# Mississippi's Unified Long-Range Transportation Infrastructure Plan


Mississippi Department of Transportation

## Final Report

MAY 2011

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# 1. INTRODUCTION

Mississippi – along with the nation as a whole – is at a transportation cross-roads. Our economy continues to be haunted by a national and statewide economic down turn and transportation funds continue to dwindle. At the same time, demands on our transportation system coupled with aging bridge and highway infrastructure have resulted in seemingly ever-increasing transportation needs.

The Mississippi Department of Transportation (MDOT) recognizes the transportation pressures that continue to mount. Concerns regarding passenger needs in rural and metropolitan areas are only one part of the state's complex challenges. Intermodal freight movements to support our state economy, coupled with pressures for transportation agencies to "be green" and support sustainable and livable communities, further complicate the development of long-term, system-wide transportation needs as well as corresponding technical, policy, and performance-based solutions.

MDOT is committed to not only identifying our transportation challenges, but also to finding innovative solutions to address them. The analyses conducted for MULTIPLAN 2035 provide an informed, clear direction for MDOT, with the understanding that:

- Transportation needs are increasing; transportation funding is not keeping pace.
- Federal funds are not the solution; all signs point to a status-quo or smaller federal surface transportation authorization bill, and Mississippi will need to support at least status quo state transportation investment.
- Doing less with less is not acceptable; transportation is critical to economic vitality, so we must continue to consider different ways of managing and investing in our statewide multimodal transportation system.
- MDOT is committed to improving our statewide multimodal transportation network by preserving our existing infrastructure, providing information on anticipated performance outcomes to help make the case for transportation investment, and by increasing mobility along the critical transportation corridors developed and analyzed in the MULTIPLAN 2035 process.

## 1.1 MULTIPLAN 2035 – Planning for Our Transportation Future

MULTIPLAN 2035, under an extension of the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU), is Mississippi's Long Range Transportation Plan (LRTP) with a planning horizon of 2035. The **M**ississippi **U**nified **L**ong-Range **T**ransportation **I**nfrastructure **Plan** (MULTIPLAN) process also involved updates to the State Rail Plan, as well as the Hattiesburg, Jackson, and Gulf Coast Metropolitan Planning Organization (MPO) 2035 LRTP Plans. While the last version of MULTIPLAN (completed in 2007) focused on data collection and needs documentation, this Plan update also focuses on outcomes and the development of a corridor approach for transportation planning and programming. This focus makes MULTIPLAN 2035 a usable guide for future transportation investments, policy, and funding decision-making. For this plan update, MDOT:

- Examined MULTIPLAN 2035 and reaffirmed its vision, goals, and objectives for transportation;
- Collected and analyzed information about Mississippi's multimodal transportation system;
- Analyzed statewide transportation needs and documented anticipated costs, benefits, and impacts on system condition and performance.
- Identified key issues that will define an investment strategy to guide the Department in decision-making.

## 1.2 Plan Vision, Goals, and Objectives

While the current economic conditions throughout the U.S., and in particular in Mississippi, significantly shape the context for the development of MULTIPLAN 2035, the goals and strategies map the way forward. The goals of the previous MULTIPLAN effort were reviewed and found suitable to guide the current efforts (**Table 1-1**). How these goals are reflected in the MULTIPLAN 2035 process is summarized Section 6.2.

**Table 1-1: MULTIPLAN 2035 Goals**

| Goal | Description |
|---|---|
| **Accessibility and Mobility** | Improve Accessibility and Mobility for Mississippi's People, Commerce and Industry |
| **Safety** | Ensure High standards of Safety in the Transportation System |
| **Maintenance and Preservation** | Maintain and Preserve Mississippi's Transportation System |
| **Environmental Stewardship** | Ensure that Transportation System Development is sensitive to Human and Natural Environmental Concerns |
| **Economic Development** | Provide a Transportation System that Encourages and Supports Mississippi's Economic Development |
| **Awareness, Education and Cooperative Processes** | Create Effective Transportation Partnerships and Cooperative Processes that Enhance Awareness of the Needs and Benefits of an Intermodal System |
| **Finance** | Provide a Sound Financial Basis for the Transportation System |

## 1.3 Public and Stakeholder Outreach

A significant challenge to preparing MULTIPLAN 2035 included gathering inputs from the transportation users. In order to consider the wide variety of perspectives, MDOT conducted summits for both internal MDOT stakeholders as well as for those external to the Department. The external outreach was done in a Statewide Transportation Summit.

Within MDOT, key representatives from the districts, various divisions, administration, and members of the Mississippi Transportation Commission participated in discussions as to what the Department's focus should be for the long-range plan. The Statewide Transportation Summit was held with representatives from a variety of public and private sector participants.

Additional meetings were held for the general public in conjunction with the MPOs in the Jackson, Hattiesburg, and Gulf Coast areas near the start of the plan process. Further meetings were held in conjunction with the MPOs to allow the stakeholders and public to review the draft plan before it is finalized, including an additional meeting in Oxford.

*The 2035 Plan Update provides information for decision-makers and adds tools to evaluate the project programming process to ensure that the state's 2035 goals can be reached through targeted investment.*

## 1.4 Performance-Based Planning

MULTIPLAN 2035 focuses on outcomes and the development of an approach for transportation planning and programming. A final step for the Plan to be an effective guide for transportation decisions in Mississippi is to define the means for tracking progress.

A critical component of the 2035 Plan is the identification of performance measures that are directly linked with the state's long-term goals. This allows MDOT to establish a clear picture of the issues the state will face over the next 25 years, the transportation system MDOT is planning for, and the performance outcomes provided for the scarce resources to be invested. The 2035 Plan Update provides information for decision-makers and adds tools to evaluate the project programming process to ensure that the state's 2035 goals can be reached through targeted investment.

## 2. TRANSPORTATION TODAY

Geographically located between the east coast-southeastern U.S. and the west coast-south central U.S. markets, Mississippi provides an important link between gulf coast ports and the nation. On-going efforts to support interstate commerce and economic development will continue to highlight the state's key multimodal transportation corridors and the businesses they support.

Economic productivity, jobs, and higher property values depend on reliable access to transportation. For example, a 10 percent improvement in access to jobs can generate a more than 2 percent increase in general economic productivity.[1] The locations of Mississippi's largest businesses (**Figure 2-1**) follow its interstate and state highway system, underscoring the importance of highway access to the state's economy. Of course, highways are only one part of the state's complete transportation picture.

The state's 2.9 million residents depend on highways, bridges, freight rail, intercity passenger rail, ports and waterways, aviation and air travel, transit, bicycle and pedestrian modes for work and play. **Table 2-1** shows the extent and use of the state's multimodal transportation system "at a glance."

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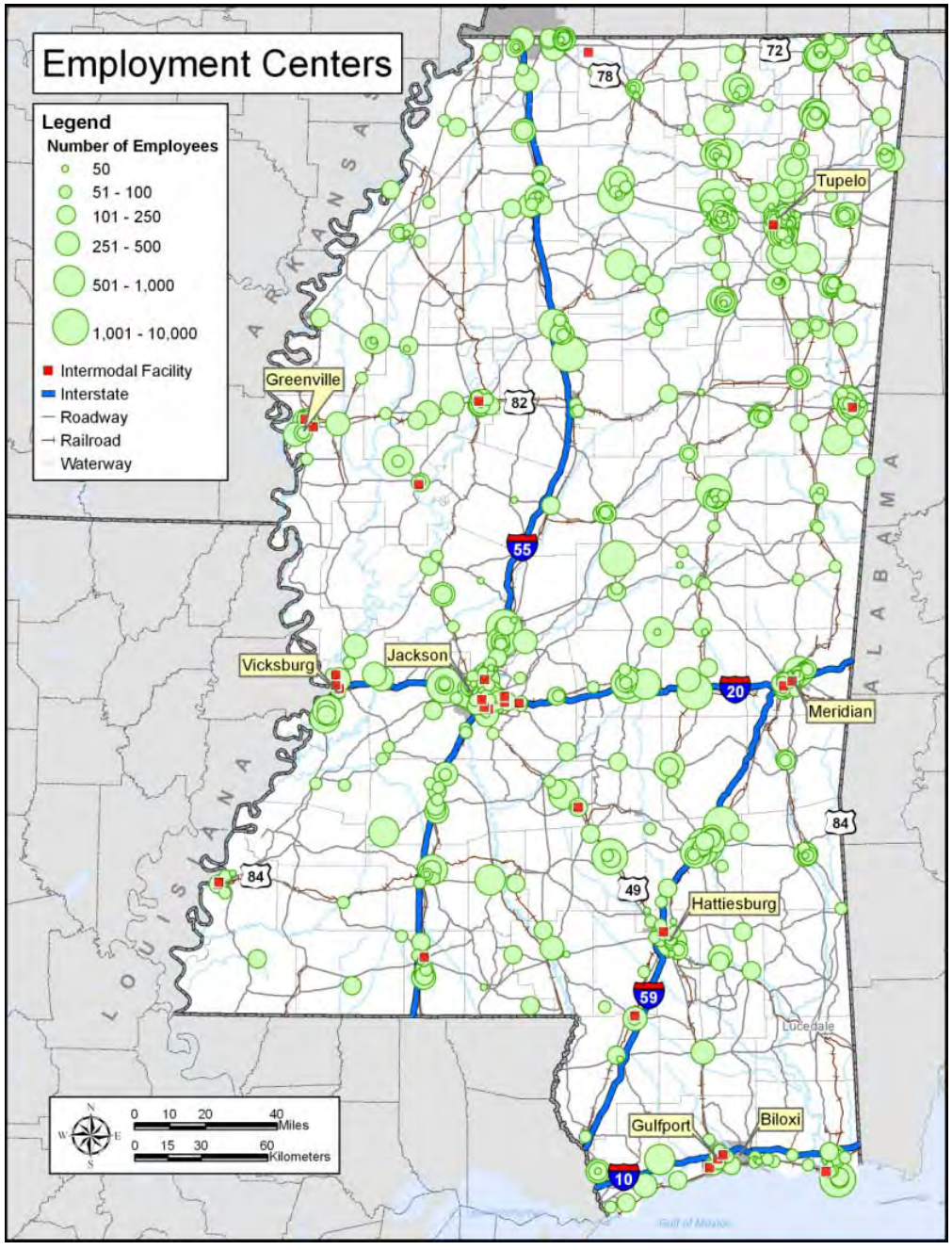
[1] *Size, Sprawl, Speed, and the Efficiency of Cities. Remy Prud'homme and Chang-Woon Lee.* http://www.dublinpact.ie/word/Prud-hommepaper.doc .

**Figure 2-1: Mississippi's Employment Centers**




*Businesses with 50 or more employees are largely located on Mississippi's state-maintained highway network.*

**Table 2-1: Transportation in Mississippi at a Glance - Existing Conditions**

| | |
|---|---|
| **People** | 2.9 million (2008)<br>Travel 43,400 million vehicle miles annually<br>56 percent of population live in rural Mississippi<br>44 percent live in urbanized areas |
| **Highways** | 10,958 state-maintained centerline miles<br>77% of roads with pavement in fair condition or better<br>$910 million invested annually in highways and bridges (2006 to 2010 in current dollars)<br>6% of investment used to preserve pavement in 2008 |
| **Bridges** | 13,627 bridges statewide<br>4,227 operated and maintained by MDOT<br>10.3% of bridges with sufficiency rating of less than 50% |
| **Freight** | 549 million tons/ $1.2 trillion move through Mississippi annually<br>74% (by ton) on Mississippi Highways<br>23 % (by ton) by rail (Class 1 RRs: BNSF, UP, CN/IC, CSX, and NS)<br>3% (by ton) via waterborne modes<br>1 % (by tonnage) via air |
| **Corridors of Statewide Significance** | I-10/I-110 along Gulf Coast (77 miles)<br>I-20: Meridian, Jackson, Vicksburg (153 miles)<br>I-55: Southaven near Memphis, Jackson, McComb (290 miles)<br>I-59: Meridian, Hattiesburg, Picayune (148 miles)<br>I-69: With proposed I-269 part of future I-69 NAFTA trade corridor<br>I-220: in Jackson connecting I-20 and I-55<br>US 49: Gulfport, Hattiesburg, Jackson (154 miles)<br>US 78 in northeast Mississippi - proposed I-22 (118 miles in MS) |
| **Rail** | 2,600 mile rail system<br>5 Class 1 RRs: BNSF, KCS, CN/IC, CSX, and NS<br>27 local or regional rail carriers<br>Two AMTRAK passenger services – Crescent and City of New Orleans |
| **Ports and Waterways** | 16 public ports along the Mississippi River, the Tennessee-Tombigbee Waterway and the Gulf of Mexico handled approximately 52 million tons of freight in 2008 |
| **Aviation** | 8 commercial and 65 general aviation airports<br>Accommodated more than 1.2 million passengers in 2009 |
| **Public Transportation** | 50 transit operators serving 76 out of 82 Mississippi counties provided 3.03 million passenger trips, with 661,350 annual revenue hours, and 13.9 million revenue-miles in 2009 |
| **Bicycle and Pedestrian** | 1.78% of Mississippians walk to work, compared to the national average of 2.47%<br>0.16% bicycle to work, which is less than the national average of .55% |
| **Economy** | Mississippi unemployment rate of 10.9% is higher than that of the nation (9.7%); ARRA provided more than $350 million in transportation infrastructure funds to Mississippi, upgrading 300 miles of pavements, replacing 14 bridges, and adding 7,000 direct jobs |

## 2.1 Highways and Bridges

MDOT operates and maintains 10,958 centerline miles of highways, of which nearly 82 percent are rural arterials and collectors (**Table 2-2**). These highways are generally in "good" condition for travelers, 77 percent of roads having pavements in fair condition or better.

