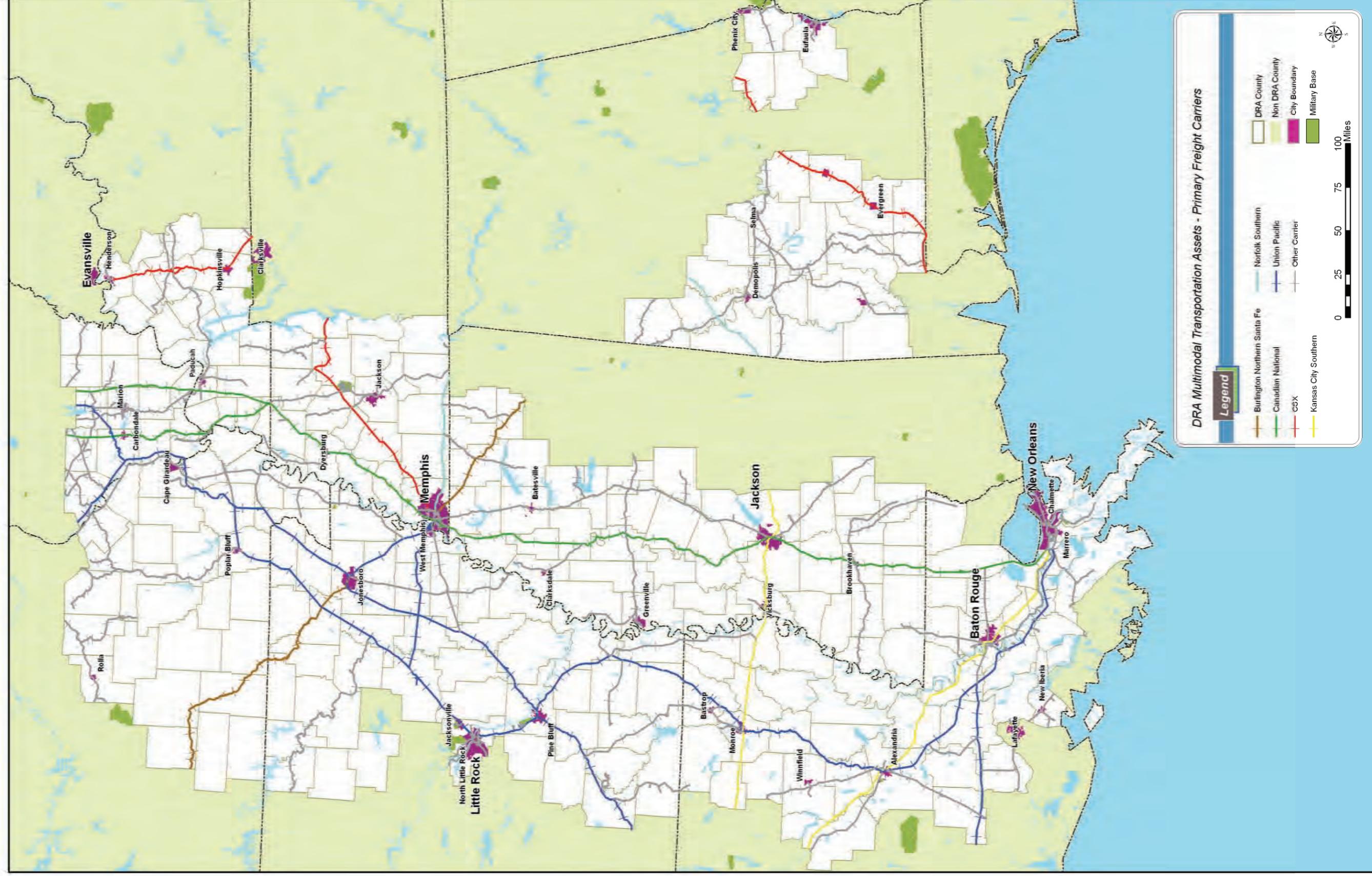


Figure 15: Growth of Trains per Day (2005-2035)

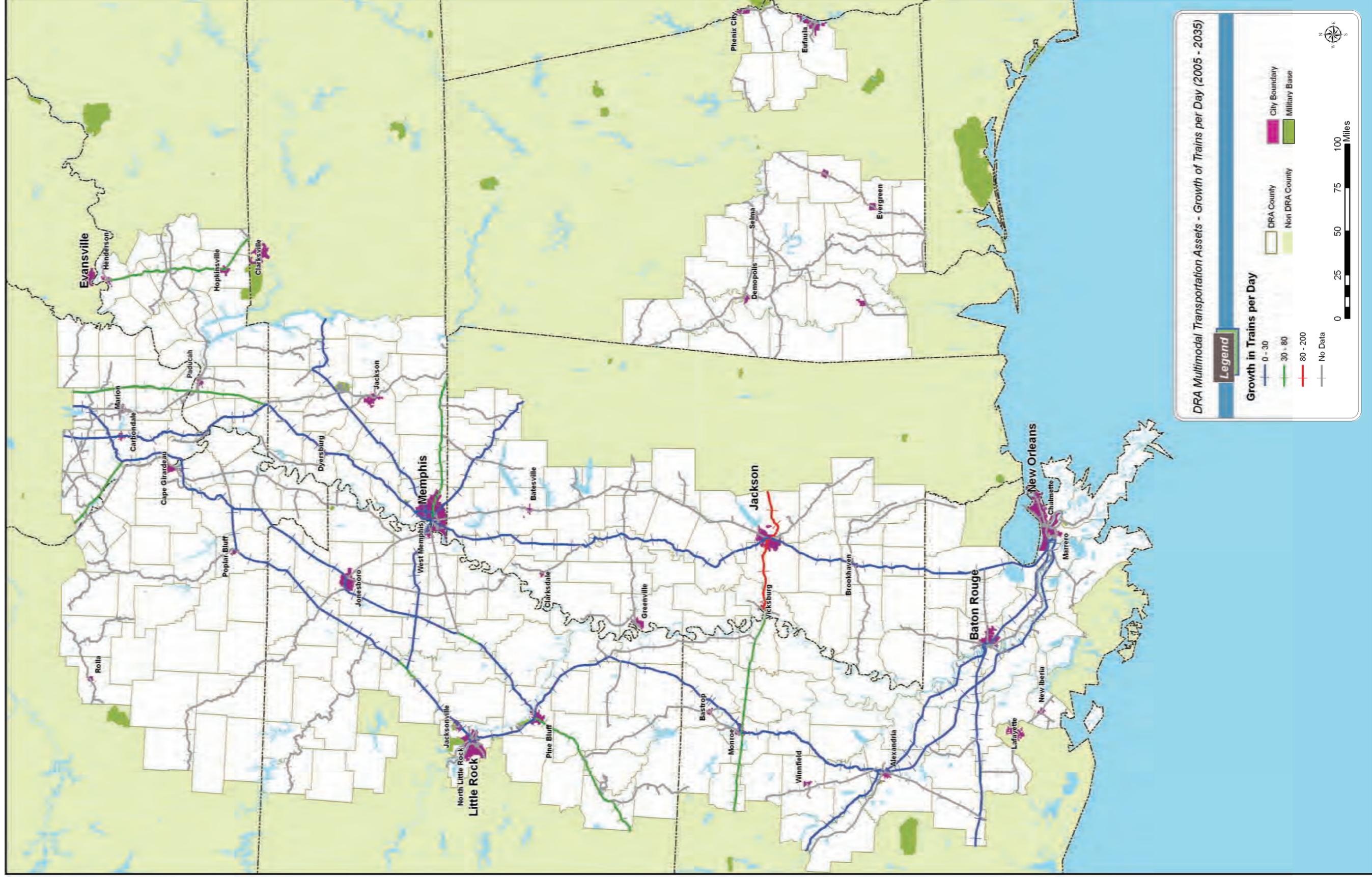
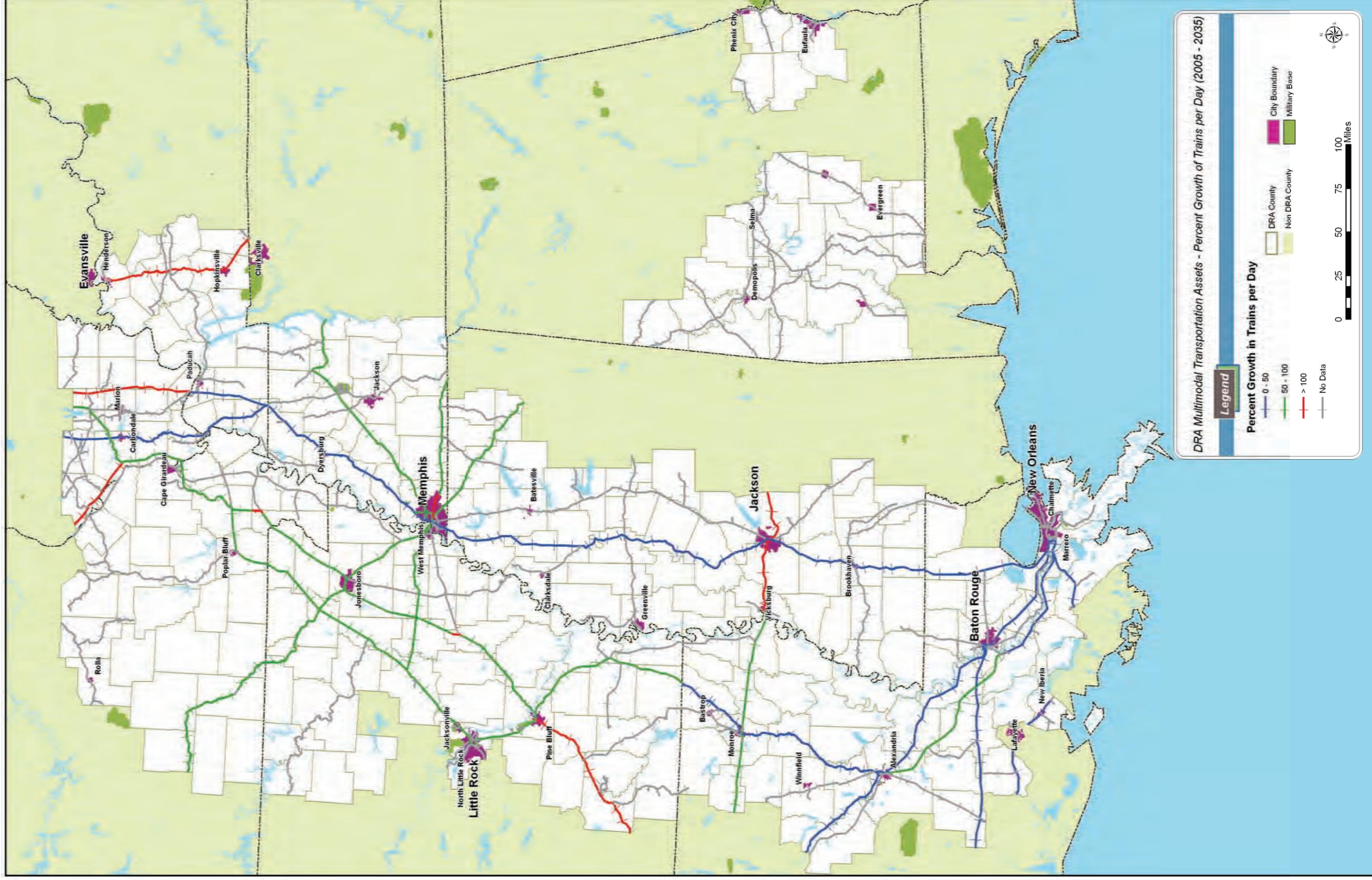


Figure 16: Percent Growth of Trains per Day (2005-2035)





8.2.1 Existing and Projected Rail Capacity Constraints on DRA Mainlines

As noted previously, the *National Rail Freight Infrastructure Capacity and Investment Study* assessed current primary corridor capacity to determine congestion levels. This was done by calculating a volume-to-capacity ratio expressed as a level of service (LOS) grade.

LOS grades were generally described as follows:

- LOS Grades A, B, C – Rail volumes are generally below current capacity. Train flows are low to moderate with capacity to accommodate maintenance and recover from incidents;
- LOS Grade D – Rail volumes are near capacity. Train flows are heavy with moderate capacity to accommodate maintenance and recover from incidents;
- LOS Grade E – Rail volumes are at capacity. Train flows are very heavy with very limited capacity to accommodate maintenance and recover from incidents; and
- LOS Grade F – Rail volumes are above capacity. Train flows are unstable and service breakdown conditions exist.

DRA rail line segments with existing Levels of Service D, E, and F are shown on **Figure 17**. Rail line segments projected to have Levels of Service D, E and F in 2035 are shown on **Figure 18**. These specific line segments are described when rail needs for individual states are discussed below.

The majority of the priority rail corridors (Class I railroads) within the DRA region currently operate with acceptable levels of service to accommodate existing traffic levels, shown in **Figure 17**. However, there are corridor segments in Missouri, Arkansas, Kentucky, and Louisiana that are currently operating at or near capacity. These segments do not negatively impact rail efficiency on a system basis as yet, but heavy flows leave little leeway to accommodate maintenance or incidents. However, the corridor segment east of Memphis currently operates at a Level of Service F and this congestion restricts operations and efficiency within Memphis and across the Mississippi River.

Based on the *National Rail Freight Infrastructure Capacity and Investment Study*, future rail corridor LOS in the DRA region are projected to worsen. All major east-west primary corridors are projected to deteriorate to LOS E or F and various north-south primary corridors segments will likely experience increased congestion in the northern portion of the DRA region and at interchange locations where major railroads exchange traffic.

Figure 17: Current Level of Service Grade

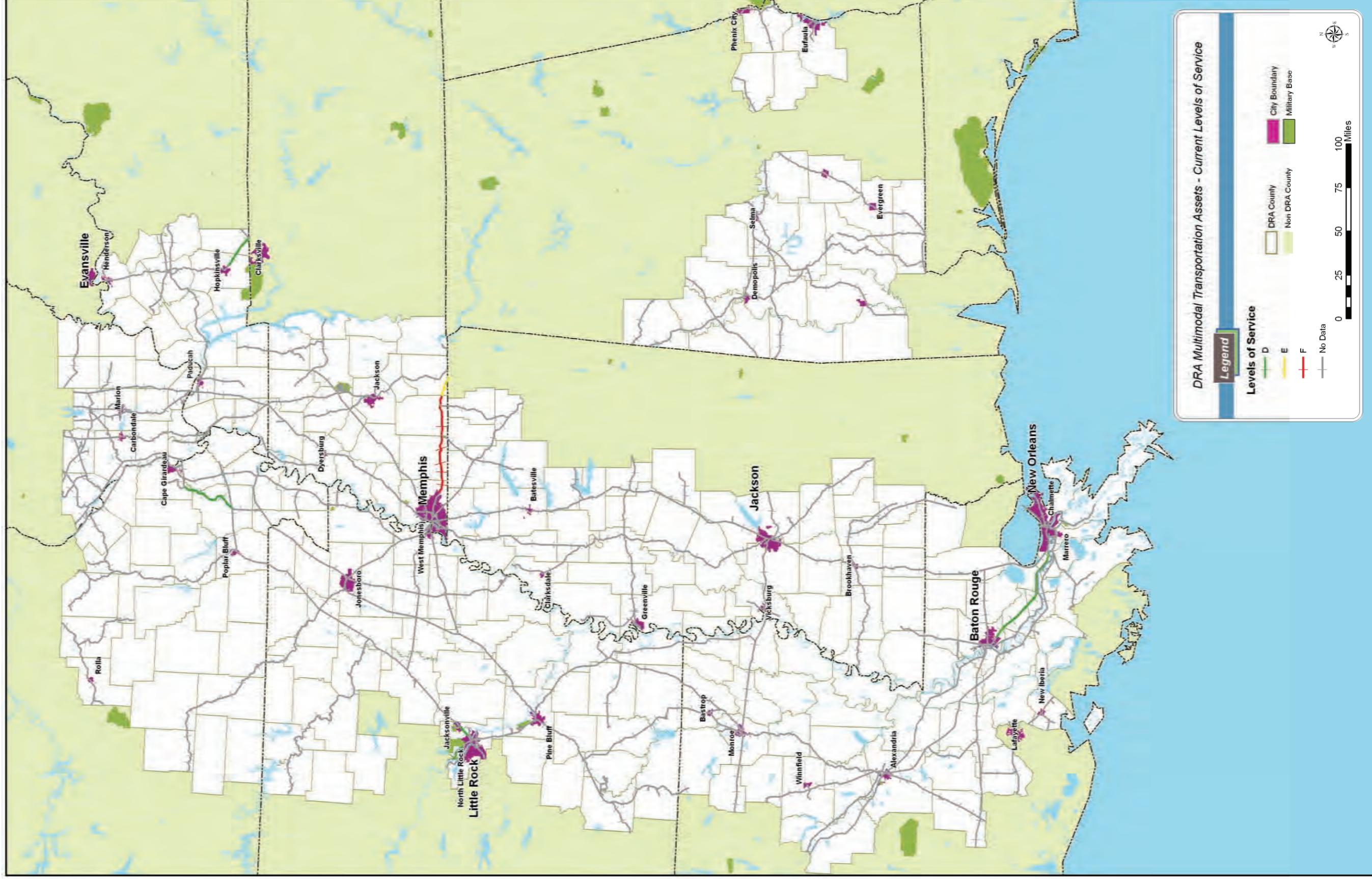
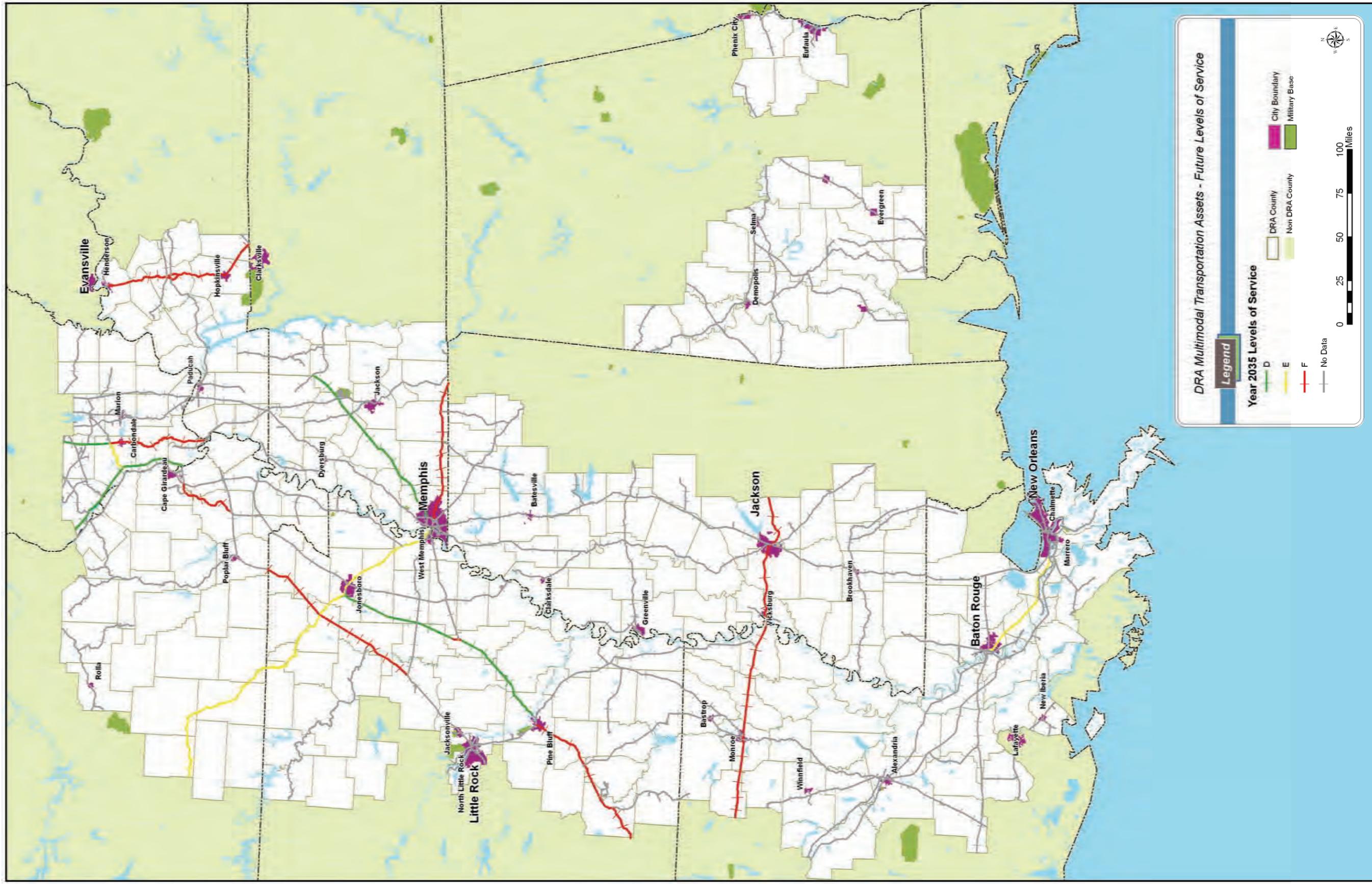


Figure 18: Future Level of Service Grade





Class I railroads intend to respond to these future capacity constraints by adding track, building or lengthening mainline passing sidings (generally up to two mile-long segments of parallel trackage), improving signal systems, and upgrading track to support increased traffic and heavier loads. These major railroads are expected to be able to meet approximately 80 percent of the infrastructure capacity needs over the next 20 years. However, Class I railroads will need federal financial and legislative assistance, as well as other public-private partnerships, to meet the remaining rail system needs in the DRA region.

8.3 State Rail Needs

The rail systems within each of the states in the DRA region comprise both a mainline network that serves the entire region, as well as a local delivery and distribution system through a system of branch lines, rail spurs, interchange sidings, short-line services and various rail yard and intermodal operations.

Although through mainline rail operations are essential to the competitiveness of the rail mode, it is the originating and terminating rail traffic for each state that contributes to the economic development base of states and regions. Each state within the DRA region differs somewhat as to its level of rail dependence, predominant commodities carried by rail and rail physical needs based on its rail network characteristics and the potential for its rail industry to attract new rail traffic or divert freight to rail from other modes. Over the next 25 years, the freight rail needs (Class I, II and III) in the DRA region total \$2.2 billion and include improvements to tracks, signal systems, and intermodal facilities.⁷⁷

The following section provides a short summary of each state's rail network within the DRA region, which is shown on **Tables 7 to 14**. Based on information provided by railroad surveys and in state rail plans, rail system needs and estimated costs are provided for the following need categories:

Safety – Needs related to conditions with the potential to lead to physical harm to rail employees or residential areas proximate to rail lines due to excepted track (below FRA safety Class standards) or rail-highway at-grade crossing deficiencies.

Congestion Relief – Needs for Class I railroad segments within each state that are currently or projected to be Levels of Service D, E or F and congestion at major rail yard facilities.

Improved Freight Mobility – Needs related to track and bridge improvements required to improve short-line capacity or efficiency, small yards or sidings required to interchange rail cars

⁷⁷ Needs calculated by reviewing the *National Rail Freight Infrastructure Capacity and Investment Study*, state rail plans, and consulting each short-line railroad company in the DRA region.



between railroads, and track/bridge improvements required to accommodate modern, heavier (286,000 lb.) car weights.

Increased Intermodal Connectivity – Needs where rail lines serve ports and where expanded intermodal transfer facilities are required.

Environmental Protection – Needs related to rail operations that pose a danger to the environment or facilities required to remediate problems.

Economic Development – Need for new facilities or the re-establishment of new rail lines for existing or prospective economic development opportunities.

8.3.1 Alabama

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	402
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	451
DRA region total Railroad track miles:	853

Table 7: Alabama Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Georgia Southwestern RR	Rehabilitate 36 miles of excepted track	\$14.0
Georgia Southwestern RR	Rehabilitate grade crossing surfaces	\$0.3
Alabama & Gulf Coast RR	Rehabilitate 1 mile of excepted track	\$0.8
Alabama RR	Rehab. 60 miles of excepted track/bridges	\$26.4
Alabama RR	Rehabilitate crossing surface/signals	\$1.0
Meridian & Bigbee RR	Install 8 defect detectors	\$0.5
Meridian & Bigbee RR	Rehabilitate 66 grade crossings	\$1.0
Total Safety Needs		\$44.0

Freight Mobility Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Georgia Southwestern RR	Rail and bridge upgrades for 286k	\$6.0
Georgia Southwestern RR	Yard expansion	\$1.6
Alabama & Gulf Coast RR	Siding expansion	\$3.0
Alabama & Gulf Coast RR	Bridge upgrades for 286k	\$10.0
Alabama & Gulf Coast RR	Magnolia Yard expansion	\$2.5
Alabama RR	Yard expansion	\$1.2
Alabama RR	Rail and bridge upgrades for 286k	\$67.0
Alabama RR	Siding expansion	\$0.5
Meridian & Bigbee RR	Rail and bridge upgrades for 286k	\$104.3
Meridian & Bigbee RR	Siding expansion	\$4.3
Total Freight Mobility Needs		\$200.4

Intermodal Connectivity Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Alabama RR	Establish Wallace intermodal yard	\$2.2
Total Intermodal Connectivity Needs		\$2.2

Source: Alabama DOT and Alabama Short-Line Railroads



8.3.2 Arkansas

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	1,407
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	566
DRA region total Railroad track miles:	1,973

Table 8: Arkansas Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Little Rock Port Authority RR	Rehabilitate grade crossing signals	\$1.0
Ouachita RR	Rehabilitate 22 miles of excepted track	\$2.2
Total Safety Needs		\$3.2

Congestion Relief Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Union Pacific	Future LOS F - N. Little Rock-Levy	\$1.0
Union Pacific	Future LOS F - Corning – Bald Knob	24.0
Union Pacific	Future LOS F – Pine Bluff- Stephens	24.0
Union Pacific	Future LOS F – at Brinkley	1.0
Burlington Northern	Future LOS E – Thayer, Missouri – Memphis	37.0
Union Pacific	Future LOS D – Jonesboro – Pine Bluff	37.0
Total Congestion Relief Needs		\$124.0

Freight Mobility Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Missouri & No. Arkansas RR	Rehabilitate track and bridges	\$1.35
Ouachita RR	Rehabilitate bridges for 286k	\$2.70
Total Freight Rail Needs		\$4.05

Intermodal Connectivity Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Little Rock Port Authority RR	Rehabilitate track	\$0.25
Little Rock Port Authority RR	Yard expansion	\$1.50
Ouachita RR	Expand transload yard at El Dorado	\$0.40
Total Intermodal Connectivity Needs		\$2.15

Economic Development Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Yellow Bend Spur Line	Establish new line/yard to port	\$20.0
Statewide	Establish fund to preserve right-of-way	\$10.0
Total Economic Development Needs		\$30.0

Source: AHTD and Arkansas Short-Line Railroads



Illinois

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	725
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	50
DRA region total Railroad track miles:	775

Table 9: Illinois Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Shawnee Terminal Railroad	Rehabilitate 2.5 miles of excepted track	\$0.525
Shawnee Terminal Railroad	Upgrade crossing surfaces and signals	\$1.000
	Total Safety Needs	\$1.525

Congestion Relief Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Canadian National (ICG)	Future LOS F Carbondale-Cairo	\$13.0
Union Pacific	Future LOS E Gorham- Carbondale	\$10.0
Union Pacific	Future LOS D Flinton-Thebes	\$15.0
Canadian National (ICG)	Future LOS D Carbondale-Ashley	\$13.0
	Total Congestion Relief Needs	\$51.0

Freight Mobility Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Shawnee Terminal Railroad	Rehabilitate yard	\$0.24
Shawnee Terminal Railroad	Rehabilitate track/bridges for 286k	\$0.6
	Total Freight Mobility Needs	\$ 0.84

Intermodal Connectivity Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Crab Orchard & Egyptian RR	Construct intermodal facility at Marion	\$7.5
	Total Intermodal Connectivity Needs	\$7.5

Source: Illinois DOT and Illinois Short-Line Railroads



8.3.4 Kentucky

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	286
DRA Region Class II Railroad track miles:	190
DRA Region Class III Railroad track miles:	56
DRA region total Railroad track miles:	532

Table 10: Kentucky Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Tennken RR	Rehabilitate 3 miles of excepted track	\$1.65
Total Safety Needs		\$1.65

Congestion Relief Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
CSX	Future LOS F Henderson-Guthrie	\$24.0
Total Congestion Relief Needs		\$24.0

Freight Mobility Needs

Railroad	Infrastructure Needs	Cost Estimate (\$millions)
Tennken RR	Rehabilitate yard	\$1.00
Tennken RR	Rehabilitate track/bridges for 286k	\$3.07
KWT Railway	Rehabilitate track/bridges for 286k	\$2.60
Total Freight Mobility Need		\$ 6.67

Source: KYTC and Kentucky Short-Line Railroads



8.3.5 Louisiana

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	1,847
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	337
DRA region total Railroad track miles:	2,184

Table 11: Louisiana Rail Freight Characteristics

Safety Needs		
Railroad	Infrastructure Needs	Cost Estimate (\$millions)
New Orleans & Gulf Coast RR	Crossing elimination/relocation-Gretna	\$500.0
Ouachita RR	Rehabilitate 7 miles of excepted track	\$0.7
Acadiana RR	Rehabilitate 3 grade crossings	\$1.0
Total Safety Needs		\$ 501.7
Congestion Relief Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Kansas City Southern	Future LOS E Baton Rouge-New Orleans	\$23.0
Total Congestion Relief Needs		\$23.0
Freight Mobility Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Louisiana & Delta RR	Rehabilitate track/bridges for 286k	\$2.40
Arkansas, Louisiana & Miss. RR ⁷⁸	Rehabilitate track for 286k	\$1.00
Delta Southern RR ⁷⁸	Rehabilitate track for 286k	\$15.00
Gloster & Southern RR ⁷⁸	Rehabilitate bridges	\$0.20
New Orleans & Gulf Coast RR ⁷⁸	Rehabilitate track/bridges	\$1.55
New Orleans Public Belt RR ⁷⁸	Rehabilitate track/bridges/yard	\$33.70
Total Freight Mobility Needs		\$53.85
Intermodal Connectivity Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Louisiana & Delta RR	Yard/siding expansion at New Iberia Pt	\$2.2
Acadiana RR	New intermodal facility at Opelousas	\$2.5
Total Intermodal Connectivity Needs		\$4.7
Economic Development Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Ouachita RR	New rail line Lillie-Ruston	\$30.0
Statewide ⁷⁸	Millennium Port feasibility study	\$1.0
Total Economic Development Needs		\$31.0

Source: LA DOTD and Louisiana Short-Line Railroads

⁷⁸ Louisiana Department of Transportation and Development. *Louisiana State Rail Plan*.



8.3.6 Mississippi

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	1,046
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	386
DRA region total Railroad track miles:	1,432

Table 12: Mississippi Rail Freight Characteristics

Safety Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Mississippi Delta RR	Rehabilitate 60 miles of excepted track	\$30.00
Mississippi & Tennessee RR	Rehabilitate crossing signals – Airport Rd.	\$0.75
Kosciusko & Southwestern RR	Rehabilitate crossing signals – Hwy 35	\$1.00
Mississippi Central RR	Rehabilitate 50 miles of excepted track	\$18.40
Mississippi Central RR	Rehabilitate crossing surfaces/signals	\$0.90
Total Safety Needs		\$51.05
Congestion Relief Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Kansas City Southern	Future LOS F Vicksburg – Pelahatchee	\$15.0
Total Congestion Relief Needs		\$15.0
Freight Mobility Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Mississippi Delta RR	Expand Swan Lake interchange track	\$1.50
Mississippi Delta RR	Rehabilitate track/bridges for 286k	\$30.80
Mississippi Delta RR	Expand Tallahatchee Yard	\$1.60
Mississippi & Tennessee RR	Rehabilitate track/bridges for 286k	\$10.00
Mississippi & Tennessee RR	Yard expansion	\$3.50
Kosciusko & Southwestern RR	Rehabilitate bridges	\$0.50
Mississippi Central RR	Rehabilitate yard	\$0.75
Mississippi Central RR	Rehabilitate track/bridges for 286k	\$5.70
Total Freight Mobility Needs		\$54.35
Intermodal Connectivity Needs		
Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Mississippi Delta RR	Reinstall tracks Coahoma-Friars Point	\$5.0
Total Intermodal Connectivity Needs		\$5.0

Source: Mississippi DOT and Mississippi Short-Line Railroads

Transportation (potential) needs in northwest Mississippi to accommodate 30,000 to 50,000 tons per day capacity may include the following freight rail improvements to support future development:

- Port to Facility - 10 miles of single rail track;
- Miles to Facility – 15 miles, double rail track (30 single-rail miles);
- Facility to Coahoma and switching connection to short line rail – 35 miles, single rail track; and
- Switch Connection to Canadian National Mainline (two connections; one at Sledge and the second at Swan Lake).



