



11. WATERWAYS, PORTS AND LOCKS

11.1 Introduction

As one port authority suggests, one can think of a public port like a shopping mall.¹³⁷ The port authority owns the entire mall property while the stores are leased to individual retail companies. For instance, the New Orleans Port Authority owns 79 terminals. Some terminals handle containers (which are truck trailers without the wheels), others may handle dry bulk cargo (such as coal, grain, or sugar), liquid bulk cargo (such as petroleum or chemicals), break bulk cargo (such as steel coils, pipes, or large machinery), or automobiles and trucks. A typical container terminal may be 100 to 300 acres in size, while the entire port complex of a major port may be 2,000 to over 3,000 acres in size.¹³⁸ Ports are an integral component of the DRA region transportation system because there are 1,210 public and private port terminals and 48 public port authorities that operate 192 public port terminals in the DRA region.

The inland and intracoastal waterways system is a vital part of the U.S. multimodal transportation network. For only 2 percent of the U.S. freight cost, the inland waterways system moves 15 percent of the nation's commercial intercity freight tonnage on 12,000 miles of commercially significant waterways. The barge and towing industry operating on the inland and intracoastal waterway system transports freight in a safe and fuel efficient, environmentally-friendly manner.

Twenty-four states are linked directly to the inland waterways system, which includes all eight states in the DRA region. The Mid-America waterways network extends from Brownsville, Texas to the Great Lakes and from Minneapolis, Minnesota to Pittsburgh, Pennsylvania. It is made up of the following two major subsystems:

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

This Mid-America waterways network serves the heartland of the U.S., including its industrial core and a large portion of its agricultural regions. **Figure 33** shows the Inland Waterway System in the DRA region and the connectivity to the rivers and waterways in Mid-America.

¹³⁷ An analogy used by the Port of Tacoma, "Questions and Answers: Port Terminal Ownership, Operations, and Security," February 24, 2006, Press Release.

¹³⁸ *Terminal Operators and Their Role in U.S. Port and Maritime Security*. CRS Report for Congress, April 2006



Figure 33: U.S. Inland Waterway System



Source: U.S. Fish & Wildlife Service



The following waterways are a vital component of the multimodal transportation system in the DRA region:

- **Alabama** - Alabama River, Black Warrior River, Chattahoochee River, Tennessee-Tombigbee Waterway, Tombigbee River
- **Arkansas** - Arkansas River, Mississippi River, Ouachita River, White River, Wolf River
- **Illinois** – Kaskaskia River, Mississippi River, Ohio River
- **Kentucky** - Cumberland River, Green River, Ohio River, Tennessee River
- **Louisiana, within the Port of New Orleans Jurisdiction** - Algiers Canal, GIWW, Grand Pass, Harvey Canal, Inner Harbor Navigation Canal, Michoud Canal, Mississippi River, Mississippi River Gulf Outlet Canal and other waterways including Bayou Bienvenue, Lake Pontchartrain and Bayou Barateria
- **Louisiana, Below Port of New Orleans** - Mississippi River downriver of Port of New Orleans, Pass Tante Phine, Tidewater Access Channel, Tiger Pass and other waterways
- **Louisiana, Other Waterways** - Atchafalaya River, Acadiana Gulf of Mexico Access Channel, Bayou Lafourche, Bayou Teche, Black River, Mermentau River, Mississippi River upriver of the Port of New Orleans, Ouachita River, Port Allen Alternate Route Intracoastal Waterway, Red River and other waterways.
- **Mississippi** – Lake Ferguson, Mississippi River, Rosedale Harbor, Vicksburg Harbor, Yazoo River Diversion Channel
- **Missouri** – Mississippi River
- **Tennessee** – McKellar Lake, Mississippi River, Tennessee River, Wolf River

Operations and maintenance of the inland and intracoastal waterways system is the responsibility of the U.S. Army Corps of Engineers (USACE). Locks, dams, and other infrastructure development on the waterways are funded by the Inland Waterways Trust Fund, which is a fund supported by the barge and towing industry by a tax paid on the fuel used by towing vessels in moving cargo on the waterways. This user fee represents 20 – 30 percent of the industry’s total fuel cost and is one of a number of taxes and fees paid to federal, state, and local governments.

Barges play a vital role in waterway transportation in the DRA region. Barges transport one out of every eight freight ton-miles moved domestically by U.S. industries. The majority of commodities transported by barges on the inland and Gulf Intracoastal Waterway (GIWW) system in the DRA region include coal, petroleum, grain and aggregates.

The inland and intracoastal waterway system and the associated industries are a tremendous asset in the DRA region. An economic impact study of the Port of Memphis completed in 2005 found that 12,310 jobs were port-related with earnings of \$287.8 million, and that local port related purchases were \$844 million. Waterborne transportation is clearly in a position to continue providing low cost, safe, environmentally-friendly, and fuel efficient transportation into the



future. Moving cargo by barge takes on an even greater importance when examining transportation options that can provide the capacity for sustainable development.

11.1.1 Port and Terminal Assets

The USACE Asset Database identifies 1,210 public and private port terminals in DRA region and 929 are private and 281 are public. Of the 281 public port terminals, 192 are owned and operated by port authorities. For the purposes of this report, private port terminal assets have been identified, but needs related to these private port terminals are not documented in this report.

11.1.1.1 Private Port Terminals

The 929 private port terminals supply a broad range of services in the DRA region and these facilities provide support for the following:

- Barge fleetings throughout the inland waterways;
- Agricultural services. For instance the Bunge Corporation operates 40 terminals in the DRA region that support agriculture services. Other agricultural terminal operations in the DRA region include ADM, Continental Grain and Cargill and many small independent operators;
- Petrochemical industry, such as Ashland Oil, Exxon Mobile, and Chevron;
- Loading and offloading bulk products;
- Repairing and manufacturing marine vessels; and
- Other aspects of the maritime industry.

11.1.1.2 Public Port Terminals

The 281 public port terminals in the DRA region include local, state and federal agency ports, as well as ports owned and operated by public port authorities. The public port terminals are owned and operated by 48 public port authorities in the DRA region and these authorities operate 192 commodity port terminals. Needs for these port authorities were identified and are documented in this report and in the CD that accompanies this report.

Public port terminals support cargo movement, ferry services, fisheries, and tourism. Both the U.S. Coast Guard and the U.S. Army Corps of Engineers operate terminals throughout the inland waterways to maintain and police the waterways. Public ports also support economic development initiatives in the DRA region. Local governments have utilized the sale of public bonds to finance investments that support port facilities. Although these port terminals are owned by the local government, the operations are leased to private industries.



11.1.2 Deepwater Ports

The deep draft channels in the DRA region are the Mississippi and the Calcasieu Rivers and the lower reach of Bayou Lafourche from Port Fourchon to the Gulf of Mexico. The USACE New Orleans District maintains both rivers. The Mississippi River from Baton Rouge to the Gulf of Mexico is 236 miles in length and is the state's chief river, the heart of waterborne commerce, and the lifeblood of the southeastern part of the DRA region. The Mississippi River from Baton Rouge north to Illinois is considered shallow draft. The Mississippi River is of major importance to the DRA region and to the nation as it is the gateway for waterborne commerce connecting the international maritime industry via the Gulf of Mexico with the DRA region.¹³⁹

Within the DRA region the USACE maintains a 45 foot navigation draft within the Mississippi River from Baton Rouge south to the Gulf of Mexico. The deep draft ports located within this section of the Mississippi River serve as the Inland Waterway's link to the world. Public ports include Plaquemines Port and the Port of St. Bernard and private terminals located downstream of the Port of New Orleans, the Port of New Orleans, the Port of South Louisiana and the Port of Greater Baton Rouge. These ports serve local regional economies. However, the national economy and ports located throughout the inland waterway are also directly benefited by the import and export of commodities through these ports. Although not located within the geography of the DRA the Port of Mobile also contributes significantly to goods movements to inland DRA ports.