**Table 2-2: Centerline Miles of State-Maintained Roadways**

| | | | |
|---|---|---|---|
| Rural Interstate | 492 | Urban Interstate | 206 |
| Rural Principal Arterial | 1,867 | Urban Expressway | 70 |
| Rural Minor Arterial | 3,418 | Urban Principal Arterial | 731 |
| Rural Major Collector | 3,612 | Urban Minor Arterial | 214 |
| Rural Minor Collector | 73 | Urban Collector | 50 |
| Rural Local | 142 | Urban Local | 83 |
| **Rural Total** | **9,604** | **Urban Total** | **1,354** |
| **Total of all state-maintained roads = 10,958 miles** | | | |

The quality of highway pavements in Mississippi is a function of recent efforts to improve system condition and performance. In the *19th Annual Report on the Performance of State Highway Systems* published by the Reason Foundation (September 2010), Mississippi ranked 16th among all states in its transportation "performance," which reflects MDOT's effectiveness in increasing statewide pavement conditions within a relatively thin budget. In comparison to the previous Reason report, Mississippi improved 12 spots - from 28th to 16th - by reducing costs and improving performance in six areas, including reducing the "poor" pavement conditions on interstates by more than 50 percent.

Of course, on a thin budget, Mississippi continues to struggle in making progress across all areas of highway condition and performance. MDOT maintains 4,227 highway bridges of which 10.3% percent currently have a sufficiency rating of 50 percent or less – thereby becoming eligible for Federal bridge replacement funding.

Highway condition, performance, and safety are important to the state's 2.9 million residents (2008), especially since Mississippi's highway network is critical to the state's economic vitality. Highways link passengers and freight to the state's businesses and industries providing access to jobs, labor, goods, and services for all Mississippians and are well-used. Total vehicle miles traveled (VMT) increased from approximately 37 billion to 43.4 billion between 2004 and 2008, or by 18 percent, despite volatility in gas prices during that same period. In 2008, 61 percent of vehicle miles were on rural roads.

*In comparison to the previous Reason report, Mississippi improved from 28th to 16th by reducing costs and improving performance in six areas, including reducing the "poor" pavement conditions on interstates by more than 50 percent.*

The importance of the Mississippi highway system is further underscored by the profile of the state's commuters (**Table 2-3**), where nearly 94.6 percent of Mississippi workers use highway transportation for work trips.

**Table 2-3: Commuter Mode Choice Profile (Percent Share)**

| Mode | Mode Breakdown | | Mode Share |
|---|---|---|---|
| Highways | | | **94.56%** |
| | Drove alone | 82.15% | |
| | Carpooled | 11.80% | |
| Taxicab | | 0.07% | |
| Motorcycle | | 0.14% | |
| Transit | | 0.40% | |
| Non-Motorized | | | **5.44%** |
| | Bike | 0.16% | |
| | Walk | 1.78% | |
| | Telecommute / Work from home | 3.50% | |
| **Total** | | | **100.00%** |

*Source: American Community Survey 2005-2009 Mississippi Total by Mode*

## 2.2 Freight Rail

The State of Mississippi plays an important role in the nation's freight rail transportation network. In 2006, Mississippi's railroads carried a total of 130 million tons and moved 2.2 million carloads of goods, for a total value of $126 billion. The vast majority, nearly 80 percent of the total rail traffic or just over 100 million tons, passed through Mississippi without stopping. Most of this through traffic results from flows between the markets located in Southwest, Southeast and Mountain regions.

*More importantly, outbound freight flows represent commerce that is created within the State and sold to outside customers, creating employment opportunities for Mississippi's citizens.*

Inbound and outbound freight represented approximately 20 percent of the total (**Table 2-4**). Inbound and outbound freight flows are important to understand because they represent commerce that is transported into the state for consumption, but more importantly, outbound freight flows represent commerce that is created within the state and sold to outside customers, creating employment opportunities for Mississippi's citizens. Although the state received more goods than it shipped out in terms of tonnage, the value of outbound goods was higher than the value of inbound goods by $3.5 billion.

**Table 2-4: Mississippi's Rail Traffic Directional Flows**

| Movement | Millions of Tons | Percent (%) |
|---|---|---|
| Interstate Inbound | 16.4 | 12.6 |
| Interstate Outbound | 9.8 | 7.5 |
| Intrastate | 1.7 | 1.3 |
| Through Freight | 102.5 | 78.6 |
| **Total** | **130.5** | **100.0** |

## 2.3 Intercity Passenger Rail

Current rail passenger service in Mississippi is provided by two traditional long-distance trains operated by Amtrak - the *Crescent* and the *City of New Orleans*. Until 2005 a third train, the *Sunset Limited*, also served Mississippi along the Gulf Coast route. Amtrak is looking at three options for potential restoration of that service. There are no commuter railroads or tourist railroads operating in the state.

Based on FY 2009 Amtrak ridership reports, about 15 percent of Mississippi riders on the *Crescent* are traveling locally (in both directions) between stations in Mississippi. Another 24 percent of the Mississippi riders are traveling (in both directions) from stations in Mississippi to New Orleans or Slidell, LA. The 1,377-mile Crescent route includes 162 miles in Mississippi.

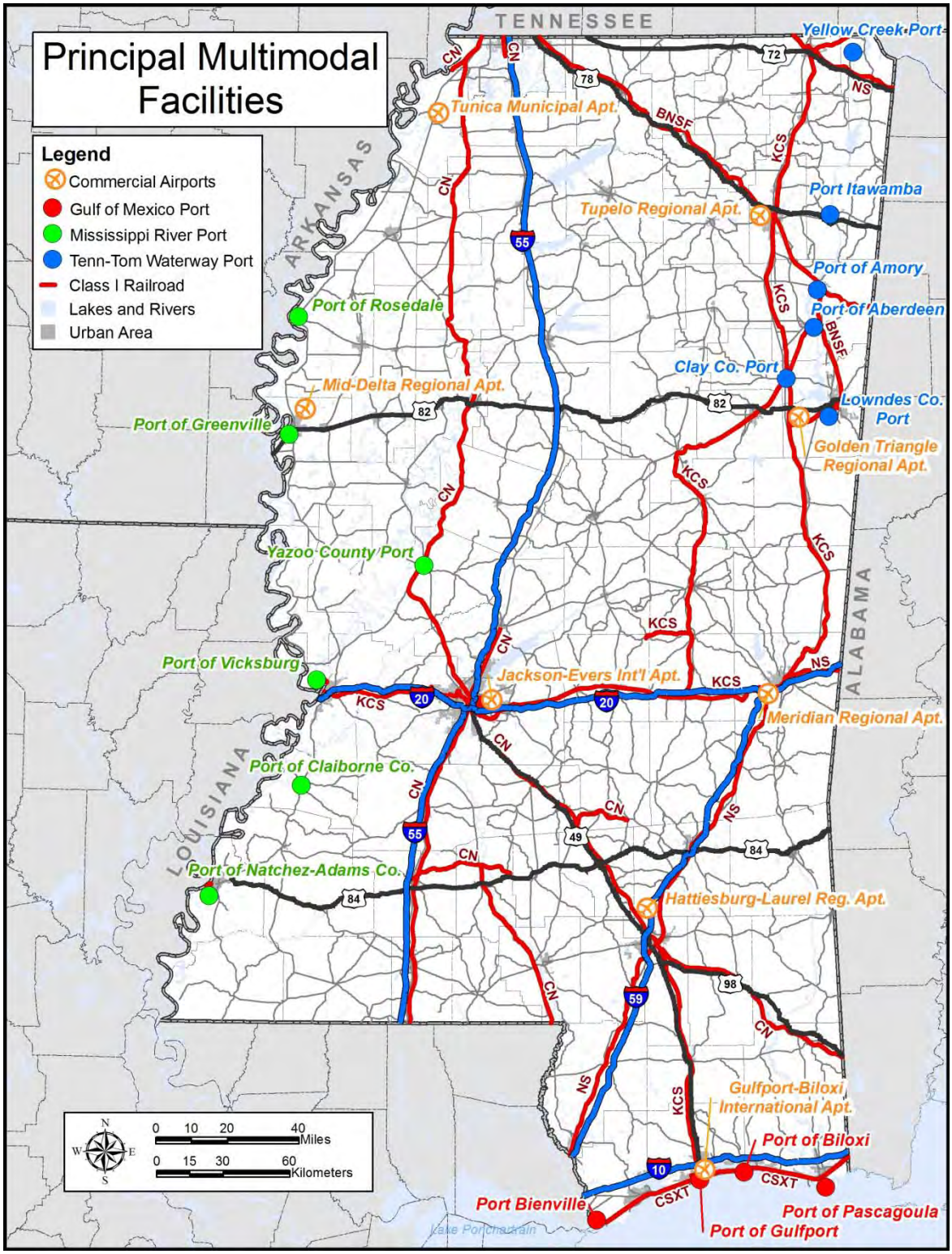
Based on FY 2009 Amtrak ridership reports, about 6 percent of Mississippi riders on the *City of New Orleans* are traveling locally (in both directions) between stations in Mississippi. Another 34 percent of the Mississippi riders are traveling (in both directions) from stations in Mississippi to New Orleans or Hammond, LA. The 926-mile City of New Orleans route from Chicago to New Orleans includes 292 miles in Mississippi.


*Amtrak's "Crescent" and "City of New Orleans" Service*

## 2.4 Ports and Waterways

Mississippi has 16 public ports along the Mississippi River, the Tennessee-Tombigbee (Tenn-Tom) Waterway and the Gulf of Mexico (**Figure 2-2**). There are four ports on the Gulf (Gulfport, Pascagoula, Bienville, and Biloxi), six on the Tennessee-Tombigbee Waterway (Yellow Creek, Itawamba, Aberdeen, Amory, Lowndes County, and Clay County), and six on the Mississippi River or tributaries (Rosedale,

**Figure 2-2: Mississippi Water Ports, Airports and Class 1 Railroads**



Yazoo County, Greenville, Vicksburg, Natchez, and Claiborne County). Although not in Mississippi, the Port of New Orleans and the Port of Mobile are important to the state, as they provide deepwater access from the Mississippi River and the Tennessee-Tombigbee Waterway.

*The Gulf ports allow the state to trade with international trading partners. The inland ports on the Mississippi River and the Tenn-Tom Waterway serve as a feeder network to bring international trade to and from seaports.*

These ports contribute significantly to the local, regional and national economies by providing employment and income to individuals, tax revenues to local and state governments, customs fees to the Federal Government, and revenue to businesses engaged in handling, shipping, and receiving cargo via the ports. Mississippi's ports handled approximately 52 million tons of freight in 2008, consisting of 19 million tons of outbound freight and 33 million tons of inbound freight.

Mississippi's ports play a vital role in the logistics network of Mississippi. They provide what is often the lowest-cost option for shipping products, as well as facilitate international trade. The Gulf ports allow the state to trade with international trading partners. The inland ports on the Mississippi River and the Tenn-Tom Waterway serve as a feeder network to bring international trade to and from seaports, as well as to facilitate domestic trade between domestic ports.

Many of the industries that use and benefit from Mississippi's ports are large employers within the state. Some of the largest users of Mississippi's ports are in chemical and petroleum product manufacturing, non-metallic mineral manufacturing, agriculture, forestry products, and steel product manufacturing. In some cases, relatively small ports support relatively large employers, such as a variety of manufacturing and agricultural activities.

## 2.5 Transportation Corridors

Key multimodal corridors – freight and passenger – facilitate Mississippi's trade relationship with the national and international markets and provide access to jobs and labor. With 97 percent of the recorded tonnage in 2006 moving on truck or rail, these two modes are critical to the state's economic vitality.

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Cargo moved by truck and rail, in conjunction with water and air cargo movements, is focused in key freight corridors: Southaven-McComb; Bienville-Pascagoula; Jackson-Hattiesburg-Gulfport; Vicksburg-Meridian; Picayune-Meridian; and Olive Branch-Tupelo-Fulton. Resulting from varying supply chain requirements, each industry accesses these corridors via a variety of modal choices. In 2006, 549 million tons of freight valued at $1.2 trillion moved in, out, within

and through the State of Mississippi. On a weight basis, 74 percent of this freight moved on the state's highway system by truck. Railroads moved 23 percent, waterborne modes 3 percent, and air transport accounted for less than 1 percent.

The six freight corridors, combined with the I-220 connector corridor and the I-69/I-269 corridor (part of the future I-69 NAFTA Trade Corridor from Michigan to Texas), form the multimodal corridors of statewide significance listed in Table 2-1 and discussed further in Section 4 of this report.

## 2.6 Aviation

Mississippi has 73 airports included in the National Plan of Integrated Airport Systems (NPIAS). Of these airports, eight serve both commercial service and general aviation activities and 65 accommodate only general aviation activities. The eight Mississippi commercial service airports accommodated more than 1.2 million passengers in 2009.

While none of the 73 airports are owned and operated by the state, MDOT's Aeronautics Division provides technical and administrative assistance to the public airport owners (cities, counties, and airport authorities) in project formulation and preparation of applications for the Federal Aviation Administration's Airport Improvement Program (AIP) grants. The Division also approves airport construction plans and specifications, conducts construction inspections, conducts annual airport safety inspections for general aviation airports, and prepares airport layout plans.

## 2.7 Transit

Mississippi's public transportation system is a vital component of the multimodal transportation system serving 76 out of the 82 counties in the state. Mississippi's 50 transit operators provided 3.03 million passenger trips, with 661,350 annual revenue hours, and 13.9 million revenue miles in 2009. Transit operators in Mississippi can be divided into four main categories of service:

- Intercity: Greyhound and Delta Bus Lines provide intercity bus service across the state.
- Elderly and persons with disabilities: MDOT provides federal funding to 28 grantees using "pass-through" funds from the Federal Transit Administration's (FTA's) Section 5310 Elderly and Persons with Disabilities Program. This program includes the purchase of vehicles and requires a 20 percent local match.
- Rural transit: A network of 19 providers offers rural transit service funded by FTA's Section 5311 Program. The agencies provide service to 46 of the 82 Mississippi counties.
- Urban transit: FTA's Section 5307 Program funds are distributed from the FTA directly to each of the urban area transit providers - Gulfport-Biloxi and Pascagoula (Coast Transit Authority), Jackson (JATRAN), and Hattiesburg (Hub City Transit).

## 2.8 Bicycle and Pedestrian

Bicyclists and pedestrians in Mississippi utilize national, state, and local facilities. Bicyclists normally use travel lanes, road and street shoulders, dedicated bike lanes and off-road paths and trails. However, many bicyclists ride in regular travel lanes because many roads (predominantly in rural areas) do not provide paved shoulders. Many of the rural two-lane facilities have low traffic volumes to the point that safe bicycle travel may be possible. Bicycles are allowed on all federal, state and county highways, except interstates. Pedestrians use sidewalks and off-road trails.