8.3.7 Missouri

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	969
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	33
DRA region total Railroad track miles:	1,002

Table 13: Missouri Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
SEMO	Rehabilitate 7 miles excepted track	\$1.80
Malden Rail Spur	Upgrade crossings with gates/signals	\$0.50
Burlington Northern	Crossing improvements – Hayti	\$0.59
Burlington Northern	Grade separation – West Plains	\$4.50
Burlington Northern	Crossing improvements – Sikeston	\$1.00
Burlington Northern	Crossing improvements – Pemiscot County	\$0.10
Union Pacific	Crossing improvements – Poplar Bluff	\$0.75
	Total Safety Needs	\$12.24

Congestion Relief Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Union Pacific	Future LOS F Delta – Dexter	\$13.0
Burlington Northern	Future LOS E Thayer – Mansfield	\$24.0
	Total Congestion Relief Needs	\$37.0

Freight Mobility Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
SEMO	Rehabilitate track	\$5.0
SEMO	Expand yard	\$1.5
Malden Lead Track	Rehabilitate track; construct loop track	\$0.5
	Total Freight Mobility Needs	\$7.0

Intermodal Connectivity Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
SEMO	Expand Harbor Lead yard	\$18.3
	Total Intermodal Needs	\$18.3

Source: Missouri DOT and Missouri Short-Line Railroads



8.3.9 Tennessee

RAIL FREIGHT CHARACTERISTICS:

DRA Region Class I Railroad track miles:	546
DRA Region Class II Railroad track miles:	0
DRA Region Class III Railroad track miles:	377
DRA region total Railroad track miles:	923

Table 14: Tennessee Rail Freight Characteristics

Safety Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Tennken RR	Rehabilitate 15 miles of excepted track	\$7.50
Tennken RR	Install crossing gates – Hwy 51 Bypass	\$0.40
Mississippi Central RR	Rehabilitate 5 miles of excepted track	\$1.80
Mississippi Central RR	Upgrade crossing surfaces/signals	\$0.10
RJ Corman – Tennessee RR	Upgrade 15 crossing surfaces/3 signals	\$0.25
Total Safety Needs		\$10.05

Congestion Relief Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Norfolk Southern	Future LOS F Memphis – Corinth, MS	\$24.0
CSX	Future LOS D Memphis – McKenzie	\$27.0
State ⁷⁹	Feasibility study for new Miss. River bridge	\$0.5
Total Congestion Relief Needs		\$51.5

Freight Mobility Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Tennken RR	Rehabilitate track/bridges for 286k	\$10.80
Tennken RR	Rehabilitate yard	\$1.00
Tennken RR	Expand yard at Dyersburg	\$0.57
KWT RR	Rehabilitate track/bridges for 286k	\$18.90
Mississippi Central RR	Rehabilitate track/bridges for 286k	\$6.00
West Tennessee RR	Expand Humboldt interchange yard	\$0.86
West Tennessee RR	Rehabilitate track/bridges for 286k	\$46.40
Canadian National ⁷⁹	Expand Johnson Yard	\$4.00
Total Freight Mobility Needs		\$88.53

Intermodal Connectivity Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
Tennken RR ⁷⁹	Rehabilitate track for intermodal freight	\$3.0
State ⁷⁹	Feasibility study for Bruceton facility	\$0.2
State ⁷⁹	Feasibility study for Trenton facility	\$0.2
State ⁷⁹	Develop W. Tennessee intermodal feeder system	\$20.0
Total Intermodal Connectivity Needs		\$23.4

Economic Development Needs

Railroad	Infrastructure Need	Cost Estimate (\$ millions)
State ⁷⁹	Construct rail line Dresden – South Fulton	\$12.0
State ⁷⁹	Construct rail line Brownsville – Dyersburg	\$27.0
Total Economic Development Needs		\$39.0

⁷⁹ Tennessee State Rail Plan. Tennessee Department of Transportation. All other needs from short-line railroads.



8.3.10 Needs Summary

The DRA rail freight mainline system plays a critical role within both the region and the nation as whole. The rail system provides major routes for international movements, as well as serving as the linchpin to connect domestic railroads for cross-country movements.

Other than the congestion in Memphis, there are currently few critical capacity constraints on the DRA rail system. However, projected growth rates over the next 30 years will result in service far below efficient levels, especially on lines crossing the Mississippi River.

It is likely that the railroad industry will be able to meet most of the Primary Rail Corridor capacity needs. The Class I railroads should communicate with the DRA and AAR, to ensure all capacity needs are addressed in a timely manner and local shipper needs can be conveyed.

8.4 RAIL FREIGHT RECOMMENDATIONS

8.4.1 Policy Recommendations

To be an effective advocate of rail freight transportation within the DRA region, it is important that DRA's rail policies be consistent with rail policies adopted by the eight states within the DRA region. Although rail policies, objectives and areas of jurisdiction or emphasis differ from state to state, in general state freight rail transportation policies are established to address the following areas:

ECONOMIC DEVELOPMENT

- Support and promote economic activity by preserving and improving the existing freight transportation system;
- Increase employment opportunities with new and/or improved rail freight services and intermodal facilities; and
- Increase the number of businesses served by rail freight.

EFFICIENT FREIGHT DISTRIBUTION

- Ensure rail freight movements serve customers efficiently, effectively and safely;
- Support rail and intermodal services with long-term economic potential;
- Provide facilities that satisfy the requirements of shippers and industry; and
- Promote and support public-private funding partnerships for projects that have clear public benefits.

HIGHWAY CONGESTION MITIGATION

- Reduce vehicular traffic by providing a viable and safe rail transportation alternative; and



- Support the development of transload and intermodal services.

ENERGY AND THE ENVIRONMENT

- Support rail freight and intermodal services that minimize the use of energy and detrimental, environmental impacts.

Through carefully developed transportation policies, cooperative arrangements, and strategic investments, the freight rail system in the DRA region can achieve these goals and objectives and the DRA can focus its rail-related efforts to maximizing the benefits achieved within limited financial capabilities. Core rail-related policies that best meet these criteria would include the following:

- Rail-related investments should result in positive economic development impacts;
- Prioritize freight rail investments on projects that support intermodal services, especially toward cost and energy-efficient rail-water intermodal operations;
- Maximize and leverage funding through joint investments with states, private railroads, and other economic development agencies on projects with proven public benefits and where all parties participate and commit to the project's success; and
- Develop regional coalitions to educate federal and state transportation policies makers on the freight rail needs to ensure a safe, efficient and reliable DRA freight rail system is maintained and expanded to serve future demand.

These recommended core policies are explained in more detail below.

PROJECT RECOMMENDATIONS

Although it is important the DRA support efficient freight rail operations over the entire region, the freight rail focus should be on smaller projects where resources, together with financial support from other public and private entities, can result in system improvements and linkages to intermodal facilities. There are numerous rail-related needs provided by the region's undercapitalized port and short-line rail operators that are candidates for investment. For example, at least eight short-line railroads request assistance to accommodate existing traffic levels through yard or interchange siding expansion projects. It is recommended that projects considered by DRA for financial assistance meet the following criteria:

- Project applicants should provide comprehensive project descriptions, which include detailed public benefits and financial or other commitments from the applicant, shippers or industries served, and/or other public entities.
- Due to the importance of the freight rail system and the inland waterway system in the DRA, it is recommended that joint rail/water intermodal services be given a high priority because of the cost effectiveness and the reduction in detrimental environmental emissions.



- Other project priorities include the following:
 - Invest in rail facilities essential to industries relocating to or expanding in the DRA region;
 - Preserve rail right-of way threatened with abandonment if deemed of future value; and
 - Invest in track/bridge upgrades to accommodate 286,000 car weight on railroads with shippers dependent on the efficient movement of heavy bulk commodities.

The following provides a summary of the areas that are pursuing to develop or expand intermodal facilities in the DRA region:

- Pine Bluff, Arkansas;
- Little Rock, Arkansas;
- McGehee, Arkansas;
- Cairo, Illinois;
- Marion, Illinois;
- Paducah, Kentucky;
- Wickliffe, Kentucky;
- New Orleans, Louisiana;
- Baton Rouge, Louisiana;
- Alexandria, Louisiana;
- Monroe, Louisiana;
- Vicksburg, Mississippi;
- Yazoo City, Mississippi;
- Cape Girardeau, Missouri;
- Scott City, Missouri;
- Tiptonville (Cates Landing), Tennessee;
- Memphis, Tennessee; and
- Other areas of western Tennessee;

The DRA supports continual investment and study to make certain intermodal facilities are identified and constructed throughout the region to ensure freight goods are transported efficiently and economic development opportunities can be strengthened.

COORDINATION AND ECONOMIC DEVELOPMENT RECOMMENDATIONS



Future freight rail needs and issues have been identified in this report. To ensure these needs and issues are addressed throughout the entire region, the DRA is an attractive partner to the rail industry and rail advocacy groups. Specific coordination recommendations include:

- Develop a DRA Freight Rail Working Group, which would have representatives from federal, state, and local transportation agencies, as well as private rail companies in the DRA region and would meet twice a year to share successful rail ventures and to address intermodal freight rail service needs related to economic development initiatives.
- Coordinate with each state DOT in the region to better understand each state's rail-related policies and areas of emphasis, and agree on joint investment priorities.
- Coordinate with each Class I railroad within the DRA region to better understand freight rail priorities and needs and to offer its political support to the rail industry's federal (or state) legislative agenda where it is determined to benefit rail service in the region (e.g. federal tax credits for railroad investment, etc).
- Coordinate with rail providers and state DOTs to preserve the existing rail system to eliminate rail abandonment.
- Ensure proper coordination between private and public sectors is maintained to ensure freight rail and intermodal infrastructure projects are synchronized and funding is secured.
- Attend and participate in freight rail conferences to highlight the DRA freight rail system and to participate in developing rail policies and successful rail improvement methodologies.

FUNDING RECOMMENDATIONS

Freight rail needs in the DRA region exceed available funding. To reduce risk and increase financial leveraging, the DRA is well positioned to develop a freight rail investment funding program (if funds were appropriated) to assist in developing freight rail improvements in the DRA region that have support and financial commitment from the local railroads and shippers that will benefit from the improvement. Thus, a Freight Rail categorical funding program is needed to assist in the development and construction of freight rail infrastructure in the DRA region.

To maintain and improve priority rail corridors in the region, the DRA can support the railroad industry, and especially rail carriers that operate priority rail corridors through the region by highlighting freight rail needs, improvements and policies at the national level to ensure national policies address the needs in the DRA region. Specific federal legislative proposals have already been developed to provide tax credits to railroads investing in improvements that provide additional capacity or intermodal improvements. Additional legislative proposals related to rail freight assistance are expected to arise from the recently published *Transportation for*



Tomorrow: Report of the National Surface Transportation Policy and Revenue Study Commission.

In addition to the above recommendation, the DRA will continue to monitor other funding arrangements that have been successful by states with active rail and economic development programs. These include:

- As an alternative to a freight rail investment funding program, a categorical grant program should be developed and used to fund critical freight rail investments to intermodal facilities in the DRA region.
- If emphasis needs to be on economic development and job creation, an industrial access program could be created to invest in rail spurs to new or expanding industries. The DDHS developed a categorical grant funding recommendation similar to this for roadway connections to intermodal facilities and economic development locations in the DRA region. Funding for these programs are generally comprised of grants and are evaluated on the basis of the total number of new jobs created (in very depressed areas jobs preserved can also be considered).

INTERMODAL RECOMMENDATIONS

A number of railroads noted the need to expand existing intermodal facilities, improve rail infrastructure (track improvements, etc.) to enhance intermodal connections, and to create new intermodal facilities to accommodate prospective intermodal movements. Although improving intermodal connectivity should be a priority goal for the DRA, it should take a conservative approach to financing this still evolving area of freight transportation. The following approach is recommended:

- Develop an intermodal transportation system that supports the economic growth of DRA region through the safe and efficient movement of people and goods.
- Investments in the short-term should be focused on existing, successful intermodal operations, especially where water/rail transfer provides low rates for shippers in the area. A number of existing ports with rail access have requested upgrades to rail infrastructure.
- Investment in expanded bulk transfer facilities, and infrastructure improvements such as loop tracks to improve efficiency at existing intermodal facilities, should be considered where cost/benefit criteria are met.
- Proposals to fund prospective intermodal operations should be analyzed carefully. These proposals should be accompanied with comprehensive market and transportation plans, as well as documented commitments by shippers or industries served by the prospective facilities.
- Fund a Federal Rehabilitation Grant Program that would benefit smaller railroads in the DRA region.



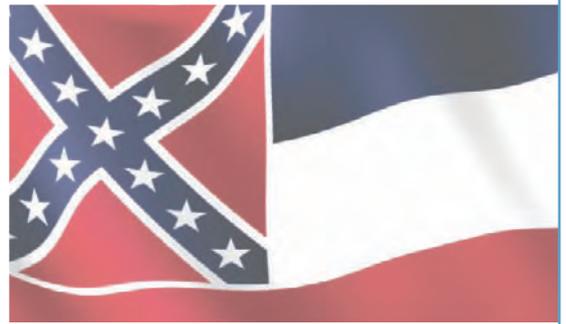
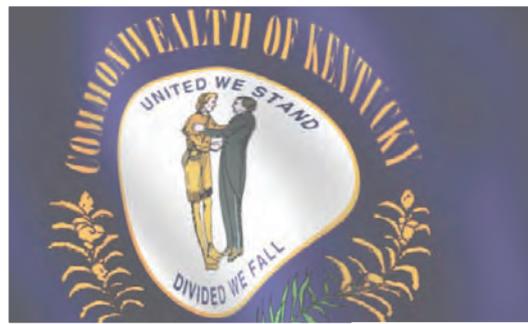
PRIORITY RECOMMENDATIONS

Freight railroads significantly impact the regional and local economies where bulk commodities are produced and/or transferred in large quantities. The following are priority recommendations to support the freight rail transportation system in the DRA region:

- Develop and fund a Freight Rail categorical grant program to assist in the development and construction of freight rail infrastructure in the DRA region.
- Develop a DRA Freight Rail Working Group.
- Class III (local) railroads typically do not generate sufficient revenue to support needed infrastructure improvements and large capital equipment procurement. Ensure Class III (local) railroads have adequate funding to support infrastructure and equipment needs so connectivity to Class I railroads throughout the DRA region is maintained and expanded.
- Each year rail track is abandoned and this potentially leaves industries exclusively dependent on moving goods with truck freight providers. To ensure all existing railroad track is preserved, coordinate with appropriate entities to protect strategic railroad right-of-way for possible future use.
- The condition and safety of highway and railroad at-grade crossings along roadways, especially near freight terminals is a major barrier to freight movement. Ensure highway and railroad grade crossings are safe and provide efficient freight movement at high traffic crossings and at major freight terminals in the DRA region.
- Fund a Federal Rehabilitation Grant Program that would benefit smaller railroads in the DRA region.
- Monitor and potentially fund intermodal studies and projects that are important to the economic competitiveness of the DRA region.
- Support improvements to the high-priority freight multimodal corridors and intermodal facilities in the DRA region.
- Coordinate a regional approach to address freight transportation needs for high-priority freight multimodal corridors and intermodal facilities in the DRA region.
- Ensure the freight rail transportation system security is enhanced by providing closed circuit television cameras that are linked to state Traffic Management Centers (TMCs) at major railroad bridge crossings and strategic intermodal facilities.



Passenger Rail





9. PASSENGER RAIL

9.1 Introduction

The National Railroad Passenger Corporation, Amtrak, is a for-profit corporation that operates intercity passenger rail services for 46 states. Nationally, Amtrak serves more than 500 destinations, utilizes over 21,000 miles of track, and employs over 19,000 people. Amtrak was created by Congress in the Rail Passenger Service Act of 1970, assuming the common carrier obligations of the private railroads in exchange for the right to priority access to tracks for incremental cost.⁸⁰ Based on the two concepts of “American” and “track”, Amtrak began service on May 1, 1971, and recently entered its 37th year of service. Amtrak can be found in each of the eight states in the DRA region.

9.2 Regional Intercity Passenger Rail Service

Amtrak is the only major passenger rail service provider in the DRA region. There are currently 18 Amtrak stations and over 1,000 miles of track in the DRA region used for passenger rail service. Based on 2007 ridership numbers, Amtrak provided service for over 389,000 people in the DRA region. In FY 2007, Amtrak achieved its fifth consecutive year of record ridership. **Figure 19** shows the Amtrak routes in the DRA region and surrounding states:

⁸⁰ Federal Railroad Administration



Figure 19: Amtrak Routes in the DRA Region



Source: Amtrak

The following five Amtrak routes traverse through the DRA region:

- City of New Orleans;
- Crescent;
- Sunset Limited;
- Texas Eagle; and
- Saluki - Illinois Network.

The City of New Orleans offers daily service from New Orleans to Chicago with Amtrak stations in the DRA region located in New Orleans, Hammond, McComb, Brookhaven, Hazlehurst, Jackson, Yazoo City, Greenwood, Memphis, Newbern, Fulton, and Carbondale, as shown in **Figure 20**.



Figure 20: The City of New Orleans Route



Source: Amtrak

The Crescent offers daily service from New Orleans to New York with an Amtrak station in the DRA region located in New Orleans, as shown in **Figure 21**.



Figure 21: The Crescent Route



Source: Amtrak

The Sunset Limited offers tri-weekly service from New Orleans to Los Angeles with Amtrak stations in the DRA region located in Atmore, Alabama (suspended service August 27, 2005 due to Hurricane Katrina), New Orleans, and New Iberia, Louisiana, as shown in **Figure 22**.

Figure 22: Sunset Limited Route



Source: Amtrak



The Texas Eagle offers daily service from San Antonio to Chicago with Amtrak stations in the DRA region located in Little Rock, Walnut Ridge, and Poplar Bluff, as shown in **Figure 23**.

Figure 23: Texas Eagle Route



Source: Amtrak

The Saluki Illinois Route offers daily service between Chicago and Carbondale with Amtrak stations in the DRA located in Carbondale and Du Quoin, as shown in **Figure 24**.



Figure 24: Saluki Illinois Service Route



Source: Amtrak

9.3 Light Rail Service

Little Rock, Memphis, and New Orleans offer a light rail, streetcar service in the DRA region. These public transportation rail systems provide an alternate means of transportation through the downtown areas for the local businesses, residents, and tourists.

CENTRAL ARKANSAS TRANSIT

The Central Arkansas Transit Authority (CAT) has 14 stations, 5 street cars and, as shown in **Figure 25**, 3.40 miles of track currently being used in the downtown areas of Little Rock and North Little Rock, Arkansas.



Figure 25: CAT System Routes

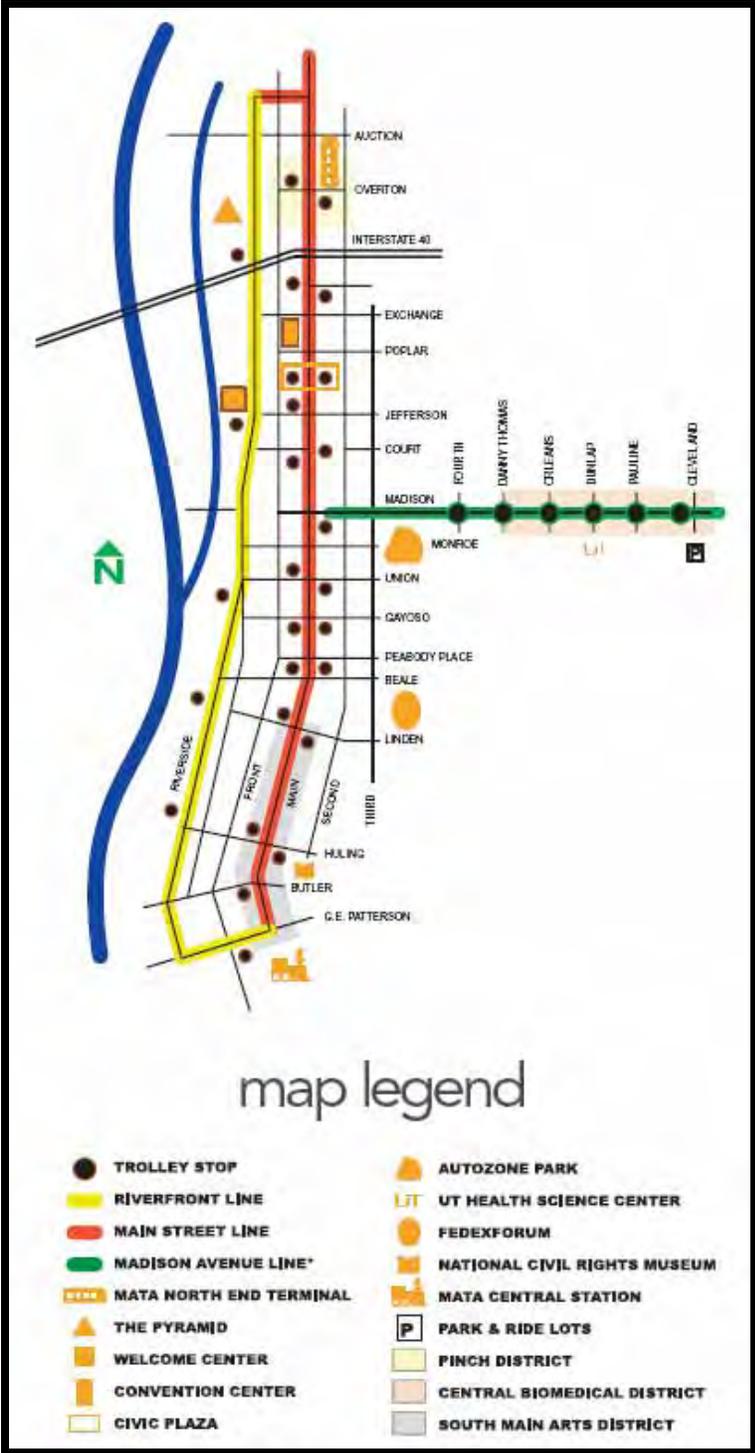


Source: Central Arkansas Transit

MEMPHIS AREA TRANSIT AUTHORITY

The Memphis Area Transit Authority (MATA) has 36 stations, 19 street cars and, as shown in **Figure 26**, more than 10 miles of track currently being used in the downtown area and along the Mississippi River in Memphis, Tennessee.

Figure 26: MATA System Routes

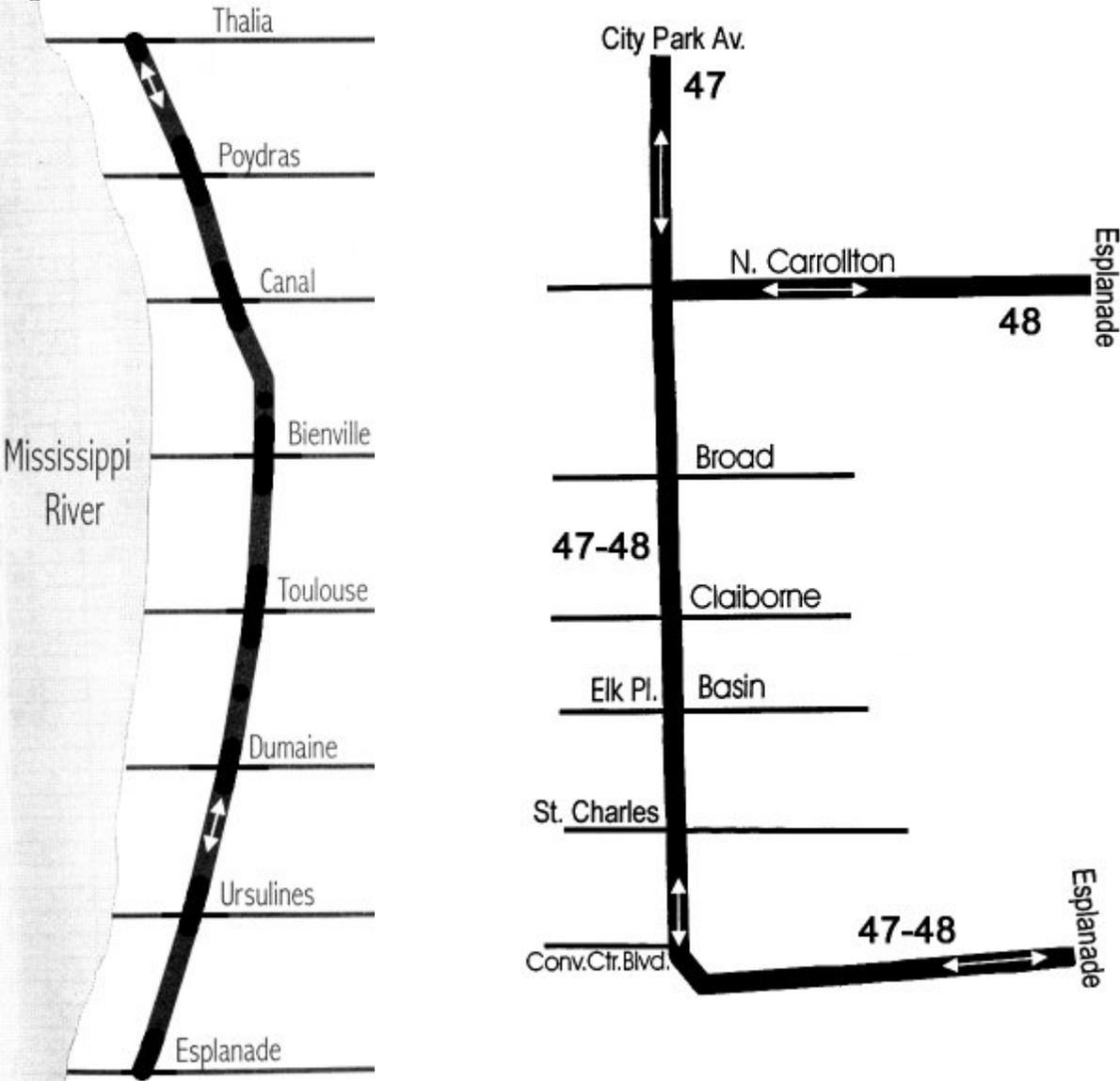


Source: Memphis Area Transit Authority

NEW ORLEANS REGIONAL TRANSIT AUTHORITY

The New Orleans Regional Transit Authority (NORTA) has 9 stations, 66 street cars, more than 26 miles of track currently being used in the downtown area, along the Mississippi River, and along St. Charles Avenue in New Orleans, Louisiana. Examples of some of the NORTA street car routes are shown in **Figure 27**.

Figure 27: NORTA Streetcar Routes



Source: New Orleans Regional Transit Authority



9.4 Passenger Rail Needs

The Federal Railroad Administration (FRA) actively supports the development of the nation's intercity rail passenger system. FRA develops and implements Administration policy regarding the nation's existing intercity passenger rail systems and sponsors passenger rail improvements and services.⁸¹

Passenger rail is an important transportation mode in the DRA region. It serves all eight states and provides a reliable option for local residents. The *Tennessee State Rail Plan* noted that passenger rail can assist in the following ways:

- Reduce the need to expand existing highway facilities;
- Improve air quality and the environment;
- Provide an alternate means of transportation;
- Facilitate linkages with local public transportation systems;
- Enhance economic development;
- Minimize impacts to freight operations;
- Partner with neighbor states to advance regional passenger rail projects;
- Reduce societal costs by cutting automobile travel delays;
- Establish corridors to carry the greatest number of riders at an affordable cost; and
- Provide adequate service to intermediate stations along the corridors.

SAFETY

The FRA Office of Research and Development conducts research, development, test, and evaluation projects to support its safety mission and to enhance the railroad system as a national transportation resource. The FRA contributes vital benefits to the safety regulatory processes, to railroad suppliers, to railroads involved in the transportation of freight, to inter-city and commuter passengers, to railroad employees, and to labor organizations.⁸²

Each state DOT also conducts safety inspections at at-grade railroad crossings. There are thousands of at-grade crossings in the DRA region and some of these crossings need to be improved. Most state DOTs regulate freight and passenger railroads in the areas of crossing improvements, railroad operating practices, track and signal safety, and light rail safety oversight. Each state was asked to provide safety needs in the DRA region. Missouri DOT provided the following:

⁸¹ Federal Railroad Administration

⁸² Federal Railroad Administration



- Vine Street Crossing Upgrade: The City of Poplar Bluff has been working with MoDOT to address an ADA compliance at the Vine Street crossing. The crossing contains three sets of tracks and does not have an adequate pedestrian walkway. MoDOT recently conducted a diagnostic review of the crossing with UP Railroad and city officials. Recommended improvements include replacing all three crossing surfaces, upgrading current signalization to warning lights and protective gates, and installation of a pedestrian walkway with protection controls.
- Second Street Crossing Upgrade: Crossing upgrades are recommended at Second Street due to increasing rail traffic volume on the Hoxie rail subdivision, which is the main corridor for rail chemical transportation from Houston to Chicago. Specific recommended improvements include installation of signal lights and protective gates with constant warning circuitry.
- Increase Road Clearance at E Street Railroad Bridge: The City has approached Union Pacific and MoDOT to consider increasing the road height clearance for the railroad bridge at E Street. Currently, the height separation is too low for emergency vehicles to gain access to the approximately 200 residents that live on the southwest side of the tracks. This situation becomes more serious if crossings are blocked at either B Street or C Street by a train. A feasibility study has not been completed at this time to determine the best approach to this project.

AMTRAK STATION NEEDS

During the Regional Coordination meetings, it was noted that Marks, Mississippi needs Amtrak passenger rail service. There are currently no Amtrak stations between Memphis and Greenwood, Mississippi and providing Amtrak service in Marks to the City of New Orleans Route would serve citizens in northern Mississippi more conveniently.

The Office of Railroad Development works with and assists the Office of the Secretary of Transportation and the U.S. Access Board in preparing and implementing regulations required under the Americans with Disabilities Act of 1990 (ADA) and the Rehabilitation Act of 1973 as it relates to the movement of passengers by rail in the U.S.⁸³ Two of the main concerns stated in the ADA Guidance is for full-length, level boarding platforms and the use of segways on transportation vehicles when used as a mobility device by people with disabilities. Amtrak also has goals of upgrading its stations to meet the design guidelines listed in Amtrak's Station Program and Planning – Standards and Guidelines, Version 2.1, which are as follows:

- Verify zoning and permitting requirements;
- Verify historical approvals as required by Section 106 of the National Historic Preservation Act of 1966 (NHPA);

⁸³ Federal Railroad Administration.



- Comply with national and state environmental review requirements;
- Accommodate and encourage intermodality;
- Define station activity levels, ridership projections, services offered and the frequency of trains;
- Provide design to accommodate projected volume for 15 years;
- Consider the physical environment and context;
- Consider zoning and planning and business development proposals related to the station in the larger surrounding area;
- Design for both vehicular and pedestrian circulation patterns, including ADA requirements;
- Design station circulation and flow to be simple, convenient and efficient;
- Utilize materials and systems that are durable, energy efficient and easy to maintain;
- Develop value engineering options that can reduce operating or maintenance costs, without sacrificing the overall design intent;
- Include telecom and data requirements early in the design process. Many IT infrastructure issues can be effectively handled in coordination with electrical design and installation;
- Design public spaces with ADA, safety and security in mind;
- Meet requirements for emergency egress identified in NFPA 130;
- Arrange construction phasing plans to accommodate operations;
- Consider options for adaptability for future growth; and
- Consider impacts on ventilation that over-the track configurations may require.

CONGESTION RELIEF

Today, Amtrak and the three light rail providers in the DRA region provide a viable transportation option to many residents. Maintaining and expanding the current system to serve growing population areas can assist in relieving congestion on DRA roadways. The following provides a list of initiatives that are currently being discussed in the DRA region to expand passenger rail service and in turn improve congestion and transportation choices for DRA residents.