11.1.2.1 Port of New Orleans

The Port of New Orleans benefits from its location on the Mississippi River, its linkage with the 12,000-mile inland waterway system, and from its connection with the Gulf Intercoastal Waterway, which joins the Mississippi River at New Orleans. The port is well positioned from the perspective of landside transportation. The port is served by six Class I railroads (including a rail bridge crossing of the Mississippi River) and linkages with I-10, I-55 and I-59. These highway and rail connections provide the Port of New Orleans users direct and economical freight service to the DRA region and the rest of the county.

The Port of New Orleans is one of America's leading general cargo ports. Principal commodities include steel, coffee, forest products, rubber, containerized cargo, and copper. The port also serves more than 700,000 passengers each year providing both international cruises and cruises on the inland waterways.

In the past 10 years, the Port of New Orleans has invested more than \$400 million in new state-of-the-art facilities. Improvements include improved break bulk and container

¹³⁹ *Louisiana Marine Transportation System Plan*. Louisiana Department of Transportation and Development, September 2007.



terminals that provide new multipurpose cranes, expanded marshalling yards and a new roadway to accommodate truck traffic.

11.1.2.2 The Port of South Louisiana

The Port of South Louisiana stretches 54 miles along the Mississippi River, and is the largest tonnage port district in the western hemisphere. The facilities within St. Charles, St. John the Baptist, and St. James parishes handled over 258 million short tons of cargo in 2007, via vessels and barges. Over 4,000 ocean-going vessels and 55,000 barges call at the Port of South Louisiana each year, making it the top ranked port in the country for export tonnage and total tonnage. The port cargo throughput accounts for 15 percent of total U.S. exports.

The Port of South Louisiana has eight port-owned facilities, ranging from grain elevators to general cargo facilities. The port serves as landlord of these, which are leased to operating companies such as Occidental Chemical, Archer Daniels Midland, and Cargill. The exception is the Globalplex Intermodal Terminal, purchased by the port in 1992. This terminal is being redeveloped into a world-class complex to accommodate a variety of dry bulk and break bulk cargo. Landside access at the Port of South Louisiana includes direct connections with two class I railroads and connections to I-10 and I-55 via LA 61.

The Port of South Louisiana Connector, which is a new roadway connecting the port to I-10, is an important project for the Port and it is identified in the *Louisiana Statewide Transportation Plan* completed by Louisiana Department of Transportation and Development.

11.1.2.3 The Port of Greater Baton Rouge

The Port of Greater Baton Rouge is strategically located on the Mississippi River and is an integral part of the Louisiana maritime industry and local and regional economy. The port is the head of deep water navigation on the Mississippi River; a 45-foot shipping channel that extends to the mouth of the Mississippi. The port is adjacent to the Port Allen Lock, which is the northern most point on the Mississippi River where barges can access the GIWW.

Landside access to the port includes a direct connection to I-10, convenient connection with I-12 and I-49, as well as Class I rail connectivity to the Union Pacific railroad on the west bank of the river, and with the Canadian National and Kansas City Southern railroads on the east bank. Like New Orleans, Baton Rouge has a rail bridge crossing of the Mississippi River. The port ranks among the top 10 U.S. ports in total tonnage.

11.1.2.4 Proposed New Deep Water Ports

The Millennium Port Authority was created by the Louisiana Legislature in 1999 to support the location of a major port container terminal downriver from New Orleans. *The Louisiana Statewide Transportation Plan*, suggests that the Millennium Port should be supported through public/private partnerships.



11.1.3 Inland Water Ports

The following provides a summary for some of the inland water ports located in the DRA region.

11.1.3.1 International Port of Memphis

The International Port of Memphis is the largest inland water port serving the DRA region. The Port of Memphis is the second largest inland port on the shallow draft portion of the Mississippi River, and the 4th largest inland Port in the U.S.

The Port of Memphis is part of an inland transportation hub encompassing Mississippi River ports, linkages to five Class I railroads, connectivity to I-55 (north-south) and I-40 (east-west) and superior access to Memphis International Airport, which is home to the Federal Express Corporation, which is a huge economic engine to Memphis and the surrounding DRA region. No other inland port approaches Memphis in either levels of freight moved or intermodal connectivity supported. Like the deepwater ports, Memphis serves local, regional and national markets and is a huge economic engine in the DRA region.

Inland waterway ports in the DRA region are extremely valuable, since these ports feed and disperse commodities throughout rural areas. Ports provide key linkages, such as collection points for agricultural commodities that are loaded on barges for international shipping or distribution for petroleum products moving up river. Ports provide access to waterborne transportation, which is a critical location factor for firms. Ports also contribute to local job creation and at the industries which locate in the area. However, unlike the deepwater ports and the Port of Memphis, these inland waterway ports, such as the ones listed below, tend to serve local and regional markets.

11.1.3.2 Southeast Missouri Regional Port Authority

The SEMO Regional Port Authority is located in Scott City, Missouri near Cape Girardeau and it is the most developed rural public port in the state. Semo Port is on the Mississippi River, midway between St. Louis, Missouri and Memphis, Tennessee. The 1,800-foot slackwater harbor is located 48 miles upstream from Cairo, Illinois (Ohio River) and 147 miles downstream from St. Louis (Illinois River and Missouri River). SEMO Port has ready access to all five modes of transportation (river, rail, highway, pipeline, and air). Interstates 55, 57, and 24 are located nearby; the Texas Eastern pipelines for petroleum products and natural gas are one mile away; and the regional airport is four miles by direct highway. The port handles primarily agricultural products, has intermodal water/truck/rail capability, and averages movement of over one million tons per year. A recently completed economic impact analysis estimated that the operations at the port added \$46 million in Gross State Product to Missouri in 2007. The analysis also showed a local impact of 530 jobs paying an average wage of \$36,631, \$20.4 million in personal income, and \$89.9 million in total economic impact. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.



11.1.3.3 New Madrid County Port Authority

The New Madrid County Port Authority is located just south of New Madrid, Missouri. The port is located in the 4,200-acre St. Jude Industrial Park along the upper-lower Mississippi River (mile 885) and is accessible by barge, rail and truck. The New Madrid County Airport is within two miles of the harbor and has recently undergone major renovation. Located a half-mile from I-55, the port is 175 miles south of St. Louis and 110 miles north of Memphis. It handles primarily agricultural products, has intermodal water/truck/rail capability, and moves an average of 265,000 tons per year. A recently completed economic impact analysis estimated that port operations added approximately \$9.2 million in gross state product in 2007. The analysis also showed a local impact of 170 jobs paying an average wage of \$29,349, \$5.1 million in personal income, and \$28.3 million in total economic output. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.

11.1.3.4 Pemiscot County Port Authority

The Pemiscot County Port Authority is located in Caruthersville, Missouri and located at mile 849 on the Mississippi River between St. Louis and Memphis. The port offers access to every mode of transportation and is located between two I-55 and I-155. Completion of the I-155 bridge between Caruthersville, Missouri and Dyersburg, Tennessee in 1976 established Pemiscot County as a complete intermodal transportation interchange providing direct linkage to all parts of the country. This is a well-developed port that handles agriculture products and fiberglass barge covers. The port handles approximately 550,000 tons per year and has a general cargo dock with excellent highway/interstate access. A recently completed economic impact analysis estimated that the operations at the port added approximately \$77 million in gross state product to Missouri in 2007. The analysis also showed a local impact of 1,061 jobs paying an average wage of \$42,531, \$50.1 million in personal income, and \$177.5 million in total economic output. Revenue generated from port operations is put back into facility development but infrastructure needs are far greater than revenue.