The Mississippi River Trail is a national bike route, which has 300 miles in the state. It follows along the Mississippi River between the Mississippi/Arkansas U.S. Highway 49 Bridge at Lula, MS/Helena, AR and the U.S. Highway 84 Bridge at Natchez. The route is signed along state, county and municipal roadways and is also along a portion of the Natchez Trace south of Vicksburg to north of Natchez. The oldest and best known touring route in Mississippi is The Natchez Trace Parkway. Over 300 miles of the 444–mile long Natchez Trace are in Mississippi. This historic roadway has relatively low motorized traffic, no shoulders, a speed limit of 50 and trucks are not allowed. There are a few areas with dedicated bike and pedestrian lanes on the Natchez Trace.

*The oldest and best known touring route in Mississippi is The Natchez Trace Parkway. Over 300 miles of the 444–mile long Natchez Trace are in Mississippi.*

The 2009 American Community Survey data from the US Census Bureau Commute-to-Work data were reviewed to assess the current number of Mississippians who bike or walk to work. The statewide estimate for the number of workers who commuted by bicycle to work was 1,925 (0.16 percent), while 21,279 (1.78 percent) workers walked to work. This compared to national averages of 0.55 and 2.47 percent, respectively.

## 2.9 Safety

Mississippi's fatality rate (fatalities per 100 million vehicle miles of travel) was ranked sixth highest nationally in 2008 and has run consistently at approximately 50 percent greater than the national rate. Both nationally and in Mississippi, the trend is toward decreasing fatalities. Analysis of accident data from 2003 to 2008 indicate that, on average, Mississippi reduced traffic fatalities over twice as fast as the nation did in this period.

Even though Mississippi displays a roughly 50 percent higher fatality rate as the nation, analysis of the fatalities per 100MVMT shows an encouraging trend in closing this gap. It reveals that Mississippi's Strategic Highway Safety Plan initiatives, though relatively recently implemented in 2007, are improving Mississippi's roadway safety.

## 2.10 Environment and Land Use

Currently, all Mississippi regions are in attainment with all National Ambient Air Quality Standards (NAAQS). There have been, however, some concerns regarding the Environmental Protection Agency's (EPA's) 8-hour ozone standard. In 2004, EPA designated Memphis, TN (including Shelby County, TN and Crittenden County, AR) as an 8-hour "marginal" ozone non-attainment area. Desoto County, MS was not included in the designation. However, because Desoto County lies immediately south of the Memphis area, air quality is an important focus for MDOT and the Mississippi Department of Environmental Quality (MDEQ). Currently the ozone standard is under reconsideration with a proposed standard in the range of 60 to 70 parts per billion (ppb). Even if the Standard is set at the top of the range, 70 ppb, Desoto County and the entire Memphis area would not meet the standard and likely be designated as non-attainment.

The Mississippi Gulf Coast lies between New Orleans, LA and Mobile, AL. Due to industrial activities and population densities in these urban centers, as well as transportation related emissions along the coast, EPA may designate Jackson, Harrison, and Hancock Counties as non-attainment for new National Ambient Air Quality Standards (NAAQS) for ozone in 2011. The state, MPO, and local governments have focused on this possibility and taken proactive approaches to the issue.

**Land Use** - It is commonly recognized that a transportation system does not operate in a vacuum. The transportation system impacts many other aspects of states and communities, including economic development, the environment, and land use. Much research has been conducted on the relationship between land use and transportation. It is a circular relationship and symbiotic in nature. Land use decisions impact transportation decisions and transportation decisions impact land use decisions.

Good land use policies that are consistent, transparent and fair to all parties, serve to foster well planned development and supporting infrastructure. Because land use is largely a local issue, strong coordination mechanisms must be in place between MDOT, MPOs and other local agencies to ensure that land use policies are supportive of both local and statewide goals.

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## 2.11 Economic Slowdown

At 10.9 percent in January 2010, Mississippi unemployment is higher than the 9.7 percent unemployment rate for the nation. More than two years after the official start of the economic downturn, Mississippi's jobless rate has not yet begun to recover.

Aside from tax cuts and extended unemployment benefits for Mississippi workers seeking employment, the American Recovery and Reinvestment Act of 2009 (ARRA) provided more than $350 million in transportation infrastructure funds to Mississippi, with which more than 300 miles of the states' pavements have been or will be upgraded and 14 bridges have been or will be completely replaced.

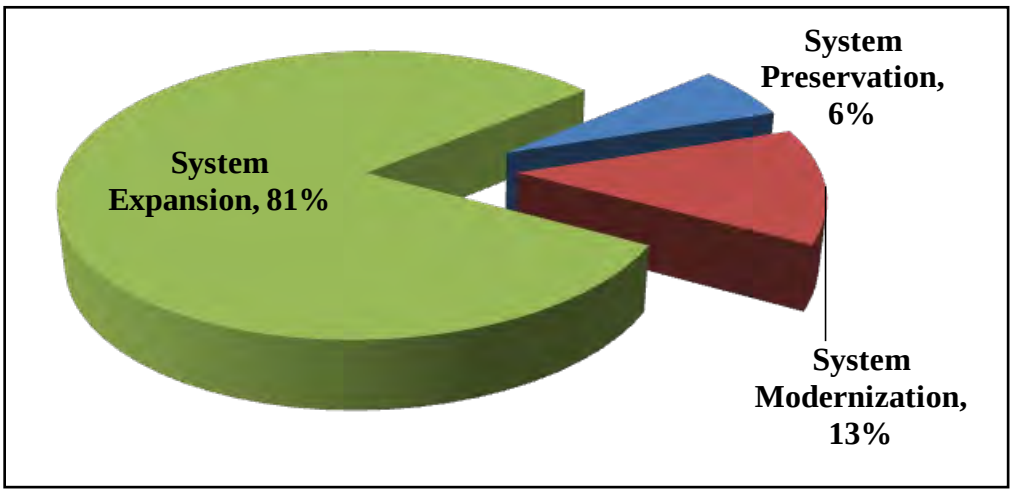
The long-term impacts of ARRA remain to be seen; however, the capital funding from ARRA certainly made an impact on the condition of roads and bridges in Mississippi.

# 3. TRANSPORTATION TOMORROW

## 3.1 Highway and Bridge Needs

MDOT continues to work toward goals for capacity expansion as defined in *Moving Ahead – Vision 21*, but must also balance financial plans to include preservation and maintenance as a key priority such that the current system continues to function not only to meet performance standards, but also pavement and bridge condition expectations. The allocation of MDOT highway and bridge expenditures of $909 million[2] in 2008 is illustrated in **Figure 3-1**.

**Figure 3-1: Mississippi Highway Capital Spending - 2008**




MDOT spends about $55 million annually for pavement preservation alone, which has led to generally good pavement conditions in most areas of the state. However, Mississippi is currently facing a large - and growing - "backlog" of bridge and pavement preservation needs. This backlog is based on bringing all pavements and bridges to minimum tolerable conditions as defined by MDOT in conjunction with state and American Association of State Highway and Transportation Officials (AASHTO) standards.

### *3.1.1 Highway Needs Backlog*

The transportation system is aging. Many of Mississippi's highways and bridges were constructed during the Interstate era and currently require significant rehabilitation. Improvements to overcome these existing deficiencies constitute backlog needs.

For MULTIPLAN 2035, highway needs – backlog and future – are expressed in three general areas:

- Preservation, including the improvement of pavement only without changes to roadway geometry;
- Modernization, which includes improvements to pavement that change the roadway characteristics and/or the structural integrity of the pavement base; and

[2] FHWA Highway Statistics, Table SF 12-A, State Highway Agency Capital Outlay – 2008.

- Expansion / capacity increasing projects, which add lane(s) and change the roadway characteristics for existing lanes along the same segment.

*Highway expansion accounts for only 10% of the total needs backlog, underscoring the need for preservation and modernization of the State's highway network.*

Needs were calculated using the Highway Economic System Requirements model (HERS) using baseline data collected by MDOT. HERS calculates needs by considering the benefit-cost ratio of bringing the system to minimum tolerable conditions as defined by MDOT.

The backlog of state-maintained highway and pavement needs is estimated at $5.5 billion (**Table 3-1**), against a Fiscal Year (FY) 2010 budget for MDOT's highway and bridge Construction Program of $837 million. The majority – nearly 68 percent – of these needs are in Mississippi's rural areas, with the remaining 32 percent in the state's urban areas. Expansion accounts for only 10 percent of the total needs backlog underscoring the need for preservation and modernization of the state's highway network.

**Table 3-1: Highway Needs Backlog**

| Type of Need | Rural | Urban | Total | Percent |
|---|---|---|---|---|
| Preservation | $1,692 | $232 | $1,924 | 35% |
| Modernization | $1,836 | $1,168 | $3,004 | 55% |
| Expansion | $202 | $365 | $567 | 10% |
| **Total** | **$3,730** | **$1,765** | **$5,495** | **100%** |
| Percent | 68% | 32% | 100% | |

*Notes: (1) Backlog Needs in Millions of $2008*

### *3.1.2 Bridge Needs Backlog*

Similar to the development of highway needs, bridge needs can be presented in terms of three categories. These categories are comparable, though not identical, to those for highways:

- Rehabilitation, including all federally-eligible maintenance, repair, and rehabilitation;
- Improvements, which includes raising, widening, and strengthening bridges; and
- Full replacement of the entire bridge structure.

Bridge needs – backlog and future – were calculated using the National Bridge Inventory (NBI) dataset and the National Bridge Investment Analysis System (NBIAS) model. It is important to note that when the age and reoccurring maintenance of a given bridge overshadows the cost to replace it, NBIAS will select a new bridge since the long-term benefit/cost ratio of the replacement is better.

For bridges, 2008 data show a $1.7 billion backlog (**Table 3-2**). There are more rural bridges (3,518) than urban bridges (709) in the state system. The backlog needs reflect this disparity as $1.2 billion, or 72 percent, of needs occur on rural bridges.

**Table 3-2: Bridge Needs Backlog**

| Type of Need | Rural | Urban | Total | Percent |
|---|---|---|---|---|
| Rehabilitation | $8 | $3 | $11 | 1% |
| Improvement | $242 | $126 | $368 | 21% |
| Replacement | $995 | $357 | $1,352 | 78% |
| **Total** | **$1,245** | **$486** | **$1,731** | **100%** |
| Percent | 72% | 28% | 100% | |

*Notes: (1) Backlog Needs in Millions of $2008*

Over time, the backlog of both pavement rehabilitation and bridge needs will continue to grow without significant additional investment. The underfunding of transportation infrastructure improvements is not unique to Mississippi. In May 2009, AASHTO published their most recent analysis of transportation funding needs in its "The Bottom Line Report." In the Bottom Line Report, transportation funding needs across the nation for highways, bridges and transit are an estimated $212 billion annually from 2010 through 2015. This compares to less than an $80 billion investment at all levels of government in 2006.

### *3.1.3 Full Highway Needs*

For MULTIPLAN 2035, total highway needs were assessed by considering pavement condition and smoothness, roadway standards as defined by Mississippi and AASHTO, and capacity needs, both backlog and over the MULTIPLAN 2035 28-year planning horizon from 2008 to 2035 (current and future needs) (**Table 3-3**). Full highway needs provide a baseline for analysis using unconstrained levels of funding. Using the parameters summarized above in the needs backlog sections, Mississippi's highway needs total more than $25 billion, of which $5,495 million (or 21.8 percent) are estimated to be backlog needs, defined as the cost to bring all existing Federal-aid roads up to minimum tolerable conditions (**Table 3-3**). At 48 percent, almost half of all highway needs through 2035 are for Preservation.

*Mississippi's highway needs total more than $25 billion, of which $5.5 billion (or 22%) are estimated to be backlog needs, defined as the cost to bring all existing Federal-aid roads up to minimum tolerable conditions.*

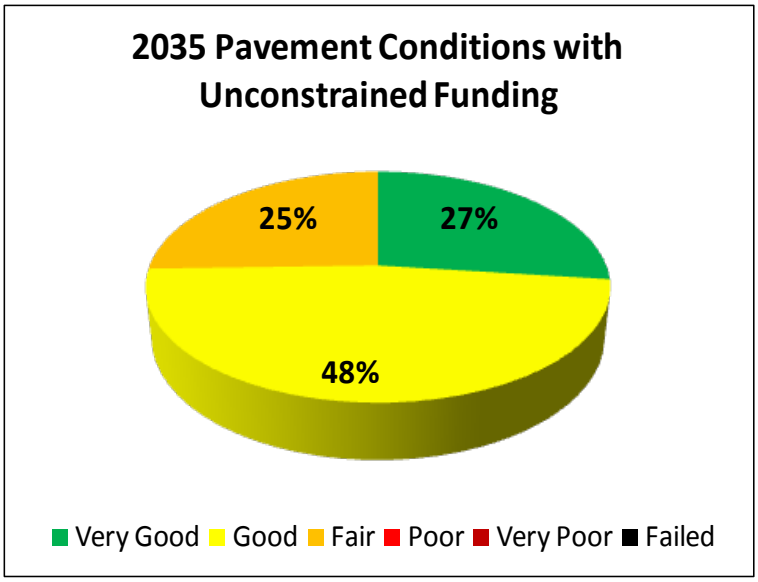
While such a high level of funding is not anticipated, **Figure 3-2** shows the impacts of unconstrained investment on projected pavement conditions in 2035. Investing in all HERS-recommended improvements, unconstrained investments in the federal-aid highway system in the state would bring all pavements to fair or better conditions, with 75 percent of all pavements in good or better condition.

**Table 3-3: Full Highway Needs Through 2035**

| Type of Need | Rural | Urban | Total | Percent |
|---|---|---|---|---|
| Preservation | $9,619 | $2,355 | $11,974 | 48% |
| Modernization | $5,768 | $2,852 | $8,620 | 34% |
| Expansion | $2,453 | $2,138 | $4,591 | 18% |
| **Total** | **$17,840** | **$7,345** | **$25,185** | **100%** |
| Percent | 71% | 29% | 100% | |

*Notes: (1) Backlog and Accruing Needs in Millions of $2008*

**Figure 3-2: 2035 Pavement Conditions with Unconstrained Funding**




### *3.1.4 Full Bridge Needs*

Total unconstrained bridge needs for the MULTIPLAN 2035 timeframe are estimated at $4.6 billion in 2008 dollars (**Table 3-4**). Of the $4.6 billion total needs, 62 percent are future needs and $1.7 billion are backlog needs (38 percent).

