



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

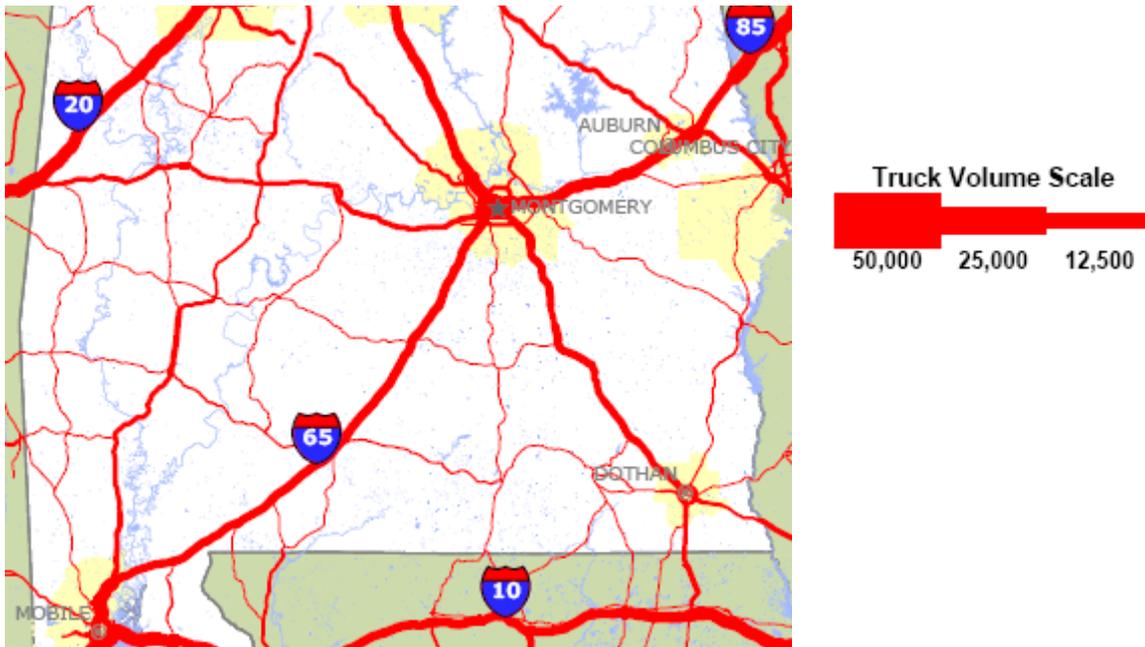
Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-20, I-65 and US 80, as shown in **Figure 5**. About 18 percent of truck traffic involved in-state shipments. Thirty percent involved trucks traveling across 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

