

FREIGHT AND TRANSPORTATION

Commercial transport is important to all sectors of society. Business and industry rely on ships, jets, trains and trucks to receive production inputs, and deliver final products; residents rely on freight deliveries for food, clothing, fuel and other products that improve their quality of life, and government relies on commercial transport services to support economic growth. Manufacturing and retail businesses today are increasingly shifting from inventory-based supply systems, to “Just-in-time” (JIT) supply systems. As a result, timely, reliable freight delivery is a key consideration for transportation planning and implementation in the state of Mississippi. Recognizing the important role goods transport plays in preserving the quality of life and business in Mississippi, and helping to match the transportation infrastructure supply with the industry demand on it, will help in maintaining and enhancing the experience for future generations.

The level of mobility and accessibility to the Mississippi transportation network is a key consideration to the smooth and efficient flow of freight.

ROLE OF FREIGHT IN THE MODERN ECONOMY

In today’s global society, commercial transportation has become crucial to Mississippi’s business and industrial development potential. For many industries, economic competitiveness is defined by the ability of goods and services to be transported in a time-definite manner. And, while a well-functioning commercial transport system is largely responsible for the modern quality-of-life attributes that residents value, many view commercial transport as an invisible process they see only as big, intimidating, and noisy commercial vehicles that threaten their own safety and timely travel.

In the current business environment cost effective, time sensitive transportation services are increasingly a strategy for competitive advantage in manufacturing, resource and service based industries. To support economic development in this environment, planning agencies must understand and support new economy transportation needs. There are a number of important changes currently taking place within the economy of Mississippi that have significant implications for any long range transportation planning and congestion relieve effort:

- The globalization of trade;
- Ongoing shift to a service economy;
- The evolution of business logistics; and
- Post-Katrina rebuilding.

The Globalization of Trade

Many of the Mississippi's manufacturers now shop the world for components and subassemblies to production processes. Advances in technology and management practices are also allowing Mississippi firms to develop strategies that enable customized products for mass as well as niche market distribution.

The growth in trade globalization is attributed to three major trends:

- World trade policies that have allowed industries and nations to benefit from trade as a source of economic growth;
- Global supply chains resulting from industries seeking out cost and market advantages that are offered by different parts of the world; and
- Advanced information technologies that allow distinct elements of supply chains and distribution channels to be better integrated in time and space.

This evolving business environment and associated impacts on transportation networks also has significant implications for local economic development.

Shift to a Service Economy

Mississippi wants to attract and maintain quality employment for its population. The ability to move freight freely in the area is critical to serve existing and bringing new industry to the State, and supporting job retention and creation efforts.

The Evolution of Business Logistics

As Mississippi industries become increasingly reliant on out-of-state trade Mississippi companies are adopting modern supply chain management techniques with the following attributes:

- Customer-Focused Logistics: Tailoring the logistics system so that it responds to the needs and potential profitability of each specific group of customers;
- Transportation Effectiveness: Leveraging the ability of integrated transportation to improve customer service and total supply chain cost performance; and
- Working Capital Management: Maximizing the productivity of inventory, accounts receivable, and accounts payable.

Under the integrated model of supply chain management, businesses often integrate transportation as part of their product offerings. To succeed businesses are employing just-in-time and other precision based inventory management approaches. Enterprises today tend to have minimal "emergency" stockpiles and hence any shortages in the inventory management system may lead to missed sales opportunities or a temporary plant shutdown. The goods and services transport system is critical to urban mobility and productivity, and ultimately economic development. As a result, an efficient and cost effective transport system is vital to the competitive position of businesses and industries competing in a global economy. These trends in logistics management are

AGILE LOGISTICS (Selected Excerpts)
World Wide Shipping Magazine, February/March 2003
By THOMAS CRAIG, President LTD Management

“Agile is the essence of supply chain management. Adaptive, move-quickly is necessary for an effective supply chain. Each order must be handled differently. Each customer has its own set of instructions and requirements to satisfy its supply chain ... the global supply chain can be extremely complex. The logistics director must be a maestro to manage an agile supply chain with its scope and breadth. And it must be lean...