- The Midwest High Speed Rail Association, a membership based non-profit organization advocating the development of fast, frequent and dependable passenger trains linking the entire Midwest, supports a new high speed rail corridor along the Illinois Central railroad between Carbondale and Chicago, Illinois.
- The *Tennessee Rail System Plan* describes a potential intercity passenger rail corridor as the East-West Corridor Study, which examines the feasibility of train enhancements to



support freight movements and passenger rail service in the Memphis-to-Knoxville Corridor. The rail line that directly connects Memphis to Nashville is an active freight line owned by CSX Transportation. The 237-mile long rail-line carries 10 to 12 trains per day and the implementation of a passenger rail service on this route is not expected to significantly impact freight operations. Also, this corridor would connect the two largest population centers in Tennessee in Memphis and Nashville.

- Amtrak is pursuing plans to establish a new rail link, the Crescent Star, between Meridian, Mississippi and Fort Worth, Texas. The service would involve splitting the Crescent at Meridian, and operating a segment of the train from Meridian to Dallas/Fort Worth via Jackson and Shreveport. The remainder of the Crescent would continue to New Orleans, as at present. Introducing the Crescent Star is dependant upon additional siding capacity on the Kansas City Southern (KCS) trackage. KCS is seeking a Rehabilitation and Improvement Financing Program loan of \$44 million from the FRA to finance the necessary track and signal improvements, and is asking the three states involved (Mississippi, Louisiana, and Texas) to provide \$1.5 million each for a loan guarantee insurance. KCS indicated the service could start when the loan is assured, even though the improvements will not be completed for some time.⁸⁴
- Amtrak and the FRA have goals of developing high speed rail corridors through portions of the DRA region. As of January 2002, the FRA has designated 10 high-speed corridors under section 1010 of the Intermodal Surface Transportation Act of 1991 (ISTEA) and Section 1103(c) of the Transportation Efficiency Act for the 21st Century (TEA-21).⁸⁵ Designation allows a corridor to receive specially targeted funding for highway-rail grade crossing safety improvements, and recognizes the corridor as a potential center of high speed rail activity.⁸⁶ The designated corridors are shown in **Figure 28**:

⁸⁴ *Louisiana State Transportation Plan*. Louisiana Department of Transportation and Development.

⁸⁵ Federal Railroad Administration

⁸⁶ Federal Railroad Administration.



Figure 28: National Map of High Speed Rail Corridor Designations



Source: Federal Railroad Administration

Of these designated high speed rail corridors, there are three corridors that will affect the DRA region.

1. Gulf Coast High-Speed Rail Corridor, which would extend from Mobile and New Orleans to Houston with connections to Meridian and Birmingham, as shown in **Figure 29**.

Figure 29: Gulf Coast High-Speed Rail Corridor



Source: Federal Railroad Administration

- The South Central Corridor would extend from San Antonio, Austin, and Dallas to Oklahoma City and Little Rock, as shown in **Figure 30**.

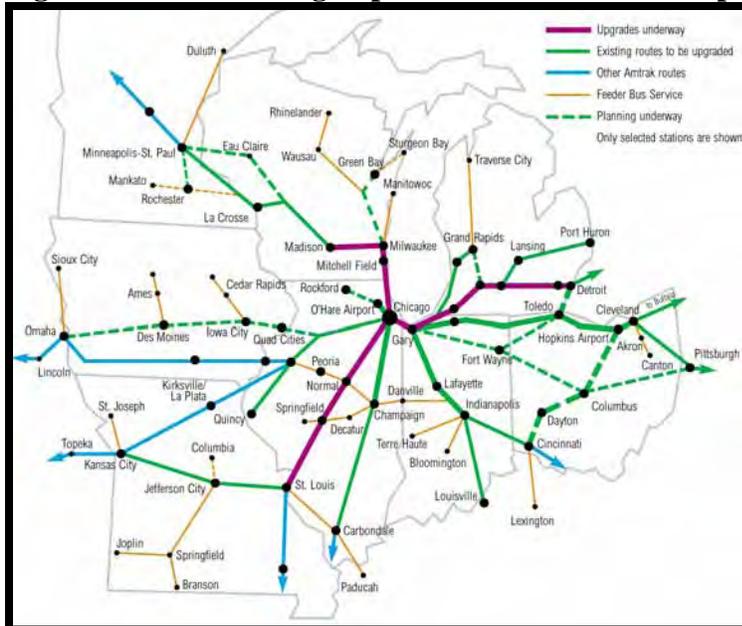
Figure 30: South Central High-Speed Rail Corridor



Source: Federal Railroad Administration

- The Midwest High Speed Rail Association, as stated above, supports a high speed rail corridor along the Illinois Central railroad between Carbondale and Chicago, Illinois, as shown in **Figure 31**.

Figure 31: Midwest High Speed Rail Association Map



Source: Midwest High Speed Rail Association



9.5 Passenger Rail Needs for New Orleans

The transit system in the New Orleans urbanized area was devastated by Hurricane Katrina. Not only were hundreds of millions of dollars in physical assets lost, but a large segment of the transit-riding population was left homeless by the storm and relocated to areas outside of the New Orleans area and throughout the U.S. As a result, all transit grantees in the area have suffered extreme losses in ridership and tax revenues that subsidized the operation. All area transit operators have found it necessary to scale back operations, in some cases severely. The Regional Planning Commission (RPC) is working closely with the transit operators to assist in the development of a recovery plan for the sustainable operation of the transit system over the next four years. The RPC also continues to work with LA DOTD concerning the light rail connection between the New Orleans International Airport and Union Passenger Terminal Station in the Central Business District, as well as a more ambitious inter-city rail concept between Baton Rouge and New Orleans.⁸⁷

A renovation plan for the New Orleans Union Passenger Terminal has been developed by the City, in conjunction with Amtrak and the former railroad owners of the station. The plan will convert the station, now 48-years old, into a contemporary transportation center serving trains, buses, and local transportation. The plan includes upgrading the facility with new mechanical systems and passenger conveniences, and environmental containment removal. The \$6.5 million rehabilitation will be funded by Amtrak and freight carriers. A new control center will be provided to control RTA, Amtrak, and Greyhound movements as well as the city's traffic signals.⁸⁸

The total passenger rail needs total \$3.1 billion, which includes high speed rail improvements in the DRA region.⁸⁹

9.6 Modal Recommendations

POLICY RECOMMENDATIONS

- Upgrade Amtrak stations to meet the requirements outlined in Amtrak's Station Manual, *Station Program and Planning: Standards and Guidelines, Draft Version 2.1*, as shown in **Table 15**.

⁸⁷ *Transportation Improvement Program, New Orleans Urbanized Area, FY 2008-2011, New Orleans RPC, 2008*

⁸⁸ *Louisiana State Transportation Plan*. Louisiana Department of Transportation and Development.

⁸⁹ Needs calculated by consulting with Amtrak, CAT, MAT and NORTA.



Table 15: Station Standard Matrix

	Ridership Revenue	Large 400,000 and \$35M	Medium 50,000 and/ or \$500K	Small 10,000 and/ or \$50K	Basic < 10,000 <\$50K	Bus
1	ADA / FDA requirements	●	●	●	●	●
2	Trailblazing – highway signs	●	●	●	●	○
3	Paved parking	●	●	●	●	○
4	Auto / Taxi Pick-up / drop-off lanes	●	●	●	○	
5	Bicycle racks	●	●	●	○	○
6	Exterior signage / lighting	●	●	●	●	●
7	Amtrak standard signage	●	●	●	●	
8	Paved platform w/ canopy	●	●	●	●	
9	Platform lighting	●	●	●	●	
10	Trash receptacles	●	●	●	●	○
11	Trash pick-up / snow removal	●	●	●	●	○
12	Janitorial services	●	●	●	●	
13	Janitorial service / dedicated cleaning staff	●	●	●	●	
14	Caretaker w/ occasional janitor			●		
15	Waiting Room	●	●	●		
16	Restrooms	●	●	●		
17	Shelter / waiting area				●	○
18	Quik-Trak	●	●	○	○	
19	Ticket Office		●			
20	Customer Service office	●				
21	Staffed information counter	●				
22	ClubAcela or Metropolitan Lounge	○				
23	Passenger boarding assistance	●	●	●		
24	Passenger assistance (Red Cap)	●	○			
25	Checked baggage	●	○			
26	Baggage storage	●	○			
27	Amtrak Express	○	○			
28	Information kiosk		●	●		○
29	Passenger Information Display System (PIDS)	●	●	●		
30	Train schedule board or poster				●	
31	Public Address system w/ PIDS	●	●			
32	Remote P/A w/ platform LED			●	●	
33	Pay telephones	●	●	●	●	
34	Security on site	●				
35	Security on call / Systems		●			
36	Security on call / Systems / call box			●		
37	Local Police surveillance / call box				●	○
38	Mailbox / Overnight service	●				
39	Mailbox nearby		●			
40	Restaurant / Food service	●	○			
41	Vending machines		●	○		
42	Shops (news, books, etc.)	●				
43	Newsstand or news racks		●	○	○	
44	Rental cars on call	●	○	○		
45	Rental cars on property	○				

○ = Should be evaluated for inclusion, based upon business analysis for need, availability and cost

Source: Amtrak

- Re-establish Amtrak service between New Orleans along the I-10 corridor and the Mississippi and Alabama Gulf Coast region.
- Provide Amtrak service between Baton Rouge and New Orleans.



- Construct an Amtrak rail station in Marks, Mississippi to connect with the City of New Orleans Route.
- Expand Regional public transportation rail systems in Memphis to improve mobility, connect the downtown area to the airport, major job centers, and eventually the growing gaming industry in north Mississippi.
- Expand Regional public transportation rail systems in New Orleans to improve mobility in the downtown business district.
- Expand Regional public transportation rail systems in Little Rock to improve mobility in the downtown business district.
- Renovate Amtrak and transit authority rail stations to better serve the public, offering modern conveniences of public parking, ticket offices, food service, public rest rooms, information kiosks, baggage services, rental cars, security, etc.
- Expand light rail systems into a regional rail system in Little Rock, Memphis and New Orleans. Use and build upon this regional light rail system to revitalize and provide economic growth in each city.

COORDINATION RECOMMENDATIONS

Develop a DRA Passenger Rail Working Group, which would have representatives from federal, state and local transportation agencies in the DRA region and would meet twice a year.

COORDINATION BETWEEN AMTRAK AND THE STATES

Illinois and Missouri are the only two DRA states that have a state contract with Amtrak for the operation of supplemental trains. These routes supplement the national Amtrak network by extending the rail service and providing additional frequencies on Amtrak routes. State and regional agencies pay most of the cost of these services, reimbursing Amtrak for direct expenses. The routes in Illinois are the Hiawatha Service (Chicago-Milwaukee), Lincoln Service (Chicago-St. Louis), Illini & Saluki (Chicago-Carbondale) and Illinois Zephyr & Carl Sandburg (Chicago-Quincy), and in Missouri are the Missouri Mules and Ann Rutledge (Kansas City-St. Louis).

COORDINATION BETWEEN AMTRAK AND THE CLASS I RAIL PROVIDERS

Approximately 70 percent of the miles traveled by Amtrak trains are on tracks owned by other railroads, which are known as "host railroads". Amtrak pays host railroads for use of the track and other resources required to operate Amtrak trains, with incentives for on-time dispatching. Those payments were for more than 26 million train miles (one train mile = a mile of track usage by each train) in FY 2007 and totaled more than \$92 million.⁹⁰

⁹⁰ Amtrak



The six largest host railroads for Amtrak trains are:

- BNSF Railway, 6.7 million train miles;
- Union Pacific Railroad, 6.16 million train miles;
- CSX Transportation, 5.7 million train miles;
- Norfolk Southern Railway, 2.36 million train miles;
- Canadian National Railway, 1.45 million train miles; and
- Metro North Railroad, 1.31 million train miles.

The National Association of Railroad Passengers completed an analysis on Amtrak route segments that are at risk due to severe freight train congestion. Based on this evaluation, the Texas Eagle, south of Poplar Bluff, and the Sunset Limited, east of New Orleans are at risk. Coordination between Amtrak and the Class I rail provider are crucial to ensure passenger rail service in the DRA region remain a stable and efficient mode of transportation.

FUNDING RECOMMENDATIONS

Amtrak provides a valuable transportation option to the residents in the DRA region. This fact is proven in the 2007 ridership numbers, which exceeded 389,000 passengers in the DRA region. Over the years, Amtrak has had financial struggles and relies on an annual federal appropriation, which in FY 2007 totaled \$1.294 billion. While Amtrak relies on federal appropriations to support operating and capital needs, the federal government's investment in Amtrak is less than 2 percent of the entire federal transportation budget for FY 2007.⁹¹

The Office of Railroad Development provides financial assistance, sponsors research and development, and provides technical assistance. These program activities include: the Railroad Rehabilitation and Improvement Financing Program (RRIF), environmental research and project reviews, and research and development to further safety and efficiency of the nation's railroad system.⁹²

The enactment on December 26, 2007 of the Department of State, Foreign Operations and Related Programs Appropriations Act, 2008, as Public Law H.R. 2764 authorizes the Secretary of the U.S. Department of Transportation to make quarterly grants to Amtrak from a total appropriation of \$1.325 billion. The 2008 Act gives the Secretary oversight of the fiscal spending of Amtrak and enables the Secretary to make grants to Amtrak, to remain available until expended, providing a maximum of \$475 million for operating subsidy grants and \$850 million for capital subsidy grants. Of the \$850 million capital subsidy grants, not more than \$285 million shall be for debt service obligations and \$35 million will be available only if Amtrak

⁹¹ Amtrak Annual Report, 2007

⁹² Federal Railroad Administration.



demonstrates to the Secretary's satisfaction that Amtrak has achieved operational savings and met ridership and revenue targets as defined in its business plan.

Amtrak has received \$258.6 million of the FY 2008 appropriation under continuing resolutions through January 29, 2008. Amtrak believes that it can achieve its planned results and that it will receive the full amount appropriated under the 2008 Act. To the extent that less than the full appropriation is received from the Secretary or Amtrak's funding needs are greater than \$1.325 billion plus \$233.9 million combined of cash on hand and short-term investments, due to operating results or the unfavorable resolution of contingencies or other matters, Amtrak may not have sufficient funds to operate through the end of FY 2008.⁹³

There can be no assurances that Amtrak will receive adequate funding to continue operations in its current form in FY 2009 and beyond. To the extent that sufficient appropriations are not received, Amtrak may be required to make certain operational changes, which could result in impairments that could jeopardize passenger rail service in the DRA region.⁹⁴

While the future of Amtrak is uncertain, national leaders are introducing legislation to assist Amtrak. Currently there are several Bills involved the legislative process that will provide financing for Amtrak and high speed passenger rail services. The following is a list of these Bills:

- The Passenger Rail Investment and Improvement Act of 2008 (H.R. 6003). If this bill is enacted into law, it would authorize the appropriation of an estimated \$14.9 billion over the 2009-2013 periods for rail programs administered by Amtrak, states, and the Department of Transportation (DOT). That amount includes \$9.9 billion for grants to Amtrak to cover its operating expenses, capital projects, and debt repayment; \$4.3 billion in grants to states for rail projects, including high-speed rail; and \$520 million for grants to states and Amtrak to reduce rail congestion. Assuming appropriation of the amounts specified and estimated to be necessary, Congressional Budget Office estimates that enacting the legislation would cost \$12.4 billion over the 2009-2013 period.⁹⁵ This funding would also include money for Americans with Disabilities Act Compliance throughout Amtrak.
- The Rail Infrastructure Development and Expansion Act for the 21st Century, RIDE-21, was introduced on May 8, 2008. H.R. 6004 would provide financing for high-speed rail infrastructure and this bill is in the first step in the legislative process. The following is a list of the major provisions:⁹⁶
 - Bonds to be issued by a state, group of states or interstate compact.

⁹³ Amtrak Annual Report, 2007

⁹⁴ Amtrak Annual Report, 2007

⁹⁵ Congressional Budget Office.

⁹⁶ National Association of Railroad Passengers.



- For each year from FY2009 to FY2018, \$1.2 billion in Tax Exempt Bonds and \$1.2 billion in Tax Credit Bonds.
- Bond proceeds may be used for high speed rail (including Maglev) or by Alaska Railroad.
- Proceeds may be used for equipment, infrastructure, Stations and Facilities, and grade crossing eliminations.
- Only projects that completed preliminary engineering and full environmental process are eligible.
- Operator of the high speed service is subject to Railroad Retiree, Railroad Labor and Railroad Unemployment.
- Construction must be at least to the same standards that Amtrak is held to.
- Any displaced employees must be protected.
- The American Investment in Safe, Reliable High-Speed Rail Act (H.R. 4122) would support the development of high-speed rail in the United States. It amends federal transportation law to authorize the Secretary of Transportation to make grants to a state, an Interstate Compact, a public agency, or a public-private entity to finance high-speed capital projects that improve intercity passenger rail transportation service. It prohibits Secretary approval of a grant project without a state rail plan and a project management plan. Requires each state to prepare for Secretary approval a state rail plan that includes a long-range rail investment program.⁹⁷
- The High-Speed Rail Authority Development and Formation Act (H.R. 4123) would provide for the creation of a National High-Speed Rail Authority.⁹⁸
- To provide for competitive development and operation of high-speed rail corridor projects (H.R. 5644) would provide for competitive development and operation of high-speed rail corridor projects.⁹⁹

PRIORITY RECOMMENDATIONS

- Develop and fund a Passenger Rail Station categorical grant program to assist in the development and construction of passenger rail infrastructure in the DRA region.
- Develop a DRA Passenger Rail Working Group.
- Upgrade existing Amtrak stations to be compliant with ADA and FDA requirements. This means that all stations must be compliant with federal, state, and local laws, regulations and codes, including the Americans with Disabilities Act and its implementing regulations included in the architectural guidelines in the ADA Accessibility Guidelines.

⁹⁷ www.opencongress.com

⁹⁸ www.washingtonwatch.com

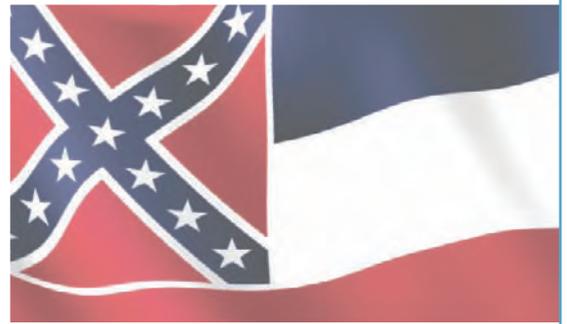
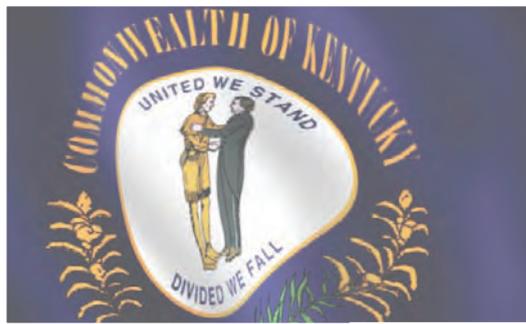
⁹⁹ www.washingtonwatch.com



- Ensure adequate funding is available to maintain the DRA passenger rail systems at both the local and regional level.
- Improve at-grade rail crossing throughout the DRA region.
- Upgrade New Orleans Union Passenger Terminal.



Aviation





10. AVIATION

10.1 Introduction

Air transportation is an important transportation mode in the DRA region because these facilities transport people and cargo throughout the region and the world; provide quick response to critically ill residents accessing local and regional hospitals and trauma centers; provide recreational pilots access to hundreds of destinations; and provide economic development opportunities to local and regional economies. There are a total of 993 public and private aviation facilities in the DRA region, while 256 are public facilities. While every public air transportation facility serves a purpose, the 13 commercial airports that provide both passenger and freight service are vital assets to the quality of life and economy in the DRA region. The following section outlines the air transportation assets, needs and recommendations in the DRA region.

10.1.1 Asset Inventory

10.1.1.1 Facility Type

Air transportation facilities in the DRA Region take a number of forms, including: airports, heliports, seaplane bases, STOLPorts, ultralight flight parks, and gliderports.

The FAA maintains a database to record all public and private air transportation facilities. While all air transportation facilities are an asset in the DRA region, this report focuses on public air transportation facilities. As shown in **Table 16**, there are 256 public and 737 private air transportation facilities in the DRA region that provide a variety of aviation choices. Public airports and heliports represent 26 percent of total air transportation facilities in the DRA region. **Figure 32** shows a breakdown by state of the number of public and private air transportation facilities in the DRA region.

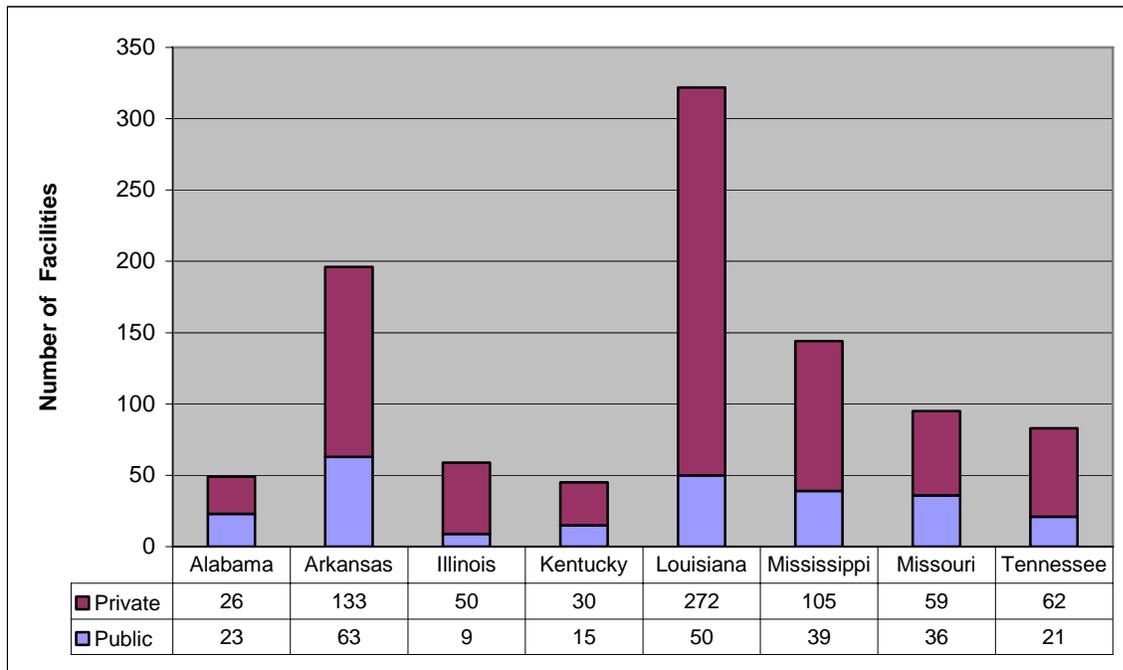
Table 16: DRA Air Transportation Facilities by Type

Facility Type	Public Use	Private Use	Total
Airport	253	405	658
Heliport	3	306	309
Gliderport	0	2	2
Seaplane Base	0	6	6
Ultralight Flight Park	0	14	14
STOLPort	0	4	4
Total	256	737	993

Source: Federal Aviation Administration



Figure 32: DRA Air Transportation Facilities by State



Source: Federal Aviation Administration

10.1.1.2 National Plan of Integrated Airport Systems

The FAA recognizes the importance of a safe, efficient civil air transportation system, and has developed a national aviation system plan to identify airports significant to national air transportation. This plan is known as the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS includes all commercial service and reliever airports, and selected general aviation airports. Approximately 65 percent of U.S. airports, open to the public, are included in the NPIAS and approximately 98 percent of the U.S. population resides within 20 miles of one of these NPIAS airports. FAA uses the NPIAS to identify airports eligible to receive federal grants through the Airport Improvement Program (AIP). The AIP provides funding to improve the safety and capacity, as well as rehabilitation/reconstruction funding to preserve infrastructure of the nation’s air transportation system.

The NPIAS categorizes airports into the following major categories, as shown in **Table 17**.



Table 17: NPIAS Airport Categories

Airport Type	Basic Description	Example Airport
Primary Commercial Service Airports	Receive greater than 2,500 scheduled passenger service enplanements per year Account for at least 1 percent of total U.S. annual enplanements	None
Large Hub	Account for between 0.25 percent and 1 percent of total U.S. annual enplanements	Memphis International Airport
Medium Hub	Account for between 0.05 percent and 0.25 percent of total U.S. annual enplanements	Baton Rouge
Small Hub	Account for less than 0.05 percent of total U.S., but more than 10,000 annual enplanements	Metropolitan Airport Barkley Regional Airport, Paducah, Kentucky
Non-Hub		
Non-Primary Commercial Service Airports	Between 2,500 and 10,000 annual enplanements	Cape Girardeau Regional, Cape Girardeau, Missouri
Reliever Airports	High capacity general aviation airports to relieve commercial airports in major metropolitan areas.	Olive Branch Airport, Olive Branch, Mississippi
General Aviation Airports	Provide airport facilities to communities greater than 20 miles from nearest NPIAS Airport. Must have at least 10 based aircraft.	Benton Municipal Airport, Benton, Illinois

Source: Federal Aviation Administration

Of the 256 public airports located in the DRA region, 192 are included in the NPIAS and are therefore eligible for AIP federal funding. The 192 public airports in the DRA region have the following NPIAS classifications:

- 2 Medium hub;
- 3 Small hub;
- 5 Non-hub;
- 3 Non-primary commercial service airport;
- 4 reliever airports; and
- 173 General aviation airports.

There are 64 non-NPIAS public General Aviation airports in the DRA region and these facilities are dependent on state and local funding. Based on consultation with each of the eight state aeronautics departments, the following new airports have been proposed in the DRA region:

- Delta Regional Airport, St. Francis County, Arkansas; and
- Choctaw, Clarke, and Marengo County, Alabama Regional Airport.

Regional Airports are typically designed to replace one or more municipal or county airports in order to provide an expanded range of services to meet a region’s anticipate aviation needs. Regional Airports can also be effective in reducing the overall operations and rehabilitation cost by combining several facilities. These facilities are often used to serve as



an economic recruiting tool for an entire region consisting of several counties and municipalities.

10.1.1.3 Major Passenger and Cargo Airports

The following five airports provide valuable passenger and cargo services and are large economic engines in the DRA region.

BATON ROUGE METROPOLITAN AIRPORT

The Baton Rouge Metropolitan Airport is located in the northwest portion of East Baton Rouge Parish, about 5 miles north of downtown Baton Rouge, adjacent to I-110. In the fall of 2005, Hurricanes Katrina and Rita caused a series of unforeseeable events that significantly changed Baton Rouge's aviation activity and growth. Although the hurricanes displaced a substantial portion of the region's population and damaged a number of airports along the Gulf Coast, Baton Rouge Metropolitan Airport emerged relatively unharmed. As a result, the airport has experienced a dramatic increase in operations since the fall 2005.¹⁰⁰ The Baton Rouge Metropolitan Airport completed Phase I (32,800 Square Feet) of its Air Cargo Facilities in 2005. The Phase I Cargo Facility is currently at capacity with air cargo operations conducted by FedEx Air Cargo and Integrated Airlines Services. However, to continue its pursuit to develop air cargo activity, the Airport is currently in the design process for the Phase II Air Cargo Project, which entails adding additional facilities, truck docking, staging and aircraft parking area.¹⁰¹ Although some of the post-hurricane activity receded in 2006, the latest statistics from January to April 2008 show that the number of passengers was nearly 307,000, which is substantially higher than during the same period in 2005.¹⁰²

JACKSON-EVERS INTERNATIONAL AIRPORT

The Jackson-Evers International Airport is located 5 miles east of Jackson, Mississippi at the intersection I-55 and I-20. The airport provides 40 daily non-stop flights (arrivals and departures) to 10 cities/12 airports via eight passenger carriers and provides cargo services. The Jackson International Airport Air Cargo Logistics Center provides an optimal location for air cargo and logistics management for companies doing business in the South Central United States of America. Kansas City Southern and Canadian National Railways maintain two mainlines and yards with 10 minutes of Jackson International Airport, both with modern full service intermodal facilities.¹⁰³ As of April 2008, passenger service is up nearly 1 percent

¹⁰⁰ *Master Plan Update baton Rouge Metropolitan Airport*, Great Baton Rouge Airport District. February 2007.

¹⁰¹ Baton Rouge Metropolitan Airport

¹⁰² Baton Rouge Metropolitan Airport

¹⁰³ *Mississippi Air Cargo Logistics Center, Jackson International Air Airport, the Intermodal Link for Southcentral U.S. Jackson-Evers International Airport*, 2006



over 2007 with approximately 440,000 passengers using the airport during this four month period.¹⁰⁴

LITTLE ROCK NATIONAL AIRPORT

Little Rock National Airport officially designated Adams Field, is located 2 miles east of the downtown Little Rock and it is Arkansas' largest commercial service airport, serving about 2.1 million passengers annually. The airport attracts passengers from a large part of Arkansas, as well as a number of surrounding states. There are more than 150 flights (arrivals and departures) a day, serving 18 cities. A \$3 million renovation of the baggage claim wing has been completed and upgrades to the second level, including the concourse, are currently under construction. Over the last year and a half, almost \$180 million in improvement have been made at the airport to ensure it will continue to serve the traveling public. The direct economic benefit of the Little Rock National Airport has been estimated at \$263 million annually. As of April 2008, passenger service is up nearly 2 percent over 2007 with over 768,000 passengers using the airport during this four month period.¹⁰⁵

LOUIS ARMSTRONG NEW ORLEANS INTERNATIONAL AIRPORT

The Louis Armstrong New Orleans International Airport (LANOIA) is a very important part of the New Orleans area economy. The airport serves as the gateway to the important New Orleans tourism industry, as well as for local and visiting business people. Most importantly, however, the economic activities directly related to LANOIA generate over \$1 billion in economic impact to the economy. The airport also provides crucial services to local business and industry and it is the ninth largest origin-and-destination airport in the U.S. These activities are concentrated in close physical proximity to the Airport and generate income, jobs and tax revenue for local residents. Airport cargo facilities play a large part in the efficient movement of your cargo. LANOIA, as your cargo partner, has embarked on an aggressive \$850 million expansion plan resulting in cargo facilities and equipment. As of March 2008, passenger service is nearly 16 percent over 2007 with over 1 million passengers using the airport during this three month period.¹⁰⁶

MEMPHIS INTERNATIONAL AIRPORT

The single largest economic engine in Memphis is the Memphis International Airport, which is located three miles south of downtown Memphis with access to I-240 and I-55. Memphis International Airport serves as a regional hub for Northwest Airlines and is home to Federal Express Corporation Super Hub.

¹⁰⁴ Jackson-Evers International Airport

¹⁰⁵ Little Rock National Airport

¹⁰⁶ Louis Armstrong New Orleans International Airport



The continued development of a powerful value-added air-cargo, logistics, and distribution industry in Memphis depends heavily upon air services. In 2003, Memphis International Airport ranked 37th of all U.S. airports in passenger enplanements and number 1 in cargo volume. Memphis International Airport has been the world's busiest cargo airport since 1992, and operations at the FedEx Super Hub accounted for 93.6 percent of all cargo at the airport. The long-term investments completed by the Airport have generated billions in output and earnings and thousands of job opportunities for Memphis-area residents. In fact, the total combined direct expenditures of FY 2004 cargo and passenger operations and construction projects and expenditures at Memphis International Airport totaled nearly \$10.7 billion, resulting in total output in the Memphis area of over \$20.7 billion and the generation of nearly 166,000 jobs.¹⁰⁷ Memphis International Airport is poised to become one of the few global transportation logistics hubs in the world due to the strategic improvements made and planned at the airport. As of April 2008, passenger service is up 2 percent over 2007 with over 3.4 million passengers using the airport during this four month period.¹⁰⁸

10.1.2 Needs

Needs were collected and assessed using a variety of sources, including FAA's NPIAS Plan, State Aviation System Plans, input from each facility owner / operator through an open on-line survey provided on the project website (www.dramultimodal.com), and the regional coordination meeting conducted in each of the eight states. Needs for each airport facility are included in the CD that accompanies this report. Air Transportation needs are classified into the following categories:

- Safety;
- Capacity;
- Rehabilitation and Reconstruction; and
- Economic Development.

The public air transportation needs in the DRA region total \$1.5 billion.¹⁰⁹

10.1.2.1 Safety

Airports provide aircraft with a safe environment from which to takeoff, land, taxi, and transfer cargo and passengers. The U.S. has the largest, most complex, and safest aviation system in the world.¹¹⁰ To ensure uniform operating facilities throughout the country, FAA has developed standards that address the physical layout characteristics of an airfield. FAA

¹⁰⁷ *The Economic Impact of Memphis International Airport*. Memphis International Airport, May 2005

¹⁰⁸ Memphis International Airport

¹⁰⁹ Needs calculated by reviewing the *National Plan of Integrated Airport Systems*, state aviation plans, and local airport operators in the DRA region.