11.1.3.5 Yazoo County Port

Yazoo County Port is located in Yazoo City in the west central portion of Mississippi at milepost 75 on the Yazoo River. The port serves four counties including Issaquena, Sharkey, Yazoo and Warren. The port is east of the Mississippi River and offers service to industries along the Yazoo River. The port has rail and landside access and intermodal capabilities. The port offers one barge berth, with nine feet of water and hard surface backup area. The port has one crane, a truck scale, one dry storage warehouse and one 8-inch pipeline servicing private storage facilities. There are two plots of developable land available including one 27-acre area on the terminal and one 56-acre area one-half mile from the terminal. The port is served by one Class 1 railroad, the Canadian National via a 2.5-mile rail spur partially owned



by the railroad and the James River Corporation. The port is accessed by both US 49 West and MS 3.¹⁴⁰

11.1.3.6 Port of Vicksburg

The Port of Vicksburg is located in the City of Vicksburg in the lower western portion of Mississippi. The port is on a slack water harbor connected to the Mississippi River by 4,800-foot of channel at milepost 437. The port serves Warren, Hinds and Claiborne Counties and parts of Louisiana. The port has rail and road access and has intermodal capabilities. There are two large barge berths 400-feet in length with a draft of 12-feet. There is a T-dock with one overhead gantry crane. The port maintains an additional mobile crane. There are four acres of surfaced area used as back-up for the berth. The port also has a conveyor loader, direct dump capability for direct barge loading, palletized loading capability, and two dry storage warehouses totaling 90,000-square feet. The port's rail spur is connected to two Class 1 railroads, the CN/IC and the Union Pacific, via the Mid South Railroad. The port area is located off US 61, six miles from I-20. The area maintains the only major rail crossing between Memphis, TN and Baton Rouge, LA.¹⁴¹

11.1.3.7 Henderson County River Port

The Henderson County Riverport is located at river mile 808 on the left descending bank of the Ohio River, west of Henderson, Kentucky. The general cargo handling area includes a cargo dock with 42,000-square foot of open dock space and a 125-ton electric-pedestal crane capable of handling commodities from barge, truck, or rail. The crane capacity and design configuration provides excellent heavy-lift capacity, with the terminal noted for this service. The operating port facilities and available industrial properties are located on KY 136, a 2-lane roadway. This highway connects with US 60, only one mile from the port, and also connects with US 41 about three miles from the port. At the junction of KY 136 and US 60, KY 425 (also known as Henderson Bypass) offers an excellent connection to the Edward T. Breathitt/Pennyryle Parkway and the Audubon Parkway, both only eight miles from the port. The Edward T. Breathitt/Pennyryle Parkway is a designated I-69 corridor, important for future transportation in the geographic region. Rail service at the port is provided by CSX, with numerous port industries and nearby industries utilizing rail transportation. Within the confines of the port development, the port authority owns a track network of 12,800-feet designed to service the needs of industries and terminal operations.¹⁴²

¹⁴⁰ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴¹ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴² *Kentucky Riverport Improvement Project*. Kentucky Transportation Cabinet, January 2008.



11.1.3.8 Yellow Bend Slackwater Harbor

The Yellow Bend Slackwater Harbor (Yellow Bend Port) is an important part of the freight transportation system in southeastern Arkansas, providing a cost-effective means for shipping the region's bulk commodities. Completed in September 1993, it is operated as a public terminal where anyone may ship or receive goods or use its facilities. The port's primary purpose is to serve agricultural operations in the region. Yellow Bend Port is located on Highway 208 near the Chicot/Desha County line at river mile 553 on the Mississippi River. The harbor is located in close proximity to the planned I-69 and Great River Bridge. When constructed, these transportation facilities would provide an improved Canada / United States / Mexico overland trade route that could possibly generate additional cargo shipments at the port. The port, however, is currently underutilized with regard to its potential.¹⁴³

11.1.4 Petroleum Industry Ports

Ports in south Louisiana provide support to the U.S. offshore oil industry. For example, Port Fourchon's primary service market is domestic deepwater oil and gas exploration, drilling, and production in the Gulf of Mexico. The port plays a crucial role in providing 16-18 percent of the U.S. oil supply. Other ports in the DRA region supporting the offshore industry include the Port of New Iberia and private terminals located in Plaquemines Parish, Louisiana. These ports are crucial to the national, regional and local economies and needs at these ports must be addressed to ensure these strategic port assets are maintained and expanded to fully support the petroleum industry.

11.1.5 Port Security

The U.S. Coast Guard is responsible for security of port facilities and vessels, under the terms of the Ports and Waterways Safety Act of 1972 and the Maritime Transportation Security Act of 2002.

Each terminal operator in a port area is required to conduct a facility security assessment, as well as write a security plan and submit it to the U.S. Coast Guard for review and approval. The facility security plan must specify how the port will address the security vulnerabilities identified in its security assessment. For instance, it must restrict access to its facility with fences and a system to identify unauthorized personnel. The operator must specify how it will monitor activity at the facility through the use of some combination of security guards, water-borne patrols, alarm systems, surveillance equipment, and lighting. Security plans at container facilities must specify how it will check container seals and verify that arriving trucks have legitimate business at the facility.¹⁴⁴

¹⁴³ *Yellow Bend Slackwater Harbor Study*. Arkansas Highway and Transportation Department. March 2004.

¹⁴⁴ *Terminal Operators and Their Role in U.S. Port and Maritime Security*. CRS Report for Congress, April 2006



11.1.6 Lock Assets

A lock is a device for raising and lowering boats or barges between stretches of water of different levels on a river to make the river navigable. The distinguishing feature of a lock is a fixed chamber whose water level can be varied.

The U.S. Army Corps of Engineers is responsible for the operation and maintenance of the U.S. waterway system to ensure efficient and safe passage of commercial and recreational vessels. Locks play a vital role in the waterborne transportation system, especially in the DRA region in which there are 40 locks along 19 waterways. Mississippi and Missouri are the only two states that do not have a lock on a navigable waterway in the DRA region.

From St. Genevieve, Illinois south to the Gulf of Mexico, the Mississippi River is an open river with no lock structures allowing barges to tow more than 80,000 tons. Smaller tows of up to 23,000 tons operate on other rivers, due to the size of the lock structures.