Why must Logistics be agile? Time is the biggest driver and enemy of agility. It drives customer satisfaction and responsiveness. It is important to gaining competitive advantage with supply chain management...Customer and company internal expectations have increased. Time demands have shortened, while the length and complexity of supply chains has increased...

Time means velocity--velocity as to order fulfillment and delivery; as to inventory turns; as to order to payment; as to placement of purchase order through to delivery to customers. Global supply chains, by their length, mean distance and time. Distance and time are anti-agile agents...

CONCLUSION. The pressure to be agile will continue. Time demands, inventory pressures, cost and service requirements and continuing global supply chain complexity demand it.... Information technology and collaboration are vital to agility success, especially in the lean organization.”

sometimes characterized as moving from “push logistics” to “pull logistics.” Whereas manufacturers used to schedule production runs and push the resulting products into customer markets; today, products are pulled from the manufacturing process using advanced communications and point of sale information.

The state's future, like its past, will not be independent of reliable freight systems. As Mississippi continues its growth and development, it can be expected that freight traffic volumes in the Mississippi will continue to increase. To accommodate this growth without negatively impacting economic development and quality of life, Mississippi should develop and implement transportation planning policies designed to deal with the externalities associated with increasing goods movement demands. Establishing public planning policies directed toward freight, can also mitigate undesirable externalities by promoting intermodal connectivity and communication between the public and private sectors. Freight planning policies are discussed later in this chapter.

Post-Katrina Rebuilding

Hurricane Katrina had a devastating impact on the Mississippi Gulf Coast region and freight facilities were no exception. In addition to much of their infrastructure being damaged, many of the facilities, including the Ports of Gulfport and Bienville lost computer files containing historical freight flow data. Recent interviews with key freight stakeholders revealed that the region, while getting close to pre-Katrina volume levels, continues to struggle with issues such as labor shortages, slow insurance payments and rebuilding of key infrastructure, including warehouses and terminals. In general, the facility operators on the coast are optimistic about future economic growth and freight

activity in the region, but there is concern about potential conflicts between their needs and the growing casino and resort development.

Katrina's impacts on freight are not limited to the coastal region. The redistribution of population to other parts of the state has led to a redistribution of some of the freight activity. For example, freight operators in the Jackson Metro region have reported significant increases since Katrina and the general opinion is that the growth is not temporary and actually represents a permanent increase in the growth trend for the Jackson region.

It will be another year before comparative commodity flow data for the post-Katrina period are available to more fully analyze the impacts of Katrina on freight movements within the State. However, opportunities for repositioning the state's gateways to take advantage of the ever-increasing global trade are abundant and post-Katrina rebuilding could lead to substantial growth above the forecast presented below.

FREIGHT FLOWS IN MISSISSIPPI

Freight by its nature tends to be multimodal, moving by water, air and land. In addition to the three main ports (Gulfport, Pascagoula, and Bienville), and the two main airports (Jackson International, and Gulfport-Biloxi Regional), freight in Mississippi currently moves on or through extensive road (over 74,000 miles, including almost 700 miles of interstates), and rail (over 1,000 miles) networks. These flows of various commodities have a wide array of origins and destinations. The narrative and figures below present a summary profile of these flows.

Freight Flow Movements

The recent Mississippi freight flow movements are estimated based on the TRANSEARCH¹ database. This database provides year 2000 domestic movements by mode, direction and commodity groups.

According to the TRANSEARCH database, in the year 2000 a total of almost 923 million tons of freight moved into, out, within of or through Mississippi, as summarized by mode and direction in **Table 4-1**. Inbound freight from Mississippi comprised 8 percent (75 million tons), while outbound amounted to 10 percent (89 million tons), internal added 9 percent (79 million), and through traffic 74 percent (680 million tons). By mode, truck movements lead with 61 percent (567 million tons), followed by water with 27 percent (249 million tons), and rail at 11 percent (106 million tons), and air with tonnage volume at a fraction of a percent (1.6 million tons).