¹¹⁰ *National Plan of Integrated Airport Systems (NPIAS), 2007 – 2011 Report to Congress*



provides funding to NPIAS airports to make necessary capital improvements to comply with established standards.

The FAA Office of Airport Safety and Standards has primary responsibility for all programs related to airport design, construction, and safety. In recent years, FAA has placed an emphasis on airport certification, runway safety areas, and runway incursion prevention.

10.1.2.2 Airport Certification

The FAA has maintained an airport certification program since 1972. This program is described in Code 14 of Federal Regulations, Part 139 Certification of Airports. This Code requires FAA to issue operating certificates to airports that serve commercial aircraft with a seating capacity of greater than nine passengers. Part 139 establishes safety standards for items such as the condition of pavement surfaces, shoulders, safety area, lighting signage, and other items that may affect safe aircraft movement. Part 139 also establishes standards for the type of aircraft rescue and fire fighting equipment and personnel training. Part 139 certificated airports are eligible to use federal AIP funding toward certain items specifically pertaining to maintaining Part 139 standards. The following 16 airports are Part 139 certificated airports in the DRA region:¹¹¹

- South Arkansas Regional, Arkansas (ELD);
- Jonesboro Municipal, Jonesboro, Arkansas (JBR);
- Adams Field, Little Rock, Arkansas (LIT);
- Southern Illinois, Carbondale, Illinois (MDH) ;
- Williamson County Regional, Marion, Illinois (MWA);
- Barkley Regional, Paducah, Kentucky (PAH);
- Alexandria International, Alexandria, Louisiana (AEX) ;
- Baton Rouge Metro – Ryan Field, Baton Rouge, Louisiana (BTR);
- Monroe Regional, Monroe, Louisiana (MLU) ;
- Jackson-Evers International, Jackson, Mississippi (JAN);
- University-Oxford Airport, Oxford, Mississippi (UOX);
- Tunica Airport, Tunica, Mississippi (UTA) ;
- Cape Girardeau Regional, Cape Girardeau, Missouri (CGI);
- Memphis International, Memphis, Tennessee (MEM);
- McKellar-Sipes Regional, Jackson, Tennessee (MKL); and
- Millington Municipal, Millington, Tennessee (NQA).

¹¹¹ http://www.faa.gov/airports/airtraffic/airports/airport_safety/part139_cert/



10.1.2.3 Runway Safety Areas

Runway Safety Areas (RSAs) are defined surfaces surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway¹¹². These standards generally require a graded, compacted area free of ruts, humps, surface irregularities, and any other objects.

The FAA began an initiative in 2000 to accelerate RSA improvements at the nation's commercial service airports. The program's goal is to have all practical improvements completed by 2015. Approximately 88 percent of the required improvements will be made by 2010. In areas where a full RSA is not practical due to land constraints or excessive costs, FAA has approved the use of an Engineered Materials Arresting System (ERAS) consisting of crushable materials placed at the end of the runway designed to absorb the forward momentum of an aircraft veering off the runway. RSA improvements are typically eligible for AIP funding for airports included in the NPIAS.

10.1.2.4 Runway Incursion Prevention

The prevention of runway incursions has been identified as a "Most Wanted Aviation Safety Improvement" by the National Transportation Safety Board (NTSB). Reducing the risk of runway incursions is also one of FAA's top priorities. A runway incursion is any unauthorized intrusion onto a runway, including aircraft, ground vehicles, or pedestrians. Despite improved technology, increased training and awareness, and installation of more visible pavement markings, the rate of runway incursions in the U.S. has not changed appreciably over the past four years at approximately 6.1 incursions per 1,000,000 tower operations.¹¹³ FAA reports that the number of serious runway incursions known as Category A and B incursions has dropped 55 percent from FY 2001 to FY 2007. FAA is continuing to emphasize this issue through outreach, training, improved infrastructure, and technology. The proposed physical improvements to airfields include improved pavement markings, "end-around" taxiways, runway status lights similar in concept to traffic signals, and installation of more advanced surface movement detection equipment.

The needs identified by DRA region airports and in the NPIAS include numerous runway, taxiway, apron, roadway and facility safety improvements.

10.1.2.5 Capacity

The capacity of an airport system is affected by a variety of factors, including the physical layout of individual airport facilities, airspace utilization and organization, airport operating procedures, and technology.¹¹⁴ In May 2007, FAA released a report on airport capacity titled

¹¹² FAA Advisory Circular 150/5300-13.

¹¹³ National Transportation Safety Board.

¹¹⁴ *National Plan of Integrated Airport Systems*, 2007. Federal Aviation Administration.



Capacity Needs in the National Airspace System. This report, known as FACT2, was developed to determine which airports and metropolitan areas have the greatest need for additional capacity. The analysis included 291 commercial service airports in the U.S. The report recommended that 56 commercial airports be studied in greater detail to evaluate future capacity needs. Memphis International Airport was one of the 56 airports recommended for further capacity evaluation. Meeting future capacity for the nation's air transportation system will require ongoing monitoring and study of the system and a variety of solutions, including new runways and commercial service airports, more efficient management of traffic, and improved technology to increase capacity.

Although airport capacity is a critical issue to the nation's air transportation system, the majority of the airports within the DRA region are not limited by infrastructure capacity. A general rule is that a single runway with a parallel taxiway can normally accommodate 200,000 annual aircraft operations.¹¹⁵ Very few airports within the DRA region surpass this number of annual operations. The development and use of reliever airports around major metropolitan air carrier airports is recognized as an effective way to reduce airport congestion. The needs identified by DRA region airports and in the NPIAS include many runway, taxiway, apron, roadway and facility expansion improvements.

10.1.2.6 Rehabilitation and Reconstruction

Rehabilitating and preserving existing air transportation assets is a top priority for all airports in the DRA region. It is critical to maintaining safe, operable airports and protecting previous federal, state, and local infrastructure investments. The timing of rehabilitation and maintenance measures is critical in extending the life of airport pavements. Delay of maintenance measures can result in major rehabilitation or reconstruction measures costing four to five times as much as the original maintenance costs performed at the optimum time.¹¹⁶ The needs identified by DRA region airports and in the NPIAS include many runway, taxiway, apron, roadway and facility rehabilitation and maintenance improvements.

10.1.2.7 Economic Development

Initially railroads played a vital role in determining a region's economic power and over the last 50 years highway systems have served this role. However, global air transportation systems are proving to be essential economic engines in the future for cities, regions and countries. The DRA region is home to the largest air freight cargo airport in the world. Memphis International Airport is home to Federal Express Corporation, which is a huge economic engine to Memphis and the surrounding DRA region. Federal Express handles more than 7.5 million daily shipments; provides service to more than 220 countries and

¹¹⁵ *National Plan of Integrated Airport Systems.* Federal Aviation Administration.

¹¹⁶ *Selecting a Preventative Maintenance Treatment for Flexible Pavements,* Gary R. Hicks, P.E., PhD., June 14, 2000



territories; employs more than 290,000 employees and contractors worldwide; operates four separate companies; and owns 671 aircraft, more than 75,000 motorized vehicles and serves 375 airports worldwide.¹¹⁷ Freight cargo carriers continue to have a significant impact at the Memphis International Airport, making the airport one of the few dual-purpose airports in the U.S. The Memphis International Airport has maintained its #1 ranking in the world for total air cargo handled since 1992, according to statistics reported by Airports Council International, Geneva, Switzerland.¹¹⁸ In addition to the airport, the Memphis region also provides over 130 million square feet of distribution space, which has resulted in this area being described as the following:¹¹⁹

- The “hottest logistics location from which to manage logistics operations in the U.S. today”— *Business Facilities*.
- Considered an “Elite, Five Star Logistics Metro” by *Expansion Management Magazine*.
- Memphis is “North America’s Logistics Center” leading the nation in Logistics Industry workforce (17%).

The needs identified by DRA region airports and in the NPIAS include many runway, roadway, passenger terminal and cargo facility improvements that once completed will assist in local and regional economic developments efforts in the DRA region.

10.1.2.8 Heliports

As mentioned earlier, a heliport is a small airport suitable for use only by helicopters. A heliport will typically have one or more paved helipads to provide a landing area for helicopters and may also have lighting, a windsock, and fueling facilities. Typically, a heliport is substantially smaller than an airport providing comparable services. The helicopter has the capability of providing a wide variety of important services to any community that integrates this aircraft into its local transportation system. In addition to service in the transportation of people, helicopters have proven to be useful to local communities in the following ways:¹²⁰

- Disaster relief;
- Air ambulance services;
- Police services; and
- Moving high-value assets.

¹¹⁷ Federal Express Corporation, May 2008.

¹¹⁸ Memphis International Airport, May 2008

¹¹⁹ *Memphis International Airport & Air Cargo. Where World Class Logistics meet America’s Distribution Center!* Memphis International Airport Brochure.

¹²⁰ *Helicopter Design – Advisory Circular 150/5390-2B*. U.S. Department of Transportation Federal Aviation Administration. September 2004.



Helicopters have proven to be an effective means of transporting injured persons from the scene of an accident to a hospital and in transferring patients in critical need of specialized services from one hospital to another hospital having that capability. A functional hospital heliport may be as simple as a cleared area on the ground, together with a windsock and a clear approach/ departure path.¹²¹ There are 309 heliports in the DRA region and numerous hospitals and other medical facilities maintain private heliport to provide rapid access to healthcare for critical patients. These heliports are strategically located throughout the DRA region and are extremely important to meeting critical health care needs of residents in the DRA region.

While the vast majority of heliports are privately owned, there are three public heliports in the DRA region that are publicly owned. For instance, the New Orleans Downtown Heliport is conveniently located on top of the parking garage next to the Louisiana Superdome in the heart of the Central Business District. The heliport is operated by the New Orleans Aviation Board and it is vital to the long-term growth and economic health of the New Orleans area. It is vitally important that heliports associated with transporting critically ill patients are maintained, improved and expanded throughout the DRA region.

10.1.2.9 State Aviation Initiatives

Significant changes in the aviation industry have taken place in the DRA region in recent years. In particular, Hurricanes Katrina and Rita caused significant damages to public and private airports in New Orleans and other coastal parishes. Aviation fuel prices have risen dramatically over the past 18 months and many recreational pilots have reduced flying hours because of the higher fuel prices. Regional jets are now the prominent jet serving smaller commercial airports in the DRA region. Finally, uncertainty in the FY 2008 Aviation Improvement Program Legislation has caused many projects to be scaled back or delayed.

While Baton Rouge, Little Rock, Jackson (Mississippi), Memphis and New Orleans airports will continue to be strong economic engines, there are many other commercial and general aviation airports in the DRA region that have needs. The following provides a state-by-state summary of airport needs documented in state aviation plans or provided in the DRA needs survey. All airport needs are provided in the CD that accompanies this report.

ALABAMA

The Alabama Department of Transportation Aeronautics Bureau (ALDOT Aeronautics) completed a State Aviation System Plan in January 2005. The purpose of the plan was to

¹²¹ *Helicopter Design – Advisory Circular 150/5390-2B*. U.S. Department of Transportation Federal Aviation Administration. September 2004.



evaluate the needs of the state's aviation system, assess the performance of the system, and to determine the level of spending required to support future activity and growth.¹²²

The Plan includes an inventory of the existing state aviation system, aviation demand forecasts, an evaluation of airport roles, a recommended airport system to effectively serve aviation needs, and an analysis of each airport's economic impact. The needs assessment contained in the study recommends a total of \$667 million over the next 10 years to improve Alabama's airport system (statewide).

The DRA region encompasses 23 public use airports in Alabama including 19 NPIAS General Aviation Airports and 4 Non-NPIAS Airports. Based on the System Plan there are approximately \$45 million in airport needs in the DRA region.¹²³ A summary of specific airport needs include the following:

- Extend runway at Demopolis Municipal Airport;
- Extend runway at Atmore Municipal Airport;
- Construct runway at Franklin Field in Union Springs; and
- Install instrument approach aid at George Downer Airport in Aliceville.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

ALDOT Aeronautics is participating in a study for a new regional airport proposed in Southwest Alabama. The study is the result of interest from Choctaw, Clarke, and Marengo Counties, as well as the municipalities of Butler, Grove Hill, Linden, Pine Hill, and Thomasville. Once complete, the study will include an economic impact analysis and evaluation to determine the feasibility of constructing a new airport versus the cost of maintaining existing airports serving these three counties. A preliminary cost estimate for construction of the new airport facility totals \$12.9 million.

An economic analysis of Alabama's airports showed that Alabama's airports are critical to economic growth, including business recruitment, retention, and expansion. The study found that for every dollar invested in the aviation system, approximately \$163 is returned to Alabama's economy. Alabama's airport system supports more than 73,100 jobs and \$1.8 billion in payroll, and creates an economic output of nearly \$4.7 billion.¹²⁴

ARKANSAS

The Arkansas Department of Aeronautics completed a State Aviation System Plan in December 2006. This plan studied the performance and interaction of all of the airports in the

¹²² *Alabama State Aviation System Plan*. ALDOT, January 2005.

¹²³ *Alabama State Aviation System Plan*. ALDOT, January 2005.

¹²⁴ *Alabama State Aviation System Plan*. ALDOT, January 2005.



state as part of a complete system. The plan examined economic impact, aviation activity and developed a future aviation demand forecast. Based on this demand, each airport was assigned to one of five categories depending on the type of aircraft operating from that airport. A defined set of minimum standards was developed for each category of airport. The minimum standards include items such as runway length and width, taxiways, lighting, navigational aids and weather reporting, fuel availability, and landside support services. The existing facilities at each airport were then compared to the appropriate minimum standard to develop recommended improvements.

The study shows that Arkansas' airports provide a significant impact to the state's economy. Specifically, Arkansas' airports support over 29,000 jobs, \$846 million in payroll, and produce \$2.5 billion in economic activity.¹²⁵

A significant number of Arkansas' airports are located in the DRA region. Of the 91 public use airports in Arkansas, 63 are in the DRA region. Forty seven of these airports are included in the NPIAS, which are eligible for AIP federal funding. Sixteen of the top 25 Arkansas airports with the largest number of operations are located in the DRA region. These airports comprise approximately 42 percent of the total number of aircraft operations in Arkansas.¹²⁶

The State System Plan recommends \$353.5 million in improvements statewide over the 20-year planning period to meet benchmarks and facility/service objectives. These improvements include approximately \$258 million in airfield improvements, \$6 million in visual and navigational aids, \$81 million in general aviation facilities and \$8 million in planning. A summary of specific airport needs include the following:

- Widen runway at North Little Rock Municipal Airport;
- Extend runway at Melbourne Municipal (John E Miller Field);
- Extend runway at Little Rock National Airport (Adams Field);
- Rehabilitate runway at West Memphis Municipal Airport;
- Improve runway safety area at Batesville Regional Airport; and
- Rehabilitate runway lighting at Kirk Field in Paragould.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

A new regional airport facility is proposed in St. Francis County, Arkansas. This airport, known as the Delta Regional Airport, is scheduled to open in approximately five years (2013). Immediate needs total \$5 million and include an access road, hangars, public use

¹²⁵ *Arkansas Aviation System Plan*. Arkansas Department of Aeronautics, December 2006.

¹²⁶ *Arkansas Aviation System Plan*. Arkansas Department of Aeronautics, December 2006.



facility, and fuel farm. Future needs total \$7.9 million and include a runway and taxiway extension and strengthening, and an apron expansion and strengthening.¹²⁷

ILLINOIS

The Illinois Department of Transportation published the *Airport Inventory Report* in 2007. This report includes information on the physical characteristics and conditions of the public use airports in Illinois, including airport activity, passenger enplanements, based aircraft, airfield characteristics (runways, navigational aids, etc.), weather reporting capability, and pavement condition.

The airports within the DRA Region in Illinois support 209,000 annual operation and 317 based aircraft.¹²⁸ A review of the pavement evaluation survey contained in the *Airport Inventory Report* shows that the runway and taxiway pavements located at the nine airports within the DRA region are generally in good condition.

IDOT also provided a document titled *Report to Delta Regional Authority In Response to DRA Inventory Survey* in March 2008. This document includes an inventory and needs request for airports located in the DRA region. Of the nine airports in the DRA region, one airport is classified as a commercial service facility, the remaining eight are classified as general aviation airports and all nine are included in the NPIAS, which are eligible for AIP federal funding.

In December 2007, Southern Illinois University students completed the Southern Illinois Regional Aviation System Plan. The plan provides an assessment of ten public use airports located within a seventeen county region in southern Illinois, as well as a system-wide perspective of airport activity. This document concludes with recommendations intended to enhance the capability of the southern Illinois airport system. The entire report is available on the CD that accompanies this report.¹²⁹

IDOT annually compiles a list of requested improvements from each public use airport in the state. The airport needs reported for airports in the DRA region includes \$3.4 million in airfield preservation, \$55,000 in navigational aids, and \$47 million in airport expansion. A summary of specific airport needs include the following:

- Construct a runway at Carmi Municipal Airport;
- Extend runway at Benton Municipal Airport;
- Rehabilitate runway at Sparta Community Airport (Hunter Field);
- Extend taxiway at Metropolis Municipal; and

¹²⁷ DRA Air Transportation On-line Needs Survey. May 2008.

¹²⁸ *Airport Inventory Report*. Illinois Department of Transportation, 2007.

¹²⁹ *Southern Illinois Regional Aviation System Plan*. Sabrina Weber, Joe Byrne, Brian Freeburg, and Matt Romero. Southern Illinois University. December 2007.



- Construct hangars and education building to develop a Shawnee Community College Aviation Center at Cairo Regional Airport.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

KENTUCKY

The Kentucky Transportation Cabinet completed the *Statewide Aviation System Plan* in February 1998. This plan determined that Kentucky’s public use airports have a combined economic impact of \$7.1 billion with a payroll of \$2.2 billion supporting 96,291 jobs. Of the \$7.1 billion in impact, the Cincinnati-Northern Kentucky Airport and Louisville International Airport accounted for a combined \$6.8 billion, both of which are located outside the DRA region. The DRA region includes 12 public use airports in Kentucky, including Barkley Regional Airport in Paducah. Barkley Regional Airport is the only commercial Kentucky airport in the DRA region and it operates three departures per day to Memphis. Midwest Aviation operates freight cargo at Barkley Regional Airport with a fleet of various sized planes to handle freight. Midwest Aviation handles an average of 224.5 tons of cargo per year.¹³⁰ A summary of specific airport needs include the following:

- Extend runway safety area at Lake Barkley State Park Airport;
- Construct runway at Hopkinsville-Christian County Airport;
- Improve runway safety area at Mayfield Graves County Airport; and
- Install instrument approach aid at Kyle-Oakley Field in Murray.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

LOUISIANA

The Louisiana Department of Transportation and Development Aviation Section completed the *Louisiana Aviation System Plan* in 2003. The plan was developed to identify and analyze the aviation assets and needs of the State and to ensure that aviation properly performs its role to support Louisiana’s economy and its citizens; and to provide continued guidance for development of a system of airports that meets the state’s existing and future air transportation needs. The *Louisiana Aviation System Plan* was also developed to provide access to a system airport within a 30 minute drive time to 98 percent of the State’s population (88 percent during inclement weather) and provide access to all of the State’s major economic centers.¹³¹

¹³⁰ Barley Regional Airport

¹³¹ Louisiana Aviation System Plan. Louisiana Department of Transportation and Development. 2003.



The *Louisiana Aviation System Plan* establishes criteria and benchmarks for the airport system to evaluate the system for adequacy. The three major goals include the following:

- Access – Does the airport system adequately cover the population and provide service during all weather conditions?
- Economic – Does the airport system serve economic / trade centers and meet air cargo needs?
- Physical – Do the airports in the system meet minimum standards?

Based on these goals, the *Louisiana Aviation System Plan* developed recommendations and projects to meet these goals and to improve the system's performance. The *Louisiana Aviation System Plan* identified 14 projects totaling \$7.9 million at General Aviation - National Airports, 60 projects totaling \$29.1 million at General Aviation – Regional Airports, 175 projects totaling \$54.5 million at General Aviation – Local Airports, and 18 projects totaling \$6.1 million at General Aviation – Limited Airports. The top five project categories, based on dollars, are aircraft aprons, aircraft storage (hangars), taxiway improvements, navigational aids, and terminal / pilots' lounge buildings. It is important to note that two of the top five project categories (aircraft storage and terminal buildings / pilots' lounge) are not typically eligible for federal funding at general aviation airports through the AIP.

Although the *Louisiana Aviation System Plan* provides a good overview of the entire airport system in Louisiana, LA DOTD Aviation Section provided the DRA project team an airport project/needs list in April 2008, which identified needs at airports in the DRA region. LA DOTD – Aviation Section also prepared an itemized project list for potential FY 2008 projects. This list includes ten projects at airports in the DRA region totaling \$102.2 million with a request for \$61.1 million in DRA funds. A summary of specific airport needs include the following:

- Extend runway at Le Gros Memorial Airport in Crowley;
- Rehabilitate runway at Hammond Northshore Regional Airport;
- Construct Aircraft Rescue & Fire Fighting Building at Louis Armstrong New Orleans International;
- Install runway lighting at Jonesboro Airport; and
- Improve runway safety area at George R Carr Memorial Air Field in Bogalusa.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

MISSISSIPPI

Mississippi DOT completed the *Mississippi Statewide Airports Study* in May 1999. Although many factors have changed since the development of this plan, many of the principals upon which it was developed have remained constant. Along with other objectives,



the plan was developed to demonstrate the economic value of airports; examine existing funding mechanisms; recommend a system for prioritizing projects; and recognize the multimodal potential of airports.

The *Mississippi Statewide Airports Study* identified \$637 million in economic activity related to the State's public use airports. This amount includes \$203.7 million in earnings paid to 10,347 jobs resulting from aviation activity in Mississippi. Although these figures may be outdated, several Mississippi airports located in and out of the DRA region have experienced tremendous growth since the study was completed due to industrial activities directly related to the airfield's location and services. Some of these include the following:

- The Olive Branch Airport, near Memphis, Tennessee, is located adjacent to an industrial park and primarily serves business aviation needs;
- The Trent Lott International Airport in Moss Point, Mississippi is home to the Northrop Grumman Corporation production facility for the Fire Scout unmanned aerial vehicle;
- The Greenwood-Leflore County Airport is home to The Memphis Group, a company who provide spare parts, parts refurbishment, and aircraft disassembly; and
- The Golden Triangle Regional Airport is home to Eurocopter, a large helicopter manufacturing facility, and SeverCorr, a next generation steel production facility.

Although not all of these developments are located within the DRA region, these airports serve as important examples of the economic value a viable airport can bring to a community. A summary of specific airport needs include the following:

- Extend runway at Magee Municipal Airport;
- Rehabilitate runway at Mid Delta Regional Airport in Greenville;
- Construct Aircraft Rescue & Fire Fighting Building at Tunica Municipal Airport;
- Extend taxiway at Hardy-Anders Field Natchez-Adams County Airport; and
- Rehabilitate runway at Jackson-Evers International.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

Mississippi's primary funding mechanism for airport improvements is FAA's Airport Improvement Program (AIP). Currently, Mississippi DOT will match one half of the local sponsor's share of an AIP grant. In addition, Mississippi also sponsors a state grant program known as the Multi-Modal Transportation Improvement Fund. In recent years, this program has issued grants of approximately \$3.8 million annually to airports seeking projects for multimodal connectivity, revenue producing items, and other projects. The Mississippi Development Authority (MDA) also administers a loan program for airports known as the Mississippi Airport Revitalization Revolving Loan Program. This loan program is available



to all publicly owned airports and is intended for use for improvements directly tied to the airport facility. Up to \$750,000 for any one project may be borrowed for a term of up to 10 years at 3 percent interest.

MISSOURI

The Missouri Department of Transportation – Aviation Section completed an update of the *State Aviation System Plan* in 2005 with the goal of building a consensus with policy makers and airport operators to develop and implement recommendations to improve system performance. The *State Aviation System Plan* measures system performance in the areas of physical performance, economic benefit, and accessibility.

The *State Aviation System Plan* identified airport's roles as commercial, regional, business, and community. Each type of airport serves a specific function in the overall system based on economics, accessibility, and physical characteristics. The *State Aviation System Plan* developed minimum standards for each type of airport in order to provide a benchmark to measure current and future system performance. The *State Aviation System Plan* also developed recommendations and cost estimates to provide stakeholders and policy makers with information to make cost-effective improvements to the entire state airport system. An economic impact analysis was also completed on each of the state's airports to determine each airport's contribution to the local and state economy. In total, Missouri's airports generate \$9.5 billion annually and support 149,500 jobs and \$3.7 billion in payroll.

The *State Aviation System Plan* estimated total airport improvement development costs over the planning period at \$710.2 million (statewide), including projects related to the state system plan and projects identified in each airport's capital improvements plan.¹³²

Missouri's Five Year Statewide Transportation Improvement Program (STIP) identifies aviation needs averaging approximately \$38 million per year. Using current funding levels, available funding falls short by approximately \$10 million annually.

MoDOT administers funding for airports through several federal and state programs. MoDOT is a Block Grant State and as such, administers federal AIP grants for the FAA. MoDOT also provides funding for airports within the state system plan through the *MoDOT Capital Improvements Plan* and *MoDOT STAR Lending Program*. MoDOT has provided between \$2.2 million and \$5.9 million in airport funding since 2001.¹³³

MoDOT also provided a document titled *Missouri's Report to Delta Regional Authority in Response to DRA Inventory Survey* in January 2008. This report included an asset inventory and identified multimodal needs in the DRA region. This MoDOT report identified 34 general aviation airports and one commercial service airport in Missouri within the DRA region with an annual economic impact of approximately \$100 million. Of the 35 airports in

¹³² *State Aviation System Plan*. Missouri Department of Transportation, 2005.

¹³³ *State Aviation System Plan*. Missouri Department of Transportation, 2005.



the DRA region, 19 are included in the NPIAS and are eligible for AIP federal funding and 16 are Non-NPIAS public use airports. Based on the FAA's airport classification system, there is one commercial airport, nine regional airports, 11 business airports, and 14 community airports in the DRA region. A summary of specific airport needs include the following:

- Construct runway at West Plains Municipal Airport;
- Rehabilitate runway at Cape Girardeau Regional Airport;
- Rehabilitate runway lighting at Sikeston Memorial Municipal Airport;
- Extend runway at Mountain Grove Memorial Airport; and
- Install Runway Vertical/Visual Guidance System at Malden Municipal Airport.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

The MoDOT Report to the DRA identified specific high priority aviation projects needed over the next five years. These projects include airfield preservation, navigational aids, and expansion projects at eleven NPIAS airports. The total estimated cost of these projects is \$8.8 million. MoDOT has requested \$4.4 million in DRA assistance to complete these projects.

TENNESSEE

The Tennessee Department of Transportation completed the *Statewide Aviation System Plan* in November 2001. The stated purpose of this plan was to provide a framework for the orderly, ongoing, and timely development of a system of airports that is adequate to meet the current and future aviation needs of the state.¹³⁴

The *Statewide Aviation System Plan* identified several airports within the DRA region that have significant intermodal development opportunity. These include Memphis International Airport, General Dewitt Spain Airport, Charles W. Baker Airport, Millington Airport, Dyersburg Airport, Arnold Field Airport, and Thorton Airport.¹³⁵ The Memphis International Airport and surrounding General Aviation airports, such as General Dewitt Spain, Charles W. Baker, and Millington, are located at the focal point for one of the most prominent locations for intermodal transportation in the country.¹³⁶

A summary of specific airport needs include the following:

- Rehabilitate runaway at Memphis International Airport;
- Rehabilitate runway at McKellar-Sipes Regional Airport in Jackson;

¹³⁴ *Tennessee Airport System Plan*. Tennessee Department of Transportation. November 2001.

¹³⁵ *Tennessee Airport System Plan*. Tennessee Department of Transportation. November 2001.

¹³⁶ *Tennessee Airport System Plan*. Tennessee Department of Transportation. November 2001.



- Extend runway at Benton County Airport;
- Improve runway safety area at Gibson County Airport; and
- Construct taxiway at Savannah-Hardin County Airport.

While this only provides a sample of the airport needs, the CD that accompanies this report includes a comprehensive list of all public airport needs in the DRA region.

10.1.3 Recommendations

10.1.3.1 Policy Recommendations

- Develop an airport system that enhances economic development in the DRA region.
- Provide an airport system that serves the aviation demands of the DRA region for passenger and goods movement.
- Increase awareness of the role of aviation in the transportation system and promote better understanding of the importance and economic value of airports in the DRA region.
- Monitor commercial airline service to ensure the growing fuel prices do not negatively impact passenger air service at smaller commercial airports in the DRA region.

10.1.3.2 Coordination Recommendations

- Develop a DRA Aviation Working Group, which would have representatives from federal, state, and local transportation agencies, as well as airport and heliport managers in the DRA region and would meet twice a year.
- Continual coordination between local airports and state DOTs and other state aeronautics agencies to communicate preservation, expansion and safety needs
- Coordinate with state DOTs and other state aeronautics agencies to ensure airport needs are addressed to ensure efficient passenger and goods movement.
- Coordinate with state Economic Development agencies to ensure aviation needs are addressed to support local and regional economic development efforts.
- Integrate Intermodal planning with other state and/or regional planning activities.
- Local counties and parishes should coordinate to discuss options to construct a regional airport that will serve a multi-county/parish region to encourage regional economic development activity.

10.1.3.3 Funding Recommendations

- Develop and fund an aviation categorical grant program to assist in the development and construction of aviation infrastructure in the DRA region.



- Aviation needs for the majority of the public use airports in the DRA are primarily funded through the FAA's AIP. However, this program does not fund all types of projects at public use airports and funding levels are not sufficient to meet all of the programmed needs. Thus, providing additional funding that is available to both NPIAS and non-NPIAS airports is critical to ensure these assets are maintained and expanded to improve the quality of life and economies in the DRA region.
- Establish a grant funding program to support aviation improvements that are not eligible for federal AIP funding.
- Establish a grant funding program to support general aviation improvements at non-NPIAS airports.

10.1.3.4 Intermodal Recommendations

- Coordinate with appropriate entities with the goal of ensuring adequate highway access is maintained and provided to airports.
- Coordinate with appropriate entities with the goal of ensuring adequate rail access is maintained or extended to strategic airports to improve intermodal transportation connections.

10.1.3.5 Project Recommendations

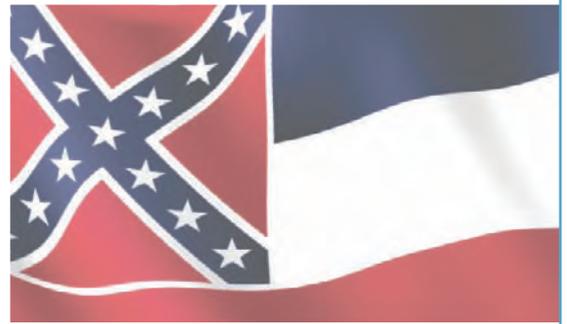
- Continue to fund the federal Airport Improvement Program to complete projects identified in this program.

10.1.3.6 Priority Recommendations

- Develop and fund an aviation categorical grant program to assist in the development and construction of aviation infrastructure in the DRA region.
- Establish a grant funding program to support aviation improvements that are not eligible for federal AIP funding.
- Establish a grant funding program to support general aviation improvements at non-NPIAS airports.
- Develop a DRA Aviation Working Group.
- Increase awareness of the role of aviation in the transportation system and promote better understanding of the importance and economic value of airports in the DRA region.
- Coordinate with appropriate entities with the goal of ensuring adequate highway access is maintained and provided to airports.



Waterways, Ports and Locks





11. WATERWAYS, PORTS AND LOCKS

11.1 Introduction

As one port authority suggests, one can think of a public port like a shopping mall.¹³⁷ The port authority owns the entire mall property while the stores are leased to individual retail companies. For instance, the New Orleans Port Authority owns 79 terminals. Some terminals handle containers (which are truck trailers without the wheels), others may handle dry bulk cargo (such as coal, grain, or sugar), liquid bulk cargo (such as petroleum or chemicals), break bulk cargo (such as steel coils, pipes, or large machinery), or automobiles and trucks. A typical container terminal may be 100 to 300 acres in size, while the entire port complex of a major port may be 2,000 to over 3,000 acres in size.¹³⁸ Ports are an integral component of the DRA region transportation system because there are 1,210 public and private port terminals and 48 public port authorities that operate 192 public port terminals in the DRA region.