The following provides the state and waterway in which a lock is located in the DRA region:

- **Alabama** - Seven Locks
 - 2 on the Alabama River;
 - 1 on the Black Warrior River;
 - 2 on the Tennessee-Tombigbee Waterway; and
 - 2 on the Tombigbee River.
- **Arkansas** - 10 Locks
 - 7 on the Arkansas River; and
 - 3 on the Ouachita River.
- **Illinois** - Five locks
 - 1 on the Kaskaskia River; and
 - 4 on the Ohio River.
- **Kentucky** - Four Locks
 - 1 on the Cumberland River;
 - 2 on the Green River; and
 - 1 on the Tennessee River.
- **Louisiana, Within the Port of New Orleans Jurisdiction** - Three Locks
 - 1 at the Algiers Canal;
 - 1 at the Harvey Canal; and
 - 1 at the Inner Harbor Navigation Canal.
- **Louisiana, Other Waterways** - Nine Locks



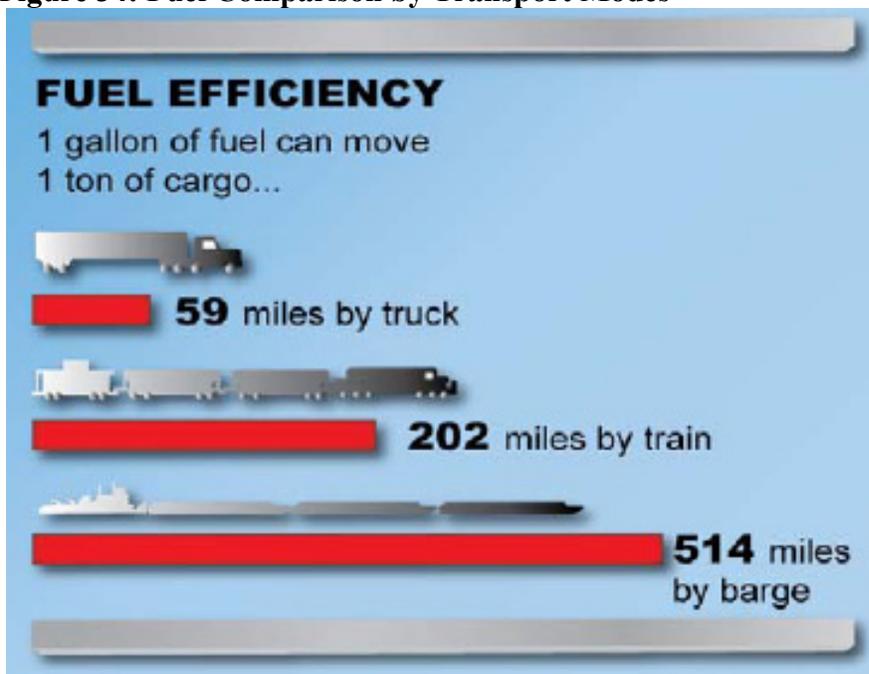
- 1 on Bayou Teche;
- 1 on the Black River;
- 2 on the Ouachita River;
- 2 on the Port Allen Alternate Route Intracoastal Waterway; and
- 3 on the Red River.
- **Tennessee - Two Locks**
 - 2 on the Tennessee River

11.2 Barge vs. Truck and Rail Transportation

11.2.1 Energy Savings

As shown in **Figure 34**, barge transportation is cost and fuel efficient and is ideal for large bulk commodities. A ton of cargo can be moved more than 500 miles by barge with one gallon of fuel compared to 59 miles by truck or 202 miles by rail. A comparison of capacities between barge, rail, and truck is shown in **Figure 35**.

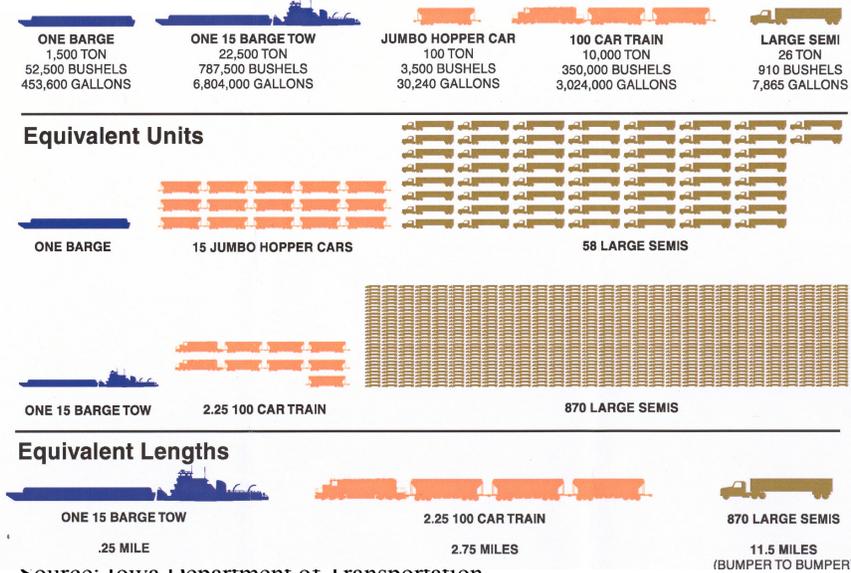
Figure 34: Fuel Comparison by Transport Modes



Source: U.S. Army Corps of Engineers



Figure 35: Cargo Capacity Comparison by Transport Modes



Source: Iowa Department of Transportation

Considering the escalating cost of fuel and the growing dependence on imported oil in the U.S., investment in the U.S. inland and Gulf Intracoastal Waterway (GIWW) system and public waterway infrastructure along these systems is needed to provide and support additional freight movement in the DRA region.

11.2.2 Safety

Barge transportation is a safe way to transport cargo and based on safety records, it has the fewest number of incidents, fatalities, and injuries of all surface modes and the fewest number of hazardous material spills.

11.2.3 Environmental Protection

There are clear environmental benefits to using waterway transport in lieu of roadway and rail transport. Studies have shown that waterway transportation produces fewer emissions than competing modes and that the impacts on the surrounding land and noise-related pollution are much lower than roadway and rail transport. Waterway transportation can also assist in mitigating the need for increasing highway and rail capacity by constructing new facilities. This avoids the environmental impacts that could result from the construction of new or expanded facilities.



11.2.4 Benefits to the Nation’s Highways

Truck freight traffic in the DRA region is forecasted to nearly double by 2020. If some of the truck freight cargo can be moved from truck to waterway transportation, major highways, especially in urban areas in the DRA region, will benefit because truck traffic disproportionately produces wear and tear on the roadways and bridges, reducing life expectancy. Also, the removal of trucks will improve highway capacity.

11.3 Waterway, Lock and Port Needs

11.3.1 Waterway Needs

Addressing the needs on the inland and GIWW system in the DRA region is crucial. The responsibility for maintaining a navigable channel on these waterways rests with the USACE. Waterway needs are grouped into dredging and channel deepening. **Table 18** provides a summary of waterway channel needs in the DRA region, identified through discussions with state waterway staff, port operators, regional meetings and reviewing state waterway system plans. The public port needs total \$3.6 billion and lock needs total \$477.6 million.

Table 18: DRA Inland Waterway Needs

Waterway	State	Needs
Alabama River	AL	Dredge channel to maintain authorized depth
Tennessee-Tombigbee Waterway	AL	Dredge channel to maintain authorized depth
Black Warrior River	AL	Dredge channel to maintain authorized depth
Apalachicola-Chattahoochee-Flint River System	AL	Dredge channel to maintain authorized depth
McClellan-Kerr Arkansas River	AR	Increase channel depth from 9 to 12-feet
White River	AR	Dredge channel to maintain authorized depth
Kaskaskia River	IL	Dredge channel to maintain authorized depth
Bayou Lafourche	LA	Channel deepening to 50 feet from Port Fourchon to Gulf
Freshwater Bayou/Gulf Intracoastal Waterway (GIWW)/Commercial Canal	LA	Widen channel and improve navigation depth to 16-feet
Red River (includes route with DRA parishes)	LA	Improve channel depth to 12 feet from Old River Lock to Shreveport
GIWW includes route with DRA parishes)	LA	Dredging along the Gulf Intracoastal Waterway (GIWW) from the Louisiana/Alabama border to Carrabelle, Florida
Baptiste Collette	LA	Channel deepening to accommodate oil and gas industry traffic
Ouachita River	LA	Dredge channel to maintain authorized depth
Tennessee River	KY	Dredge channel to maintain authorized depth
Yazoo River	MS	Dredge channel to maintain authorized depth
Vicksburg Harbor	MS	Dredge channel to maintain authorized depth
Tennessee River	TN	Dredge channel to maintain authorized depth



The USACE has a difficult task in ensuring that all navigable waterway channels provide sufficient depth to allow barges to transport cargo to and from markets in the DRA region. The USACE conducts regional public meetings that present an opportunity for local port and waterway personnel to provide comments and needs to the Corps. These meetings are very successful in identifying immediate waterway needs that are crucial to maintaining an efficient waterway system in the DRA region. If dredging and channel deepening is not maintained, the resultant impedance to navigation increases transportation costs, timely shipping of perishable goods and affects the local and regional economy. The DRA region's ability to attract industries that rely on waterborne transportation is affected, as are existing industries and port terminal operations.