Mississippi Movements by Origin/Destination – When looking at the geographical distribution of the Mississippi freight flows, it is dominated by the southeastern states. Neighboring Louisiana leads all the states in terms of both Mississippi inbound and outbound movements, while the eastern neighbor state Alabama is firmly in second place, with Texas, Florida and Tennessee in the top five (see **Figure 4-1**).

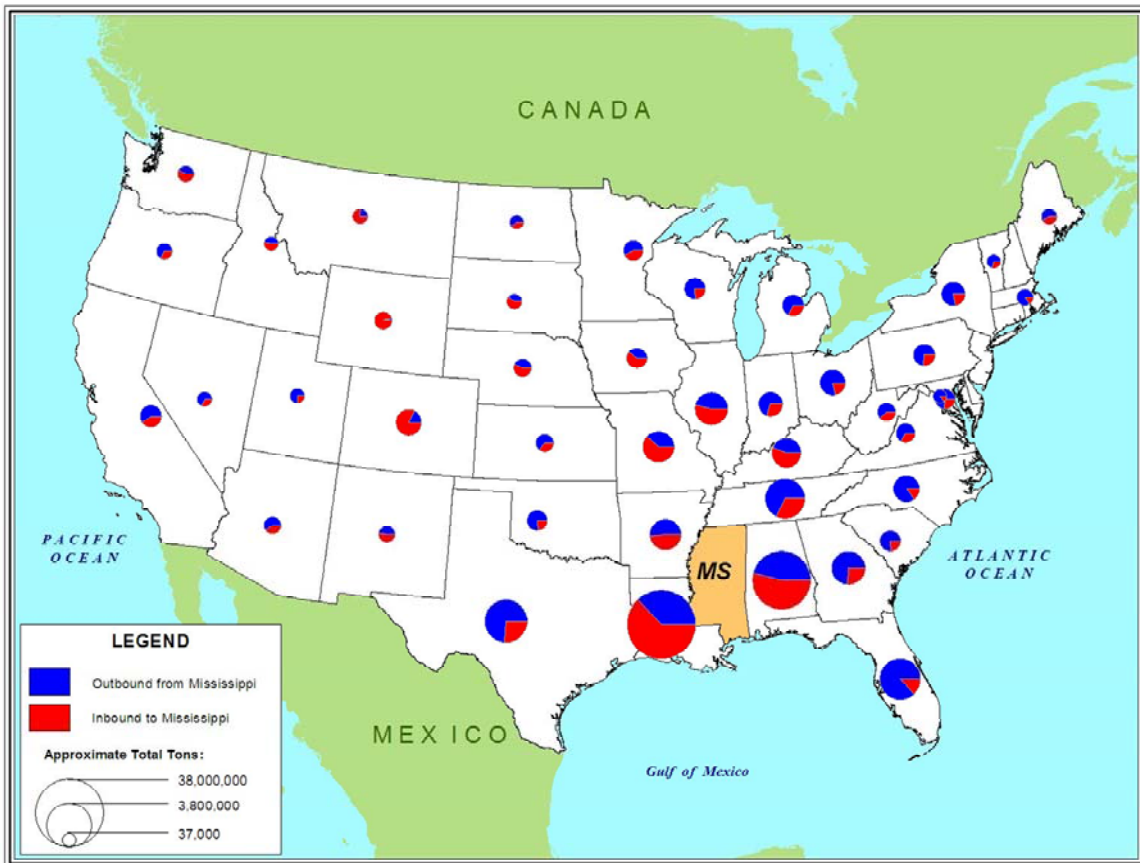
¹ Reebie Associates, 2003.