The inland and intracoastal waterways system is a vital part of the U.S. multimodal transportation network. For only 2 percent of the U.S. freight cost, the inland waterways system moves 15 percent of the nation's commercial intercity freight tonnage on 12,000 miles of commercially significant waterways. The barge and towing industry operating on the inland and intracoastal waterway system transports freight in a safe and fuel efficient, environmentally-friendly manner.

Twenty-four states are linked directly to the inland waterways system, which includes all eight states in the DRA region. The Mid-America waterways network extends from Brownsville, Texas to the Great Lakes and from Minneapolis, Minnesota to Pittsburgh, Pennsylvania. It is made up of the following two major subsystems:

- The Mississippi River system, the Ohio River system, the Illinois Waterway and other commercially important rivers and tributaries; and
- The Gulf Intracoastal Waterway (GIWW)

This Mid-America waterways network serves the heartland of the U.S., including its industrial core and a large portion of its agricultural regions. **Figure 33** shows the Inland Waterway System in the DRA region and the connectivity to the rivers and waterways in Mid-America.

¹³⁷ An analogy used by the Port of Tacoma, "Questions and Answers: Port Terminal Ownership, Operations, and Security," February 24, 2006, Press Release.

¹³⁸ *Terminal Operators and Their Role in U.S. Port and Maritime Security*. CRS Report for Congress, April 2006



Figure 33: U.S. Inland Waterway System



Source: U.S. Fish & Wildlife Service



The following waterways are a vital component of the multimodal transportation system in the DRA region:

- **Alabama** - Alabama River, Black Warrior River, Chattahoochee River, Tennessee-Tombigbee Waterway, Tombigbee River
- **Arkansas** - Arkansas River, Mississippi River, Ouachita River, White River, Wolf River
- **Illinois** – Kaskaskia River, Mississippi River, Ohio River
- **Kentucky** - Cumberland River, Green River, Ohio River, Tennessee River
- **Louisiana, within the Port of New Orleans Jurisdiction** - Algiers Canal, GIWW, Grand Pass, Harvey Canal, Inner Harbor Navigation Canal, Michoud Canal, Mississippi River, Mississippi River Gulf Outlet Canal and other waterways including Bayou Bienvenue, Lake Pontchartrain and Bayou Barateria
- **Louisiana, Below Port of New Orleans** - Mississippi River downriver of Port of New Orleans, Pass Tante Phine, Tidewater Access Channel, Tiger Pass and other waterways
- **Louisiana, Other Waterways** - Atchafalaya River, Acadiana Gulf of Mexico Access Channel, Bayou Lafourche, Bayou Teche, Black River, Mermentau River, Mississippi River upriver of the Port of New Orleans, Ouachita River, Port Allen Alternate Route Intracoastal Waterway, Red River and other waterways.
- **Mississippi** – Lake Ferguson, Mississippi River, Rosedale Harbor, Vicksburg Harbor, Yazoo River Diversion Channel
- **Missouri** – Mississippi River
- **Tennessee** – McKellar Lake, Mississippi River, Tennessee River, Wolf River

Operations and maintenance of the inland and intracoastal waterways system is the responsibility of the U.S. Army Corps of Engineers (USACE). Locks, dams, and other infrastructure development on the waterways are funded by the Inland Waterways Trust Fund, which is a fund supported by the barge and towing industry by a tax paid on the fuel used by towing vessels in moving cargo on the waterways. This user fee represents 20 – 30 percent of the industry’s total fuel cost and is one of a number of taxes and fees paid to federal, state, and local governments.

Barges play a vital role in waterway transportation in the DRA region. Barges transport one out of every eight freight ton-miles moved domestically by U.S. industries. The majority of commodities transported by barges on the inland and Gulf Intracoastal Waterway (GIWW) system in the DRA region include coal, petroleum, grain and aggregates.

The inland and intracoastal waterway system and the associated industries are a tremendous asset in the DRA region. An economic impact study of the Port of Memphis completed in 2005 found that 12,310 jobs were port-related with earnings of \$287.8 million, and that local port related purchases were \$844 million. Waterborne transportation is clearly in a position to continue providing low cost, safe, environmentally-friendly, and fuel efficient transportation into the



future. Moving cargo by barge takes on an even greater importance when examining transportation options that can provide the capacity for sustainable development.

11.1.1 Port and Terminal Assets

The USACE Asset Database identifies 1,210 public and private port terminals in DRA region and 929 are private and 281 are public. Of the 281 public port terminals, 192 are owned and operated by port authorities. For the purposes of this report, private port terminal assets have been identified, but needs related to these private port terminals are not documented in this report.

11.1.1.1 Private Port Terminals

The 929 private port terminals supply a broad range of services in the DRA region and these facilities provide support for the following:

- Barge fleetings throughout the inland waterways;
- Agricultural services. For instance the Bunge Corporation operates 40 terminals in the DRA region that support agriculture services. Other agricultural terminal operations in the DRA region include ADM, Continental Grain and Cargill and many small independent operators;
- Petrochemical industry, such as Ashland Oil, Exxon Mobile, and Chevron;
- Loading and offloading bulk products;
- Repairing and manufacturing marine vessels; and
- Other aspects of the maritime industry.

11.1.1.2 Public Port Terminals

The 281 public port terminals in the DRA region include local, state and federal agency ports, as well as ports owned and operated by public port authorities. The public port terminals are owned and operated by 48 public port authorities in the DRA region and these authorities operate 192 commodity port terminals. Needs for these port authorities were identified and are documented in this report and in the CD that accompanies this report.

Public port terminals support cargo movement, ferry services, fisheries, and tourism. Both the U.S. Coast Guard and the U.S. Army Corps of Engineers operate terminals throughout the inland waterways to maintain and police the waterways. Public ports also support economic development initiatives in the DRA region. Local governments have utilized the sale of public bonds to finance investments that support port facilities. Although these port terminals are owned by the local government, the operations are leased to private industries.



11.1.2 Deepwater Ports

The deep draft channels in the DRA region are the Mississippi and the Calcasieu Rivers and the lower reach of Bayou Lafourche from Port Fourchon to the Gulf of Mexico. The USACE New Orleans District maintains both rivers. The Mississippi River from Baton Rouge to the Gulf of Mexico is 236 miles in length and is the state's chief river, the heart of waterborne commerce, and the lifeblood of the southeastern part of the DRA region. The Mississippi River from Baton Rouge north to Illinois is considered shallow draft. The Mississippi River is of major importance to the DRA region and to the nation as it is the gateway for waterborne commerce connecting the international maritime industry via the Gulf of Mexico with the DRA region.¹³⁹

Within the DRA region the USACE maintains a 45 foot navigation draft within the Mississippi River from Baton Rouge south to the Gulf of Mexico. The deep draft ports located within this section of the Mississippi River serve as the Inland Waterway's link to the world. Public ports include Plaquemines Port and the Port of St. Bernard and private terminals located downstream of the Port of New Orleans, the Port of New Orleans, the Port of South Louisiana and the Port of Greater Baton Rouge. These ports serve local regional economies. However, the national economy and ports located throughout the inland waterway are also directly benefited by the import and export of commodities through these ports. Although not located within the geography of the DRA the Port of Mobile also contributes significantly to goods movements to inland DRA ports.

11.1.2.1 Port of New Orleans

The Port of New Orleans benefits from its location on the Mississippi River, its linkage with the 12,000-mile inland waterway system, and from its connection with the Gulf Intercoastal Waterway, which joins the Mississippi River at New Orleans. The port is well positioned from the perspective of landside transportation. The port is served by six Class I railroads (including a rail bridge crossing of the Mississippi River) and linkages with I-10, I-55 and I-59. These highway and rail connections provide the Port of New Orleans users direct and economical freight service to the DRA region and the rest of the county.

The Port of New Orleans is one of America's leading general cargo ports. Principal commodities include steel, coffee, forest products, rubber, containerized cargo, and copper. The port also serves more than 700,000 passengers each year providing both international cruises and cruises on the inland waterways.

In the past 10 years, the Port of New Orleans has invested more than \$400 million in new state-of-the-art facilities. Improvements include improved break bulk and container

¹³⁹ *Louisiana Marine Transportation System Plan*. Louisiana Department of Transportation and Development, September 2007.



terminals that provide new multipurpose cranes, expanded marshalling yards and a new roadway to accommodate truck traffic.

11.1.2.2 The Port of South Louisiana

The Port of South Louisiana stretches 54 miles along the Mississippi River, and is the largest tonnage port district in the western hemisphere. The facilities within St. Charles, St. John the Baptist, and St. James parishes handled over 258 million short tons of cargo in 2007, via vessels and barges. Over 4,000 ocean-going vessels and 55,000 barges call at the Port of South Louisiana each year, making it the top ranked port in the country for export tonnage and total tonnage. The port cargo throughput accounts for 15 percent of total U.S. exports.

The Port of South Louisiana has eight port-owned facilities, ranging from grain elevators to general cargo facilities. The port serves as landlord of these, which are leased to operating companies such as Occidental Chemical, Archer Daniels Midland, and Cargill. The exception is the Globalplex Intermodal Terminal, purchased by the port in 1992. This terminal is being redeveloped into a world-class complex to accommodate a variety of dry bulk and break bulk cargo. Landside access at the Port of South Louisiana includes direct connections with two class I railroads and connections to I-10 and I-55 via LA 61.

The Port of South Louisiana Connector, which is a new roadway connecting the port to I-10, is an important project for the Port and it is identified in the *Louisiana Statewide Transportation Plan* completed by Louisiana Department of Transportation and Development.

11.1.2.3 The Port of Greater Baton Rouge

The Port of Greater Baton Rouge is strategically located on the Mississippi River and is an integral part of the Louisiana maritime industry and local and regional economy. The port is the head of deep water navigation on the Mississippi River; a 45-foot shipping channel that extends to the mouth of the Mississippi. The port is adjacent to the Port Allen Lock, which is the northern most point on the Mississippi River where barges can access the GIWW.

Landside access to the port includes a direct connection to I-10, convenient connection with I-12 and I-49, as well as Class I rail connectivity to the Union Pacific railroad on the west bank of the river, and with the Canadian National and Kansas City Southern railroads on the east bank. Like New Orleans, Baton Rouge has a rail bridge crossing of the Mississippi River. The port ranks among the top 10 U.S. ports in total tonnage.

11.1.2.4 Proposed New Deep Water Ports

The Millennium Port Authority was created by the Louisiana Legislature in 1999 to support the location of a major port container terminal downriver from New Orleans. *The Louisiana Statewide Transportation Plan*, suggests that the Millennium Port should be supported through public/private partnerships.



11.1.3 Inland Water Ports

The following provides a summary for some of the inland water ports located in the DRA region.

11.1.3.1 International Port of Memphis

The International Port of Memphis is the largest inland water port serving the DRA region. The Port of Memphis is the second largest inland port on the shallow draft portion of the Mississippi River, and the 4th largest inland Port in the U.S.

The Port of Memphis is part of an inland transportation hub encompassing Mississippi River ports, linkages to five Class I railroads, connectivity to I-55 (north-south) and I-40 (east-west) and superior access to Memphis International Airport, which is home to the Federal Express Corporation, which is a huge economic engine to Memphis and the surrounding DRA region. No other inland port approaches Memphis in either levels of freight moved or intermodal connectivity supported. Like the deepwater ports, Memphis serves local, regional and national markets and is a huge economic engine in the DRA region.

Inland waterway ports in the DRA region are extremely valuable, since these ports feed and disperse commodities throughout rural areas. Ports provide key linkages, such as collection points for agricultural commodities that are loaded on barges for international shipping or distribution for petroleum products moving up river. Ports provide access to waterborne transportation, which is a critical location factor for firms. Ports also contribute to local job creation and at the industries which locate in the area. However, unlike the deepwater ports and the Port of Memphis, these inland waterway ports, such as the ones listed below, tend to serve local and regional markets.

11.1.3.2 Southeast Missouri Regional Port Authority

The SEMO Regional Port Authority is located in Scott City, Missouri near Cape Girardeau and it is the most developed rural public port in the state. Semo Port is on the Mississippi River, midway between St. Louis, Missouri and Memphis, Tennessee. The 1,800-foot slackwater harbor is located 48 miles upstream from Cairo, Illinois (Ohio River) and 147 miles downstream from St. Louis (Illinois River and Missouri River). SEMO Port has ready access to all five modes of transportation (river, rail, highway, pipeline, and air). Interstates 55, 57, and 24 are located nearby; the Texas Eastern pipelines for petroleum products and natural gas are one mile away; and the regional airport is four miles by direct highway. The port handles primarily agricultural products, has intermodal water/truck/rail capability, and averages movement of over one million tons per year. A recently completed economic impact analysis estimated that the operations at the port added \$46 million in Gross State Product to Missouri in 2007. The analysis also showed a local impact of 530 jobs paying an average wage of \$36,631, \$20.4 million in personal income, and \$89.9 million in total economic impact. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.



11.1.3.3 New Madrid County Port Authority

The New Madrid County Port Authority is located just south of New Madrid, Missouri. The port is located in the 4,200-acre St. Jude Industrial Park along the upper-lower Mississippi River (mile 885) and is accessible by barge, rail and truck. The New Madrid County Airport is within two miles of the harbor and has recently undergone major renovation. Located a half-mile from I-55, the port is 175 miles south of St. Louis and 110 miles north of Memphis. It handles primarily agricultural products, has intermodal water/truck/rail capability, and moves an average of 265,000 tons per year. A recently completed economic impact analysis estimated that port operations added approximately \$9.2 million in gross state product in 2007. The analysis also showed a local impact of 170 jobs paying an average wage of \$29,349, \$5.1 million in personal income, and \$28.3 million in total economic output. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.

11.1.3.4 Pemiscot County Port Authority

The Pemiscot County Port Authority is located in Caruthersville, Missouri and located at mile 849 on the Mississippi River between St. Louis and Memphis. The port offers access to every mode of transportation and is located between two I-55 and I-155. Completion of the I-155 bridge between Caruthersville, Missouri and Dyersburg, Tennessee in 1976 established Pemiscot County as a complete intermodal transportation interchange providing direct linkage to all parts of the country. This is a well-developed port that handles agriculture products and fiberglass barge covers. The port handles approximately 550,000 tons per year and has a general cargo dock with excellent highway/interstate access. A recently completed economic impact analysis estimated that the operations at the port added approximately \$77 million in gross state product to Missouri in 2007. The analysis also showed a local impact of 1,061 jobs paying an average wage of \$42,531, \$50.1 million in personal income, and \$177.5 million in total economic output. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.

11.1.3.5 Yazoo County Port

Yazoo County Port is located in Yazoo City in the west central portion of Mississippi at milepost 75 on the Yazoo River. The port serves four counties including Issaquena, Sharkey, Yazoo and Warren. The port is east of the Mississippi River and offers service to industries along the Yazoo River. The port has rail and landside access and intermodal capabilities. The port offers one barge berth, with nine feet of water and hard surface backup area. The port has one crane, a truck scale, one dry storage warehouse and one 8-inch pipeline servicing private storage facilities. There are two plots of developable land available including one 27-acre area on the terminal and one 56-acre area one-half mile from the terminal. The port is served by one Class 1 railroad, the Canadian National via a 2.5-mile rail spur partially owned



by the railroad and the James River Corporation. The port is accessed by both US 49 West and MS 3.¹⁴⁰

11.1.3.6 Port of Vicksburg

The Port of Vicksburg is located in the City of Vicksburg in the lower western portion of Mississippi. The port is on a slack water harbor connected to the Mississippi River by 4,800-foot of channel at milepost 437. The port serves Warren, Hinds and Claiborne Counties and parts of Louisiana. The port has rail and road access and has intermodal capabilities. There are two large barge berths 400-feet in length with a draft of 12-feet. There is a T-dock with one overhead gantry crane. The port maintains an additional mobile crane. There are four acres of surfaced area used as back-up for the berth. The port also has a conveyor loader, direct dump capability for direct barge loading, palletized loading capability, and two dry storage warehouses totaling 90,000-square feet. The port's rail spur is connected to two Class 1 railroads, the CN/IC and the Union Pacific, via the Mid South Railroad. The port area is located off US 61, six miles from I-20. The area maintains the only major rail crossing between Memphis, TN and Baton Rouge, LA.¹⁴¹

11.1.3.7 Henderson County River Port

The Henderson County Riverport is located at river mile 808 on the left descending bank of the Ohio River, west of Henderson, Kentucky. The general cargo handling area includes a cargo dock with 42,000-square foot of open dock space and a 125-ton electric-pedestal crane capable of handling commodities from barge, truck, or rail. The crane capacity and design configuration provides excellent heavy-lift capacity, with the terminal noted for this service. The operating port facilities and available industrial properties are located on KY 136, a 2-lane roadway. This highway connects with US 60, only one mile from the port, and also connects with US 41 about three miles from the port. At the junction of KY 136 and US 60, KY 425 (also known as Henderson Bypass) offers an excellent connection to the Edward T. Breathitt/Pennyrile Parkway and the Audubon Parkway, both only eight miles from the port. The Edward T. Breathitt/Pennyrile Parkway is a designated I-69 corridor, important for future transportation in the geographic region. Rail service at the port is provided by CSX, with numerous port industries and nearby industries utilizing rail transportation. Within the confines of the port development, the port authority owns a track network of 12,800-feet designed to service the needs of industries and terminal operations.¹⁴²

¹⁴⁰ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴¹ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴² *Kentucky Riverport Improvement Project*. Kentucky Transportation Cabinet, January 2008.



11.1.3.8 Yellow Bend Slackwater Harbor

The Yellow Bend Slackwater Harbor (Yellow Bend Port) is an important part of the freight transportation system in southeastern Arkansas, providing a cost-effective means for shipping the region's bulk commodities. Completed in September 1993, it is operated as a public terminal where anyone may ship or receive goods or use its facilities. The port's primary purpose is to serve agricultural operations in the region. Yellow Bend Port is located on Highway 208 near the Chicot/Desha County line at river mile 553 on the Mississippi River. The harbor is located in close proximity to the planned I-69 and Great River Bridge. When constructed, these transportation facilities would provide an improved Canada / United States / Mexico overland trade route that could possibly generate additional cargo shipments at the port. The port, however, is currently underutilized with regard to its potential.¹⁴³

11.1.4 Petroleum Industry Ports

Ports in south Louisiana provide support to the U.S. offshore oil industry. For example, Port Fourchon's primary service market is domestic deepwater oil and gas exploration, drilling, and production in the Gulf of Mexico. The port plays a crucial role in providing 16-18 percent of the U.S. oil supply. Other ports in the DRA region supporting the offshore industry include the Port of New Iberia and private terminals located in Plaquemines Parish, Louisiana. These port are crucial to the national, regional and local economies and needs at these ports must be addressed to ensure these strategic port assets are maintained and expanded to fully support the petroleum industry.

11.1.5 Port Security

The U.S. Coast Guard is responsible for security of port facilities and vessels, under the terms of the Ports and Waterways Safety Act of 1972 and the Maritime Transportation Security Act of 2002.

Each terminal operator in a port area is required to conduct a facility security assessment, as well as write a security plan and submit it to the U.S. Coast Guard for review and approval. The facility security plan must specify how the port will address the security vulnerabilities identified in its security assessment. For instance, it must restrict access to its facility with fences and a system to identify unauthorized personnel. The operator must specify how it will monitor activity at the facility through the use of some combination of security guards, water-borne patrols, alarm systems, surveillance equipment, and lighting. Security plans at container facilities must specify how it will check container seals and verify that arriving trucks have legitimate business at the facility.¹⁴⁴

¹⁴³ *Yellow Bend Slackwater Harbor Study*. Arkansas Highway and Transportation Department. March 2004.

¹⁴⁴ *Terminal Operators and Their Role in U.S. Port and Maritime Security*. CRS Report for Congress, April 2006



11.1.6 Lock Assets

A lock is a device for raising and lowering boats or barges between stretches of water of different levels on a river to make the river navigable. The distinguishing feature of a lock is a fixed chamber whose water level can be varied.

The U.S. Army Corps of Engineers is responsible for the operation and maintenance of the U.S. waterway system to ensure efficient and safe passage of commercial and recreational vessels. Locks play a vital role in the waterborne transportation system, especially in the DRA region in which there are 40 locks along 19 waterways. Mississippi and Missouri are the only two states that do not have a lock on a navigable waterway in the DRA region.

From St. Genevieve, Illinois south to the Gulf of Mexico, the Mississippi River is an open river with no lock structures allowing barges to tow more than 80,000 tons. Smaller tows of up to 23,000 tons operate on other rivers, due to the size of the lock structures.

The following provides the state and waterway in which a lock is located in the DRA region:

- **Alabama** - Seven Locks
 - 2 on the Alabama River;
 - 1 on the Black Warrior River;
 - 2 on the Tennessee-Tombigbee Waterway; and
 - 2 on the Tombigbee River.
- **Arkansas** - 10 Locks
 - 7 on the Arkansas River; and
 - 3 on the Ouachita River.
- **Illinois** - Five locks
 - 1 on the Kaskaskia River; and
 - 4 on the Ohio River.
- **Kentucky** - Four Locks
 - 1 on the Cumberland River;
 - 2 on the Green River; and
 - 1 on the Tennessee River.
- **Louisiana, Within the Port of New Orleans Jurisdiction** - Three Locks
 - 1 at the Algiers Canal;
 - 1 at the Harvey Canal; and
 - 1 at the Inner Harbor Navigation Canal.
- **Louisiana, Other Waterways** - Nine Locks



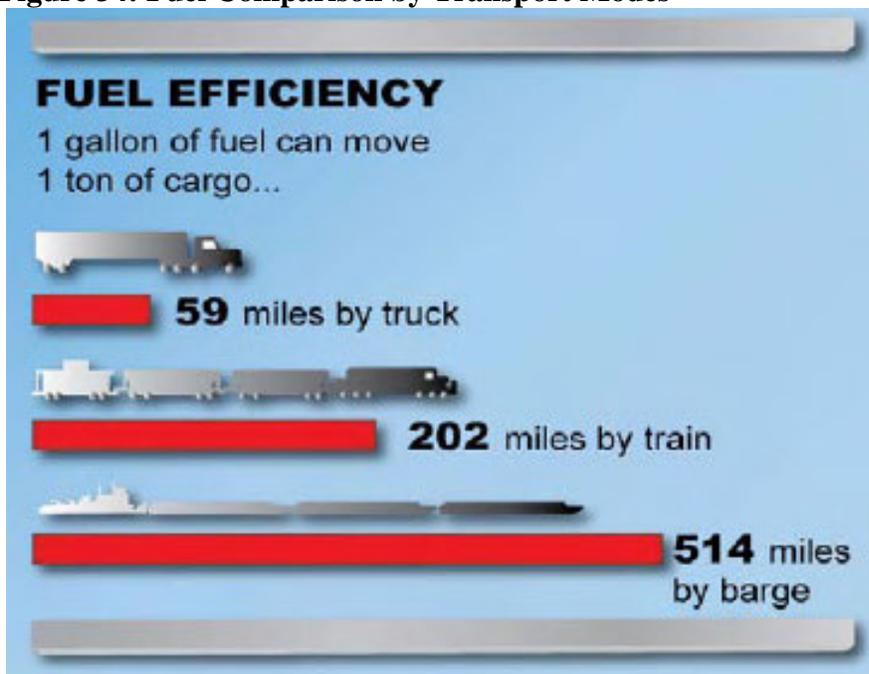
- 1 on Bayou Teche;
- 1 on the Black River;
- 2 on the Ouachita River;
- 2 on the Port Allen Alternate Route Intracoastal Waterway; and
- 3 on the Red River.
- **Tennessee - Two Locks**
 - 2 on the Tennessee River

11.2 Barge vs. Truck and Rail Transportation

11.2.1 Energy Savings

As shown in **Figure 34**, barge transportation is cost and fuel efficient and is ideal for large bulk commodities. A ton of cargo can be moved more than 500 miles by barge with one gallon of fuel compared to 59 miles by truck or 202 miles by rail. A comparison of capacities between barge, rail, and truck is shown in **Figure 35**.

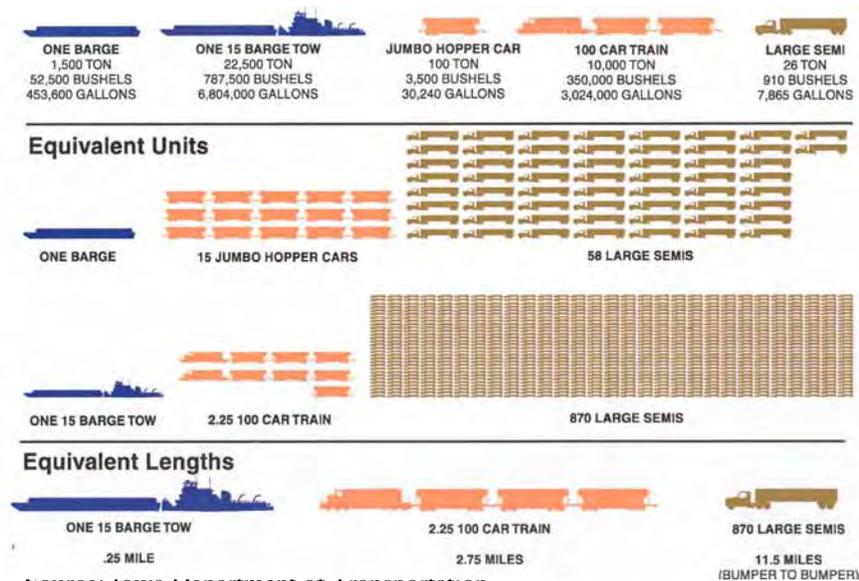
Figure 34: Fuel Comparison by Transport Modes



Source: U.S. Army Corps of Engineers



Figure 35: Cargo Capacity Comparison by Transport Modes



Source: Iowa Department of Transportation

Considering the escalating cost of fuel and the growing dependence on imported oil in the U.S., investment in the U.S. inland and Gulf Intracoastal Waterway (GIWW) system and public waterway infrastructure along these systems is needed to provide and support additional freight movement in the DRA region.

11.2.2 Safety

Barge transportation is a safe way to transport cargo and based on safety records, it has the fewest number of incidents, fatalities, and injuries of all surface modes and the fewest number of hazardous material spills.

11.2.3 Environmental Protection

There are clear environmental benefits to using waterway transport in lieu of roadway and rail transport. Studies have shown that waterway transportation produces fewer emissions than competing modes and that the impacts on the surrounding land and noise-related pollution are much lower than roadway and rail transport. Waterway transportation can also assist in mitigating the need for increasing highway and rail capacity by constructing new facilities. This avoids the environmental impacts that could result from the construction of new or expanded facilities.



11.2.4 Benefits to the Nation’s Highways

Truck freight traffic in the DRA region is forecasted to nearly double by 2020. If some of the truck freight cargo can be moved from truck to waterway transportation, major highways, especially in urban areas in the DRA region, will benefit because truck traffic disproportionately produces wear and tear on the roadways and bridges, reducing life expectancy. Also, the removal of trucks will improve highway capacity.

11.3 Waterway, Lock and Port Needs

11.3.1 Waterway Needs

Addressing the needs on the inland and GIWW system in the DRA region is crucial. The responsibility for maintaining a navigable channel on these waterways rests with the USACE. Waterway needs are grouped into dredging and channel deepening. **Table 18** provides a summary of waterway channel needs in the DRA region, identified through discussions with state waterway staff, port operators, regional meetings and reviewing state waterway system plans. The public port needs total \$3.6 billion and lock needs total \$477.6 million.

Table 18: DRA Inland Waterway Needs

Waterway	State	Needs
Alabama River	AL	Dredge channel to maintain authorized depth
Tennessee-Tombigbee Waterway	AL	Dredge channel to maintain authorized depth
Black Warrior River	AL	Dredge channel to maintain authorized depth
Apalachicola-Chattahoochee-Flint River System	AL	Dredge channel to maintain authorized depth
McClellan-Kerr Arkansas River	AR	Increase channel depth from 9 to 12-feet
White River	AR	Dredge channel to maintain authorized depth
Kaskaskia River	IL	Dredge channel to maintain authorized depth
Bayou Lafourche	LA	Channel deepening to 50 feet from Port Fourchon to Gulf
Freshwater Bayou/Gulf Intracoastal Waterway (GIWW)/Commercial Canal	LA	Widen channel and improve navigation depth to 16-feet
Red River (includes route with DRA parishes)	LA	Improve channel depth to 12 feet from Old River Lock to Shreveport
GIWW includes route with DRA parishes)	LA	Dredging along the Gulf Intracoastal Waterway (GIWW) from the Louisiana/Alabama border to Carrabelle, Florida
Baptiste Collette	LA	Channel deepening to accommodate oil and gas industry traffic
Ouachita River	LA	Dredge channel to maintain authorized depth
Tennessee River	KY	Dredge channel to maintain authorized depth
Yazoo River	MS	Dredge channel to maintain authorized depth
Vicksburg Harbor	MS	Dredge channel to maintain authorized depth
Tennessee River	TN	Dredge channel to maintain authorized depth



The USACE has a difficult task in ensuring that all navigable waterway channels provide sufficient depth to allow barges to transport cargo to and from markets in the DRA region. The USACE conducts regional public meetings that present an opportunity for local port and waterway personnel to provide comments and needs to the Corps. These meetings are very successful in identifying immediate waterway needs that are crucial to maintaining an efficient waterway system in the DRA region. If dredging and channel deepening is not maintained, the resultant impedance to navigation increases transportation costs, timely shipping of perishable goods and affects the local and regional economy. The DRA region's ability to attract industries that rely on waterborne transportation is affected, as are existing industries and port terminal operations.

11.3.2 Port Needs

Each of the 48 public port authorities serving the DRA region was contacted to complete a survey to document the needs at individual ports. The detailed needs are provided on the CD included in this report. The following provides need information for each state in the DRA region that was identified by reviewing State Long Transportation Plans and Long Range Transportation Plans completed by MPOs.

11.3.2.1 Alabama

The Alabama State Port Authority is responsible for five ports in the DRA region. The port authority has identified the maintenance of waterways to authorized navigation depths as the most pressing need. The Alabama State Port Authority and five waterway associations representing the commercially navigable river systems in Alabama have formed the Coalition of Alabama Waterway Associations (the "Coalition") to promote port and waterways projects and programs to benefit the state's river basins, industries, carriers and other users of the ports and waterways. The Coalition is working on a strategic plan in support of Container on Barge (COB) service. Container on Barge services are reviewed as a separate topic in this report

11.3.2.2 Arkansas

The Arkansas State Public Riverport Study and Needs Assessment, provides an overview of river port needs in Arkansas. The ports in the DRA region that were evaluated in the Study include the Ports of Camden, Crossett, Helena Harbor, Little Rock, Osceola, Pine Bluff, West Memphis and Yellow Bend. Three of the ports identified the need for improved rail access. Other identified needs included maintenance dredging at the port, equipment (including conveyors and cranes), docks, warehouse and open storage, and site improvements in support of port operations. The Central Arkansas Transportation Study (CATS), which covers the Little Rock-North Little Rock Metropolitan area, identifies \$2.3 million to improve barge capacity and truck access at the Little Rock Port. *The Arkansas Statewide*



Long Range Intermodal Transportation Plan, 2007 Update, also noted the following port issues in the DRA region:

- Improve landside access (roadway and rail);
- Improve dredging ;
- Improve intermodal capabilities;
- Upgrade infrastructure, facilities and equipment;
- Provide additional security at ports;
- Identify new funding resources; and
- Develop marketing plans.

11.3.2.3 Illinois

Studies show that Illinois waterborne freight movement trends are mixed, with some ports experiencing growth while others report reduced tonnage over recent years. Even though the Illinois Waterway System is an underutilized freight transportation asset, the state is geographically positioned to use waterborne freight transportation more effectively.¹⁴⁵

The two operating ports in the DRA region are the Shawneetown Regional Port District and the Kaskaskia Regional Port District. Needs noted at these ports include upgrades to roadway and rail access, channel and lockage improvements, equipment upgrades and enclosed storage. Also, the *Illinois Transportation Plan, Special Report: Illinois Transportation System Update*, noted the following waterway system issues:

- Encourage the use of “short sea shipping” to offset loads that currently are carried by truck and rail;
- Provide better integration of rail and waterborne transportation resources through improvements to rail-water intermodal facilities; and
- Evaluate the ports within the state to determine if steps can be taken to improve utilization for warehousing, manufacturing, and other commercial transportation-related uses.