**Table 3-4: Full Bridge Needs Through 2035**

| Type of Need | Rural | Urban | Total | Percent |
|---|---|---|---|---|
| Rehabilitation | $610 | $154 | $764 | 17% |
| Improvement | $245 | $127 | $372 | 8% |
| Replacement | $1,368 | $2,109 | $3,477 | 75% |
| **Total** | **$2,223** | **$2,390** | **$4,613** | **100%** |
| Percent | 48% | 52% | 100% | |

*Notes: (1) Backlog and Accruing Needs in Millions of $2008*

Unlike the backlog of bridge needs, most of the future (accruing) bridge needs are in Mississippi's urban areas. Total future urban bridge needs are $1.9 billion, or 66 percent of the future needs. Bridges on urban principal arterials and minor arterials accrue the most future needs. Future rural bridge needs total $977 million, or 34 percent of the future needs. When combining backlog and accruing needs, urban bridge needs account for 52 percent of full bridge needs.

Improvements on highways and bridges are both funded through MDOT's Construction Program. Full needs for both highways and bridges over the 2008 to 2035 period are projected to amount to $29.8 billion.

## 3.2 Non-Highway Needs

Although the largest percentage of the Department's transportation funds are directed to the state's highway network, MDOT has prominent roles in the areas of aviation, public transportation, rail, and water transportation. While the highway network represents the foundation and backbone of the multimodal transportation system, the philosophy and premise of a fully integrated system is dependent on interconnectivity between the modes. Likewise, movement of freight is an essential component of the Department's planning efforts. As the economy has grown there are key multimodal and intermodal corridors that serve the regions within Mississippi that produce and attract a significant amount of freight tonnage (compared to other regions) and facilitate Mississippi trade with the national and international markets.

*As the economy has grown there are key multimodal and intermodal corridors that serve the regions within Mississippi that produce and attract a significant amount of freight tonnage (compared to other regions) and facilitate Mississippi trade with the national and international markets.*

Needs for non-highway modes were considered in MULTIPLAN 2035 and documented in supporting reports as references to the Plan. These needs are summarized in **Table 3-5**.

**MDOT Support for Non-Highway Modes** - Recent actions have clearly demonstrated that MDOT fully recognizes the vital role of non-motorized modes of transportation, as well as intermodal transportation, in the future well-being of its citizens and businesses. MDOT has partnered with the leaders in the non-highway modes to forge new legislation and other financial support for multimodal and intermodal programs. One example is the National Highway System (NHS) Intermodal Connector Program in which MDOT has put federal dollars into the improvement of these connectors. The other significant example is the state funded Multimodal Capital Improvement Program which was established by state statute and funded by MDOT transportation funds.

**Table 3-5: Multimodal and Intermodal Transportation Needs Summary**

| Mode | Needs Summary | Appendix Reference Document |
|---|---|---|
| Freight Rail | Track and structure upgrades: $355 million; Rail-highway safety projects: $37 million; Operating and capacity improvements: $169 million | Appendix E: Freight and Passenger Rail Investment Needs |
| Passenger Rail | Track and structure upgrades: $539 million; Station improvements: $10 million | Appendix E: Freight and Passenger Rail Investment Needs |
| Ports and Waterways | 89 major projects identified in 15 of the 16 public ports in Mississippi totaling $1.3 billion | Appendix H: Port and Waterway Needs Assessment |
| Aviation | $2.0 billion for airport capital development projects at 73 airports in Mississippi, with half of the needs at the 8 commercial service airports | Appendix J: Aviation Needs Assessment |
| Public Transportation | $690 million for operating and capital expenditures of existing services; $1,248 million for total operating and capital costs of existing and new services through 2035 | Appendix F: Transit Needs Assessment |
| Bicycle and Pedestrian | Completion of 3 MPO bicycle/pedestrian networks: $262 million; Tanglefoot Trail: $30 million; Mississippi River bridge crossing: $10 million. Estimated TE funding for non-MPO bicycle/pedestrian projects: $95 million | Appendix I: Bicycle and Pedestrian Needs Assessment |

**Bicycle and Pedestrian Initiatives** - MDOT has also committed $9.6 million of Transportation Enhancement (TE) funds towards the development of the 43-mile Tanglefoot Trail. Projections for the direct economic benefit to this rural area are estimated at $3 to $4 million annually due to its length and close proximity to the Natchez Trace. Additionally, $95 million in TE funds spent over 20 years on bicycle and pedestrian improvements has shown tangible benefits throughout the state.

## 3.3 Freight

Mississippi freight movements are projected to grow from 534 million tons in 2010 to 770 million tons in 2030[3], an overall increase of 44 percent or an average annual growth rate of 1.8 percent. This is significantly higher than the U.S. Census Bureau projection of population growth of 4 percent over the same period. Transportation by truck over the state's highways and bridges accounts for 74 percent of current freight movements by weight and 89 percent by value.

[3] The Mississippi State Goods Movement and Trade Assessment Study

**Potential for Diversion from Trucks to Rail or Water** - The question of diversion of freight between modes is complex, involving detailed information about freight volume, its origins and destinations, its delivery schedules and shipping costs; customer and shipper requirements and facilities; contract requirements between customers, carriers, and manufacturers/suppliers; as well as other issues. While recognizing these complexities analysis shows that there are opportunities in Mississippi to divert goods from truck to rail and, to a minor degree, from truck to water.

Mississippi truck cargo that could potentially move by rail in 2030 would account for 10 million tons; this represents a reduction of about five percent of the combined inbound and outbound truck tonnage compared to its baseline forecast. Conversely, the tonnage diverted to rail represents a significant increase of 31 percent compared to the rail cargo baseline forecast. In terms of truck volume, the estimated diverted cargo would represent a reduction of nearly 475,000 trucks between selected origin-destination pairs in 2030.

The truck cargo that could potentially move by water in 2030 would account for only a half million tons. This represents a marginal reduction of about 0.5 percent of the truck tonnage compared to its baseline forecast, but an increase of two percent of the water cargo baseline forecast. In terms of truck volume, the estimated diverted cargo would represent a reduction of nearly 27,000 trucks in 2030.

## 3.4 Land Use and Transportation

The strategic investment of limited transportation resources will require effective coordination of land use and transportation planning. While MDOT owns and maintains the major roadways in Mississippi, many of the planning and regulatory decisions that impact those roadways are made by other jurisdictions. With the recent adoption of the state's Access Management Manual and the identification of key transportation corridors, MDOT has acknowledged this interconnection and taken steps to better integrate land use and transportation planning. Because land use is largely a local issue, strong coordination mechanisms must be in place between MDOT, MPOs and other local agencies to ensure that land use policies are supportive of both local and statewide transportation goals.

The following highlights some of the key land use and transportation planning considerations that should guide MDOT and its partners as they implement MULTIPLAN 2035.

*Common vision* - A vision encompasses a statement or illustration of a community's character, economy, and values in addition to its physical and manmade environment. This vision should be consistent with a regional and statewide vision.

*Coordinated policy at each level of government* - Building on the coordinated vision, each level of government has associated statutes, rules and policies that support coordinated land use and transportation planning.

*Stakeholder input* - Representatives of the general public, industry and all areas of government are tapped to contribute to the visioning effort and its implementation.

*Transportation and corridor plans which reflect a common vision* - These plans reflect the vision associated with each level of government and provide the blueprint to create and fund the vision.

*Access management plans* – These plans are an important corridor management strategy and help determine which land uses are compatible with the corridor. This is accomplished by developing a long-range, consensus-based vision for each corridor to guide decisions related to funding, project planning, design, driveway permit approvals, and local land use decisions.

*Multimodal considerations* – Mechanisms are in place that provide for the evaluation and planning of pedestrian, bicycle, transit and freight modes.

## 3.5 Climate, Energy Independence, and Environmental Concerns

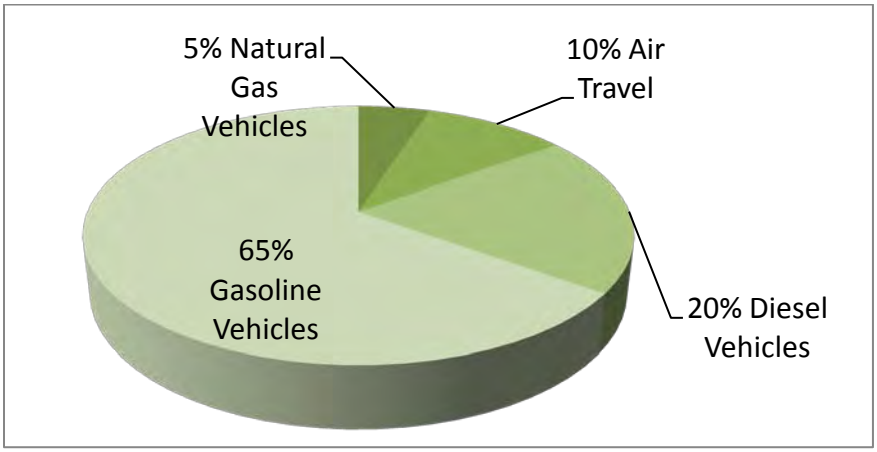
Climate change as it relates to transportation involves two separate issues, generally classified as "reduction" and "adaptation," which can be defined as:

- How transportation decision-making can influence reductions in pollutants of all types, including carbon emissions; and
- How the impacts, such as rising sea level, will impact transportation infrastructure and operations and how those challenges can be met.

*Transportation sources are responsible for about 39 percent of the nation's Greenhouse Gas (GHG) emissions.*

Transportation sources are responsible for about 39 percent of the nation's Greenhouse Gas (GHG) emissions. Within the transportation sector, gasoline vehicles (cars, light trucks, and some heavy trucks) are responsible for nearly two thirds of the transportation sector emissions, and diesel vehicles (heavy trucks) produce another 20 percent (**Figure 3-3**). GHG emissions from these sources are projected to roughly double between 1990 and 2020 without some intervening action.

**Figure 3-3: Transportation Sector GHG Emissions**



### 3.5.1 Reduction

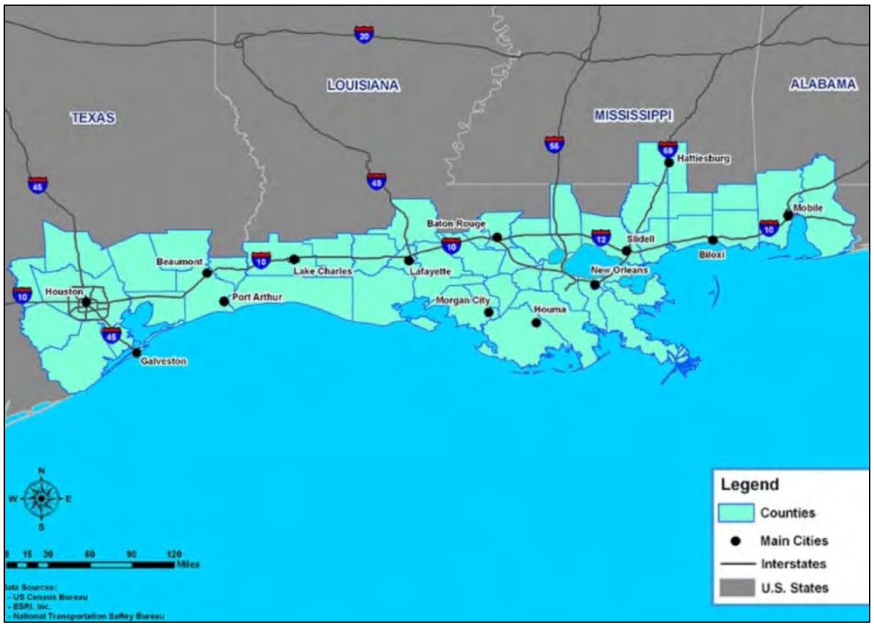
As vehicle manufacturers produce and sell more fuel-efficient cars in Mississippi, GHG emissions per mile of travel will fall. Possible shifts to use of alternative fuels such as ethanol, biodiesel, and electricity, may also help to reduce the amount of GHG emissions from the tailpipes of cars and trucks.

Improvements to Mississippi's transportation system coupled with land use planning may help reduce GHG emissions along with improvements that reduce congestion in urban areas. At the same time, increasing vehicle efficiency further reduces gas tax receipts and likewise will reduce funding for surface transportation projects in the state.

### 3.5.2 Adaptation

The U.S. Gulf Coast (**Figure 3-4**) is expected to be particularly vulnerable to the impacts of global climate change. This vulnerability lies primarily in the areas of rising temperatures, changing precipitation patterns, rising sea levels, and increasing storm frequency and severity.

**Figure 3-4: Climate Change Adaptation Concerns: US Gulf Coast**




*Source: Study area from, "Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I," a Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research (CCSP Report).*

These effects have varying implications for transportation infrastructure. For example, higher temperatures can increase rutting of asphalt pavements, result in expansion strains in structures in excess of the design (such as the buckling of tracks on rail lines), and other material degradation. Rising sea levels increase the risk of inundating existing transportation infrastructure. However, even for facilities that have not been

*The U.S. Gulf Coast is expected to be particularly vulnerable to the impacts of global climate change.*

inundated, increased sea levels result in a greater potential for storm surge damage during tropical storms and hurricanes. If these storms increase in frequency and severity, the transportation system must respond adequately with safe and efficient evacuation routes.

### *3.5.3 Other Implications*

For now, and not unlike the rest of our nation, Mississippi's transportation system runs on oil. While there is much conversation regarding alternate forms of energy powering vehicles, currently 99 percent of all travel in the U.S. is oil-based. Higher crude prices and declining domestic production have increased costs and risks to the United States and the Mississippi economy. Therefore, it will be important for Mississippi to balance the push for alternative fuels and energy independence with the state's priorities for transportation as well as economic vitality and job growth.