**Table 4-1:
Mississippi Freight Tonnage by Direction and Mode (2000)**

Flow Direction	Truck Tons	Air Tons	Water Tons	Rail Tons	Total	Percent Share
Inbound	45,591,038	17,518	12,482,547	16,905,839	74,996,942	8%
Outbound	64,515,867	14,482	13,669,609	10,757,481	88,957,440	10%
In.Out Subtotal	110,106,905	32,001	26,152,156	27,663,320	163,954,382	18%
Internal	73,546,710	-	1,431,362	3,976,908	78,954,980	9%
Through	383,021,207	1,601,421	221,235,111	74,035,305	679,893,044	74%
Total	566,674,822	1,633,422	248,818,629	105,675,533	922,802,406	100%
Exl. Through Flows	183,653,615	32,001	27,583,518	31,640,228	242,909,362	
Percent Share	61%	0.2%	27%	11%	100%	

Source: TRANSEARCH, Reebie Associates 2003

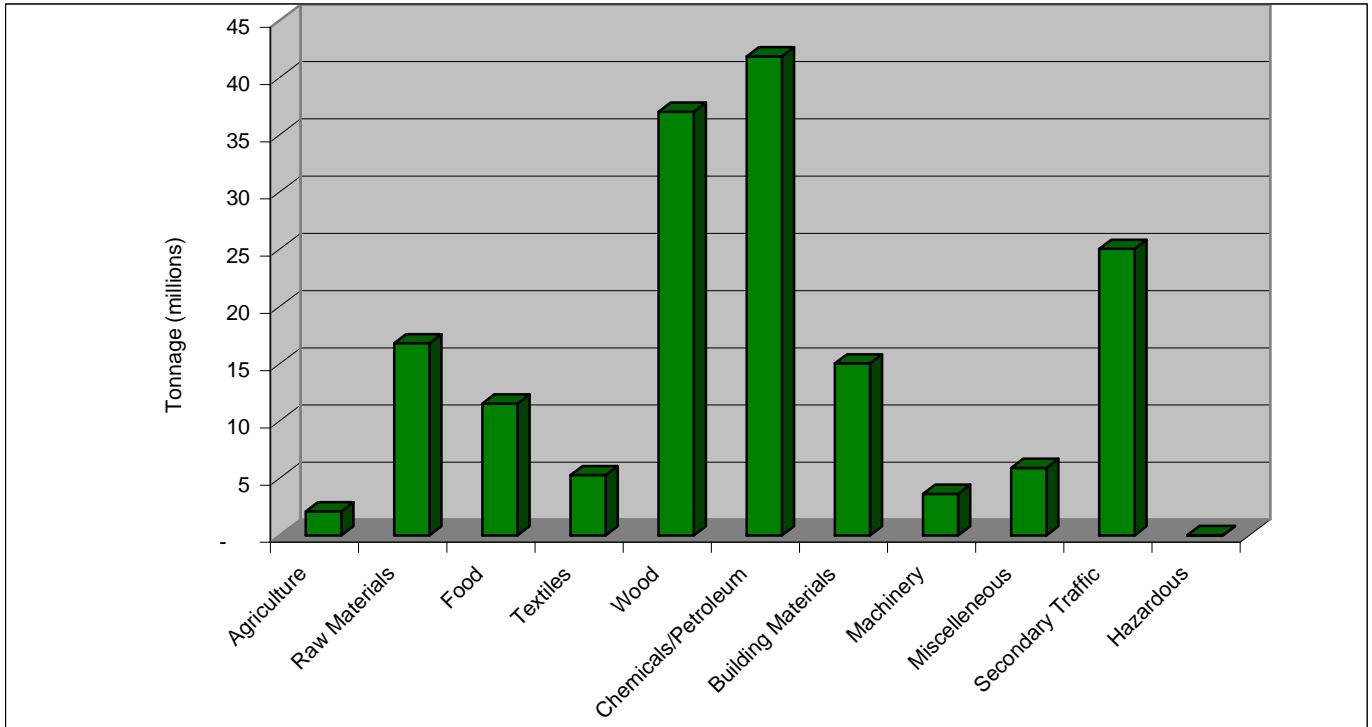
**Figure 4-1:
Mississippi Freight Inbound and Outbound Tonnage by State**



Source: Based on data in TRANSEARCH, Reebie Associates 2003

Mississippi Movements by Commodity Sector – The inbound and outbound tonnage by all the modes combined is lead by three largest commodity sectors: chemicals/petroleum products, wood, and secondary traffic (mostly warehouse and distribution) as shown in **Figure 4-2**.