11.3.2.4 Kentucky

The Kentucky Transportation Cabinet completed the *Kentucky Riverport Improvement Project* in January 2008. The four ports in the DRA region are the Eddyville Riverport and Industrial Development Authority, the Henderson County Riverport Authority, the Hickman-Fulton County Riverport Authority and the Paducah-McCracken County Riverport. Needs

¹⁴⁵ *Illinois State Transportation Plan*, Illinois Department of Transportation, June 2007.



noted at these ports include upgrades to rail access, port expansions, as well as equipment and storage upgrades and total \$48 million.

Two additional ports are proposed: the Marshall County-Calvert City Riverport Authority and the Wickliffe-Ballard County Riverport Authority. Port needs include start-up funding involving planning and engineering and site development.

11.3.2.5 Louisiana

The Louisiana Department of Transportation and Development completed the *Louisiana Marine Transportation System Plan*, and this Plan identified the following needs:

LOUISIANA DEEP DRAFT PORT NEEDS

Louisiana's public deepwater ports service the Mississippi River from head of pass to Baton Rouge, as well as the offshore oil industry and various inland waterways. The three primary deep draft ports are the Ports of New Orleans, South Louisiana and Greater Baton Rouge.

1. The Port of New Orleans recently released *Charting the Future of the Port of New Orleans, 2020 Master Plan*. The plan focus is the continued upgrade to the capacity and modal capability of the Napoleon Container Terminal Complex. The Napoleon Terminal is the port's principal container handling facility. Planned terminal expansion will increase the handling capacity of the terminal from 360,000, 20-foot equivalent units (TEUs) to 1,000,000, 20-foot equivalent units (TEUs).

Another key improvement proposed for the terminal is the rail intermodal facility. The rail facility will be capable of handling several intermodal unit trains per day. Connections with railroads are currently undertaken by truck dray to one of the six main line railroads that serve the port. The port also recognizes as a need an improved roadway connection with the Pontchartrain Expressway, the control of access roadway which links the port to I-10.

These improvements to the Napoleon Terminal represent nearly \$500 million of investment, approximately half of the port's \$1 billion long-range plan requirements.

2. The Port of South Louisiana needs include more than \$40 million of pier/dock related improvements at the Globalplex complex, and emergency repairs to the access bridge which connects the existing dock to landside infrastructure.
3. Greater Baton Rouge has identified more than \$100 million of investment needs, including annual maintenance dredging, maintenance of various port facilities, and upgrades to equipment, docks and warehouses, as well as improvements to roadway and rail access.



LOUISIANA PORT NEEDS IN SUPPORT OF THE OFFSHORE PETROLEUM INDUSTRY

Port Fourchon is the principal landside support agent for oil and gas extraction in the Gulf of Mexico. Port needs include continued financial support for the \$1.4 billion upgrade of LA 1 to a continuous roadway on structure from Golden Meadow to Port Fourchon. The port also hopes to upgrade its Bayou Lafourche access channel to 50-foot navigation depth to accommodate the increasing demands of the offshore industry. The Port of New Iberia's primary need is upgrading the Acadiana Gulf of Mexico Access Channel to 16-foot navigation depth, which requires \$150 million in investment.

LOUISIANA INLAND PORT NEEDS

Within the DRA region, Louisiana's 17 inland ports service the Mississippi River upriver from Baton Rouge, and various inland waterways, including the Red River. Individual port needs vary, but collectively these ports have infrastructure needs, including roadway and rail access, dredging of waterways to/at the ports, dock facilities, equipment maintenance and upgrades, and various types of expansion programs to meet future requirements.

11.3.2.6 Mississippi

Five of the six ports in the DRA region are located on the Mississippi River and include the Claiborne County Port Commission, the Greenville Port Commission, the Natchez-Adams County Port Commission, the Rosedale-Bolivar County Port Commission, and the Warren County Port Commission. The Yazoo River County Port Commission is located Yazoo River.

A complete review of the state's 16 ports was conducted through the *Comprehensive Assessment of the Ports of Mississippi* in January 2000. This report provided a comprehensive assessment of the ports including facilities, market, expenditures required and future needs and includes the six ports located in the DRA region. The primary goals of the comprehensive assessment were to assess the ports' contribution to the state economy and to identify the ports' internal infrastructure needs. Therefore, the report did not address fully an analysis of the importance of the development of water, rail and road accessibility to the state's ports.

The state of Mississippi and MDOT, have made significant advances in recent years by supporting the ports through improved road access. Ports are appreciative of the National Highway System Intermodal Connector Improvement Program (ICIP) and the Multimodal Transportation Capital Improvement Program. Most ports have benefited from the available funding and access to the ports has improved significantly. However, planning for future



growth will require continuous improvements and enhancements, and in some cases completely new access roads, to handle the projected traffic volumes.¹⁴⁶

Various concerns regarding rail access and/or service were identified by ports in the DRA region. These included the rate structure, lack of service, or limited rail service available due to the condition of the rail infrastructure itself. Maintaining the water depth of access channels and berth areas were also identified as the primary concern for ports in the DRA region. The cost of dredging and disposal, and environmental issues related to the disposal of dredged material are preventing many of the ports from adequately maintaining the required water depths. Many of the ports in Mississippi would benefit from Long-Term Dredge Management Plans (LTDMP), and funding assistance for maintenance dredging.¹⁴⁷

Waterfront property at the Port of Vicksburg is fully utilized. As a result, the port has been forced to turn away potential new business. The port is currently evaluating the potential to develop an additional 80 acres located on the north end of the industrial park; however, if the cost of development proves too burdensome, the port will not be able to expand without funding assistance.¹⁴⁸ During the April 2008 DRA Multimodal Regional Meeting in Mississippi, a short-line rail track between the Pot of Vicksburg and Yazoo City Port was discussed as a potential solution.

Transportation (potential) needs in northwest Mississippi may include the following Mississippi River port improvements to support future development:

- Portage Facilities;
- Heavy Cranes;
- Over Levee Conveyor;
- Rail Load Out; and
- Bulk Storage.

11.3.2.7 Missouri

The three-operating ports in the DRA region are the New Madrid County Port Authority, the Pemiscot County Port Authority, and the Southeast Missouri Regional Port Authority. The New Bourbon Regional Port Authority is proposing to construct facilities and the Mississippi County Port Authority operates a ferry.

Missouri port needs include improve rail access, maintenance dredging and other channel modifications, new terminals (including bulk products), upgrades to warehouses and general cargo storage, and land for port expansion.

Missouri DOT provided the DRA with the following port needs:

¹⁴⁶ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴⁷ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴⁸ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.



SOUTHEAST MISSOURI REGIONAL PORT AUTHORITY

Current port infrastructure needs include rail track maintenance due to growing rail traffic, paving of dock surfaces and various streets for improved truck access, and dike construction and site fill for industrial development. The cost estimate for these projects totals \$1.4 million. MoDOT proposes a 50/50 percent cost share for these projects with DRA funds. SEMO Port Authority also completed the needs survey and identify an additional \$3.2 million in needs to maintain and expand the port.

MISSISSIPPI COUNTY PORT AUTHORITY

The port authority operates a ferry service from Dorena, Missouri to Hickman, Kentucky. The service transports an average of 18,000 vehicles and 39,000 passengers per year. It received \$80,000 in state operating financial assistance from MoDOT in state FY 2007 and that amount was also matched by the Commonwealth of Kentucky. MoDOT applied for Federal Ferryboat Discretionary funds in federal FY 2008 to purchase a new larger barge for this service in order to increase capacity, but the application was not funded. There is growing semi truck traffic on this service, due to high fuel costs, and the current barge has limited carrying capability, which frequently causes cars to be left on the bank for another trip. This equipment upgrade is estimated to cost \$1.25 million.

NEW MADRID COUNTY PORT AUTHORITY

While a current port tenant enjoys rail service, rail access still needs to be extended to the north side of the port and to the dock for economic and industrial development. The estimated cost totals \$950,000 and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

There is also a need for additional storage and warehouse capacity at this port to promote additional industrial development. The estimated cost totals \$550,000 and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

PEMISCOT COUNTY PORT AUTHORITY

Completing a rail connection to the port has been a long-standing need and ongoing project for approximately 10 years. A spur track from Hayti has been constructed within two miles of the port using a combination of local, state, and federal funds, but is waiting for additional funding to complete the project. It is estimated to cost \$2.4 million to complete the rail spur into the port and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

11.3.2.8 Tennessee

The only public port authority supporting existing port facilities within the DRA region of Tennessee is the Memphis and Shelby County Port Commission, operating as the International Port of Memphis.



The port needs include improvements to roadway and rail access serving the port; maintenance dredging as well as widening and deepening of the access channel to McKellar Lake Harbor; internal roadway and storm drainage improvements; various facility improvements at Pidgeon Industrial Park including an intermodal terminal and rail upgrades; and improvements to Homeland Security capabilities.

Additionally the *Memphis 2030 Long Range Transportation Plan*, identified the need for improved access from I-55 to Riverport Road and improved access to Presidents Island.

The Tennessee Long Range Transportation Plan, Modal Needs, highlighted of the following actions to improve navigation on waterways in the DRA region:

- Deepening navigation channels to a minimum 12-foot navigation depth;
- Completion of construction of the Kentucky Lock;
- Research navigation clearances at bridges and upgrade those not meeting standards;
- Full funding of USACE operations and Maintenance budget;
- Addition of mooring cells through the navigable waterways in support of temporary mooring and fleeting; and
- Support for multimodal ports on the Tennessee River.

The Northwest Tennessee Regional Port Authority has initiated construction of the Port of Cates Landing in northwest Tennessee. The Cates Landing public port will provide loading and unloading capabilities for various raw and finished products onto and off barges. The port will be accessible to barge traffic year round with slack water access to the barge berthing area. The needs to complete the Port of Cates Landing total \$37.4 million.

11.3.3 Locks Needs

As with other critical components of the DRA region transportation infrastructure, the locks and dams that support navigation through the region inland waterways are aging. As noted, there are 40 locks along 19 waterways in the DRA region. The oldest lock is 95-years old, while the youngest is 16-years old.¹⁴⁹ The average lock age in the DRA region is 44-years old and due to this there are many lock needs in the DRA region.

Some of the locks in the DRA region, such as the Inner Harbor Navigation Canal Lock (INHC) at the Mississippi River in New Orleans, are reaching functional obsolescence. The Inner Harbor lock, which opened in 1923, is critical to traffic utilizing the GIWW. A replacement lock is needed, but plans have been stopped due to environmental concerns of constructing a new lock.

¹⁴⁹ U.S. Army Corps of Engineers



The consequence to the aging lock infrastructure is increasing incidents of maintenance requiring lock downtime, and a higher risk of major component failure, which affects navigation through the inland waterways network. Downtime has increased by over 300 percent between 1992 and 2005.¹⁵⁰

Although the locks enable navigation through the inland waterways, there are inherent constraints associated with lock operations with limitations imposed on tow length and width. Also, since there are numerous barge tows that must use locks, a schedule to enter to lock is needed and the actual wait times vary with individual locks. These constraints are contributory to tow transit delay, which occurs throughout the inland waterway network as tows transit through the locks.

The U.S. continues to reap the benefits of investments made by previous generations to the inland waterway system in the DRA region. However without adequate reinvestment to maintain and modernize the waterways infrastructure, waterways containing aged locks may threaten waterborne transportation in the future.

The *National Surface Transportation Policy and Revenue Study Commission* authorized in Section 1909 of SAFETEA-LU, completed a final report in January 2008. One of the policy papers noted the following:¹⁵¹

Inland waterways locks and dam structures have become antiquated and efforts to replace them with modern design and capacity enhancements have been stagnant. Congestion associated with the approaches to the obsolete lock structure means tows of barges are queued for long distances along river banks for hours or days, waiting for access to the locks. During this waiting period barges are not providing any transportation service. Labor, capital and other operating costs, however, continue, almost undiminished.

The problem arises from both the inadequate dimensions of the older lock structures and from the physical deterioration. Older locks were designed to accommodate 600 foot barge tows ("trains" of individual barges), while modern barge tows are 1,200 feet long. Delays are caused when these longer tows transit the shorter locks, necessitating the time consuming exercise of breaking a tow and reassembly after passing the lock in two or more segments.

The USACE provided the lock needs, which total \$477 million and the following provides a summary of the needs and costs associated with improving the improving waterway infrastructure in the DRA region:

- Emergency Generator at the Algiers Lock - \$1 million;

¹⁵⁰ Private Sector Role in Waterway Infrastructure Development. Smart Rivers 2006 Conference.

¹⁵¹ Paper 2E-01, Conditions and Performance of Other Components of the Surface Transportation System. National Surface Transportation Policy and Revenue Study Commission. January 2008.



- Spare Gates at the Algiers Lock - \$3.2 million;
- Inner Harbor Navigation Canal Lock Guidewall Replacement - \$6 million;
- Continued Planning for the Inner Harbor Navigation Canal Lock replacement - \$6 million;
- Programmable Logic Controllers at the Algiers, Harvey, Port Allen and Inner Harbor Navigation Canal locks - \$ 1.7 million; and
- Repair and Replacement of Mooring Buoys at locks - \$500 thousand.

The *Louisiana Marine Transportation System Plan* considers the Inner Harbor Navigation Canal Lock replacement and the Bayou Sorrel Lock replacements to be critical projects. Needs for all locks are provided on the CD included in this report.

11.3.4 Container on Barge (COB) Services

The widening of the Panama Canal to accommodate larger container vessels is expected to expand opportunities container ports in the Gulf of Mexico. Gulf ports, including New Orleans, Mobile (outside DRA region), and Gulfport (outside DRA region) are expanding container handling facilities in anticipation of this market opportunity.

As a result of these expanding container services, one of the emerging issues within the inland port community is the consideration of opportunities for development of COB services.

Both the Port of Greater Baton Rouge and the International Port of Memphis currently support COB services. Additionally, a number of studies have focused on the opportunities for COB services. *Where the Rubber Meets the Roads, U.S. Maritime Administration, U.S. Department of Transportation September 2002* was published in conjunction with the Gulf/River Intermodal Partnership (GRIP). The Study envisions a proactive government role, both in providing the leadership required to initiate services, and in funding the infrastructure required to support COB service. The following potential impediments to the services were noted:

- Lack of public and shipper recognition of service;
- Vessel technology lacking;
- Expensive pilotage;
- Markets may be inadequate or insufficient;
- Service reliability of transit within the inland waterway due to aging lock and bridge infrastructure; and navigation channels not maintained to authorized depths;
- Lack of connectivity to existing roadway and rail infrastructure;
- Environmental constraints; and
- Perceived investor risks.



The Alabama Freight Mobility Study, Phase I, presents a business perspective on the feasibility of container on barge service. Case studies were developed for services between the Port of Mobile and markets in Montgomery, Alabama; and the Port of Mobile and markets in Tupelo, Mississippi. Cost is always a factor driving shipper decisions. However, the study determined that schedule (frequency of service) and service reliability (on-time delivery) are just as important as cost in determining shipper preference. The Montgomery Case Study focused on the need for dredging of the Alabama River to provide a reliable navigation depth for barge transit.

Phase II of the *Alabama Freight Mobility Study*, which will be completed in 2008 will deliver:

1. Strategic market assessment of the Tennessee-Tombigbee and Tennessee River Corridors from Columbus, Mississippi to Chattanooga, Tennessee;
2. Business perspectives initiative for container-on-barge operations;
3. Analysis of Mobile container terminal operations from an inland waterways perspective; and
4. Analysis of European Waterways.

The Southeast Missouri Port Authority has also investigated the feasibility of initiating COB service to Waco Texas and to New Orleans. Container-on-Barge service was compared with a truck transit. Neither service was cost-effective in February 2008. The analysis undertaken in support of the SEMO case study assumed cargo origins and destinations within the U.S. This assumption required a backhaul of the container (empty or full), which added to the overall cost of the trip. If the container shipment was an import/export movement, the return shipment of the container would not be a factor affecting the cost of the service. Another consideration in the SEMO study was the truck dray. Dray of the container at origin and destination points was considered and the cost of the dray was added to the overall cost of the trip.

Per ton of cargo moved, barge transport is more energy efficient than truck or rail transport and it produces less pollution. From a public policy objective, moving shipping containers from truck and rail transit to barge may be a beneficial strategy. However, market forces drive shipper decisions. To date, the high value, time-sensitive cargos shipped via shipping containers continue to be transported by rail and truck. Are there market conditions at play that would support the growth of COB traffic in the DRA region, possibly?

1. To the extent that the ports of Mobile (which outside the DRA region but impacts inland waterway traffic in the DRA region) and New Orleans capture additional container business associated with the widening of the Panama Canal, there may be additional opportunities for COB on connecting inland waterways.
2. COB service would benefit if agricultural or other bulk commodities shifted partially to utilization of shipping containers.



3. COB service would benefit by attracting hazardous cargos on to this very safe means of transport.
4. COB service would benefit by attracting containers with weights exceeding highway load limits.
5. If a cost-effective marine technology can be developed to reduce barge transit times, COB services would benefit.
6. In comparison to other transportation modes (truck and rail), barge transportation is less impacted by the increasing price of fuel. How increasing fuel costs transform the U.S. economy, and how these cost increases affect how goods are moved is yet to be determined.

Because there are no lock structures on the Lower Mississippi, there are no navigation impediments to the growth of COB service. However, once the inland waterways controlled by locks are entered, the COB service would be subject to all of the congestion constraints and schedule uncertainties confronting bulk shippers, and these uncertainties may affect shipper decisions relating to the utilization of COB service. For COB to become a viable option throughout the entire DRA region, additional funding to upgrade to the navigation locks and to support dredging of navigable waterways must be identified.

RECOMMENDATIONS

The investments in the inland waterway network have far reaching implications to the U.S. economy. In addition to the direct benefits associated with the employment in transportation industries that service customers on the waterway, there are many industry sectors that rely on the efficiencies of water transportation. The overall economy is directly benefited by these efficiencies in the form of reduced cost for goods, and the import/export of commodities within the global economy. Strategic investments in the waterway network need to be evaluated in consideration of the benefits that are derived within the overall economy of the region.

POLICY RECOMMENDATIONS

There is a growing recognition to develop a national comprehensive freight policy that includes waterways to meet the freight transportation challenges in the future. The system of inland waterways and associated ports and terminals currently plays a significant role in moving approximately 15 percent of the country's intercity freight tonnage including primarily petroleum, grain coal and other bulk commodities. With the increased importance of fuel efficiency and environmental constraints, opportunities exist for modal shifts from highways and rail to waterborne transportation.



The following provide some recommendations to improve the inland waterway transportation in the DRA region, as well as support port authorities in making waterborne transportation a viable transportation mode well into the future.¹⁵²

- According to the USACE, the lock and dam infrastructure on the inland waterways network is worsening. Funding mechanisms need to be in place to ensure that monies are available for construction, as well as operation and maintenance of locks to meet anticipated demand levels.
- Maintain adequate channel depths along all waterways in the DRA region.
- Improve the efficiency of waterway operations by alleviating physical constraints.
- Streamline federal authorization and funding processes and restructure USACE procedures to minimize time constraints (currently under legislative consideration). The present USACE budget process focuses narrowly on individual projects that are proposed by individual cost-shared sponsors. Funding of projects to completion often is uncertain for large, multi-year projects, and more projects have been authorized than have been funded.
- Increase value-added manufacturing industry along the waterways e.g. iron ore and scrap metal, chemical manufacturing, goods manufacturing, ethanol industry, grain containerization, etc.
- Increase private sector investment through marketing, tax incentives, and state grants.
- Expand COB Operations – Containerized shipping is not only the fastest growing technique for transporting all types of cargo, but it is also considered one of the most efficient and cost-effective methods. International trade generally drives the surge in containerized cargo. With the increasing role played by the foreign component of U.S. waterborne commerce, it is imperative that the DRA region marine transportation system take advantage of this trend.
- Encourage the use of “short sea shipping” to use the inland waterways to offset loads that currently are carried by truck or rail.
- Provide better integration of rail and waterborne transportation resources through improvements to rail-water intermodal facilities.

PROJECT RECOMMENDATIONS

Inland Waterways – Although not identifiable as a specific project, the greatest need is maintenance dredging of DRA inland waterways to authorized channel depths. These

¹⁵² Some of the recommendations are from the *Louisiana Marine Transportation System Plan*. Louisiana Department of Transportation and Development, September 2007 and the *Illinois State Transportation Plan*, Illinois Department of Transportation, June 2007.



recommendations need to be evaluated to determine the costs and benefits associated with each proposed action.

Ports – Needs for individual ports have been identified and these are provided in on the CD included in this report.

The ports of Baton Rouge, Memphis, New Orleans and South Louisiana play a special role in that these ports enable business to occur throughout the inland waterways. Individual projects that support the capabilities of these ports should be supported. Particular attention should be focused on projects that improve roadway or rail connectivity. Also, Port Fourchon plays a critical role in support of Gulf of Mexico oil and gas extraction. The port’s expansion to accommodate future industry needs; its continuing efforts to upgrade landside access; and its proposals to upgrade access channel depths should be supported.

Locks – Three locks have been identified as primary concerns. The construction of the Kentucky Lock needs to be fully funded. The environmental documents for the Inner Harbor Canal Lock need to be carried forward to conclusion, and a committed construction funding stream needs to be identified. The Bayou Sorrell Lock needs to be fully funded for construction. Additionally, individual maintenance items have been identified by USACE and by stakeholder organizations. These need to be carried forward.

INTERMODAL RECOMMENDATIONS

The following issues and recommendations pertaining to intermodal connectivity at ports have been identified:

- Rail competitiveness – This issue is very important to the petrochemical industry and all ports. As rail competition increases, shipper rates decrease. Projects which enable rail competitiveness should be supported.
- Upgrades to short-line railroads serving ports – Certain individual ports have identified rail needs and these should be supported based on demonstrated financial feasibility.
- Upgrades to truck and rail intermodal connections. Individual ports are proposing to upgrade truck to rail intermodal capabilities. If COB service expands, intermodal capabilities will be a requirement of operations at COB service ports. Such improvements at ports should be supported based on demonstrated financial feasibility.
- Upgrades to roadways serving ports. Certain individual ports are proposing to upgrade roadway access. Such projects should be supported based on demonstrated financial feasibility.
- Support for roadway congestion mitigation. These projects would offer substantial travel time reductions within major metropolitan areas (Memphis, New Orleans and Baton Rouge). Such projects should be supported based on demonstrated environmental feasibility and need.



- Support for rail congestion mitigation. Both Memphis and New Orleans are major rail gateways. New Orleans has developed a plan for improving rail fluidity through the gateway. The rail gateway improvements at New Orleans should be supported
- Opportunities for providing additional rail capacity across the Mississippi River should be supported.

COORDINATION RECOMMENDATIONS

- Develop a DRA Waterways Working Group, which would have representatives from federal, state and local maritime and port agencies in the DRA region and would meet twice a year.

Port authorities should continue to coordinate with the following federal and state agencies to ensure waterway needs and concerns are communicated:

- U.S. Army Corps of Engineers Districts to communicate dredging priorities and to other waterways issues.
- State agencies responsible for waterways planning to establish individual port needs and to seek state funding in support of these needs. This may include state departments of transportation or other responsible agencies.
- State DOTs and local MPOs regarding planning of access roads to ports.
- Class I and local short-line railroad companies (Class III) to communicate rail access needs.
- State economic development agencies to partner on economic development opportunities.

FUNDING RECOMMENDATIONS

Waterways – The most evident need as expressed by inland ports, states, and stakeholder organizations, is the full funding of USACE operations and maintenance. Additional funding needs to be dedicated for upgrades to critical locks, and a new funding stream needs to be developed for strategic planning of improvements within the inland waterways, including an overall upgrade of locks and expansion of waterway navigation capabilities.

Landside Access – There are programmatic instruments in place within FHWA funding streams that enable roadway improvements in support of ports. Funding for these programs need to be expanded and other agencies should be authorized to fund projects that upgrade roadway access to ports. The DRA and the Economic Development Administration are candidate agencies.

Regarding rail access, there needs to be a funding stream established to support upgrades to short-line railroads that extends rail services to ports. Also, certain rail gateway improvement programs have been funded via federal earmarks. Improving rail connectivity through these centers of rail congestion is critical to the transportation needs of the country. Within the DRA,



New Orleans and Memphis are candidate gateways. There needs to be a programmatic funding stream dedicated to improving rail fluidity through these gateways.

Port Funding – Public ports are public - private partnerships that focus public investment with private business to grow local, regional and national economies.

Total port needs identified within the context of this report total \$3.6 billion.¹⁵³ With respect to investments in individual ports, ports can have a significant impact on local economies, including direct employ, secondary multipliers associated with the employment, taxes generated within the economy, and business grown or retained, that depend on the efficiencies of water transportation.

Within the context of providing new federal funding for port improvements, there needs to be a methodology established to assess and document the benefits of the proposed investments. This could take the form of a DRA funded pilot program that would evaluate and prioritize multiple port investment requests. This would be followed with a limited funding stream supporting the proposed investments in concert with other state, local and private revenue sources.

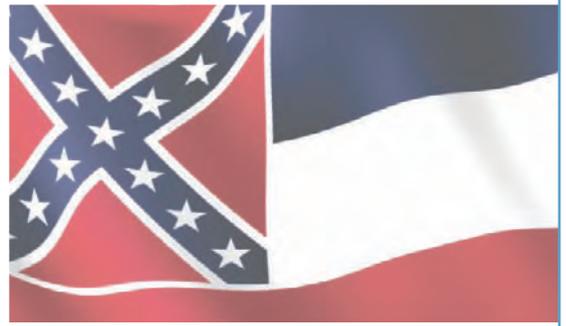
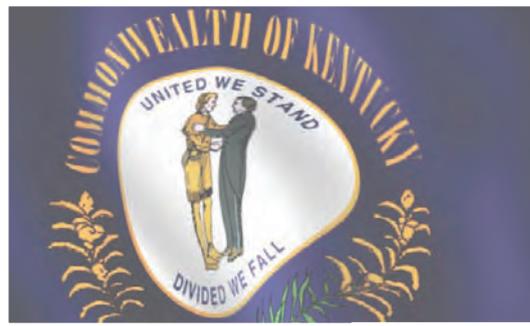
PRIORITY RECOMMENDATIONS

- Develop and fund a Waterways categorical grant program to assist in the development and construction of waterway infrastructure in the DRA region.
- Develop a DRA Waterways Working Group.
- USACE dredging of DRA inland waterways to authorized channel depths.
- Construction of Kentucky Lock, Inner Harbor Navigation Canal Lock and Bayou Sorrell Lock and proper maintenance and upgrade of other locks throughout waterways.
- Improve water-rail intermodal facilities to provide efficient transfer of cargo.
- Funding support for projects at all DRA ports and an added emphasis on the funding needs at national and regional ports, such as the ports of Baton Rouge, Memphis, New Orleans, South Louisiana and Fourchon.
- Establishment of a DRA Pilot Program to prioritize DRA port needs and focus resources on high priority port projects.

¹⁵³ Needs calculated by reviewing state waterway plans and consulting with each port authority in the DRA region.



Acknowledgements





12. ACKNOWLEDGEMENTS

The Delta Regional Authority gratefully acknowledges the contributions of numerous individuals and agencies that have assisted in the development of the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*. Direct coordination with each of the eight states contributed to the success of this important project and as a result of these contributions, this report will surely become known as one of the DRA's major initiatives.

The DRA wishes to thank the following for the support and involvement provided during the development of the *DRA Multimodal Transportation Assets, Needs and Recommendations Report*:

DRA STATE GOVERNORS

Governor Bob Riley, Alabama
Governor Mike Beebe, Arkansas
Governor Rod R. Blagojevich, Illinois
Governor Steve Beshear, Kentucky
Governor Bobby Jindal, Louisiana
Governor Haley Barbour, Mississippi
Governor Matt Blount, Missouri
Governor Phil Bredesen, Tennessee

FEDERAL AGENCIES

U.S. Department of Transportation
Federal Highway Administration
Federal Aviation Administration
Federal Transit Administration
Federal Railroad Administration
The Bureau of Transportation Statistics
U.S. Department of Transportation Maritime Administration
U.S. Army Corps of Engineers

STATE DEPARTMENTS OF TRANSPORTATION

Alabama Department of Transportation
Arkansas Highway and Transportation Department
Illinois Department of Transportation
Kentucky Transportation Cabinet
Louisiana Department of Transportation and Development
Mississippi Department of Transportation
Missouri Department of Transportation
Tennessee Department of Transportation



LOCAL ITS AGENCIES

City of Little Rock, Arkansas
City of Jackson, Mississippi
City Jackson, Tennessee
City of Memphis, Tennessee
City of Ridgeland, Mississippi
City of Southaven, Mississippi
Pearl River Valley Water Supply District, Ridgeland, Mississippi

PASSENGER RAIL AGENCIES

Amtrak
Central Arkansas Transit
Memphis Area Transit Authority
New Orleans Regional Transit Authority

PORT AUTHORITIES

The 48 port authorities in the DRA region

AIRPORTS

The 256 public airports in the DRA region

FREIGHT RAIL COMPANIES

The 45 short-line railroad companies in the DRA region

LOCAL DEVELOPMENT DISTRICTS

National Association of Development Organizations
The 44 LDDs in the DRA region

METROPOLITAN PLANNING ORGANIZATIONS

The MPOs in the DRA region

RURAL PLANNING ORGANIZATIONS

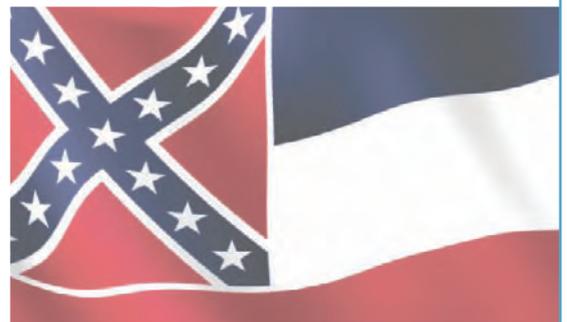
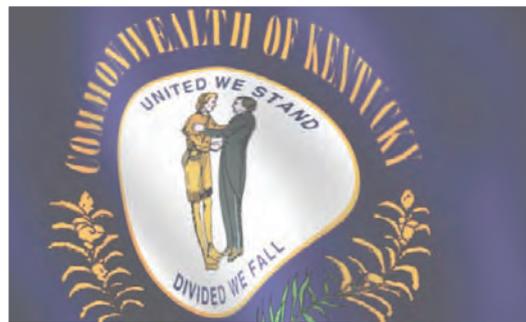
The RPOs in the DRA region

CHAMBERS OF COMMERCE

The Chambers of Commerce in the DRA region



Stakeholder – Reported Needs





APPENDIX A

STAKEHOLDER – REPORTED NEEDS



The following presents the non-prioritized local needs provided by stakeholders at the regional coordination meetings in each of the eight states or through correspondence after the meetings were completed. The local needs represent the opinions of local stakeholders concerning improvements needed to advance the multimodal transportation system.

ALABAMA

- Fund and complete Delta Development Highway System.
- Develop a north-south rail corridor in western Alabama to support increased freight due to the Panama Canal improvements.
- Due to limited public transportation funding, coordinate with local business to assist in funding public transportation services to support job access and retention.
- Develop a pilot program to support regional public transportation across state lines.
- Dredging needs on inland waterways must be address to ensure the navigable channel on the waterway and ports have sufficient depths for waterborne transportation.

ARKANSAS

- Fund and complete Delta Development Highway System.
- Construct a new short-line railroad track from the new port along the Mississippi River to West Memphis with a rail spur to Blytheville Air Force Base (BRAC).
- Provide funding to airports to fund needed maintenance, preservation and expansion projects.
- Fund and construct the Pine Bluff Intermodal Freight Transportation facility. Pine Bluff is an excellent location for an intermodal transportation center because of the proximity to highways, rail, waterways and airports.
 - Proposed Intermodal Site - The City of Pine Bluff has a 500-acre industrial site at the municipal airport (Grider Field) that is would serve as the site for this intermodal facility.
 - Port of Pine Bluff Industrial Park – The port is currently addressing port development issues identified in a recent U.S. Army Corps of Engineers report.
 - Rail – Pine Bluff is located at the intersection of Union Pacific and Burlington Northern Sante Fe railroads. South of the gravity yard is an undeveloped tract of land approximately 2.5 square miles that could be developed as a sister intermodal transportation center for handling freight movements by barge, air, rail and roadway.
- Extend I-530 from Pine Bluff, Arkansas to I-20 in Monroe, Louisiana.
- Construct new short-line railroad track to Yellow Bend Port to provide connectivity to Class I rail.