# 4. KEY TRANSPORTATION CORRIDORS

Analysis conducted for MULTIPLAN 2035 included a "corridor approach" - a multi-step approach for developing more detailed policy, infrastructure investment, and coordination planning among agencies. A corridor approach recognizes the unique contribution and potential of each corridor in terms of economic development, mobility in the communities it serves, and multimodal connections that serve both personal and commercial needs. The corridor approach and resultant strategies developed for MULTIPLAN 2035 are particularly important given the state's tremendous needs and limited resources. Defining and understanding the importance of Mississippi's multimodal transportation corridors is critical for allocating scarce transportation funds throughout the MULTIPLAN 2035 timeframe and beyond.

*Defining and understanding the importance of Mississippi's multimodal transportation corridors is critical for allocating scarce transportation funds throughout the MULTIPLAN 2035 timeframe and beyond.*

The steps of the corridor approach used as part of MULTIPLAN 2035 were:

- Identify corridors of statewide significance;
- Provide in-depth profile of the corridors;
- Define corridor goals and objectives;
- Develop corridor strategies and key projects to meet goals and objectives;
- Evaluate the effectiveness of strategies and key projects in meeting goals and objectives; and
- Identify long-term steps needed to include a corridor approach in future planning efforts.

## 4.1 Corridors of Statewide Significance

For the purpose of conducting highway needs analyses and to better understand proposed transportation solutions in the state, MDOT identified a group of key corridors of statewide significance. These corridors combined total approximately 1,000 miles. All of these corridors of statewide significance were included in the 2002 Statewide Transportation Framework. Additionally, all six of the freight corridors identified in the Mississippi Goods Movement and Trade Assessment Study are included in these corridors.

The corridors of statewide significance are illustrated in **Figure 4-1** and listed in **Table 4-1**. While identified by the principle highway along the corridor, the corridor approach used in MULTIPLAN 2035 was fully multimodal in scope and considered the corridor as extending approximately 20 miles on either side of the principle highway. It is estimated that approximately 91 percent of all freight that travels in Mississippi uses one or more of the corridors of statewide significance.

**Figure 4-1: Mississippi Corridors of Statewide Significance**

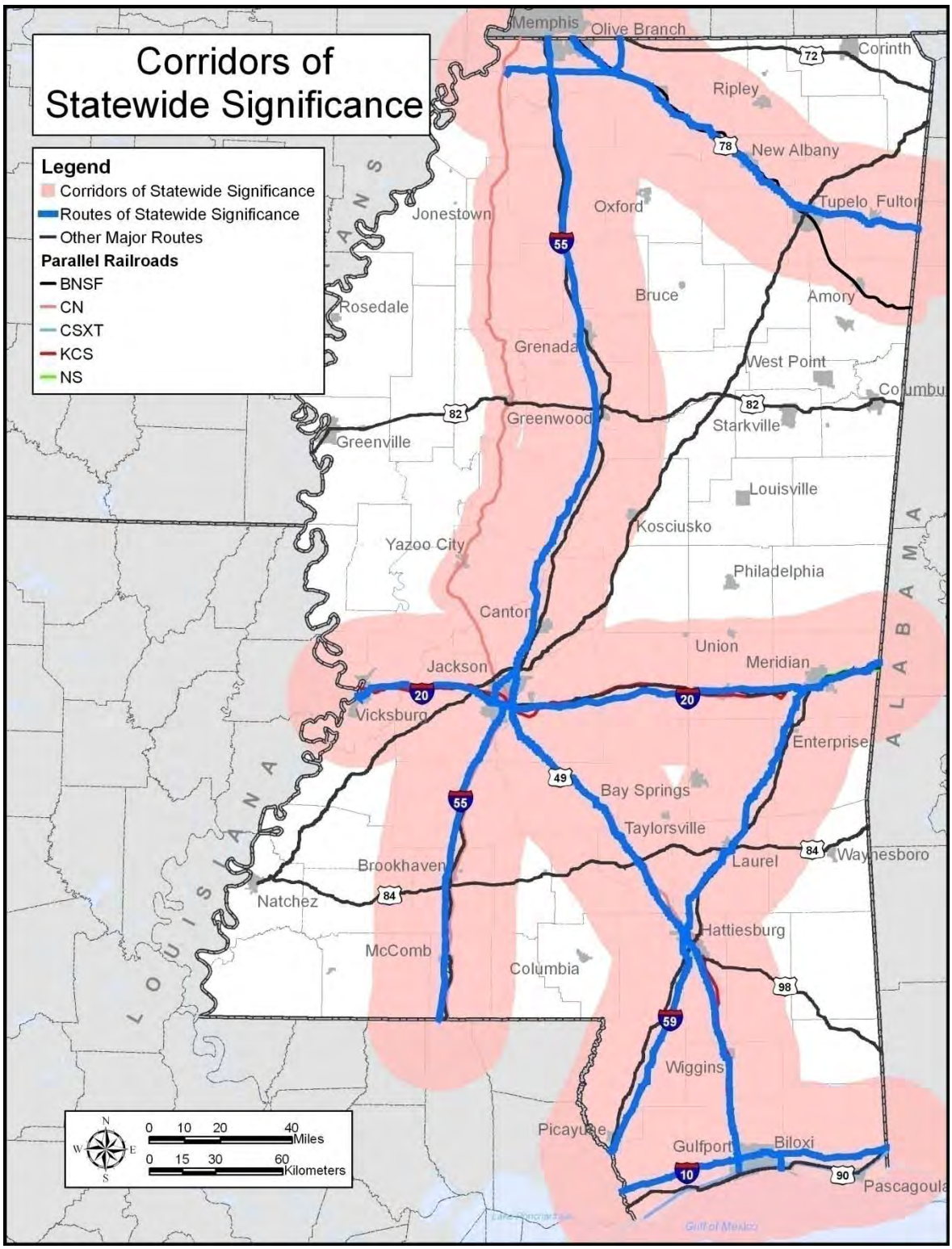


**Table 4-1: Mississippi Corridors of Statewide Significance**

| Route | Description | Length (miles) |
|---|---|---|
| **I-10** | LA line to Gulfport, Biloxi, and Pascagoula; crosses the Biloxi River and Pascagoula River; and ends at the AL line. Includes I-110 and US-90 | 77.2 |
| **I-20** | LA line at Mississippi River; goes through Vicksburg, Jackson, and Meridian; ends at AL line | 152.9 |
| **I-55** | LA line then crosses US-98, US-84, I-20, US-82, and US-278 to TN line, via McComb, Brookhaven, Jackson, Canton, Grenada, and Southaven | 289.8 |
| **I-59** | LA line then crosses the Pearl River near Picayune and crosses US-98, US-49, and US-84 to I-20 in Meridian, via Hattiesburg and Laurel | 148.2 |
| **I-69/I-269** | I-55 to US-61 in De Soto County and the future connecting I-269 corridor from I-55 to the TN line. Long-term I-69 will extend south, roughly parallel to U.S. 61, before crossing the Mississippi River into Arkansas | 44.2 |
| **I-220 Connector Corridor** | Connects I-55 north of Jackson to I-20 west of Jackson | 11.4 |
| **US-49** | Starts at the Port of Gulfport and crosses I-55, US-98, and US-84 to I-20 in Jackson, via Hattiesburg and Covington | 154.1 |
| **US-78** | TN line then crosses MS 7 and US-45 to AL line, via Olive Branch and Tupelo - crosses Tennessee-Tombigbee River and Natchez Trace Parkway | 118.1 |

*Source: Prepared by Wilbur Smith Associates*

Corridor strategies and short-term key projects were identified for each corridor. These represent the early steps in leading to long-term use of a corridor approach in planning, assessing, and implementing transportation projects in Mississippi. There are many future steps that should be considered to fully implement a corridor approach as part of the overall planning and project development process. These steps would include:

- Individual review of the short-term and long-term needs for each corridor to build on the material developed for MULTIPLAN 2035. This would include potentially more detailed and location specific analysis of the traffic, geometric, safety, economic development, environmental, multimodal, and other needs. This would lead to enhanced needs assessments for each corridor.
- Continued implementation of the key short-term projects identified in Section 4.2 of this report and through other MULTIPLAN 2035 documents. These are the higher priority projects for continuing to ensure the corridors meet their key functions.
- Development of more detailed corridor strategies and analysis of long-term project needs. The purpose of long-

*The purpose of long-term strategies and projects may be more transformational and would ensure the corridors are meeting the future transportation, economic, environmental, and other goals for Mississippi.*

term strategies and projects may be more transformational and would ensure the corridors are meeting the future transportation, economic, environmental, and other goals for Mississippi.

- Enhancing the multimodal analysis so that long-term corridor considerations include more emphasis on bicycle, pedestrian, and transit modes.
- Greater environmental analysis including more detailed examination of key environmental resource issues and potential environmental justice issues. Implementation of plans to address the long-term effects of climate change on the corridors of statewide significance could also be further considered.
- The items above could be accomplished through a series of long-term corridor master plans for the corridors of statewide significance. These plans could be developed on a phased basis, first for the corridors with more pressing needs and then for other corridors.
- MDOT will consider development of an overall guidance manual for specific projects on the corridors of statewide significance. This manual should cover topics such as standard measurement of corridor functions and needs, standard performance measures, design considerations, coordination processes, environmental review requirements, multimodal integration techniques, and context sensitive solutions.
- MDOT will consider developing corridor coordination teams consisting of groups of stakeholders for each of the corridors of statewide significance who are willing to take a corridor wide view of potential short-term and long-term improvements. Local officials, MPOs, rail owners and carriers, trucking carriers and shippers, bicycle associations, transit agencies, port operators, economic development officials, and environmental resource agencies are all among the stakeholders that could be involved. The purpose of these coordination teams would be to help develop project prioritization measures, identify corridor issues, and provide regular feedback on corridor performance.

## 4.2 Corridor Strategies and Key Short-Term Projects

Specific strategies and key short-term projects were identified to guide future transportation investment decisions for each corridor. There are several overarching corridor strategies applicable to all, including:

- Integrate bicycle, pedestrian and transit modes into the corridor transportation planning process. Integrate bicycle/pedestrian movement into the areas of highway/bridge design and facility standards, transit access, and policy planning.
- Continue to improve work zone and workplace safety along the corridor and other corridor roads.
- Complete rehabilitation of any deficient segments of the corridor over time. Prioritize mileage along the corridor with pavement condition categorized as non-acceptable.
- Partner with Federal and State Resource Agencies and conservation organizations to further promote mutual understanding of their and MDOT's goals.

- Promote context sensitive solutions/design including implementing flexibility in highway design criteria in the corridor to gain better acceptance of projects by communities and resource agencies.
- Continue development and implementation of highway improvements in the corridor in a coordinated manner with economic development efforts.
- Promote a balanced freight transportation system in the corridor that takes advantage of the inherent efficiencies of each mode.
- Elevate public involvement in transportation plans for the corridor by identifying transportation customers and facilitate improved/formalized methods for communication between them. Implement proactive public involvement programs for corridor projects and consider all public comments.

### *4.2.1 The I-10 Corridor*

Interstate 10 is the major east - west corridor of statewide significance in southern Mississippi. Key short-term projects along the corridor are listed in **Table 4-2**.

**Table 4-2: I-10 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| Development of a plan to improve existing rail service and connectivity between the ports in the Gulf Coast areas and other rail carriers | 2011 to 2015 |
| Develop Long-Term Dredge Management Plans for the Ports in the Corridor | 2011 to 2015 |
| Congestion management/capacity expansion study on I-10 from US-49 to I-110 | 2011 to 2015 |
| Widening to add one through lane in each direction on I-10 between I-110 and Highway 609 (Ongoing Project) | 2011 |
| Congestion management/capacity expansion study on I-110 including interchange at US-90 | 2011 to 2015 |
| Reconstruction of I-10/I-110 and MS 67 interchange to include ramp improvements, additional ramps at Old Highway 15 and Lamey Bridge Road and collector-distributor roads | 2011 to 2020 |
| Improvements to existing I-10 interchange at Canal Road including ramp and intersection relocations to allow for the completion of Highway 601 (ongoing) | 2011 (initial phase) and 2011 to 2020 |
| Construction of new pedestrian walkway in US-90 corridor, along seawall from Thornton Avenue in Gulfport to Southern Circle | 2011 to 2015 |

Corridor specific strategies include:

- Promote increased use of the state's freight and passenger rail system: Address potential for passenger rail and freight rail improvements in I-10 corridor.
- Encourage continued use of the Gulf Coast's water ports through promoting highway and rail access to port facilities along the I-10 corridor through the National Highway System Intermodal Connector Improvement Program (NHS ICIP). Investigate the potential for a dedicated truck corridor between the Port of Gulfport and I-10.
- Develop a plan to investigate and enhance the use of park and ride facilities along the I-10 corridor, in coordination with Coast Transit Authority.

- Further investigate the potential for bus rapid transit or streetcar services along the corridor to relieve future congestion along I-10, I-110, and US-90 and enhance overall mobility.
- Complete safety studies in key locations, such as along I-10 in Harrison County and along I-110, to address ways of reducing higher rates of crash occurrence.
- Support corridor improvements to rail crossings and along corridors.
- Continue maintenance of I-10 as an east-west hurricane evacuation route and I-110 as an evacuation connector. Ensure future improvements take these roles into account.
- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor. The needs of emerging businesses/industry clusters should continue to be evaluated to ensure that the corridor's transportation assets continue to meet their needs.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.2 The I-20 Corridor*

Interstate 20 is the major east – west corridor of statewide significance in Central Mississippi. The Mississippi Department of Transportation (MDOT) has announced a $150 million project to reconstruct I-20 through Vicksburg, improving interchanges, adding lanes, and a new bridge. Key short-term projects along the corridor are listed in **Table 4-3**.

**Table 4-3: I-20 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| I-20 Improvements in Rankin County from MS 468 to MS 475 – 3.6 miles of four lane to six lane (under construction) | 2011 |
| I-20 improvements in Rankin County from MS 475 to Brandon Crossgates Exit (Greenfield Road) – 2.2 miles of four lane to six lane (under construction) | 2011 |
| I-20 improvements in Hinds County from Clinton/Raymond Road Exit to MS 18 – 6.1 miles of four lane to six lane | 2013 to 2020 |
| I-20 improvements in Hinds and Rankin Counties from I-55 south to US-49 – 3.0 miles of four lane to six lane | 2013 to 2020 |
| Rail Capacity and Improvement Study along the I-20 Corridor | 2013 to 2020 |
| Pirates Cove new interchange | 2013 to 2020 |

Corridor specific strategies include:

- Promote increased use of the state's freight and passenger rail system: Address potential for passenger rail and freight rail improvements in the I-20 corridor. There is currently no passenger rail along the I-20 corridor west of Meridian.