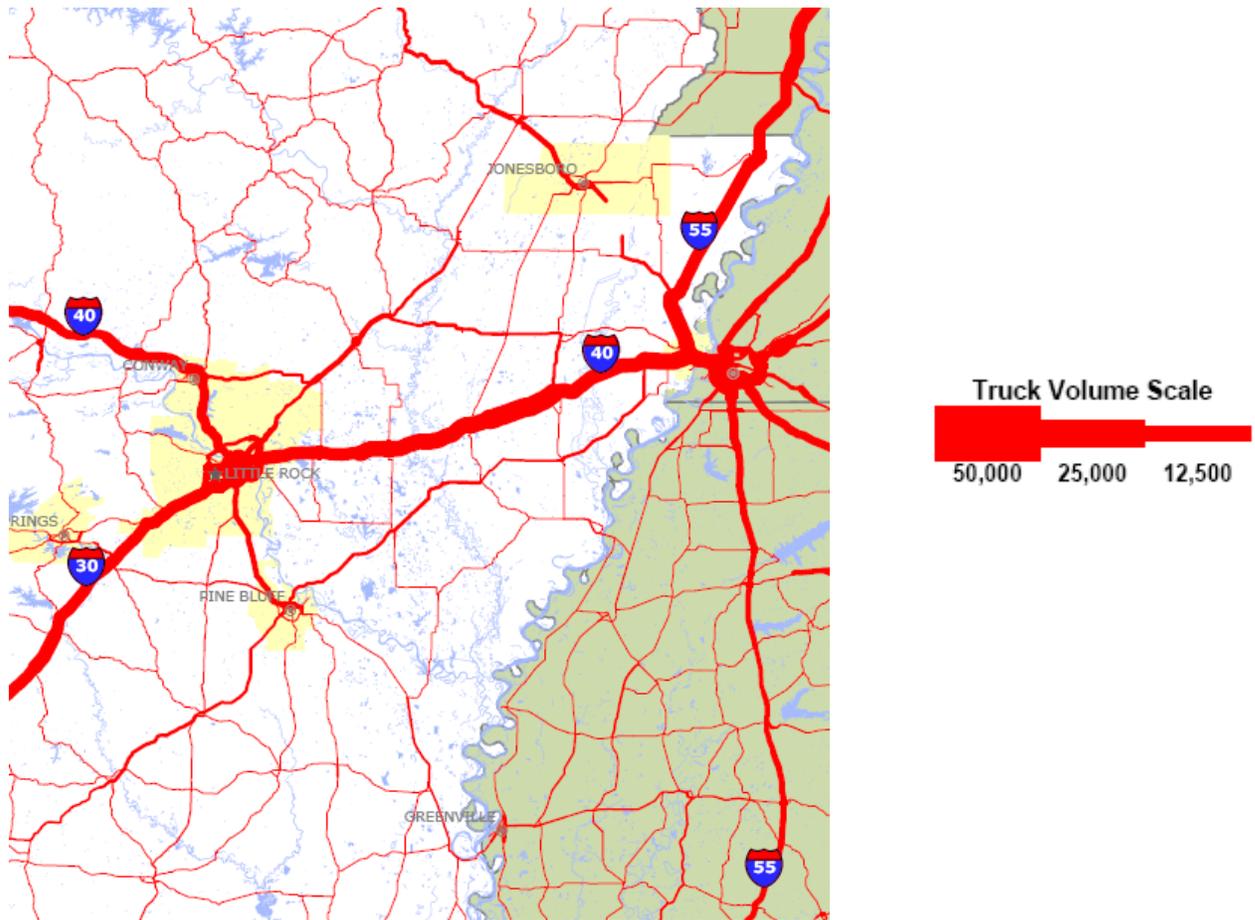
6.8.8.2 Arkansas

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

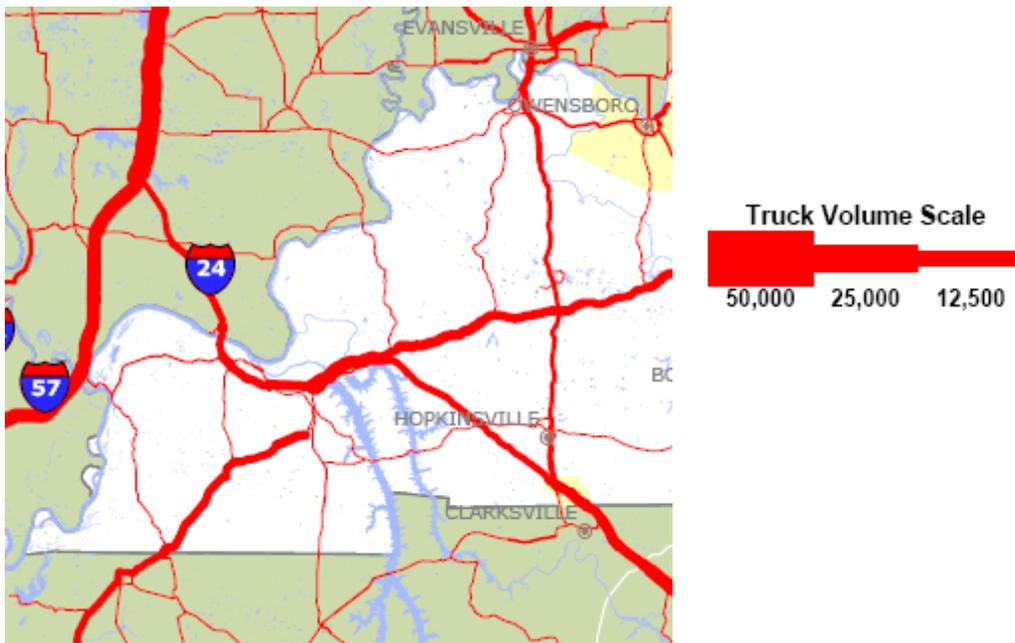
6.8.8.4 Kentucky

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