- Continue to develop and expand Yellow Bend Port to encourage waterborne transportation and to relieve highway congestion; the Port of Yellow Bend has \$36 million in needs.
- When I-530 is constructed between Pine Bluff and Monroe, develop intermodal rail-truck facility in Drew County along the new I-530 and provide connections to the Yellow Bend Port.
- Construct I-69 through Arkansas.
- Widen US 82 to 4-lanes through Arkansas to Greenville, Mississippi.
- Widen US 167 to 4-lanes from the Louisiana state line to I-530 south of Little Rock.
- Widen Highway 1 from Jonesboro to West Helena.
- Complete the White River channel depth navigation project.
- Maintain proper waterway channel depths to provide waterborne transportation access to all Arkansas ports.
- Ouachita County Port – Needs repairs to the wharf and crane and the morring dolphins and the conveyor system need to be replaced.
- Ouachita County Port – extend rail spur to the Brownfield area next to the port, as well as rail infrastructure to CAIDC.
- Conduct a study on bend enhancements on the Ouachita River to allow for four barge tows.
- Widen Highway 229 in Dallas County from Fordyce to a small community church north of town.
- Construct rail tracks on the east side of US 167 on existing rail bed in El Dorado, Union County. The rail spur needs to begin at US 167 (bypass around east side of El Dorado) and terminate in downtown El Dorado where all three rail companies merge at Southwest Avenue. A portion of the rail bed is owned by the Ouachita Railroad and the remainder is owned privately. The purpose of the rail service will be to service a new business park being developed in the area of Highway 167 and Champagnolle Road. This is targeted to be a site for a distribution center and rail is needed to attract prospects.

ILLINOIS

- Fund and complete Delta Development Highway System.
- Provide east-west railroad connection in Williamson County connecting both north-south Class I railroads.
- IL 146 from IL 3 to E. Cape. When Missouri constructed the new bridge at Cape Girardeau, a 4-lane expressway from the bridge to I-55 was constructed. The Illinois approach to the bridge is a 2-lane rural cross section from IL 3 to East Cape Girardeau, Illinois. Illinois would like to construct a 4-lane facility from the bridge to Illinois 3 to match Missouri's cross section. Plans are complete and right-of-way has been purchased



for this improvement. Illinois has received DRA funding for part of the grading of this expressway. This would provide the transportation infrastructure to attract business and spur economic development.

- Phase I Engineering Study for a proposed I-66 segment between Paducah, Kentucky and Cape Girardeau, Missouri. Interstate 66 is a proposed east-west interstate across the United States from Washington D.C. to the San Diego-Los Angeles area. The corridor goes through the Delta Region near Cairo, Illinois in the Kentucky, Illinois and Missouri tri-state area. Illinois is proposing an alignment between Paducah, Kentucky and Cape Girardeau Missouri using the existing major river bridges near these two cities. An engineering study is needed to determine if the alignment is feasible and get a construction cost estimate. Funding from the DRA would show a regional interest and help in securing additional funds in the next transportation bill.
- Upgrade IL 13/127 from a rural 2-lane cross section to a 4-lane expressway between Murphysboro and Interstate 64. Illinois wants to construct a 4-lane expressway through the Delta Region. Illinois 13 and US 45 are 4-lane expressway facilities between Murphysboro and Eldorado. Illinois would like to upgrade IL 13/127 from Murphysboro to Interstate 64. A phase 1 engineering study on IL13/127 between Murphysboro and Pinckneyville is almost complete with design approval expected soon. A corridor protection hearing was held and the corridor protection plan was approved but has not been recorded yet. The project will be constructed in segments and funding for the first segment is needed. This would provide the transportation infrastructure to attract business and spur economic development.
- Upgrade US 45 from IL 142 to IL 141 north of Eldorado from a rural 2-lane cross section to a 4-lane expressway. US 45 has recently been upgraded to a 4-lane expressway between Harrisburg and Eldorado. Illinois wants to construct a 4-lane expressway through the Delta Region. Illinois 13 and US 45 are 4-lane expressway facilities between Murphysboro and Eldorado and there is a long range plan to construct an expressway on the east end near Eldorado to either I-64 or Indiana Route 62 near Evansville. Phase 1 engineering is funded and will begin soon. Construction funds are needed to construct the entire route or a usable segment of this highway in the 6 to 10-year timeframe. This would provide the transportation infrastructure to attract business and spur economic development.
- Phase 2 engineering plans for the proposed Interstate 66 between Paducah, Kentucky and Cape Girardeau, Missouri. Interstate 66 is a proposed east-west interstate across the US from Washington D.C. to the San Diego-Los Angeles area. The corridor goes through the Delta Region near Cairo, Illinois in the Kentucky, Illinois and Missouri tri-state area. Illinois is proposing an alignment between Paducah, Kentucky and Cape Girardeau, Missouri using the existing major river bridges near these two cities. Once the Phase 1 engineering study is complete, final construction plans need to be prepared. Funding from the DRA would show a regional interest and help in securing additional funds in the next transportation bill.



- Widen IL 13 to 6-lanes from Marion to Caterville.
- Conduct a feasibility study to examine I-66 alternatives through southern Illinois.
- There is a 7,000 acre entertainment development complex proposed in Perry County. If development is approved, conduct a feasibility study to examine the potential for light rail or a monorail service between the entertainment complex and Mid-America Airport and Carbondale and construct roadway bypass around Pickneyville.
- Federal Express has a new 45,000 square foot distribution center in Frankfort, Illinois that has a railroad connection, but there is a need to construct a rail distribution facility to load and unload products to and from the railroad.
- Develop and construct Cairo Intermodal Facility.
- Need good and reliable multimodal transportation system (highway and rail) in Saline County.
- Improve and expand public transportation services in Williamson County to major employment centers.
- Massac County two at-grade rail improvements are needed, one for a Union Pacific crossing the second for a Burlington Northern Sante Fe crossing. Both at-grade crossings are close to industrial facility entrances and access is blocked when trains are present for 30 minutes. Grade separation at both locations is needed to improve operations and safety.
- Airfield Preservation Projects:
 - Sparta Community Airport;
 - Carmi Municipal Airport;
 - Southern Illinois Airport;
 - Williamson County Regional Airport; and
 - Harrisburg – Raleigh Airport.
- Nav aids: Automated Weather Systems:
 - Sparta Community Airport; and
 - Pinckneyville - DuQuoin Airport.
- Airfield Expansion Projects:
 - Sparta Community Airport;
 - Pinckneyville - DuQuoin Airport;
 - Benton Municipal Airport;
 - Carmi Municipal Airport;
 - Southern Illinois Airport;
 - Williamson County Regional Airport;
 - Harrisburg - Raleigh Airport;
 - Cairo Regional Airport; and
 - Metropolis Municipal.



- Public transit is under funded.

KENTUCKY

- Fund and complete Delta Development Highway System.
- Construct an Interstate spur from I-24, east of Paducah to the Purchase Regional Industrial Park located in the north part of Graves County. This spur could be built with bonds backed with toll revenues and open the industrial park to interstate access.
- Create a deep river port at Wickliffe to promote economic development and enhance river, rail and truck transportation opportunities in western Kentucky.
- Conduct a feasibility study to examine I-66 alternatives through western Kentucky and a new Mississippi River bridge to Missouri.
- Provide assistance to local governments to maintain and preserve local roadways.
- Upgrade existing Kentucky Parkways to interstate standards to complete I-69 through Kentucky.
- Construct new US 68/80 bridges over Lake Barkley and Kentucky Lake. Additional construction funds are needed for FY 2011 for the Barkley Bridge and FY 2012 for the Kentucky Lake Bridge. Both bridges are estimates to cost a total of \$300 million, which is approximately \$120 million for Barkley and \$180 million for Kentucky Lake. Any additional or matching construction funds will help these two key bridge projects compete with other "Mega" bridge projects in the State. Currently, there is only one route over the twin rivers/twin lakes of the Tennessee and Cumberland Rivers that are on the national truck network, and that is the twin I-24 bridges. These two rivers/lakes cut the western third of the state in half and create a choke point for truck traffic in western Kentucky. The proposed new US 68/80 bridges will provide a second truck route over the lakes/river and greatly help the flow of truck traffic in western Kentucky.
- Relocate US 641 from the Western Kentucky Parkway to Marion, Kentucky. This is a major regional highway corridor that is needed to provide a new truck route into Crittenden County, which currently does not have any highway route that allows the 102 inch wide trucks. The new US 641 route is planned as a 4-lane highway that will also access the new mega-industrial site in western Kentucky. This industrial site is the Pennyrile WestPark, an 805 acre site just north of the Western Kentucky Parkway northeast of Eddyville, Kentucky. The new US 641 route would provide a new 4-lane access to the site. Additional construction funds are needed in FY 2010 for this project.

LOUISIANA

- Fund and complete Delta Development Highway System.
- Increase funding for all port projects in state.
- New bridge over Ouachita River, Feasibility Study (underway).
- Monroe Airport Terminal Replacement.



- Widen US165 to 4-lanes – Continue to expedite construction on 4-laning between Monroe and Alexandria.
- Widen US 425 to 4-lanes - Expedite 4-laning of U.S. 425, from Bastrop, north to the Arkansas line. This will connect with 4-laning by Arkansas to the Louisiana state line.
- Widen US 425 to 4-lanes to the proposed I-69 in Arkansas.
- Roadway improvements to Franklin Farms mega site and potential new roadway connector to US 425 to provide access to the proposed I-69.
- High speed internet for healthcare, education and economic development
- Widen US 65 to I-40 in Arkansas.
- Expand public ports in Louisiana.
- Alleviate poverty in the Delta.
- Need evacuation routes west of the Mississippi River.
- Construct intermodal facility at I-20 and US 65 in Tallulah.
- Construct two roadways from Vidalia Port to US 84.
- Construct levee bike trail from Greenville to Atchafalaya to encourage tourism.
- Provide roadway access from US 167 to Coughlin Industrial Park north of Alexandria.
- Widen US 84 to 4-lanes across Louisiana.
- Widen LA 8 to 4-lanes from US 167 to US 84.
- Widen LS 28 to 4-lanes from US 165 through Rapides Parish.
- Construct intermodal truck-rail container facility northwest of Alexandria along I-49 in Rapides Parish.
- Improve rail infrastructure at Avoyelles Port.
- Maintain 18-foot draft at all times to allow ocean going barges access to and from Avoyelles Port.
- Improve Avoyelles Port rail siting side access.
- Construct inner and outer loops around Alexandria.
- Improve US 167 access to Coughlin Industrial Park.
- Widen LA 10 (Zachery Taylor Parkway) to 4-lanes from Mississippi to LA 1.
- U.S. 80 at Kansas Lane – Turn lanes, Project #002-01-0046, 1.70 miles, \$500,000.
- Kansas Lane Connector Project #742-37-0016. The Kansas Lane Connector Project/Corridor Preservation/Planning/Construction.
- Monroe Regional Airport - Analysis by aviation experts projects the need for a new terminal of approximately twice the size of the current facility. The new terminal would accommodate the growth in passengers, provide the latest security features, improve energy efficiency, and be easily expandable for further growth beyond the 20-year



horizon. Affiliated site work would include roadway, utilities, and parking improvements. A new Passenger Facility Charge (PFC) has been implemented for additional funding for the new terminal. Monroe intends to issue two bonds based on the new PFC for a total of \$5 million. The cost of the development for the building and site is estimated to be up to \$20 million.

- Greater Ouachita Port Intermodal Facility - The Ouachita Region is constrained from growing a diverse economic base, in part because it is not connected to the global economy. Since there has been no means of efficiently handling containers, nor a pool of available containers in Ouachita Parish, the Ouachita River has been rendered useless for commercial transport of anything other than bulk materials. The financially disadvantaged region's economy will be significantly enhanced by the ability of existing businesses to receive, handle and transport containers through multiple transportation modes, and will also add a substantial incentive for additional businesses involved in site selection to select sites within the Ouachita Region – such as the newly acquired “Holly Ridge Megasite”. This intermodal facility, as conceived, planned, and ultimately constructed, will support the development of a large base of diversified industries and employers. This project includes the continuation of design, construction and implementation of multiple facets of a new intermodal container handling facility on the Ouachita River. This facility will ultimately include a general purpose container dock, rail facilities, and the necessary equipment and ancillary structures to support these components; ultimately providing for the operation of a fully integrated container handling facility connecting the Ouachita Region to international trade and commerce. The initial estimated cost of the project was \$22.94 million. However, due to inflation over the past few years, a new estimate is currently being developed for the remaining phases.
- The City of Monroe needs to construct an underpass beneath the east-west KCS Railroad that separates the downtown area from the entire north part of the city. The underpass will consist of vertical retaining walls on the sides, a bridge to support the rail, a pumping station to evacuate the rainfall, groundwater, etc., and a new 2-lane roadway beneath the rail. This project is part of a much needed three-part plan to improve traffic flow and increase emergency response times throughout the downtown area. Total cost of project \$9.6 million
- I-69 Connector from Monticello, AR to I-20 in Monroe. Anticipated to cost \$750 million or more.

MISSISSIPPI

- Widen Highway 4 in Tate County from I-55 to US 78 to improve economic development and automotive supply industry.



- Construct a short-line railroad track between Yazoo City and Vicksburg Ports. Vicksburg Port is currently out of space and Yazoo City Port has plenty of storage space and a rail connection would assist both ports in moving goods.
- Ensure the navigable waterway channels provide sufficient depths to allow for waterborne transportation to and from ports.
- Provide railroad service between Port of Greenville and Columbus.
- Vicksburg Airport needs funds to expand.
- Improve public transportation in Mississippi Delta by providing additional funding to support expanding service to major employment centers in the DRA region.
- Transportation (potential) needs in northwest Mississippi may include the following Mississippi River port improvements to support future development:
 - Portage Facilities;
 - Heavy Cranes;
 - Over Levee Conveyor;
 - Rail Load Out; and
 - Bulk Storage.
- Transportation (potential) needs in northwest Mississippi to accommodate 30,000 to 50,000 tons per day capacity may include the following freight rail improvements to support future development:
 - Port to Facility - 10 miles of single rail track;
 - Miles to Facility – 15 miles, double rail track (30 single-rail miles);
 - Facility to Coahoma and switching connection to short line rail – 35 miles, single rail track; and
 - Switch Connection to Canadian National Mainline (two connections; one at Sledge and the second at Swan Lake).

MISSOURI

- Fund and complete Delta Development Highway System.
- Enhance US Route 63, \$630 million, (Phelps, Texas, Howell and Oregon counties).
- Enhance US Route 67, Butler County to Arkansas state line, \$40 million, (Butler County).
- Enhance Interstate 44, St. Louis to Oklahoma state line, \$4.1 billion (Phelps and Crawford counties).
- Widen US 62/ US 412 to 4-lanes.
- Construct a new railroad track in New Madrid County connecting the east-west and the north-south existing railroad track.
- Rehabilitate US 60/US 62 Mississippi River bridge connecting Birds Point, Missouri and Cairo, Illinois.



- Construct a public transportation facility in Ripley County.
- Construct a public transportation facility in Stoddard County.
- Construct a public transportation intermodal facility in Poplar Bluff to incorporate Amtrak and public transportation.
- Construct a public transportation facility in Cape Girardeau.
- Construct a public transportation facility in Mississippi County.
- Develop an intercity bus route from Willow Springs to Sikeston along US 60 with a stop in Poplar Bluff.
- Upgrade ferry at the Mississippi Port to provide more space for trucks and cars.
- Airfield Preservation Projects:
 - Sikeston Memorial Municipal Airport; and
 - Malden Regional Airport.
- Nav aids; Automated Weather Systems:
 - Mountain Grove Memorial Airport;
 - Kennett Memorial Airport;
 - Salem Memorial Airport;
 - Cuba Municipal Airport;
 - Perryville Municipal Airport; and
 - Dexter Municipal Airport.
- Airfield Expansion Projects:
 - New Madrid County Airport;
 - Farmington Regional Airport;
 - West Plains Municipal Airport; and
 - Mountain Grove Memorial Airport.
- Passenger Train Depot Upgrade – The Poplar Bluff Amtrak depot has historical significance and is in desperate need of repair. A station revitalization project would provide a better working environment in and around the station, improved services for Amtrak riders, and be a source of pride for the community.
- Vine Street Crossing Upgrade – The City of Poplar Bluff has been working with MoDOT to address an ADA complaint at the Vine Street crossing. The crossing contains three sets of tracks and does not have an adequate pedestrian walkway. MoDOT recently conducted a diagnostic review of the crossing with UP Railroad and city officials. Recommended improvements include replacing all three crossing surfaces, upgrading current signalization to warning lights and protective gates, and installation of a pedestrian walkway with protection controls.
- Second Street Crossing Upgrade – Crossing upgrades are recommended at Second Street due to increasing rail traffic volume on the Hoxie rail subdivision, which is the main corridor for rail chemical transportation from Houston to Chicago. Specific



recommended improvements include installation of signal lights and protective gates with constant warning circuitry.

- Increase Road Clearance at E Street Railroad Bridge – The City has approached Union Pacific and MoDOT to consider increasing the road height clearance for the railroad bridge at E Street. Currently, the height separation is too low for emergency vehicles to gain access to the approximately 200 residents that live on the southwest side of the tracks. This situation becomes more serious if crossings are blocked at either B Street or C Street by a train. A feasibility study has not been completed at this time to determine the best approach to this project.
- Hayti Railroad Crossing Improvements (BNSF Railway Line):
 - Route J Crossing Upgrade – Crossing is currently a passive crossing with no active warning devices. Recommended improvements include upgrade to signalized crossing with lights and gates and replacement of the crossing surface.
 - Cleveland Street Signal Relocation – This is a triple track crossing with the current crossing protection setup leaving one sidetrack without active warning devices. Recommended improvements include relocating one set of lights and gates to include all tracks within active signalization and update all signal circuitry.
 - Closure of Crossings at County Roads 444 and 406 – A MoDOT rail safety field evaluation determined these crossings could be closed to reduce possibility of vehicle and train collisions. A proposal has been forwarded to BNSF and the City for consideration with an incentive offer of \$40,000 if both crossings are closed.
- West Plains Grade Separation (BNSF Railway Line):
 - A grade separation feasibility study was conducted in 2007 for the City of West Plains due to the increasing train traffic on the BNSF Thayer subdivision. Recent business and residential development adjacent to the tracks and its close proximity to US Highway 63 raise additional safety concerns. This project is still in the study phase.
- Sikeston Crossing Improvements (Union Pacific Line):
 - Pedestrian Crossing Upgrade - Route Y – This crossing is located near a school and many children must cross it on school days. The road has active warning devices with lights and gates, but the walkway that crosses the tracks is located outside of the protective gates. Recommended improvements include installation of pedestrian crossing signal and protective gates on the walkway to the school.
 - William Street and West Murray Lane Crossing Upgrades – These are currently passive crossings that are recommended for upgrade to active crossings with signalized warning lights and protective gates.
 - Quiet Zone Installation – The City is considering applying for a quiet zone in Sikeston. MoDOT is still in the early stage of review, but this project would likely involve crossing closures requiring removal of roadway approaches and installation of roadway barriers and reflective devices. Would also require installation of



- supplemental safety devices at public crossings to meet federal standards and upgrading of all signals at the crossings that lie within the quiet zone to LED lights to increase the visibility of the signals.
- St Louis Iron Mountain (SLIM) Railroad:
 - Since the SLIM railroad is a tourist short-line with limited funding, SLIM does not have the emergency condition hardware standard on Class I railroads. Proposed project would focus on the installation of back-up battery power capability for power failures and improvements to the signalization at the Hwy 72 crossing in Jackson.
 - Pemiscot County Crossing Improvements (BNSF Railway Line):
 - There are three county crossings in and around the town of Steele at Route F, State Route 164, and Gibson Street that are recommended for improvement. These are active crossings with warning devices, but are equipped with the older type of signal roundels, which have reduced visibility and are less reliability than newer LED lights. MoDOT recommends upgrading signals with LED lights to improve safety.
 - New Bourbon Regional Port Authority:
 - Phase 1 Harbor Development – The port site is located at Ste. Genevieve, Missouri. The port authority does not currently operate a cargo facility, but owns property for development, has completed wetlands mitigation, and preliminary design for initial port development. Construction has not started due to a lack of funding. MoDOT has included initial phase 1 harbor development in its 5-year STIP, subject to funding, and proposes a 50/50 percent cost share with DRA funds for this purpose. The preliminary cost estimate for phase 1 is \$2,250,000.
 - Ferry Equipment Upgrade – The port authority currently operates a ferry service from Ste. Genevieve, Missouri to Modoc, Illinois. The service transports an average of 16,000 vehicles and 47,000 passengers per year. It received \$80,000 in state operating financial assistance from MoDOT in SFY 2007. MoDOT applied for Federal Ferryboat Discretionary funds in FFY 2008 to purchase a larger barge for this service to increase capacity, but the application was not funded. MoDOT is proposing a DRA \$200,000 grant / MoDOT \$50,000 state match to complete this needed project for the region.
 - Southeast Missouri Regional Port Authority:
 - Miscellaneous Port Improvements – Current port infrastructure needs include rail track maintenance due to growing rail traffic, paving of dock surfaces and various streets for improved truck access, and dike construction and site fill for industrial development. The cost estimate for these projects totals \$1.4 million. MoDOT proposes a 50/50 percent cost-share for these projects with DRA funds.
 - Mississippi County Port Authority:
 - Ferry Equipment Upgrade – The port authority operates a ferry service from Dorena, Missouri to Hickman, Kentucky. The service transports an average of 18,000 vehicles



and 39,000 passengers per year. It received \$80,000 in state operating financial assistance from MoDOT in SFY 2007 and that amount was also matched by the State of Kentucky. MoDOT applied for Federal Ferryboat Discretionary funds in FFY 2008 to purchase a new larger barge for this service in order to increase capacity, but the application was not funded. There is growing semi truck traffic on this service and the current barge has limited carrying capability, which frequently causes cars to be left on the bank for another trip. This equipment upgrade is estimated to cost \$1.25 million.

- New Madrid County Port Authority:
 - Rail Extension – While a current port tenant enjoys rail service, rail access still needs to be extended to the north side of the port and to the dock for economic and industrial development. The estimated cost to do this is \$950,000 and MoDOT proposes a 50/50 percent cost-share for these projects with DRA funds.
 - Increase Warehouse Capability – There is a need for additional storage and warehouse capacity at this port to promote additional industrial development. The estimated cost to do this is \$550,000 and MoDOT proposes a 50/50 percent cost-share for these projects with DRA funds.
- Pemiscot County Port Authority:
 - Complete Rail Connection to Port – This has been a long-standing need and ongoing project for approximately 10 years. A spur track from Hayti has been constructed to within two miles of the port using a combination local, state, and federal funds, but is waiting for additional funding to complete the project. It is estimated to cost \$2.4 million to complete the rail spur into the port and MoDOT proposes a 50/50 percent cost-share for these projects with DRA funds.

TENNESSEE

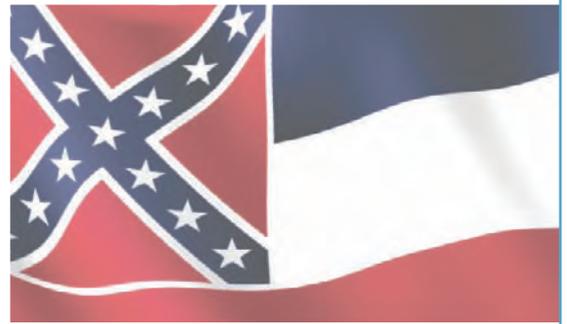
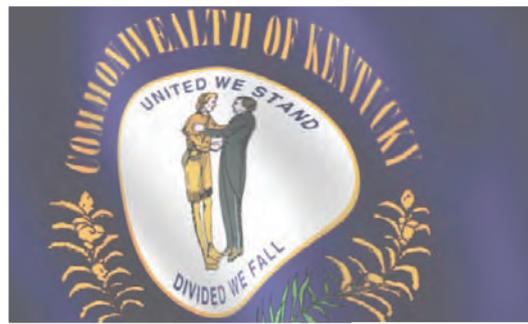
- Fund and complete Delta Development Highway System.
- Complete the Port of Cates Landing. This public port will have loading and unloading capabilities for various raw and finished products onto and off barges. The port will be accessible to barge traffic year round with slack water access to the barge berthing area. The harbor channel will provide space for passage of barge traffic at the port terminal without interference with barges that are moored at the berthing area.
- Construct third Mississippi River bridge in Memphis.
- Complete I-69 and I-269 in western Tennessee and provide ITS infrastructure along the entire corridor.
- Complete I-22 from Memphis to the Birmingham, Alabama.
- Improve intermodal feeder system in West Memphis by constructing a larger intermodal collection facility in south Fulton County.



- Conduct a study on corridors that parallel I-40 to examine improvements to ensure east-west movement has alternative routes.
- Construct and expand intermodal facilities in Memphis.
- Construct a 4th Mississippi River bridge in Lauderdale County to connect I-69 and I-55.
- Moving grain and steel is extremely important to the local economy and developing an intermodal transportation system is needed to lower costs.



Certification Letters





APPENDIX B

CERTIFICATION LETTERS



ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36130-3050



Bob Riley
Governor

Joe McInnes
Transportation Director

May 8, 2008

Mr Pete Johnson
Federal Co-Chairman
Delta Region Authority
Federal Building
236 Sharkely Avenue, Suite 400
Clarksdale, MS 38614

Dear Mr Johnson:

Subject: Review of Delta Regional Authority Multimodal Transportation Plan Assets

The Alabama Department of Transportation (ALDOT) staff has reviewed and revised the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us for review. Based on our review, we certify that our recommended revisions to the multimodal assets for the Alabama counties within the DRA region are correct.

Please let me know if you need any additional information.

Sincerely,

Robert J. Jilla, P.E.
Multimodal Transportation Planning Engineer

RJJ/LR

Cc: Mr. Jeffery Carroll
Mr. Bill Couch

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Phone (501) 569-2000 Fax (501) 569-2400



P O. Box 2261
Little Rock, Arkansas 72203-2261
WWW.ARKANSASHIGHWAYS.COM

April 17, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
Federal Building
236 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

Dear Mr. Johnson:

Reference is made to your request regarding the Delta Regional Authority Multimodal Transportation Plan. The Arkansas State Highway and Transportation Department has reviewed and revised the Arkansas highway and bridge assets. Based on our review, we certify that our recommended revisions to the multimodal assets for the Arkansas counties are correct.

If additional information is needed, please advise.

Sincerely,

Scott E. Bennett
Assistant Chief Engineer – Planning

c: Deputy Director and Chief Engineer
Planning and Research
Jeff Carroll, Wilbur Smith Associates



Illinois Department of Transportation

Division of Highways / Region 5 / District 9
P.O. Box 100 / Carbondale, Illinois / 62903-0100
Telephone 618/549-2171

April 3, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
Federal Building
236 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

**RE: Review of Delta Regional Authority Multimodal Transportation
Plan Assets**

Dear Mr. Johnson:

The Illinois Department of Transportation (IDOT) staff has reviewed and revised the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us for review. Based on our review, we certify that our recommended revisions to the multimodal assets for the Illinois counties contained in the Delta Regional Authority region are correct.

Please feel free to let me know if the Illinois Department of Transportation can be of any further assistance to the Delta Regional Authority.

Very truly yours,

A handwritten signature in black ink that reads "Mary C. Lamie P.E." with a stylized flourish at the end.

Mary C. Lamie, P.E.
Deputy Director of Highways,
Region Five Engineer



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.kentucky.gov

Steven L. Beshear
Governor

Joseph W. Prather
Secretary

March 28, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
Federal Building
236 Sharkey Avenue, Suite 400
Clarksdale MS 38614

Dear Mr. Johnson:

Subject: Review of Delta Regional Authority Multimodal Transportation Plan Assets

The Kentucky Transportation Cabinet (KYTC) staff has reviewed and revised the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us for review. Based on our review, we certify that our recommended revisions to the multimodal assets for the Kentucky counties contained in the DRA region are correct.

Please feel free to let me know if the Kentucky Transportation Cabinet can be of any further assistance to the Delta Regional Authority.

Sincerely,

A handwritten signature in cursive script that reads "Daryl J. Greer".

Daryl J. Greer, P.E.
Director
Division of Planning

DJG/JE/NH



An Equal Opportunity Employer M/F/D



BOBBY JINDAL
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.la.gov



WILLIAM D. ANKNER, Ph.D.
SECRETARY

March 20, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman

Attn: Mr. Jeff Carroll
Wilbur Smith Associates
Post Office Box 92
Columbia, South Carolina 29202-0092

Dear Mr. Johnson:

Louisiana Department of Transportation and Development (LADOTD) staff have reviewed the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us, as much as time and manpower allow. Based on our review, the state and federal databases used to collect this information - and subject to the revisions/corrections provided by DOTD staff - we concur with your multimodal asset assessment for the 46 Louisiana parishes contained in the DRA region.

Thank you for the opportunity to review this data, and your continued work in our Delta Region.

Sincerely,

Dan Broussard
Statewide Planning Engineer

c: Eric Kalivoda
Mike Schiro
Robin Romeo

Harry Lee James
Deputy Executive Director/
Chief Engineer

Brenda Znachko
Deputy Executive Director/
Administration



Steven K. Edwards
Director
Office of Intermodal Planning

Willie Huff
Director
Office of Enforcement

Larry L. "Butch" Brown
Executive Director

P. O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7001 / FAX (601) 359-7110 / GoMDOT.com

March 13, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
236 Sharkey Avenue
Clarksdale, MS 38614

Subject: Delta Regional Authority (DRA) Multimodal Plan
Mississippi Highway and Bridges Assets Review

Dear Mr. Johnson:

Please accept the Mississippi Department of Transportation (MDOT) certification of Mississippi's assets as compiled by Wilbur Smith Associates. This report is being generated as required in the Delta Regional Authority (DRA) Assets and Needs Plan, which is identified in the SAFETEA-LU Section 1923. Attached please find the assets as categorized by the requirements of the study.

If you have any questions, please contact Mr. Wayne M. Evans of the Mississippi Department of Transportation (MDOT) Planning Division at telephone number 601.359.7685.

Sincerely,

Steven K. Edwards
Director, Office of Intermodal Planning

SKE:WME:gr

pc: Mr. Jeff Pierce, P.E., State Planning Engineer, MDOT
Mr. Jeff Carroll, Senior Transportation Planner, Wilbur Smith Associates

Attachments



Missouri
Department
of Transportation



105 West Capitol Avenue
P. O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

Pete K. Rahn, Director



2007 Missouri Quality Award Winner

April 3, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
Federal Building
236 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

Subject: Review of Delta Regional Authority Multimodal Transportation Plan Assets

Dear Mr. Johnson:

The Missouri Department of Transportation (MoDOT) staff has reviewed and revised the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us for review. Based on our review, we certify that our recommended revisions to the multimodal assets for the Missouri counties contained in the DRA region are correct.

Please feel free to let me know if we can be of any further assistance to the Delta Regional Authority.

Sincerely,

Pete K. Rahn
Director

PKR/cas



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
LONG-RANGE PLANNING DIVISION
SUITE 900, JAMES K. POLK STATE OFFICE BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334**
Telephone: 615-741-3421
Facsimile: 615-532-8451
E-mail: ralph.comer@state.tn.us

March 11, 2008

Mr. Pete Johnson, Federal Co-Chair
Delta Regional Authority
C/o Mr. Jeff Carroll
Wilbur Smith Associates
P. O. Box 92
Columbia, South Carolina 29202-0092

Dear Mr. Johnson:

Subject: Delta Regional Authority Multimodal Plan
State of Tennessee, Department of Transportation Phase A Assets Report

This is to certify that the information for the Tennessee Department of Transportation contained in the DRA Multimodal Transportation Assets, Needs and Strategic Plan, Phase A Report has been reviewed and certified as correct for finalization in the report to be submitted to Congress and the Secretary of Transportation no later than July 2008.

We appreciate the work of Mr. Jeff Carroll and other Wilbur Smith Associates staff, as well as the other partnering agencies, to ensure that the Phase A Report of Highway and Bridge Assets provides a complete inventory from which to base future needs and to develop a prioritized multimodal transportation investment plan for the region.

Please let me know if I may provide any additional information. We look forward to receiving the final report.