- Encourage continued use of the Port of Vicksburg through promoting highway and rail access to port facilities along the I-20 corridor through the Intermodal Connector Improvement Program.
- Develop a plan to investigate and enhance the use of park and ride facilities and commuter routes along I-20 corridor in the Jackson Area, in coordination with Jackson Transit System (JATRAN).
- Complete safety studies in key locations, such as along I-20 in the Jackson area, to address ways of reducing higher rates of crash occurrence.
- Support corridor improvements to rail crossings and along corridors.
- Continue maintenance of I-20 as an east-west hurricane evacuation route. Ensure future improvements take this role into account.
- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor. The needs of emerging businesses/industry clusters should continue to be evaluated to ensure that the corridor's transportation assets continue to meet their needs.

### *4.2.3 The I-55 Corridor*

Interstate 55 is the major north – south corridor of statewide significance in Mississippi. Key short-term projects along the corridor are listed in **Table 4-4**.

- Promote increased use of the state's freight and passenger rail system: Address potential for passenger rail and freight rail improvements in the I-55 corridor. Current passenger rail is along the I-55 corridor from Jackson south. Northern passenger rail is along the CN line parallel to and west of I-55 through the Mississippi Delta.
- Develop a plan to investigate and enhance the use of park and ride facilities and commuter routes along I-55 corridor in the Jackson Area, in coordination the with Jackson Transit System (JATRAN).
- Continue with studies to explore potential commuter routes and Bus Rapid Transit (BRT) in Desoto County in conjunction with I-69/I-269 as well as I-55.
- Complete safety studies in key locations along I-55 as it has the highest crash rates of any of the interstate corridors.
- Support corridor improvements to rail crossings and along corridor.

**Table 4-4: I-55 Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| I-55 improvements in Desoto County from Hernando to MS 302 – 2.2 miles of four lane to eight lane and 9.8 miles of four lane to six lane (ongoing project) | 2015-2018 |
| I-55 improvements in Hinds and Madison Counties from Old Agency Road to MS 463 – 2.9 miles of four lane to six/eight lane plus new interchange | 2012 |
| I-55 improvements in Hinds and Madison Counties from I-220 to Old Agency Road – 1.4 miles of four lane to six lane | 2013 to 2020 |
| I-55 improvements in Hinds County from I-20 south to Siwell Road – 7.0 miles of widen to six lanes | 2013 to 2020 |
| Gluckstadt Road Interchange improvements | 2013 |

Corridor specific strategies include:

- Continue maintenance of I-55 as a north-south hurricane evacuation route, south of I-20. Ensure future improvements take this role into account.
- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.4 The I-59 Corridor*

Interstate 59 is a major north - south corridor of statewide significance in southeast Mississippi. Key short-term projects along the corridor are listed in **Table 4-5**.

**Table 4-5: I-59 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| SR 42 Interchange redesign/replacement | 2012 |

Corridor specific strategies include:

- Promote increased use of the state's freight and passenger rail system: Address potential for passenger rail service enhancements and freight rail improvements in the I-59 corridor.
- Support corridor improvements to rail crossings and along corridor.
- Continue maintenance of I-59 as a north-south hurricane evacuation route. Ensure future improvements take this role into account.

- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.5 The I-69/I-269 Corridor*

In the near term this corridor will include existing I-69 and the future proposed I-269 corridors, which meet at I-55. I-69 is currently an east - west corridor in the extreme northwest of Mississippi. In the long term an additional segment of I-69 will extend south from Robinsonville, travelling basically parallel to existing U.S. 61 (encompassing portions of it) and then crossing the Mississippi River at a new bridge into Arkansas and on south to Louisiana, Texas and the Mexico border. Similarly, in the future I-69 will extend north through Tennessee, Kentucky, Indiana, and Michigan to Canada. I-269 is a proposed future corridor that provides a circumferential route around Memphis, Tennessee. Key short-term projects along the corridor are listed in **Table 4-6**.

**Table 4-6: I-69/I-269 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| Completion of I-269 Segments | 2020 |
| Completion on I-69 Transit Alternative Analysis (on-going) | 2011 |

Corridor specific strategies include:

- Develop a plan to investigate and enhance the use of park and ride facilities and commuter routes along I-69 and future I-269 corridor in coordination with transit agencies.
- Continue with studies to explore potential commuter routes and BRT is Desoto County in conjunction with I-69/I-269 as well as I-55.
- Pursue completion of the I-69/I-269 corridor for its local importance and its role as part of a NAFTA trade corridor.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.6 The I-220 Connector Corridor*

Interstate 220 is a corridor of statewide significance that connects I-20 in West Jackson with I-55 in North Jackson within the Jackson metropolitan area with limited access occurring only at seven interchange locations. The purpose of the 12 mile northeast – southwest corridor is to provide connectivity from the state's primary east-west interstate to the state's primary north – south interstate

within the state's transportation hub, metropolitan Jackson. Key short-term projects along the corridor are listed in **Table 4-7.**

**Table 4-7: I-220 Connector Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| Congestion management/capacity expansion study to address areas of current/future LOS E and F. | 2011 to 2015 |

Corridor specific strategies include:

- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to airports, and industrial projects in highway project programming in the corridor.
- Support the improvement of bicycle and transit facilities along the corridor, particularly in recreation areas for tourism attraction, including the Natchez Trace Parkway.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.7 The US-49 Corridor*

U.S. Route 49 (US-49) is a north-south corridor of statewide significance in central and southeastern Mississippi. Key short-term projects along the corridor are listed in **Table 4-8.**

Corridor specific strategies include:

- Promote increased use of the state's freight and passenger rail system: Address potential for passenger rail and freight rail improvements in the US-49 corridor.

**Table 4-8: US-49 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| Rail line upgrades between Gulfport and Hattiesburg (partially funded through TIGER grant) | 2011 |
| US-49 improvements from Richland to Florence – 4.0 miles of four lane to six lane | 2014 |
| US-49 improvements from O'Neal Road north to School Road – 3.3 miles of four lane to six lane | 2013 to 2020 |
| Congestion management/capacity expansion study on US-49 from O'Neal Road to I-10 | 2011 to 2015 |
| ITS improvements along corridor in HPFL MPO Area | 2013 to 2020 |

- Encourage continued use of the Gulf Coast's water ports through promoting highway and rail access to port facilities connected by the US-49 corridor through the Intermodal Connector Improvement Program.

- Complete safety studies in key locations along US-49 as it has the highest crash rates of any of the corridors. Safety improvements should focus on addressing higher injury crash rates along the corridor.
- Support corridor improvements to rail crossings and along corridor.
- Continue maintenance of US-49 as a north-south hurricane evacuation route, south of I-20. Ensure future improvements take this role into account.
- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor. Emphasize access to the Richland Terminal intermodal facility near US-49 in Jackson.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

### *4.2.8 The US-78 Corridor*

U.S. Route 78 (future Interstate 22) is a corridor of statewide significance that runs northwest to southeast in the northeast corner of Mississippi. Key short-term projects along the corridor are listed in **Table 4-9.**

**Table 4-9: US-78 Corridor Key Short-Term Projects**

| Project | Timeframe |
|---|---|
| Congestion management/ capacity expansion study on US-78 from Musgray Road to US-178 | N/A |

Corridor specific strategies include:

- Continue to work with partners in Alabama and Tennessee to complete the conversion of US-78 to I-22 as a priority.
- Address the potential for Environmental Justice issues in the corridor by assuring that underserved, low income, and minority entities are immersed in the environmental processes to evaluate improvements.
- Consider access to ports, airports, and industrial projects in highway project programming in the corridor. The needs of emerging businesses/industry clusters should continue to be evaluated to ensure that the corridor's transportation assets continue to meet their needs.
- Undertake Major Transportation Investment Studies where appropriate in the corridor to ensure that major federally-aided projects incorporate the most beneficial mix of transportation alternatives, including intermodal facilities and services.

# 5. INVESTING IN OUR FUTURE

Transcription in Mississippi is not unlike that in most states in the nation; growing needs … shrinking resources. To retain and expand job opportunities in existing industries and continue to diversify and grow the economy attracting new businesses to Mississippi, transportation networks must continue to address preservation, modernization, and expansion needs. Mississippi may never have the resources to fund all of its "needed" transportation investments; therefore, it is critical that the state's transportation stakeholders – including state and local officials, transportation partners, and Mississippi's citizens – understand where and why MDOT invests its scarce transportation dollars.

*… it is critical that the state's transportation stakeholders – including state and local officials, transportation partners, and Mississippi's citizens – understand where and why MDOT invests its scarce transportation dollars.*

## 5.1 Highway and Bridge Revenues

### *5.1.1 State Sources*

The primary source of state-funded transportation revenue in Mississippi is the state motor fuel tax. The current tax rate of 18.4 cents per gallon on gasoline and diesel (of which 0.4 cents per gallon are dedicated to the Mississippi Groundwater Protection Trust Fund) was last increased in 1987. Of the 18 cents per gallon available for transportation investment, 73 percent is directed to MDOT for investment on the MDOT system with 27 percent to Mississippi counties. For the purposes of MULTIPLAN 2035, only the revenues available for investment by MDOT are considered (both state and federal sources).

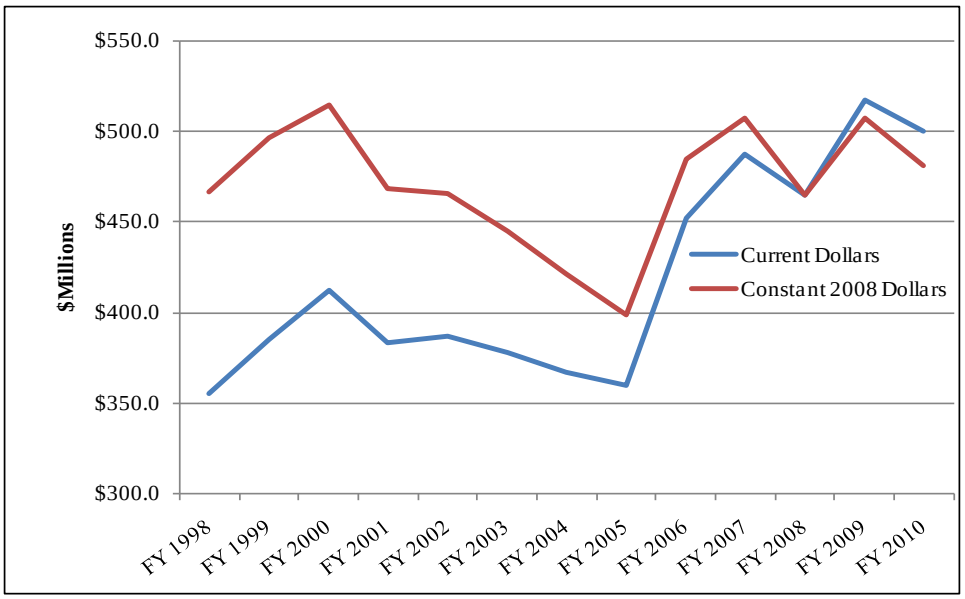
*In current dollars, 18.4 cents is now worth 10.4 cents, which represents a 42% loss of buying power since 1989. Coupled with increases in vehicle's fuel efficiency and the combustion efficiency of the fuels themselves, Mississippi's state transportation fund has certainly not kept pace with the growing demands of the past 20 years.*

Since 1989, the value of the 18.4 cents per gallon fuel tax has dropped to 10.4 cents, a 42% loss of buying power in constant dollars. Coupled with increases in vehicles fuels efficiency and the combustion efficiency of the fuels themselves, Mississippi's state transportation fund has certainly not kept pace with the growing demands of the past 20 years.

**Figure 5-1** shows the total state revenues directed to MDOT since 1998, with approximately $500 million available for investment in FY 2010. The majority of these revenues (more than two-thirds) are comprised of the state fuel tax and truck and bus fees and permits. The interlocal "proceeds," tag fees,

commercial vehicle fees, the contractor's tax, bond interest, oil taxes, and other fees account for the remaining balance.

**Figure 5-1: State Revenues to MDOT, FY 1998-2010**
**(Current Dollars and Constant 2008 Dollars)**




*Source: MDOT Annual Reports*

The Mississippi Legislature passed a law in 2000 creating the MultiModal Capital Improvement Fund (MCIF). The Legislature may provide (by appropriation) funds for MDOT for multi-modal capital improvements projects at ports, airports, publicly owned railways and public transit providers. MDOT serves to administer the project selection and coordinates the selection process, which is done by committees comprised of local representatives for the specific modes. MDOT is to distribute MCIF among modes as follows:

- 38 percent for ports
- 34 percent for airports
- 12 percent for railroads
- 16 percent for public transit.

To date the legislature has not appropriated any funding to the program since its passage. MDOT has recognized the importance of this program and funded it out of its state fuel tax revenue, but the legislature should try to develop a funding stream to replace MDOT's contribution.

As shown in **Table 5-1**, in terms of current dollars, state revenues to MDOT have grown at an average annual rate of 2.9 percent since 1998. In the last five years state revenues to MDOT grew at an average annual rate of 6.8 percent. This 6.8% growth is due largely to the growth in "interlocal proceeds"

(151.7% growth) during the last five years. It is important to note that the "interlocal proceeds" are generated from bonds that MDOT must repay.