11.3.2 Port Needs

Each of the 48 public port authorities serving the DRA region was contacted to complete a survey to document the needs at individual ports. The detailed needs are provided on the CD included in this report. The following provides need information for each state in the DRA region that was identified by reviewing State Long Transportation Plans and Long Range Transportation Plans completed by MPOs.

11.3.2.1 Alabama

The Alabama State Port Authority is responsible for five ports in the DRA region. The port authority has identified the maintenance of waterways to authorized navigation depths as the most pressing need. The Alabama State Port Authority and five waterway associations representing the commercially navigable river systems in Alabama have formed the Coalition of Alabama Waterway Associations (the "Coalition") to promote port and waterways projects and programs to benefit the state's river basins, industries, carriers and other users of the ports and waterways. The Coalition is working on a strategic plan in support of Container on Barge (COB) service. Container on Barge services are reviewed as a separate topic in this report.

11.3.2.2 Arkansas

The Arkansas State Public Riverport Study and Needs Assessment, provides an overview of river port needs in Arkansas. The ports in the DRA region that were evaluated in the Study include the Ports of Camden, Crossett, Helena Harbor, Little Rock, Osceola, Pine Bluff, West Memphis and Yellow Bend. Three of the ports identified the need for improved rail access. Other identified needs included maintenance dredging at the port, equipment (including conveyors and cranes), docks, warehouse and open storage, and site improvements in support of port operations. The Central Arkansas Transportation Study (CATS), which covers the Little Rock-North Little Rock Metropolitan area, identifies \$2.3 million to improve barge capacity and truck access at the Little Rock Port. *The Arkansas Statewide*



Long Range Intermodal Transportation Plan, 2007 Update, also noted the following port issues in the DRA region:

- Improve landside access (roadway and rail);
- Improve dredging ;
- Improve intermodal capabilities;
- Upgrade infrastructure, facilities and equipment;
- Provide additional security at ports;
- Identify new funding resources; and
- Develop marketing plans.

11.3.2.3 Illinois

Studies show that Illinois waterborne freight movement trends are mixed, with some ports experiencing growth while others report reduced tonnage over recent years. Even though the Illinois Waterway System is an underutilized freight transportation asset, the state is geographically positioned to use waterborne freight transportation more effectively.¹⁴⁵

The two operating ports in the DRA region are the Shawneetown Regional Port District and the Kaskaskia Regional Port District. Needs noted at these ports include upgrades to roadway and rail access, channel and lockage improvements, equipment upgrades and enclosed storage. Also, the *Illinois Transportation Plan, Special Report: Illinois Transportation System Update*, noted the following waterway system issues:

- Encourage the use of “short sea shipping” to offset loads that currently are carried by truck and rail;
- Provide better integration of rail and waterborne transportation resources through improvements to rail-water intermodal facilities; and
- Evaluate the ports within the state to determine if steps can be taken to improve utilization for warehousing, manufacturing, and other commercial transportation-related uses.

11.3.2.4 Kentucky

The Kentucky Transportation Cabinet completed the *Kentucky Riverport Improvement Project* in January 2008. The four ports in the DRA region are the Eddyville Riverport and Industrial Development Authority, the Henderson County Riverport Authority, the Hickman-Fulton County Riverport Authority and the Paducah-McCracken County Riverport. Needs

¹⁴⁵ *Illinois State Transportation Plan*, Illinois Department of Transportation, June 2007.



noted at these ports include upgrades to rail access, port expansions, as well as equipment and storage upgrades and total \$48 million.

Two additional ports are proposed: the Marshall County-Calvert City Riverport Authority and the Wickliffe-Ballard County Riverport Authority. Port needs include start-up funding involving planning and engineering and site development.

11.3.2.5 Louisiana

The Louisiana Department of Transportation and Development completed the *Louisiana Marine Transportation System Plan*, and this Plan identified the following needs:

LOUISIANA DEEP DRAFT PORT NEEDS

Louisiana's public deepwater ports service the Mississippi River from head of pass to Baton Rouge, as well as the offshore oil industry and various inland waterways. The three primary deep draft ports are the Ports of New Orleans, South Louisiana and Greater Baton Rouge.

1. The Port of New Orleans recently released *Charting the Future of the Port of New Orleans, 2020 Master Plan*. The plan focus is the continued upgrade to the capacity and modal capability of the Napoleon Container Terminal Complex. The Napoleon Terminal is the port's principal container handling facility. Planned terminal expansion will increase the handling capacity of the terminal from 360,000, 20-foot equivalent units (TEUs) to 1,000,000, 20-foot equivalent units (TEUs).

Another key improvement proposed for the terminal is the rail intermodal facility. The rail facility will be capable of handling several intermodal unit trains per day. Connections with railroads are currently undertaken by truck dray to one of the six main line railroads that serve the port. The port also recognizes as a need an improved roadway connection with the Pontchartrain Expressway, the control of access roadway which links the port to I-10.

These improvements to the Napoleon Terminal represent nearly \$500 million of investment, approximately half of the port's \$1 billion long-range plan requirements.

2. The Port of South Louisiana needs include more than \$40 million of pier/dock related improvements at the Globalplex complex, and emergency repairs to the access bridge which connects the existing dock to landside infrastructure.
3. Greater Baton Rouge has identified more than \$100 million of investment needs, including annual maintenance dredging, maintenance of various port facilities, and upgrades to equipment, docks and warehouses, as well as improvements to roadway and rail access.



LOUISIANA PORT NEEDS IN SUPPORT OF THE OFFSHORE PETROLEUM INDUSTRY

Port Fourchon is the principal landside support agent for oil and gas extraction in the Gulf of Mexico. Port needs include continued financial support for the \$1.4 billion upgrade of LA 1 to a continuous roadway on structure from Golden Meadow to Port Fourchon. The port also hopes to upgrade its Bayou Lafourche access channel to 50-foot navigation depth to accommodate the increasing demands of the offshore industry. The Port of New Iberia's primary need is upgrading the Acadiana Gulf of Mexico Access Channel to 16-foot navigation depth, which requires \$150 million in investment.

LOUISIANA INLAND PORT NEEDS

Within the DRA region, Louisiana's 17 inland ports service the Mississippi River upriver from Baton Rouge, and various inland waterways, including the Red River. Individual port needs vary, but collectively these ports have infrastructure needs, including roadway and rail access, dredging of waterways to/at the ports, dock facilities, equipment maintenance and upgrades, and various types of expansion programs to meet future requirements.

11.3.2.6 Mississippi

Five of the six ports in the DRA region are located on the Mississippi River and include the Claiborne County Port Commission, the Greenville Port Commission, the Natchez-Adams County Port Commission, the Rosedale-Bolivar County Port Commission, and the Warren County Port Commission. The Yazoo River County Port Commission is located Yazoo River.