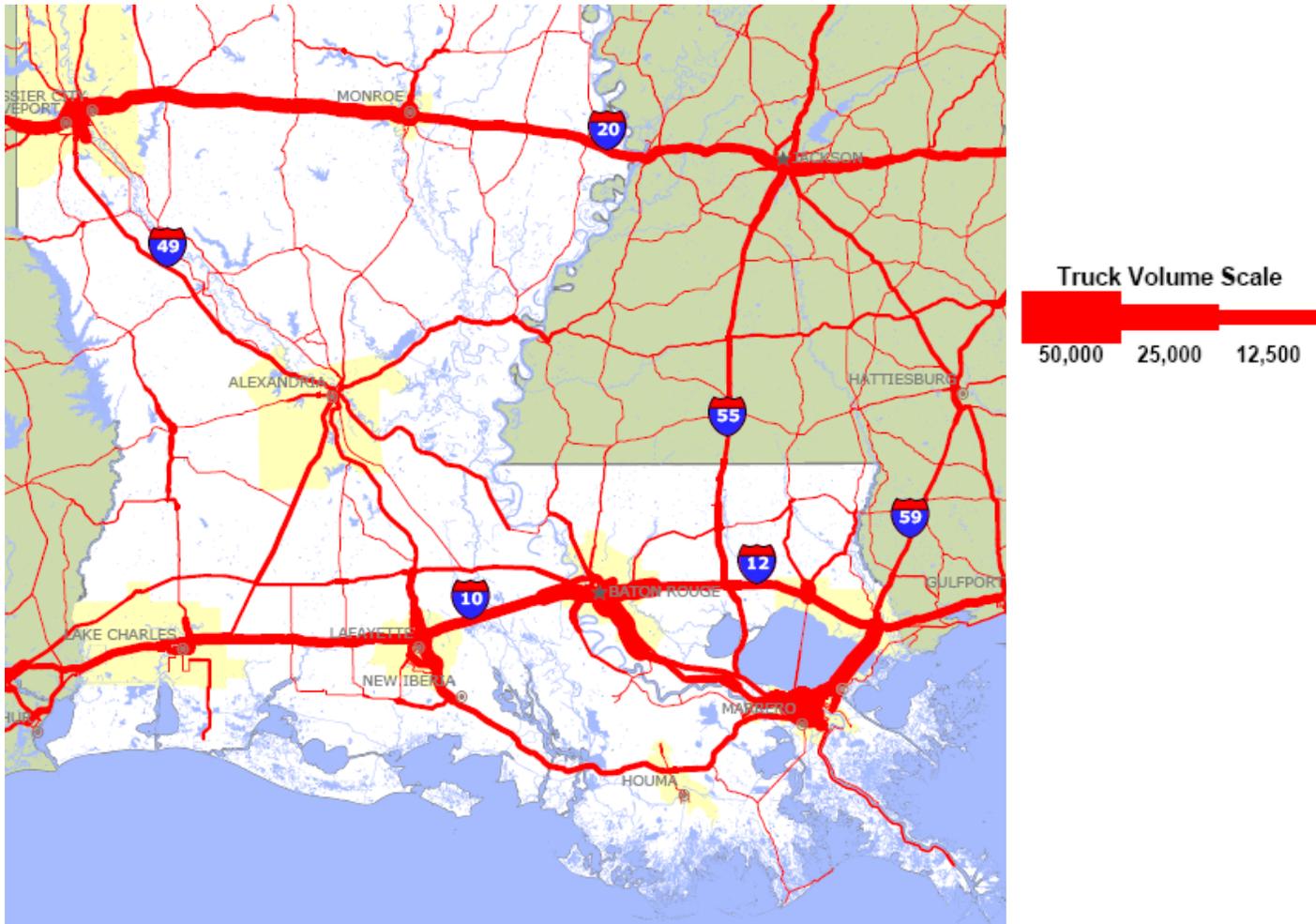
6.8.8.5 Louisiana

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

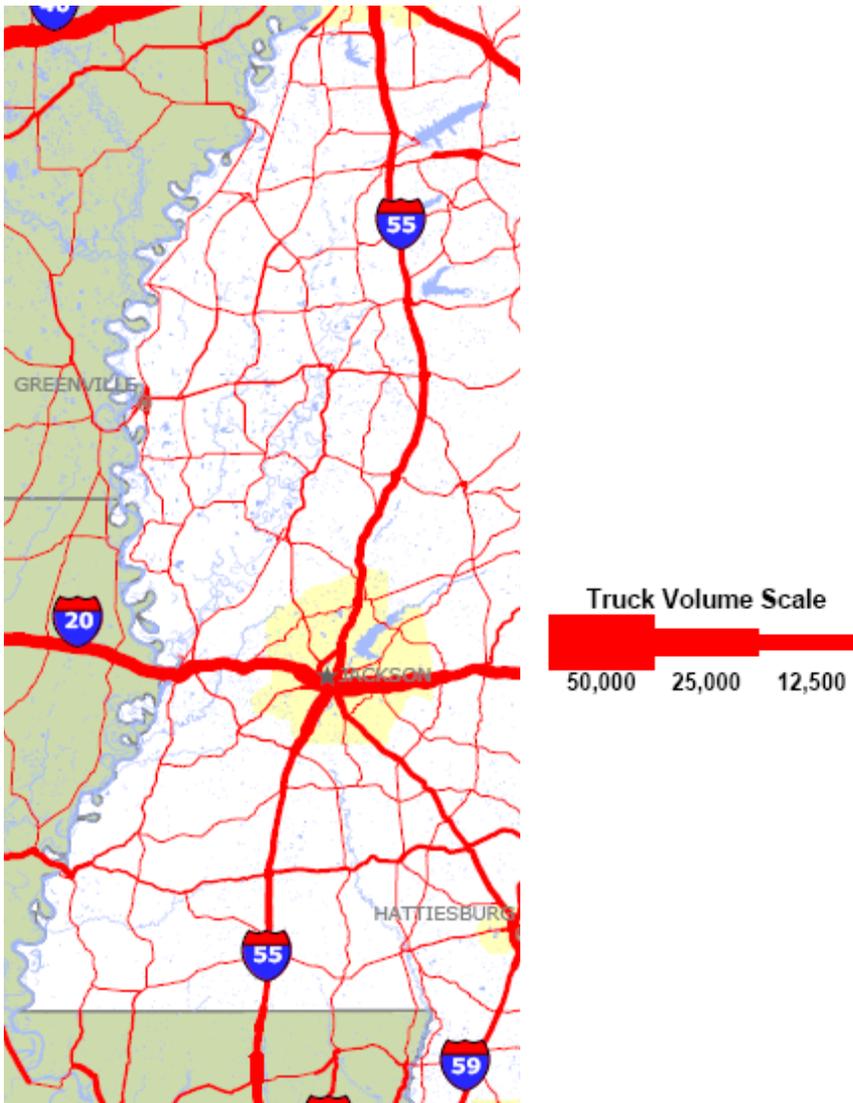
6.8.8.6 Mississippi

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

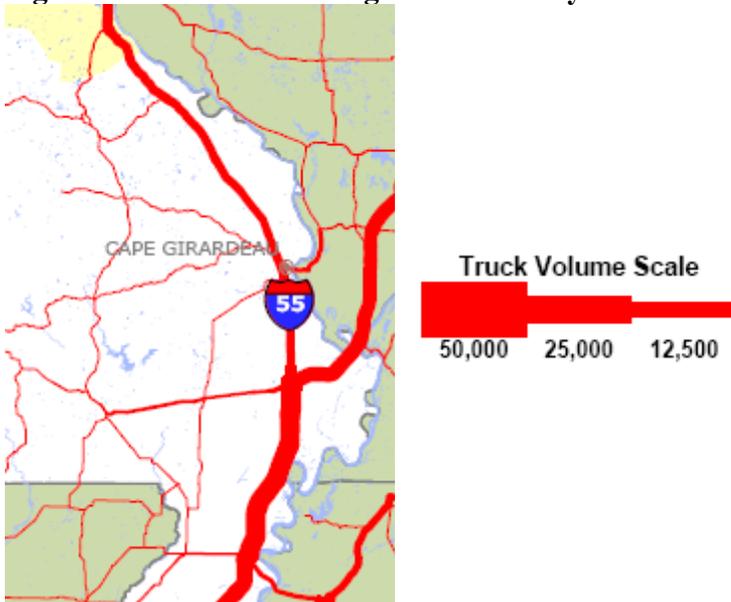