**Table 5-1: Historic Compound Annual Growth Rates for State Revenues to MDOT**

| Fiscal Years | Growth Rate (Based on Current Dollars) |
|---|---|
| 1998–2010 | 2.9% |
| 2005-2010 | 6.8% |

### *5.1.2 Federal Sources*

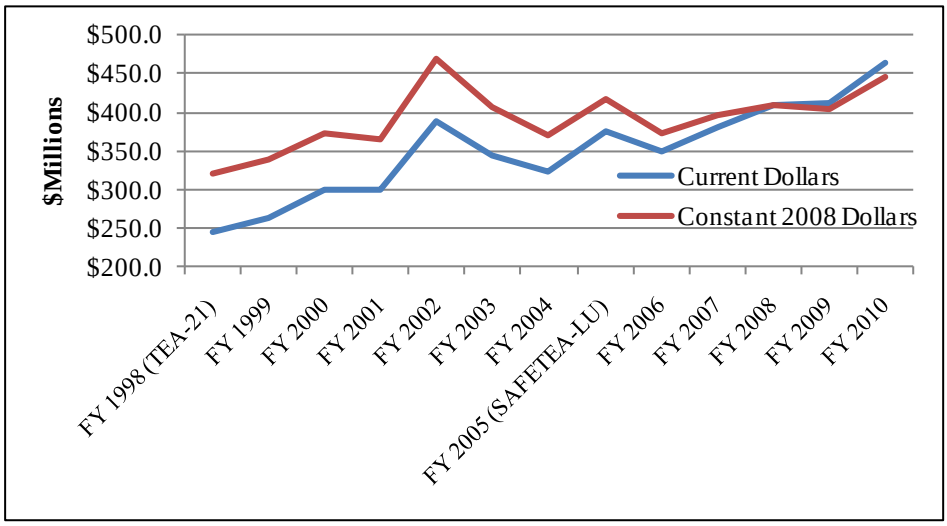
To better understand projected revenues available for transportation investment, Federal Highway Administration revenue apportionments from FY 1998 to FY 2010 were examined. This includes funding under the Transportation Equity Act for the 21st Century (TEA-21) for FY 1998 to FY 2004 and SAFETEA-LU for FY 2005 to FY 2009.

For the purpose of this revenue baseline, Federal *obligation limitation* and *equity bonus* represent total Federal highway revenues. *Obligation limitation* is a restriction, or "ceiling" on the amount of Federal assistance that may be promised (obligated) during the federal fiscal year. The *equity bonus* in SAFETEA-LU ensures that each state receives a certain amount of revenue based on equity considerations, including the guaranteed minimum rate of return on each state's share of contributions to the Highway Trust Fund. Together, the total obligation limitation and equity bonus represent the Federal dollars Mississippi is able to spend each year. Earmarks, Emergency Relief Funds, and funds from the American Recovery and Reinvestment Act of 2009 (ARRA) are not included in this revenue baseline since they are non-recurring revenue for transportation.

MDOT had an obligation limitation of $395.9 million in FY 2009 and an equity bonus of $16.7 million through SAFETEA-LU, for a total of $412.6 million of Federal highway revenues available for expenditure. Because SAFETEA-LU expired on September 30, 2009, Congress is currently enacting continuing resolutions to fund transportation programs until new surface transportation legislation is passed. Continuing resolutions provided Federal highway revenues in FY 2010. With $446.8 million in obligation limitation and $17.1 million in equity bonus, MDOT received a total of $463.9 million in transportation revenues for FY 2010.

**Figure 5-2** illustrates total Federal highway revenues (total of obligation limitation and equity bonus) to MDOT since 1998.

**Figure 5-2: Total Federal Highway Revenues to MDOT, FY 1998-2010 (Current Dollars and Constant 2008 Dollars)**




*Source: MDOT Fiscal Management System Reports*

As shown in **Table 5-2**, in terms of current dollars, total Federal highway revenues to MDOT have grown at an average annual rate of 5.5 percent since 1998. In the last five years Federal revenues to MDOT grew at an average annual rate of 4.3 percent.

**Table 5-2: Historic Compound Annual Growth Rate for Federal Highway Revenues**

| Fiscal Years | Growth Rate (Based on Current Dollars) |
|---|---|
| 1998-2010 | 5.5% |
| 2005-2010 | 4.3% |

The trend of a six-year Federal transportation funding program is expected to continue because it provides longer and more stable planning periods for states and Metropolitan Planning Organizations (MPOs). However, authorization of Federal transportation programs remains uncertain at this time and it could be possible that the six-year funding trend would not continue.

While all of this uncertainty leads to a "new normal" for transportation funding yet to be defined, the Federal government has historically dealt with transportation in a way that has kept the Trust Funds for transportation solvent. Therefore, the projections presented in this report assume that historic trends will continue through 2035, though at a considerably lower growth rate.

## 5.2 Revenues for Non-highway Modes

Non-highway revenues for multimodal transportation investment in Mississippi include funds available for transit, rail (freight and passenger), aviation, and ports.

### *5.2.1 Transit*

Transit sources include both state and federal revenues:

- Federal: In FY 2009, $50.9 million in Federal transit apportionments were made to Mississippi through SAFETEA-LU. In FY 2010, $39.6 million in Federal transit apportionments were made to Mississippi through continuing resolutions. The growth rate for Federal Transit apportionments to MDOT since 1994 is 4.9 percent. Since 2005, apportionments have grown faster, at an average annual rate of 5.9 percent.
- State: Public transit providers receive 16 percent of the MultiModal Capital Improvement Fund, previously discussed. This is the only source of state transit funding in Mississippi. These funds are included in the state revenues, presented previously.

### *5.2.2 Rail*

Rail investment in Mississippi can be considered for both passenger and freight; however, these investments are made largely outside of MDOT's purview:

- Passenger Rail: Federal funding for national passenger rail service is provided directly to Amtrak. Currently Amtrak provides a north south route that runs through Greenwood, Yazoo City, Jackson, Brookhaven, and McComb in Mississippi. This route connects New Orleans and Chicago. An east-west route, which connects Los Angeles, New Orleans, and Washington, DC, runs through Meridian and Hattiesburg in Mississippi.
- Freight Rail – Federal Sources: Very limited Federal funding exists for rail freight. In recent years, this funding has been focused on highway-railroad at-grade crossings to address safety issues and inherent roadway delays. Federal programs to assist states in meeting rail capital needs have been unfunded since 1994. MDOT's FY 2009 apportionment for Rail Highway Crossing Hazard Elimination was $1,704,630 and for Rail Highway Protective Devices was $1,704,629.
- Freight Rail – State Sources: Publicly owned railroads receive 12 percent of the MultiModal Capital Improvement Fund (MCIF). MDOT made available annual MCIF amounts of $600,000 in FY 2005 and FY 2006 and $1.2 million from FY 2007 to FY 2010, for a total of $6.0 million since 2005.
- MDOT makes revenues from the locomotive fuel tax, averaging $186,000 per year, available to railroads as a loan to rehabilitate rail lines and facilities. Since 1999, approximately $6 million (through 2010) has been loaned and is typically only utilized by Mississippi's Class III railroads. These revenues were not included in the revenue baseline because this is a loan program.

### 5.2.3 Aviation

Aviation and airport revenue sources include both state and federal revenues:

- The FAA, through the Airport Improvement Program (AIP), distributes Federal funds to the nation's public airport system from the Aviation Trust Fund. The Federal Aviation Administration (FAA) has provided $533.2 million in project funding directly to Mississippi airports since FY 1998, an average of $44.4 million per year. In FY 2010, Mississippi airports received $55.5 million in FAA funds. The compound average annual growth rate for Federal aviation revenues (directly to airports) from 1998 to 2010 was 13.1 percent and from 2005 to 2010 was 5.2 percent.
- Mississippi receives state aviation funding from fuel taxes on aviation fuel and gasoline used in aircraft, as well as a sales tax on automobile parking garages and lots at airports. Mississippi uses its state funding to match FAA grants. In addition to these aviation funds, airports receive 34 percent of the MCIF. These funds are included in the state revenues previously presented. Collections from aviation fuel, parking taxes and contributions from the Multimodal Capital Improvement Fund have provided approximately $45 million in state revenues for aviation in Mississippi since 1998. In FY 2010, state revenues for aviation totaled approximately $5.7 million.

### 5.2.4 Ports

Port revenues are largely state-based. Ports receive 38 percent of the MultiModal Capital Improvement Fund (MCIF). Mississippi Ports received annual amounts of $1.9 million in 2005 and 2006 and $3.8 million from 2007 to 2010, for a total of 19.0 million since 2005. These funds are included in the state revenues previously presented.

## 5.3 Revenue Forecast

*A conservative growth rate of 1 percent was selected to forecast Federal and state revenues.*

### 5.3.1 Growth Rates

Historic revenues for each transportation revenue category were examined to determine appropriate growth rates to use for the baseline revenue projection. Because of the uncertainty of both state and federal revenue sources, MDOT chose a conservative 25-year revenue forecast for MULTIPLAN 2035. Upon examining historic growth rates and recognizing the economic uncertainties at the national level regarding the Federal policies for domestic spending, a conservative growth rate of 1 percent was selected to forecast Federal and state revenues.

### 5.3.2 Future Revenue Projections

Future revenues (FY 2011 – FY 2035) were forecast from the average of FY 2006 to FY 2010 actual revenues. Constant 2008 dollars, which enable the comparison of buying power, were derived for forecasted revenues using a 2.0 percent inflation rate.

**Table 5-3** displays, in current and constant 2008 dollars respectively, the conservative baseline projection of all state and Federal transportation revenues. The conservative baseline projection was developed by applying the conservative 1 percent growth rate to the average of FY 2006 to FY 2010 revenues.

**Table 5-3: Revenue Projection in Current Dollars**

| Revenue Source | Total Revenue ($millions Current Dollars) FY 2011 - FY 2035 | Total Revenue ($millions Constant 2008 Dollars) FY 2011 - FY 2035 |
|---|---|---|
| Federal Highway Revenue Under MDOT Control | $9,533.5 | $7,083.2 |
| Total State Revenue | $13,814.8 | $10,264.1 |
| Federal Transit Revenue | $1,179.5 | $876.4 |
| Federal Aviation Revenue (Directly to Airports) | $1,712.3 | $1,272.2 |
| State Aviation Revenue | $153.8 | $114.3 |
| **Total Revenue** | **$26,393.9** | **$19,610.1** |
| **Total Revenue available to MDOT** | **$23,348.3** | **$17,347.2** |

For the conservative baseline forecast, the total transportation revenues for FY 2011 to FY 2035 in current dollars are estimated to be $26.4 billion, compared to $19.6 billion in constant 2008 dollars. The difference is the loss in buying power from FY 2011 to FY 2035, which is $6.8 billion or a reduction of approximately 26 percent.

Of the total revenue, $23.3 billion in current dollars would be available to MDOT for expenditure on the state highway system. The remainder is dedicated to transit and aviation. The buying power of the $23.3 billion is estimated at approximately $17.3 billion in constant dollars.

### *5.3.3 Revenues Available for Construction*

Since 2005, MDOT's highway and bridge construction program has been maintained at a level that is approximately 75 percent of its total expenditures. During this time, MDOT's highway and bridge construction program has been funded by the amount of money remaining after expenditures for all "other" MDOT programs. These "other" MDOT programs include: Maintenance; Aviation, Rail, Transit, and Ports; and Debt Service. From 2011 to 2035, these "other" MDOT programs are expected to grow by 2 percent annually. The growth in these "other" MDOT programs will result in a reduction in the total funding available for MDOT's construction program. From FY 2011 to FY 2035, MDOT's highway and bridge construction program is estimated to be $12.7 billion in current dollars or $9.5 billion in constant 2008 dollars. Therefore MDOT will not be able to maintain the FY 2005 to FY 2010 funding level for the construction program at 75 percent of its available revenues. Under the conservative revenue scenario, only 54 percent of total available revenue would be available for the construction program.

MDOT places a high value on pavement preservation as part of the annual construction program. However, the available construction funding for pavement preservation may not be adequate to meet these future maintenance needs.

### 5.3.4 Impact of Increased CAFE Standards on Mississippi Revenues

On April 1, 2010 the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) released a joint rulemaking finalizing standards for corporate average fuel economy (CAFÉ) and greenhouse gas emissions for new passenger cars and light trucks (model years 2012 to 2016). The new CAFE standards will reduce CO2 emissions by significantly reducing fuel use. The decline in fuel use will intensify the decline of fuel taxes as the principal highway funding source.

*It is estimated that Mississippi would lose $1.97 Billion in Highway Trust Fund Revenues and State revenues between 2012 and 2035 due to the increase in CAFE standards.*

The potential impact of the increase in CAFE standards on Mississippi revenues was calculated as part of this revenue baseline. It is estimated that Mississippi would lose $1.97 billion in current dollars ($1.45 billion in constant 2008 dollars) in Highway Trust Fund Revenues and state revenues between 2012 and 2035 due to the increase in CAFE standards.

After considering the impact of the increased CAFE Standards, the total revenue available for the MDOT Construction Program in the conservative scenario would be $10.71 billion (current dollars) from FY 2011 to FY 2035. For an aggressive funding projection, which assume a 4 percent annual growth in Federal transportation funding rather than 1 percent, the program would be $15.66 billion (current dollars). In constant 2008 dollars, this available total for the MDOT Construction Program would be $8.03 billion in the conservative scenario and $11.39 billion in the aggressive scenario from FY 2011 to FY 2035.

### 5.3.5 Filling the Gap

MDOT recently published a report entitled “Mississippi’s Options for Filling the State’s Transportation Funding Gap,” and examined potential state and local revenue options for meeting the growing funding gap for system preservation, system modernization, system expansion and replacement of deficient bridges. The revenue enhancement options highlighted were largely based on increasing the state’s motor fuel and other tax-based transportation funding programs. However, recent attempts have failed in the Mississippi state legislature to increase the gasoline excise tax by 5 cents per gallon. Therefore, no immediate remedy is forthcoming to help resolve the state highway funding shortfall.

*There is currently no support for increasing transportation user fees via the national gas tax and there are many competing goals for investment at both the national and state levels.*

On the federal side, Mississippi DOT continues work with AASHTO and other state DOTs to proactively pursue new federal transportation authorization legislation that would provide long-term stability and a new vision that focuses on an integrated transportation system. While the American Recovery and Reinvestment Act (ARRA) underscored the commitment of Congress to reinvigorate the U.S. economy through $48 billion in transportation investment, Congress continues to struggle with the authorization of a long-term surface transportation bill primarily because a sustainable funding stream has yet to be identified. This is largely due to the fact that the financial backbone of the surface transportation program is all but broken. There is currently no support for increasing transportation user fees via the national motor fuel tax and there are many competing goals for investment at both the national and state levels.