A complete review of the state's 16 ports was conducted through the *Comprehensive Assessment of the Ports of Mississippi* in January 2000. This report provided a comprehensive assessment of the ports including facilities, market, expenditures required and future needs and includes the six ports located in the DRA region. The primary goals of the comprehensive assessment were to assess the ports' contribution to the state economy and to identify the ports' internal infrastructure needs. Therefore, the report did not address fully an analysis of the importance of the development of water, rail and road accessibility to the state's ports.

The state of Mississippi and MDOT, have made significant advances in recent years by supporting the ports through improved road access. Ports are appreciative of the National Highway System Intermodal Connector Improvement Program (ICIP) and the Multimodal Transportation Capital Improvement Program. Most ports have benefited from the available funding and access to the ports has improved significantly. However, planning for future



growth will require continuous improvements and enhancements, and in some cases completely new access roads, to handle the projected traffic volumes.¹⁴⁶

Various concerns regarding rail access and/or service were identified by ports in the DRA region. These included the rate structure, lack of service, or limited rail service available due to the condition of the rail infrastructure itself. Maintaining the water depth of access channels and berth areas were also identified as the primary concern for ports in the DRA region. The cost of dredging and disposal, and environmental issues related to the disposal of dredged material are preventing many of the ports from adequately maintaining the required water depths. Many of the ports in Mississippi would benefit from Long-Term Dredge Management Plans (LTDMP), and funding assistance for maintenance dredging.¹⁴⁷

Waterfront property at the Port of Vicksburg is fully utilized. As a result, the port has been forced to turn away potential new business. The port is currently evaluating the potential to develop an additional 80 acres located on the north end of the industrial park; however, if the cost of development proves too burdensome, the port will not be able to expand without funding assistance.¹⁴⁸ During the April 2008 DRA Multimodal Regional Meeting in Mississippi, a short-line rail track between the Pot of Vicksburg and Yazoo City Port was discussed as a potential solution.

Transportation (potential) needs in northwest Mississippi may include the following Mississippi River port improvements to support future development:

- Portage Facilities;
- Heavy Cranes;
- Over Levee Conveyor;
- Rail Load Out; and
- Bulk Storage.

11.3.2.7 Missouri

The three-operating ports in the DRA region are the New Madrid County Port Authority, the Pemiscot County Port Authority, and the Southeast Missouri Regional Port Authority. The New Bourbon Regional Port Authority is proposing to construct facilities and the Mississippi County Port Authority operates a ferry.

Missouri port needs include improve rail access, maintenance dredging and other channel modifications, new terminals (including bulk products), upgrades to warehouses and general cargo storage, and land for port expansion.

Missouri DOT provided the DRA with the following port needs:

¹⁴⁶ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴⁷ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.

¹⁴⁸ *MULTIPLAN – Ports and Waterways Modal Assessment*. Mississippi Department of Transportation, 2007.



SOUTHEAST MISSOURI REGIONAL PORT AUTHORITY

Current port infrastructure needs include rail track maintenance due to growing rail traffic, paving of dock surfaces and various streets for improved truck access, and dike construction and site fill for industrial development. The cost estimate for these projects totals \$1.4 million. MoDOT proposes a 50/50 percent cost share for these projects with DRA funds. SEMO Port Authority also completed the needs survey and identify an additional \$3.2 million in needs to maintain and expand the port.

MISSISSIPPI COUNTY PORT AUTHORITY

The port authority operates a ferry service from Dorena, Missouri to Hickman, Kentucky. The service transports an average of 18,000 vehicles and 39,000 passengers per year. It received \$80,000 in state operating financial assistance from MoDOT in state FY 2007 and that amount was also matched by the Commonwealth of Kentucky. MoDOT applied for Federal Ferryboat Discretionary funds in federal FY 2008 to purchase a new larger barge for this service in order to increase capacity, but the application was not funded. There is growing semi truck traffic on this service, due to high fuel costs, and the current barge has limited carrying capability, which frequently causes cars to be left on the bank for another trip. This equipment upgrade is estimated to cost \$1.25 million.

NEW MADRID COUNTY PORT AUTHORITY

While a current port tenant enjoys rail service, rail access still needs to be extended to the north side of the port and to the dock for economic and industrial development. The estimated cost totals \$950,000 and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

There is also a need for additional storage and warehouse capacity at this port to promote additional industrial development. The estimated cost totals \$550,000 and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

PEMISCOT COUNTY PORT AUTHORITY

Completing a rail connection to the port has been a long-standing need and ongoing project for approximately 10 years. A spur track from Hayti has been constructed within two miles of the port using a combination of local, state, and federal funds, but is waiting for additional funding to complete the project. It is estimated to cost \$2.4 million to complete the rail spur into the port and MoDOT proposes a 50/50 percent cost share for these projects with potential DRA funds.

11.3.2.8 Tennessee

The only public port authority supporting existing port facilities within the DRA region of Tennessee is the Memphis and Shelby County Port Commission, operating as the International Port of Memphis.



The port needs include improvements to roadway and rail access serving the port; maintenance dredging as well as widening and deepening of the access channel to McKellar Lake Harbor; internal roadway and storm drainage improvements; various facility improvements at Pidgeon Industrial Park including an intermodal terminal and rail upgrades; and improvements to Homeland Security capabilities.

Additionally the *Memphis 2030 Long Range Transportation Plan*, identified the need for improved access from I-55 to Riverport Road and improved access to Presidents Island.

The Tennessee Long Range Transportation Plan, Modal Needs, highlighted of the following actions to improve navigation on waterways in the DRA region:

- Deepening navigation channels to a minimum 12-foot navigation depth;
- Completion of construction of the Kentucky Lock;
- Research navigation clearances at bridges and upgrade those not meeting standards;
- Full funding of USACE operations and Maintenance budget;
- Addition of mooring cells through the navigable waterways in support of temporary mooring and fleeting; and
- Support for multimodal ports on the Tennessee River.

The Northwest Tennessee Regional Port Authority has initiated construction of the Port of Cates Landing in northwest Tennessee. The Cates Landing public port will provide loading and unloading capabilities for various raw and finished products onto and off barges. The port will be accessible to barge traffic year round with slack water access to the barge berthing area. The needs to complete the Port of Cates Landing total \$37.4 million.

11.3.3 Locks Needs

As with other critical components of the DRA region transportation infrastructure, the locks and dams that support navigation through the region inland waterways are aging. As noted, there are 40 locks along 19 waterways in the DRA region. The oldest lock is 95-years old, while the youngest is 16-years old.¹⁴⁹ The average lock age in the DRA region is 44-years old and due to this there are many lock needs in the DRA region.

Some of the locks in the DRA region, such as the Inner Harbor Navigation Canal Lock (INHC) at the Mississippi River in New Orleans, are reaching functional obsolescence. The Inner Harbor lock, which opened in 1923, is critical to traffic utilizing the GIWW. A replacement lock is needed, but plans have been stopped due to environmental concerns of constructing a new lock.

¹⁴⁹ U.S. Army Corps of Engineers



The consequence to the aging lock infrastructure is increasing incidents of maintenance requiring lock downtime, and a higher risk of major component failure, which affects navigation through the inland waterways network. Downtime has increased by over 300 percent between 1992 and 2005.¹⁵⁰

Although the locks enable navigation through the inland waterways, there are inherent constraints associated with lock operations with limitations imposed on tow length and width. Also, since there are numerous barge tows that must use locks, a schedule to enter to lock is needed and the actual wait times vary with individual locks. These constraints are contributory to tow transit delay, which occurs throughout the inland waterway network as tows transit through the locks.