Sincerely,

Ralph E. Comer
Assistant Planning Director

Copy: Jeanne Stevens, Long-Range Planning Division



ALABAMA DEPARTMENT OF TRANSPORTATION



Design Bureau
1409 Coliseum Boulevard, Montgomery, Alabama 36110
P O. Box 303050, Montgomery, Alabama 36130-3050
Phone: 334-242-6178 FAX: 334-269-0826

Bob Riley
Governor

Joe McInnes
Transportation Director

April 7, 2008

Mr. Pete Johnson
Delta Regional Authority
Federal Co-Chairman

c/o Mr. Brooks Miller
Michael Baker Jr., Inc.
2925 Layfair Drive
Jackson, MS 39232

RE: Review of Assets
Within the State of Alabama

Dear Mr. Johnson:

We have reviewed the information gathered within the State of Alabama for the Delta Regional Authority's Assets and Needs Plan (as required by SAFETEA-LU Section 1923). This letter will serve to certify that the information regarding those assets is, to the best of our knowledge, accurate.

If you have any questions, please let me know

Yours very truly,

William F. Adams, P.E.
State Design Engineer

By: 
Gary W. Moore, P.E.
Traffic Design Engineer

WFA/gwm

c: Traffic Design Section/File

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Phone (501) 569-2000 Fax (501) 569-2400



P.O. Box 2261
Little Rock, Arkansas 72203-2261
WWW.ARKANSASHIGHWAYS.COM

April 15, 2008

Mr. Pete Johnson
Delta Regional Authority
Federal Co-Chairman
c/o Brooks Miller
2925 Layfair Drive
Jackson, MS 39232

Dear Mr. Johnson,

I have reviewed the ITS Assets that were gathered for the state of Arkansas for the DRA Multi-Modal Transportation plan, and certify these Assets are correct to the best of my knowledge.

If there is anything more we can provide for the DRA, please do not hesitate to contact me.

Sincerely,

Mark K. Bradley
Staff Research Engineer

Attachment

MKB: jy



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.kentucky.gov

Steven L. Beshear
Governor

Joseph W. Prather
Secretary

March 11, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman
% Michael Baker Jr., Inc.
2925 Layfair Drive
Jackson, MS 39232

Dear Mr. Johnson:

This is to certify that the list of ITS Assets shown on the attached sheet is correct to the best of my knowledge. I must point out, also, that some of the ITS assets are located outside the DRA area, in particular, the three ITS Traffic Management centers. Let me know if there are further questions.

Sincerely,

A handwritten signature in blue ink that reads "Leon Walden".

Leon Walden, P.E.
Transportation Engineer Specialist





Illinois Department of Transportation

Division of Highways / Region 5 / District 8
1102 Eastport Plaza Drive / Collinsville, Illinois / 62234-6198

March 17, 2008

Pete Johnson
DRA Federal Co-Chairman

Brooks Miller
Michael Baker Jr., Inc.
2925 Layfair Drive
Jackson, MS 39232

Dear Mr. Johnson,

I certify that the Intelligent Transportation System assets documented in the attached file are accurate with the exception of the "Roadway Weather Information". There are 5 Roadway Weather Information sensors in the Region 5, District 8 area.

It should also be noted that the ITS assets documented are in the Madison, St. Clair, and Monroe county areas, not in Randolph county.

Should you have any questions or concerns, please contact Brian Sneed at 618-346-3118.

Sincerely,

A handwritten signature in cursive script that reads "Mary C. Lamie" followed by a monogram "PDM".

Mary C. Lamie, P.E.
Deputy Director of Highways,
Region 5 Engineer

Attachment

cc: Jeff Abel
Kevin Grammar, District 9
Joseph Monroe
File



BOBBY JINDAL
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

www.dotd.la.gov
ITS SECTION 225-379-2517



WILLIAM D. ANKNER Ph.D
SECRETARY

Mr. Pete Johnson
Delta Regional Authority
Federal Co-Chairman

Dear Mr. Johnson,

I have reviewed the ITS Assets that were gathered for the state of Louisiana for the DRA Multi-Modal Transportation plan, and certify these Assets are correct to the best of my knowledge. Thank you for this opportunity and if there is anything more we can provide for the DRA, please do not hesitate to contact me.

Sincerely,



Stephen W. Glascock PE PTOE

And mail the letter to me at:
Brooks Miller
2925 Layfair Drive
Jackson, MS 39232



BOBBY JINDAL
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.la.gov
ITS SECTION 225-379-2517



WILLIAM D. ANKNER Ph D
SECRETARY

Louisiana DOTD Assets

Intelligent Transportation Systems (ITS) Summary

Weigh-In-Motion Sites:	10 Weigh-In-Motion sites in DRA
Parishes	
Traffic Management Centers:	Baton Rouge, LA; Two centers Baton Rouge Regional and Statewide Center
Miles of Fiber Optic Network:	430 Miles
Number of Interconnected Signal Systems:	5
Number of Traffic Cameras:	73
Number of Dynamic Message Signs:	46
Roadway Weather Information:	None
Highway Advisory Radio:	Not available
Travel Information Websites Available:	www.511la.org www.dotd.louisiana.gov

Harry Lee James
Deputy Executive Director/
Chief Engineer

Brenda Znachko
Deputy Executive Director/
Administration



Steven K. Edwards
Director
Office of Intermodal Planning

Willie Huff
Director
Office of Enforcement

Larry L. "Butch" Brown
Executive Director

P. O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7001 / FAX (601) 359-7110 / GoMDOT.com



March 27, 2008

Mr. Pete Johnson
DRA Federal Co-Chairperson
Federal Building
236 Sharkey Ave. Suite 400
Clarksdale, Mississippi 38614

Dear Mr. Johnson:

This letter is to certify that the list of ITS Assets gathered for the DRA region for MDOT are complete and accurate to the best of my knowledge.

If you require any further information, please do not hesitate to contact me at 601-421-6485.

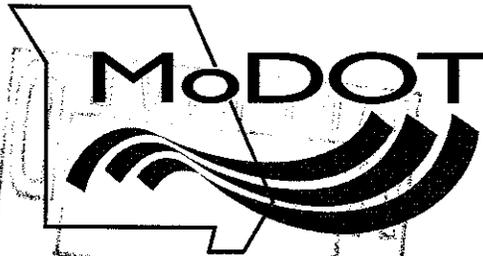
Sincerely,

Mike Stokes
ITS Manager
Mississippi Department of Transportation

MS/AR:jdr



Missouri
Department
of Transportation



105 West Capitol Avenue
P O Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

Pete K. Rahn, Director



2007 Missouri Quality Award Winner

March 14, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman

c/o Brooks Miller
Michael Baker Jr, Inc.
2925 Layfair Drive
Jackson, MS 39232

Re: DRA Multimodal Plan – Asset Certification

Dear Mr. Johnson:

This letter is to certify that the assets listed in the ITS-Assets Report compiled by Mr Brooks Miller of Michael Baker Jr., Inc. are complete and accurate to date.

If you require any further information, please do not hesitate to contact me.

Sincerely,

Melissa A. Wilbers, P.E.
MoDOT - Traffic Management and Operations Engineer

maw

cc: Brooks Miller
Troy Pinkerton



STATE OF TENNESSEES
DEPARTMENT OF TRANSPORTATION
300 BENCHMARK PLACE
JACKSON, TENNESSEE 38301
Traffic Division

March 31, 2008

Mr. Pete Johnson, DRA Federal Co-Chairman
c/o Brooks Miller
Michael Baker Jr., Inc
2925 Layfair Drive
Jackson, MS

Re: DRA Multimodal Plan- Asset Certification

Dear Mr. Johnson,

This is to certify that the attached list as compiled by Mr. Brooks Miller is an accurate account of Tennessee D.O.T. ITS assets in the DRA area of Tennessee.

Please let me know if I can provide any additional information in this regard.

Sincerely,

A handwritten signature in black ink that reads "Joe Warren".

Joe Warren
Region 4 Traffic Engineer
300 Benchmark Place
Jackson, TN 38301

JW/dn

Attachments

Department of Public Works



200 South President Street
Post Office Box 17
Jackson, Mississippi 39205-0017

Frank E. Melton
Mayor of the City of Jackson

April 9, 2008

Mr. Pete Johnson,
DRA Federal Co-Chairman
2925 Layfair Drive
Jackson, MS 39232

Re: DRA ITS Asset Report

Dear Mr. Johnson:

The City of Jackson Engineering Division has reviewed the attached ITS assets report. The assets report is accurate to our best knowledge. If you have any further questions, please call Robert Lee at (601) 960-1651.

Sincerely,

A handwritten signature in black ink that reads "Thelman Boyd".

Thelman Boyd
Director
Department of Public Works

Enclosures



City of Little Rock

Department of
Public Works

621 S. Broadway
Little Rock, Arkansas 72201
340-4856 Office
340-4857 Fax

Traffic Engineering

Mr. Pete Johnson, DRA Federal Co-Chairman
Michael Baker Jr., Inc.
2925 Layfair Drive
Jackson, MS 39232-9507

Dear Mr. Johnson:

The ITS Assets recently forwarded to the City of Little Rock are correct. Below is a copy of the assets that were forwarded to our office.

Weigh-In-Motion Sites: None
Traffic Management Centers:
Miles of Fiber Optic Network: 13 miles
Number of Interconnected Signal Systems: 300
Number of Traffic Cameras: 5
Number of Dynamic Message Signs: 0
Roadway Weather Information: None
Highway Advisory Radio: Not available
Travel Information Websites Available:
Intelligent Transportation Systems (ITS) Summary

In addition to the information listed above, we have also implemented the first traffic adaptive system in the central US, which is comprised initially of four intersections that are connected utilizing broadband radio for communications. If you should require any additional information, please feel free to contact us further

Sincerely,

William L. Henry, P.E.
Traffic Engineering Manager



Public Works

MAILING ADDRESS:
P.O. Box 217
Ridgeland, MS 39158
STREET ADDRESS:
304 Highway 51
Ridgeland, MS 39157
Ph: 601.853.2027
Fax: 601.853.2019
www.ridgelandms.org

Gene F. McGee, CMO
Mayor
John M. McCollum
Director of Public Works

BOARD OF ALDERMEN
Ken Heard, *Ward 1*
Chuck Gautier, *Ward 2*
Kevin Holder, *Ward 3*
Larry Roberts, *Ward 4*
Scott Jones, *Ward 5*
Linda S. Davis, *Ward 6*
Gerald Steen, *At-Large*
Mayor Pro-Tempore

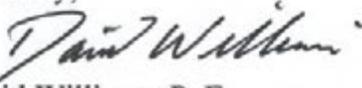
April 11, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman
2925 Layfair Drive
Jackson, MS 39232-9507

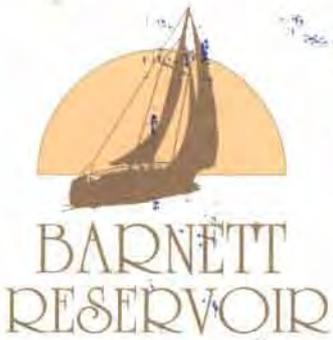
Dear Pete Johnson:

This letter is to certify that I have reviewed the list of ITS assets gathered for the City of Ridgeland, MS and these assets are complete and accurate to the best of my knowledge. Thank you for the opportunity to participate in this transportation plan. If you require any further information, please call me at 601-853-2027.

Sincerely,


David Williams, P. E.
City Engineer

C: Mike McCollum, Director of Public Works, City of Ridgeland
Mayor Gene F. McGee, City of Ridgeland



PEARL RIVER VALLEY
WATER SUPPLY DISTRICT

March 12, 2008

Michael Baker Jr., Inc.
2925 Layfair Drive
Jackson, MS 39232

Attn: Mr. Pete Johnson
DRA Federal Co-Chairman

Re: ITS-Assets-Pearl River Valley Water Supply District (MS)

Dear Mr. Johnson:

Based on the Intelligent Transportation Systems (ITS) Summary, the Pearl River Valley Water Supply District, MS, would offer the following correction:

Number of Traffic Cameras: 11

The remaining information on the summary sheet is correct. If we can provide any additional information, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "Dan Gaillet" followed by a stylized flourish.

Dan Gaillet, P.E.
Deputy Director

cc: Brooks Miller, Michael Baker Jr., Inc.

ITS Assets

Pearl River Valley Water Supply District (MS)



Intelligent Transportation Systems (ITS) Summary

Weigh-In-Motion Sites: None

Traffic Management Centers: Pearl River Valley Water Supply District

Miles of Fiber Optic Network: 3.2 Miles

Number of Interconnected Signal Systems: 0

Number of Traffic Cameras: 6

Number of Dynamic Message Signs: 0

Roadway Weather Information: None

Highway Advisory Radio: Not available

Travel Information Websites Available: www.gomdot.com; www.mstraffic.com





April 16, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority

Dear Mr. Johnson,

I have reviewed the rail assets that were gathered for the Memphis Area Transit Authority (MATA) for the DRA Multi-Modal Transportation plan, and certify these assets are correct to the best of my knowledge.

Thank you for this opportunity and if there is anything more we can provide for the DRA, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "John Lancaster".

John Lancaster, AICP
Senior Planner

cc: William Hudson, Jr., President/General Manager
Tom Fox, Assistant General Manager of Planning & Capital Projects
Maury Miles, Grants and Contracting Officer



April 4, 2008

Pete Johnson
Federal Co-Chairman
Delta Regional Authority

Dear Mr. Johnson:

I have reviewed the Amtrak service and station data that was forwarded to me by Mr. Brooks Miller of Michael Baker Jr, Inc. and determined that it is correct and current to date. Of course keep in mind that this information is subject to change as improvements and modifications are made to the facilities and the services.

If there is anything more we can provide to support your multimodal transportation plan please feel free to contact me.

With regards,

A handwritten signature in blue ink that reads "Thomas L. Stennis III". The signature is written in a cursive style with a large initial "T" and a small "III" at the end.

Thomas L. Stennis III
Director, Government Affairs-South



REGIONAL

TRANSIT

AUTHORITY

April 21, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority

Dear Mr. Johnson,

I have reviewed the Rail Assets that were gathered for the New Orleans Regional Transit Authority for the DRA Multi-Modal Transportation Plan, and certify these Assets are correct to the best of my knowledge. Thank you for this opportunity and if there is anything more that we can provide for the DRA, please do not hesitate to contract me.

Sincerely,

A handwritten signature in blue ink that reads "Mark A. Major". The signature is written in a cursive style with a large, sweeping "M" and "A".

Mark A. Major
General Manager
New Orleans Regional Transit Authority

Temporary Office:

2817 Canal Street

New Orleans,

Louisiana

70119-6301

Administration:

(504) 827-8300

Facsimile:

(504) 827-8421



State Passenger Rail Assets

Louisiana - New Orleans Regional Transit Authority

Passenger Rail Station Summary

Provider: New Orleans Regional Transit Authority (NORTA)

City: New Orleans

State: Louisiana

Type of Service: Street Car

Number of Stations: 9

Number of Routes: 3

Route 1: Canal Streetcar Route

Route 2: Riverfront Streetcar Route

Route 3: St. Charles Streetcar Route

Number of Streetcars: 66

Miles of Track: 26.00

Frequency of Service: Daily

ZIP Code: 70119

Regional
Transit
Authority

2817 Canal Street,

New Orleans,

Louisiana

70119

Administration

504-827.8300

Facsimile

504-827.8421

I CERTIFY THAT THIS INFORMATION IS TRUE AND CORRECT:

**Mark A. Major
General Manager**

MAM/rjd



901 Maple Street * North Little Rock, Arkansas 72114 * Ph 501-375-6717 * Fax 501-375-6812 * www.cat.org

April 21, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority

Dear Mr. Johnson:

I have reviewed the Rail Assets that were gathered for the Central Arkansas Transit Authority for the DRA Multi-Modal Transportation Plan and certify these assets are correct. Thank you for the opportunity to participate. Please contact me if we may be of further assistance.

Sincerely,

Betty Wineland
Executive Director

Missouri
Department
of Transportation



105 West Capitol Avenue
P.O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

Pete K. Rahn, Director



2007 Missouri Quality Award Winner

March 11, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman
230 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

Dear Mr. Johnson:

In regard to the confirmation of rail freight assets for the DRA Multimodal Transportation Assets, Needs, and Strategic Plan.

Missouri confirms the following railroad mileage as requested, which I will point out differs somewhat from the mileage figures shown in the attachment of State Freight Rail Assets-Missouri for the counties that comprise the DRA region in Missouri:

BNSF	592.44
DOD	18.36
SEMO	5.67
SLIM	8.98
UP	<u>376.88</u>
total	1002.33

Thank you for your consideration and for your support for rail projects

Sincerely,

Rodney P. Massman
Administrator of Railroads

C: Jeff Carroll

Missouri
Department
of Transportation



105 West Capital Avenue
P.O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

Pete K. Rahn, Director



2007 Missouri Quality Award Winner

March 18, 2008

Mr. Pete Johnson
DRA Federal Co-Chairman
230 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

Dear Mr. Johnson:

As a follow-up to my previous letter, here are some further clarifications to the data discussed in the letter:

- MODOT acknowledges that our track records recorded in our RSIS database measures trackage in track miles rather than route miles so the information included as to mileage in my first letter was in actual track miles;
- The Bootheel RR (BRR) is abandoned and should not be included in the inventory;
- The former Jackson & Southern RR is the SLIM (St. Louis-Iron Mountain Railroad) and is utilized only as a tourist train and should not be included in the inventory; and
- The US Government Department of Defense (this is the track coded as DOD) owns 18.36 miles of trackage of which approximately 10 miles lies within the DRA region.

Thank you for your support for rail projects.

Sincerely,

Rodney P. Massman
Administrator of Railroads

Copy Jeff Carroll, Wilbur Smith Associates



ALABAMA DEPARTMENT OF TRANSPORTATION
 1409 Coliseum Boulevard, Montgomery, Alabama 36110



Bob Riley
 Governor

March 12, 2008

Joe McInnes
 Transportation Director

Mr. Pete Johnson
 DRA Federal Co-Chairman
 Wilbur Smith Associates
 P.O. Box 92
 Columbia, South Carolina 29202-0092

Attention: Mr. Jeff Carroll

Dear Mr. Johnson:

In response to your email of March 3, 2008, the following information is provided to supplement the Alabama Freight Rails Assets portion of the DRA Multimodal Plan.

Freight Rail and Owner Summary

<u>Class I</u>	<u>Owner</u>	<u>Miles</u>
	(CSX & CSXT)	135.63
	NS	265.62
	Total	401.25
<u>Class II</u>	<u>Owner</u>	<u>Miles</u>
		0
<u>Class III</u>	<u>Owner</u>	<u>Miles</u>
	ABS	31.39
	AGR	214.74
	ALAB	52.04
	GSWR	14.00
	MNBR	128.02
	THNR	9.56
	Total	362.08
Grand Total		851.00

The Heart of Georgia (HOG) Railroad listed in your email no longer operates in Alabama.

The Pine Belt Southern Railway Co. (PBRR) is abandoned. One track was abandoned May, 2002 and the remaining track was abandoned January, 2004.

Georgia South Western Railroad (GSWR) abandoned one of their lines in January, 2007.

The annual inflation index adjustments are published each year by the Surface Transportation Board in the Federal Register in September. The inflation index is based on 1991 dollars.

The Class I, II and III designations using the 2006 inflation index adjustment factors establish the Gross Operating Revenue thresholds are as follows:

Class I \$346,788,736 or more

Class II \$27,743,099 to \$346,788,736

Class III \$27,743,099 or less

If we can be of further assistance, please contact Jenny Williams of my staff at (334) 353-6435.

Yours very truly,



Robert J. Jilla
Multimodal Transportation Engineer

RJJ/WEE/CT/JW

C: Lisa Ray





APR 16 2008

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF MULTIMODAL TRANSPORTATION RESOURCES
505 DEADERICK STREET, SUITE 1800
JAMES K. POLK BUILDING
NASHVILLE, TN 37243

April 7, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
Federal Building
236 Sharkey Avenue, Suite 400
Clarksdale, MS 38614

RE: Review of Delta Regional Authority Multimodal Transportation
Plan Assets

Dear Mr. Johnson:

The Tennessee Department of Transportation (TDOT) staff has reviewed the Delta Regional Authority (DRA) Multimodal Transportation Plan assets that were provided to us for review. Based on our review, we certify that the multimodal assets for the Tennessee counties contained in the DRA region are correct.

Please feel free to let me know if the Tennessee Department of Transportation can be of any further assistance to the Delta Regional Authority.

Sincerely,

Paula J. Shaw
Director of Program Operations

PJS/lv

Cc: Jeanne Stevens, TDOT
Steve Allen, TDOT
Bob Pack, TDOT

Harry Lee James
Deputy Executive Director/
Chief Engineer

Brenda Znachko
Deputy Executive Director/
Administration



Steven K. Edwards
Director
Office of Intermodal Planning

Willie Huff
Director
Office of Enforcement

Larry L. "Butch" Brown
Executive Director

P. O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7001 / FAX (601) 359-7110 / GoMDOT.com

April 11, 2008

Mr. Pete Johnson
Federal Co-Chairman
Delta Regional Authority
236 Sharkey Avenue
Clarksdale, MS 38614

Subject: Delta Regional Authority (DRA) Multimodal Plan
Mississippi Aviation Assets Review

Dear Mr. Johnson:

Please accept the Mississippi Department of Transportation (MDOT) certification of Mississippi's aviation assets as compiled by Wilbur Smith & Associates. This report is being generated as required in the Delta Regional Authority (DRA) Assets and Needs Plan, as identified in the SAFETEA-LU Section 1923.

If you have any questions, please contact Mr. Thomas M. Booth, Jr. of the MDOT Aeronautics Division at telephone number (601) 359-7850.

Sincerely,

Steven K. Edwards
Director, Office of Intermodal Planning

pc: Mr. Jeff Carroll, Senior Transportation Planner, Wilbur Smith & Associates



Missouri
Department
of Transportation



105 West Capitol Avenue
P.O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

Pete K. Rahn, Director



2007 Missouri Quality Award Winner

April 17, 2008

Mr. Tom Henderson
Neel-Schaffer, Inc
1022 Highland Colony Parkway, Suite 302
Ridgeland, MS 39157

Dear Mr. Henderson:

Re: DRA Missouri Aviation Assets Verification

Thank you for your e-mail dated April 9, 2008 and attached information. We have no comments on the DRA Aviation asset report for Missouri.

Please feel free to contact our office if you should require any additional information.

Sincerely,

Joe Pestka
Administrator of Aviation



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

AERONAUTICS DIVISION
P.O. BOX 17325
Nashville, TN 37217
615-741-3208

GERALD F. NICELY
COMMISSIONER

PHIL BREDESEN
GOVERNOR

April 11, 2008

Thomas C. Henderson, P.E.
Neel-Schaffer Inc.
1022 Highland Colony Parkway, Suite 302
Ridgeland, MS 39157

Dear Mr. Henderson;

In response to your e-mail of April 9, 2008 I can certify that the airports you listed in that e-mail are public use airports in Tennessee I cannot certify as to the data presented in the 5010 form because the data is from the FAA. While the FAA got some of the data from our airport inspectors, I do not know where most of it originated.

Sincerely,

A handwritten signature in cursive script that reads "Robert V. Woods".

Robert V. Woods
Director

RVW: cr

Keith Garrison, Executive Director
Phone: 501-682-1173
Fax: 501-682-1196
Email: waterway@mail.state.ar.us
Website: www.waterways.dina.org



Commissioners:
Paul Latture, Arkansas River
James C. Frazier, Mississippi River
Travis Justice, At Large
Gay Lacy, White River
Donald Banks, Ouachita River
Gary Reynolds, At Large
William Varner, Red River

Arkansas Waterways Commission

101 E. Capitol Avenue, Suite 370
Little Rock, Arkansas 72201

April 11, 2008

Barry Brupbacher
Neel-Schaffer, Inc.
800 Jackson Avenue, Suite B
Mandeville, LA 70448

Dear Mr. Brupbacher:

In response to your request I have reviewed the listing of Arkansas public ports in the Delta Regional Authority and find it to be correct.

Sincerely,

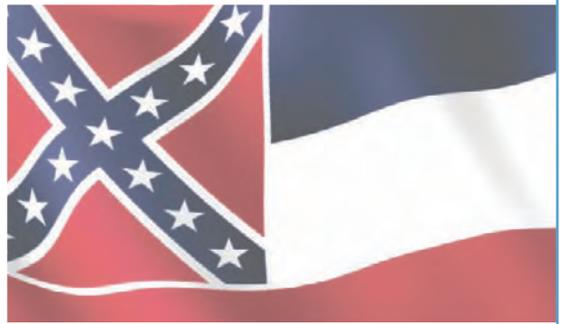
A handwritten signature in cursive script that reads "Keith E. Garrison".

Keith E. Garrison
Executive Director

The mission of the Arkansas Waterways Commission is to develop, promote, and protect the commercially navigable waterways of Arkansas for waterborne transportation and economic development for the welfare of the people of Arkansas.



DDHS





APPENDIX C

DELTA DEVELOPMENT HIGHWAY SYSTEM (DDHS)



DELTA DEVELOPMENT HIGHWAY SYSTEM – EXECUTIVE SUMMARY

The Delta Regional Authority was established by Congress in 2000 to enhance economic development and improve the quality of life for residents of this region. The DRA encompasses 240 counties and parishes in Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

Led by a federal co-chairman, Pete Johnson, who is appointed by the president and the governors of the eight states, the DRA fosters partnerships throughout the region as it attempts to improve the Delta economy. The DRA is a federal-state partnership created to provide a unified voice for the Delta region on a variety of important issues.

At a planning retreat in February 2005, the DRA board voted to make transportation one of the agency's three major policy development areas along with rural health and information technology. Shortly after that retreat, the DRA contracted with Wilbur Smith Associates (WSA) to assist the authority with transportation planning and economic activities throughout the region.

During the development of the DRA Highway Transportation Plan, the work team coordinated all planning efforts with the eight-state Departments of Transportation (SDOT). Based on this coordination, the work team developed the following:

- Delta Development Highway System (DDHS) Designation Criteria;
- DDHS Design Standards;
- DDHS Corridors;
- DDHS Priorities;
- DDHS Planning-level Cost Estimates;
- DDHS Project Descriptions; and
- DDHS Economic Impact.

Once the draft DDHS was completed, the work team presented the system to federal, state, and local agencies and citizens. These local meetings were conducted throughout the DRA region in the following cities:

- Selma, Alabama;
- Cape Girardeau, Missouri;
- Monroe, Louisiana;
- Jackson, Mississippi; and
- Memphis, Tennessee.

Based on comments received at each local meeting, the DDHS was revised based on approval from each SDOT. To date, the DDHS totals 3,843 miles of roadways throughout the region



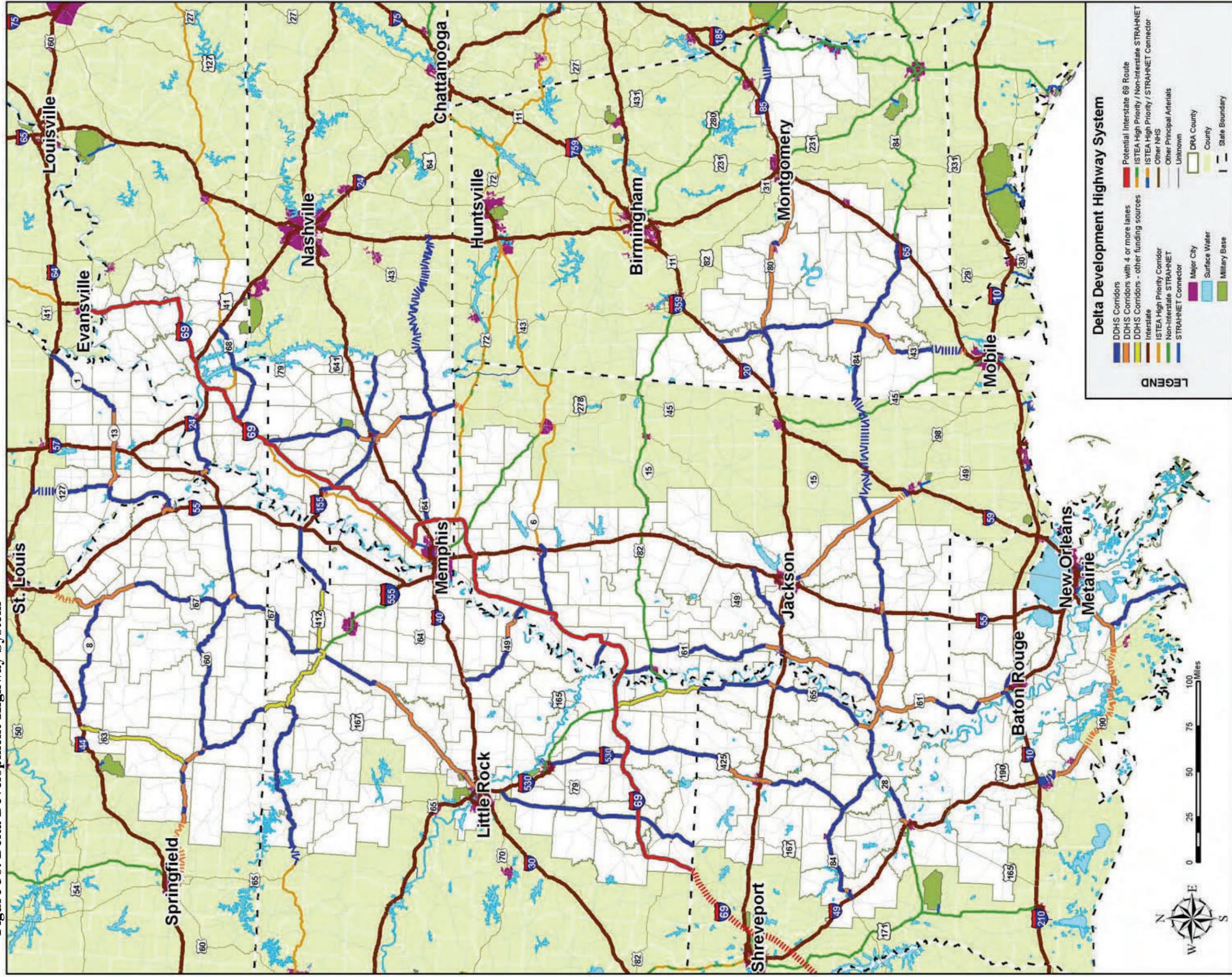
(DDHS map is on the following page) and the estimated cost to complete planned improvement projects on these roads totals \$18.5 billion. Of the 3,843 miles, approximately 1,025 miles (27%) are already multi-laned (provide four or more travel lanes) leaving a total of 2,818 miles of 2-lane roads, as shown in **Table 19**.

Once completed, the DDHS will provide many positive impacts to the region that will improve economic activities and the quality of life for residents of the region. It is estimated that when fully completed, the DDHS will have an economic impact on the region of over 130,000 additional full-time equivalent jobs annually and nearly \$3.5 billion in additional income annually. Of these total impacts, \$1.1 billion in income is attributable to increased travel efficiencies and the remaining \$2.4 billion is attributable to regional economic development or increased business attraction and retention.

Table 19: DDHS by State (DRA Region only)

State	Total DDHS Miles	Percent of DDHS	Total DDHS 4-lanes	Total DDHS 2-lanes	Percent of DDHS	Total Square Miles	Percent of DDHS Area
Alabama	383	9.97%	124	259	9.20%	17,124	11.60%
Arkansas	704	18.32%	114	590	20.93%	29,897	20.26%
Illinois	174	4.53%	48	126	4.46%	6,200	4.20%
Kentucky	230	5.98%	165	65	2.31%	7,888	5.34%
Louisiana	591	15.38%	107	484	17.19%	29,659	20.10%
Mississippi	753	19.59%	197	556	19.73%	26,247	17.78%
Missouri	566	14.73%	220	346	12.28%	19,663	13.32%
Tennessee	442	11.50%	50	392	13.91%	10,908	7.39%
TOTAL	3,843	100.00%	1,025	2,818	100%	147,585	100%

Figure 36: Delta Development Highway System





DELTA REGIONAL AUTHORITY

236 SHARKEY AVENUE

SUITE 400

CLARKSDALE, MISSISSIPPI 38614

(662) 624-8600

WWW.DRA.GOV



Baker

 **NEEL-SCHAFFER**
Solutions you can build upon

THE UNIVERSITY OF
MEMPHIS