6.8.8.7 Missouri

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

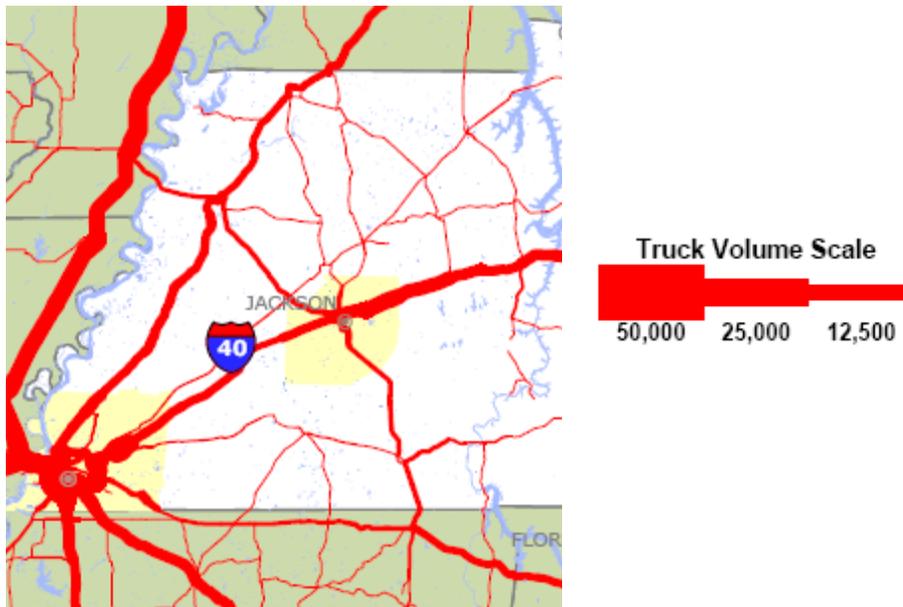
Truck traffic is expected to grow significantly throughout the state over the next 20 years. Much of the growth will occur in urban areas and on I-40, I-240 and US 51 (future I-69), as shown in **Figure 12**. Approximately 5 percent of truck traffic involved in-state shipments, and 56 percent involved 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.