The U.S. continues to reap the benefits of investments made by previous generations to the inland waterway system in the DRA region. However without adequate reinvestment to maintain and modernize the waterways infrastructure, waterways containing aged locks may threaten waterborne transportation in the future.

The *National Surface Transportation Policy and Revenue Study Commission* authorized in Section 1909 of SAFETEA-LU, completed a final report in January 2008. One of the policy papers noted the following:¹⁵¹

Inland waterways locks and dam structures have become antiquated and efforts to replace them with modern design and capacity enhancements have been stagnant. Congestion associated with the approaches to the obsolete lock structure means tows of barges are queued for long distances along river banks for hours or days, waiting for access to the locks. During this waiting period barges are not providing any transportation service. Labor, capital and other operating costs, however, continue, almost undiminished.

The problem arises from both the inadequate dimensions of the older lock structures and from the physical deterioration. Older locks were designed to accommodate 600 foot barge tows ("trains" of individual barges), while modern barge tows are 1,200 feet long. Delays are caused when these longer tows transit the shorter locks, necessitating the time consuming exercise of breaking a tow and reassembly after passing the lock in two or more segments.

The USACE provided the lock needs, which total \$477 million and the following provides a summary of the needs and costs associated with improving the improving waterway infrastructure in the DRA region:

- Emergency Generator at the Algiers Lock - \$1 million;

¹⁵⁰ Private Sector Role in Waterway Infrastructure Development. Smart Rivers 2006 Conference.

¹⁵¹ Paper 2E-01, Conditions and Performance of Other Components of the Surface Transportation System. National Surface Transportation Policy and Revenue Study Commission. January 2008.



- Spare Gates at the Algiers Lock - \$3.2 million;
- Inner Harbor Navigation Canal Lock Guidewall Replacement - \$6 million;
- Continued Planning for the Inner Harbor Navigation Canal Lock replacement - \$6 million;
- Programmable Logic Controllers at the Algiers, Harvey, Port Allen and Inner Harbor Navigation Canal locks - \$ 1.7 million; and
- Repair and Replacement of Mooring Buoys at locks - \$500 thousand.

The *Louisiana Marine Transportation System Plan* considers the Inner Harbor Navigation Canal Lock replacement and the Bayou Sorrel Lock replacements to be critical projects. Needs for all locks are provided on the CD included in this report.

11.3.4 Container on Barge (COB) Services

The widening of the Panama Canal to accommodate larger container vessels is expected to expand opportunities container ports in the Gulf of Mexico. Gulf ports, including New Orleans, Mobile (outside DRA region), and Gulfport (outside DRA region) are expanding container handling facilities in anticipation of this market opportunity.

As a result of these expanding container services, one of the emerging issues within the inland port community is the consideration of opportunities for development of COB services.

Both the Port of Greater Baton Rouge and the International Port of Memphis currently support COB services. Additionally, a number of studies have focused on the opportunities for COB services. *Where the Rubber Meets the Roads*, U.S. Maritime Administration, U.S. Department of Transportation September 2002 was published in conjunction with the Gulf/River Intermodal Partnership (GRIP). The Study envisions a proactive government role, both in providing the leadership required to initiate services, and in funding the infrastructure required to support COB service. The following potential impediments to the services were noted:

- Lack of public and shipper recognition of service;
- Vessel technology lacking;
- Expensive pilotage;
- Markets may be inadequate or insufficient;
- Service reliability of transit within the inland waterway due to aging lock and bridge infrastructure; and navigation channels not maintained to authorized depths;
- Lack of connectivity to existing roadway and rail infrastructure;
- Environmental constraints; and
- Perceived investor risks.



The Alabama Freight Mobility Study, Phase I, presents a business perspective on the feasibility of container on barge service. Case studies were developed for services between the Port of Mobile and markets in Montgomery, Alabama; and the Port of Mobile and markets in Tupelo, Mississippi. Cost is always a factor driving shipper decisions. However, the study determined that schedule (frequency of service) and service reliability (on-time delivery) are just as important as cost in determining shipper preference. The Montgomery Case Study focused on the need for dredging of the Alabama River to provide a reliable navigation depth for barge transit.

Phase II of the *Alabama Freight Mobility Study*, which will be completed in 2008 will deliver:

1. Strategic market assessment of the Tennessee-Tombigbee and Tennessee River Corridors from Columbus, Mississippi to Chattanooga, Tennessee;
2. Business perspectives initiative for container-on-barge operations;
3. Analysis of Mobile container terminal operations from an inland waterways perspective; and
4. Analysis of European Waterways.

The Southeast Missouri Port Authority has also investigated the feasibility of initiating COB service to Waco Texas and to New Orleans. Container-on-Barge service was compared with a truck transit. Neither service was cost-effective in February 2008. The analysis undertaken in support of the SEMO case study assumed cargo origins and destinations within the U.S. This assumption required a backhaul of the container (empty or full), which added to the overall cost of the trip. If the container shipment was an import/export movement, the return shipment of the container would not be a factor affecting the cost of the service. Another consideration in the SEMO study was the truck dray. Dray of the container at origin and destination points was considered and the cost of the dray was added to the overall cost of the trip.

Per ton of cargo moved, barge transport is more energy efficient than truck or rail transport and it produces less pollution. From a public policy objective, moving shipping containers from truck and rail transit to barge may be a beneficial strategy. However, market forces drive shipper decisions. To date, the high value, time-sensitive cargos shipped via shipping containers continue to be transported by rail and truck. Are there market conditions at play that would support the growth of COB traffic in the DRA region, possibly?

1. To the extent that the ports of Mobile (which outside the DRA region but impacts inland waterway traffic in the DRA region) and New Orleans capture additional container business associated with the widening of the Panama Canal, there may be additional opportunities for COB on connecting inland waterways.
2. COB service would benefit if agricultural or other bulk commodities shifted partially to utilization of shipping containers.



3. COB service would benefit by attracting hazardous cargos on to this very safe means of transport.
4. COB service would benefit by attracting containers with weights exceeding highway load limits.
5. If a cost-effective marine technology can be developed to reduce barge transit times, COB services would benefit.
6. In comparison to other transportation modes (truck and rail), barge transportation is less impacted by the increasing price of fuel. How increasing fuel costs transform the U.S. economy, and how these cost increases affect how goods are moved is yet to be determined.

Because there are no lock structures on the Lower Mississippi, there are no navigation impediments to the growth of COB service. However, once the inland waterways controlled by locks are entered, the COB service would be subject to all of the congestion constraints and schedule uncertainties confronting bulk shippers, and these uncertainties may affect shipper decisions relating to the utilization of COB service. For COB to become a viable option throughout the entire DRA region, additional funding to upgrade to the navigation locks and to support dredging of navigable waterways must be identified.

RECOMMENDATIONS

The investments in the inland waterway network have far reaching implications to the U.S. economy. In addition to the direct benefits associated with the employment in transportation industries that service customers on the waterway, there are many industry sectors that rely on the efficiencies of water transportation. The overall economy is directly benefited by these efficiencies in the form of reduced cost for goods, and the import/export of commodities within the global economy. Strategic investments in the waterway network need to be evaluated in consideration of the benefits that are derived within the overall economy of the region.

POLICY RECOMMENDATIONS

There is a growing recognition to develop a national comprehensive freight policy that includes waterways to meet the freight transportation challenges in the future. The system of inland waterways and associated ports and terminals currently plays a significant role in moving approximately 15 percent of the country's intercity freight tonnage including primarily petroleum, grain coal and other bulk commodities. With the increased importance of fuel efficiency and environmental constraints, opportunities exist for modal shifts from highways and rail to waterborne transportation.