**Figure 4-2:
Mississippi Freight Inbound and Outbound Tonnage by Commodity Sector**



Source: Based on data in TRANSEARCH, Reebie Associates 2003

Freight Flow Forecasts

As the Mississippi population and employment, and the overall economy is expected to grow, freight flows are naturally anticipated to increase over time. Based on a mix of employment, productivity, and population forecasts, freight flow projections for Mississippi were developed. It is forecasted that the overall freight can be expected to grow by about 107 percent (approximately 2.46 % on an average annual basis) between 2000 and 2030, and approach the level of two billion tons. In terms of modal growth, air flows (currently the least dominant mode) are forecasted to grow the fastest, followed by truck (currently the leading mode), then rail, with water modes expanding least rapidly, as shown in **Table 4-2**.

**Table 4-2:
Mississippi Freight Tonnage Summary Forecasts by Mode**

Mode	2000 Tonnage	2010 Tonnage	2020 Tonnage	2030 Tonnage	30-yr Growth
Truck	566,674,822	820,960,800	1,070,865,494	1,254,225,868	121%
Water	248,818,629	309,413,886	367,469,388	433,421,397	74%
Rail	105,675,533	141,438,201	176,336,227	218,754,497	107%
Air	1,633,422	2,244,045	3,059,872	4,142,030	154%
Total	922,802,406	1,274,056,931	1,617,730,981	1,910,543,793	107%

This forecasted growth in freight flows will result in additional strain on Mississippi's transportation facilities and networks. The expected transportation demand and supply can be planned for by developing sound freight policies through state and local agency coordination efforts.

FREIGHT PLANNING

While commercial transport is important to the businesses generating and receiving freight, all facets of society benefit from efficient freight transport. Therefore, government agencies should adopt planning measures to ensure a reliable and sustainable freight transportation network. When examining and planning freight related issues several objectives should be kept in mind:

- To better understand the link between transportation investment and economic development;
- To protect the state's quality of life;
- To enhance the safety and security of the state's transportation systems; and
- To raise awareness and educate the public about the importance of freight.

To meet these objectives and promote freight in the planning process after concluding this plan, recommendations are provided regarding policies affecting transportation planning:

Freight Policies

To insure a sustainable freight network that serves the needs of Mississippi, policies addressing freight should be developed in three focus areas:

- Freight Mobility;
- Urban Design/Growth Management; and
- Vitality and Quality of Life.

As goods and people-related traffic issues are particularly complex in urban areas, the state and regional/municipal agencies need to coordinate their activities when planning for efficient movement of freight. The following represent the key elements of the focus areas:

Planning to Enhance Freight Mobility:

- Maintain and update freight within the long range plan;
- Focus on key truck corridors;
- Incorporate trucks in traffic design;
- Enhance freight operation using technology;
- Support freight planning with data;
- Promote intermodal operations; and
- Partner for effective freight planning, and obtain stakeholder advice.

Urban Design and Growth Management Policy:

- Land use planning for freight;
- Zoning for freight infrastructure;
- Design standards for freight infrastructure;
- Urban development; and
- Using the development review process to benefit freight.

Promote Economic Vitality and Quality of Life:

- Air quality issues;
- Environmental justice; and
- Lane balancing.

When properly implemented these planning steps should lead to fulfillment of the Long Range Transportation Plan freight planning goals:

- A transportation system that will complement and promote the social, economic, and environmental goals of Mississippi.
- A coordinated transportation system including freight networks that will continually provide for the safe and efficient movement of goods within and through the State, facilitating development and quality-of-life efforts.