The following provide some recommendations to improve the inland waterway transportation in the DRA region, as well as support port authorities in making waterborne transportation a viable transportation mode well into the future.¹⁵²

- According to the USACE, the lock and dam infrastructure on the inland waterways network is worsening. Funding mechanisms need to be in place to ensure that monies are available for construction, as well as operation and maintenance of locks to meet anticipated demand levels.
- Maintain adequate channel depths along all waterways in the DRA region.
- Improve the efficiency of waterway operations by alleviating physical constraints.
- Streamline federal authorization and funding processes and restructure USACE procedures to minimize time constraints (currently under legislative consideration). The present USACE budget process focuses narrowly on individual projects that are proposed by individual cost-shared sponsors. Funding of projects to completion often is uncertain for large, multi-year projects, and more projects have been authorized than have been funded.
- Increase value-added manufacturing industry along the waterways e.g. iron ore and scrap metal, chemical manufacturing, goods manufacturing, ethanol industry, grain containerization, etc.
- Increase private sector investment through marketing, tax incentives, and state grants.
- Expand COB Operations – Containerized shipping is not only the fastest growing technique for transporting all types of cargo, but it is also considered one of the most efficient and cost-effective methods. International trade generally drives the surge in containerized cargo. With the increasing role played by the foreign component of U.S. waterborne commerce, it is imperative that the DRA region marine transportation system take advantage of this trend.
- Encourage the use of “short sea shipping” to use the inland waterways to offset loads that currently are carried by truck or rail.
- Provide better integration of rail and waterborne transportation resources through improvements to rail-water intermodal facilities.

PROJECT RECOMMENDATIONS

Inland Waterways – Although not identifiable as a specific project, the greatest need is maintenance dredging of DRA inland waterways to authorized channel depths. These

¹⁵² Some of the recommendations are from the *Louisiana Marine Transportation System Plan*. Louisiana Department of Transportation and Development, September 2007 and the *Illinois State Transportation Plan*, Illinois Department of Transportation, June 2007.



recommendations need to be evaluated to determine the costs and benefits associated with each proposed action.

Ports – Needs for individual ports have been identified and these are provided in on the CD included in this report.

The ports of Baton Rouge, Memphis, New Orleans and South Louisiana play a special role in that these ports enable business to occur throughout the inland waterways. Individual projects that support the capabilities of these ports should be supported. Particular attention should be focused on projects that improve roadway or rail connectivity. Also, Port Fourchon plays a critical role in support of Gulf of Mexico oil and gas extraction. The port's expansion to accommodate future industry needs; its continuing efforts to upgrade landside access; and its proposals to upgrade access channel depths should be supported.

Locks – Three locks have been identified as primary concerns. The construction of the Kentucky Lock needs to be fully funded. The environmental documents for the Inner Harbor Canal Lock need to be carried forward to conclusion, and a committed construction funding stream needs to be identified. The Bayou Sorrell Lock needs to be fully funded for construction. Additionally, individual maintenance items have been identified by USACE and by stakeholder organizations. These need to be carried forward.

INTERMODAL RECOMMENDATIONS

The following issues and recommendations pertaining to intermodal connectivity at ports have been identified:

- Rail competitiveness – This issue is very important to the petrochemical industry and all ports. As rail competition increases, shipper rates decrease. Projects which enable rail competitiveness should be supported.
- Upgrades to short-line railroads serving ports – Certain individual ports have identified rail needs and these should be supported based on demonstrated financial feasibility.
- Upgrades to truck and rail intermodal connections. Individual ports are proposing to upgrade truck to rail intermodal capabilities. If COB service expands, intermodal capabilities will be a requirement of operations at COB service ports. Such improvements at ports should be supported based on demonstrated financial feasibility.
- Upgrades to roadways serving ports. Certain individual ports are proposing to upgrade roadway access. Such projects should be supported based on demonstrated financial feasibility.
- Support for roadway congestion mitigation. These projects would offer substantial travel time reductions within major metropolitan areas (Memphis, New Orleans and Baton Rouge). Such projects should be supported based on demonstrated environmental feasibility and need.



- Support for rail congestion mitigation. Both Memphis and New Orleans are major rail gateways. New Orleans has developed a plan for improving rail fluidity through the gateway. The rail gateway improvements at New Orleans should be supported
- Opportunities for providing additional rail capacity across the Mississippi River should be supported.

COORDINATION RECOMMENDATIONS

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

Port authorities should continue to coordinate with the following federal and state agencies to ensure waterway needs and concerns are communicated:

- U.S. Army Corps of Engineers Districts to communicate dredging priorities and to other waterways issues.
- State agencies responsible for waterways planning to establish individual port needs and to seek state funding in support of these needs. This may include state departments of transportation or other responsible agencies.
- State DOTs and local MPOs regarding planning of access roads to ports.
- Class I and local short-line railroad companies (Class III) to communicate rail access needs.
- State economic development agencies to partner on economic development opportunities.

FUNDING RECOMMENDATIONS

Waterways – The most evident need as expressed by inland ports, states, and stakeholder organizations, is the full funding of USACE operations and maintenance. Additional funding needs to be dedicated for upgrades to critical locks, and a new funding stream needs to be developed for strategic planning of improvements within the inland waterways, including an overall upgrade of locks and expansion of waterway navigation capabilities.

Landside Access – There are programmatic instruments in place within FHWA funding streams that enable roadway improvements in support of ports. Funding for these programs need to be expanded and other agencies should be authorized to fund projects that upgrade roadway access to ports. The DRA and the Economic Development Administration are candidate agencies.

Regarding rail access, there needs to be a funding stream established to support upgrades to short-line railroads that extends rail services to ports. Also, certain rail gateway improvement programs have been funded via federal earmarks. Improving rail connectivity through these centers of rail congestion is critical to the transportation needs of the country. Within the DRA,



New Orleans and Memphis are candidate gateways. There needs to be a programmatic funding stream dedicated to improving rail fluidity through these gateways.

Port Funding – Public ports are public - private partnerships that focus public investment with private business to grow local, regional and national economies.

Total port needs identified within the context of this report total \$3.6 billion.¹⁵³ With respect to investments in individual ports, ports can have a significant impact on local economies, including direct employ, secondary multipliers associated with the employment, taxes generated within the economy, and business grown or retained, that depend on the efficiencies of water transportation.

Within the context of providing new federal funding for port improvements, there needs to be a methodology established to assess and document the benefits of the proposed investments. This could take the form of a DRA funded pilot program that would evaluate and prioritize multiple port investment requests. This would be followed with a limited funding stream supporting the proposed investments in concert with other state, local and private revenue sources.

PRIORITY RECOMMENDATIONS

- Develop and fund a Waterways categorical grant program to assist in the development and construction of waterway infrastructure in the DRA region.
- Develop a DRA Waterways Working Group.
- USACE dredging of DRA inland waterways to authorized channel depths.
- Construction of Kentucky Lock, Inner Harbor Navigation Canal Lock and Bayou Sorrell Lock and proper maintenance and upgrade of other locks throughout waterways.
- Improve water-rail intermodal facilities to provide efficient transfer of cargo.
- Funding support for projects at all DRA ports and an added emphasis on the funding needs at national and regional ports, such as the ports of Baton Rouge, Memphis, New Orleans, South Louisiana and Fourchon.
- Establishment of a DRA Pilot Program to prioritize DRA port needs and focus resources on high priority port projects.

¹⁵³ Needs calculated by reviewing state waterway plans and consulting with each port authority in the DRA region.