The House Transportation and Infrastructure Committee did develop a draft $450 billion reauthorization proposal in 2009 – the Surface Transportation Authorization Act (STAA) or Oberstar Bill. However, the House Banking Committee and the Senate Environment and Public works have not taken action nor has the Administration indicated their support for this bill. There is also an AASHTO proposal for conversion of the existing 18.4 cents per gallon federal tax on motor fuels to an initially "revenue neutral" percentage tax on motor fuels.

The growing Federal Deficit, the War on Terrorism, the Recession and Economic Recovery Programs, Universal Health Care and Education will all affect the ability of Congress to give the Federal transportation program the immediate attention for authorization that is needed for stable long term funding to the states. The outcome of the 2010 congressional elections focused the reduction of the federal deficit into a national priority for Congress and the Administration. The impact of the effort to reduce the federal deficit on the federal transportation budget is unclear at this point. Meanwhile the Federal Highway Trust Fund continues to teeter on the brink of insolvency while states' purchasing power for infrastructure construction has been consistently eroding due to inflation since the last change in the Federal motor fuel tax in 1993.

Mississippi's transportation infrastructure condition will continue to decline over the long term without a viable revenue source to fund transportation improvements. The federal transportation finance landscape may change and there is growing national interest in shifting from reliance on motor fuel taxes to distance-based, or Vehicle Miles Traveled (VMT) taxes. In fact, two recent reports by congressionally-appointed commissions established in SAFETEA-LU both endorse the transition to a national VMT tax. However, it will likely take a combination of new and current revenues to create a reliable funding stream for the state.

# 6. MULTIPLAN 2035: OUR PLAN FOR SUSTAINED, TARGETED INVESTMENT

MULTIPLAN 2035 serves as a comprehensive investment strategy to guide MDOT in decision-making. MDOT is committed to improving our statewide multimodal transportation network by preserving our existing infrastructure, providing information on anticipated performance outcomes to help make the case for transportation investment, and by increasing mobility along the critical transportation corridors of statewide significance.

## 6.1 Commitment to Preservation

### *6.1.1 State-maintained Highways*

MDOT recognizes that funding to satisfy all of the state's highway needs as identified in MULTIPLAN 2035 is not available. While future funding levels cannot be known with any certainty, the issues influencing future Federal and state funding for transportation have resulted in the development of a conservative revenue forecast for MULTIPLAN.

To evaluate the consequences of the baseline investment (limited to only 36 percent of the full needs on Mississippi's state-maintained highway system), HERS-ST was used to determine the most cost-effective use of funds in seven four-year periods between 2008 and 2035. These funds, in constant 2008 dollars, were based on the following considerations:

- Information from MDOT on typical levels of funding available for the Construction Program from recurring sources of federal and state funding;
- Information on short term funding sources that will be available only in the first funding period, such as funds from the American Recovery and Reinvestment Act of 2009 (ARRA) and Bonds (for new construction);
- MDOT's allocation of flexible funds between highway and bridge needs; and
- Growth projections for recurring funding sources of 1 percent per year for state and federal sources, determined in the Baseline Revenue Forecasts for the conservative funding projections.

The funding available to MDOT for its capital program for each 4-year period under a conservative funding projection is shown in **Table 6-1**.

**Table 6-1: Conservative Baseline Revenues Allocated to Highway Needs**

| | Seven 4-year Analysis Periods | | | | | | |
|---|---|---|---|---|---|---|---|
| | **08-11** | **12-15** | **16-19** | **20-23** | **24-27** | **28-31** | **32-35** |
| Projected Funding | $1,704 | $1,380 | $1,325 | $1,271 | $1,220 | $1,171 | $1,124 |
| Average per year | $426 | $345 | $331 | $318 | $305 | $293 | $281 |
| | **Total Funds over 28 years** | | | **$9,195** | **(36 % of Full Needs)** | | |

*Funds in Millions of Constant 2008 Dollars*

For planning purposes, three scenarios of funding allocation were examined to understand the condition and performance of the state system during the MULTIPLAN 2035 timeframe.

- **Strategy 1 – All Improvement Types**: Allocate revenues for all categories of highway improvements: preservation, modernization, and expansion. With the conservative funding projection and HERS allocating funding as cost-effectively as possible among all three categories of needs (preservation, modernization, and expansion), modernization uses the highest share of funds at 40 percent, with preservation and expansion accounting for 36 and 24 percent, respectively. Pavement conditions under this scenario would greatly degrade, however, with 56 percent of the state's roads in poor or worse condition in the MULTIPLAN 2035 timeframe.
- **Strategy 2 – No Capacity Expansion Improvements**: Allocate revenues for preservation and modernization only. Allocating funds to meet preservation and modernization needs only with no funds being used for expansion needs splits funds evenly between preservation (51 percent) and modernization needs (49 percent). This scenario shows the impacts of a "no-build" scenario, even along the corridors of statewide significance, and underscores the best possible condition for state roadways over the MULTIPLAN 2035 timeframe. Dedicating funds to these categories has a somewhat better effect on pavement conditions; however, 49 percent of state roadways will still be in poor or worse condition and congestion on interstates and freeways would increase.
- **Strategy 3 - Balanced**: Allocate revenues for preservation and modernization statewide, allowing expansion on interstates and on U.S. 49 and U.S. 78 only. This strategy reflects a middle ground investment scenario for MDOT and would include a focus on preservation and modernization statewide, with expansion only on the corridors of statewide significance. This scenario reduces some congestion and splits poor or worse pavement conditions between the two strategies previously discussed at 53 percent.

The outcomes of strategy 3 are presented below, where **Table 6-2** shows the allocation of funds by category of need. The projected deterioration of pavement condition in 2035 for this scenario is shown in **Figure 6-1**. Pavement conditions deteriorate from 24 percent in poor condition or worse to 42 percent by 2015 and 53 percent by 2035 (**Figure 6-2**).

**Table 6-2: Conservative Funding with Expansion on Corridors of Statewide Significance Only**

| Type of Need | Rural | Urban | Total | Percent |
|---|---|---|---|---|
| Preservation | $2,986 | $702 | $3,687 | 40% |
| Modernization | $2,407 | $1,489 | $3,896 | 42% |
| Expansion | $653 | $943 | $1,596 | 17% |
| **Total** | **$6,046** | **$3,134** | **$9,179** | **100%** |
| Percent | 66% | 34% | 100% | |

*Notes: (1) Expenditures in Millions of $2008*

**Figure 6-1: 2035 Pavement Conditions with Conservative Funding and Balanced Strategy**
**Funds Allocated to Preservation and Modernization Needs with Expansion on Selected Highways Only**

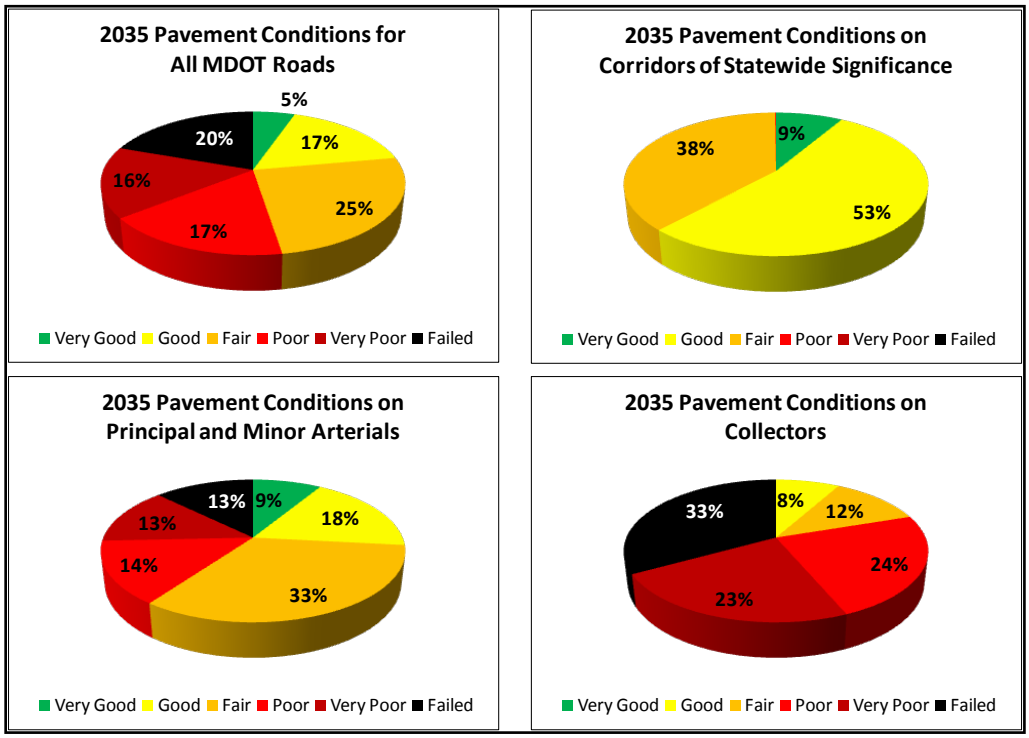
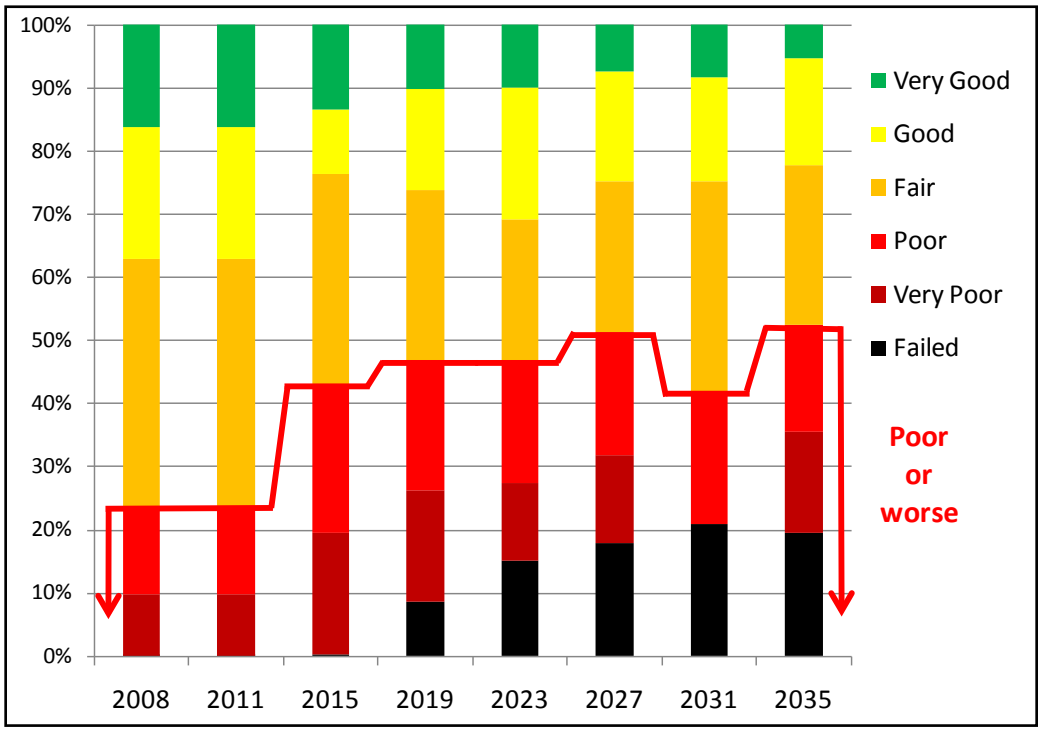



**Figure 6-2: Pavement Deterioration with Conservative Funding and Balanced Strategy**



### 6.1.2 State-Maintained Bridges

For MULTIPLAN 2035, the consequences on the condition of Mississippi's bridges using the limited funds available under the Conservative Funding Projection for MDOT's Construction Program were evaluated. NBIAS was used to determine the most cost-effective use of funds in each year between 2008 and 2035. These funds, aggregated in seven four-year periods, are shown in **Table 6-3.**

**Table 6-3: Conservative Funding Allocated to Bridge Needs**

| | Seven 4-year Funding Periods | | | | | | |
|---|---|---|---|---|---|---|---|
| Projected Funding | 08-11 | 12-15 | 16-19 | 20-23 | 24-27 | 28-31 | 32-35 |
| Conservative Funding | $537 | $378 | $363 | $348 | $334 | $321 | $308 |
| Average per year | $134 | $95 | $91 | $87 | $84 | $80 | $77 |
| | **Total Funds over 28 years** | | | **$2,589** | **(56 % of Full Needs)** | | |
| Funds in Millions of Constant 2008 Dollars | | | | | | | |

With the conservative funding projection a total of $2,589 million is allocated to bridge projects, amounting to 56 percent of full needs. With this level of funding, NBIAS allocated funds between improvement types as shown in **Table 6-4**. Almost 60 percent would be allocated to bridge replacement projects, with 31 percent used for rehabilitation and the balance on bridge improvements.

**Table 6-4: Allocation of Conservative Bridge Funding**

| Improvement Type | Total | % |
|---|---|---|
| Rehabilitation | $800 | 31% |
| Improvement | $243 | 9% |
| Replacement | $1,545 | 60% |
| **Total Needs** | **$2,589** | |

*Notes: (1) Expenditures in Millions of $2008*

The impact of funding levels for bridge projects on the projected 2035 Sufficiency Rating is shown in **Table 6-5** for unconstrained funding levels and the conservative funding projection. These impacts are also illustrated in Figure 6-2. Initial 2008 conditions are also included for comparison.

**Table 6-5: Projected Impacts of Funding on Bridge Sufficiency Ratings**

| Bridge Sufficiency Rating | 2008 Bridge Conditions | | 2035 Conditions with Conservative Funding | |
|---|---|---|---|---|
| | Number | % | Number | % |
| 75% to 100% | 3,158 | 75% | 3,384 | 80% |
| 50% to 75% | 686 | 16% | 831 | 20% |
| 25% to 50% | 218 | 5% | 12 | 0% |
| 0% to 25% | 165 | 4% | 0 | 0% |
| **Total** | **4,227** | **100%** | **4,227** | **100%** |
| **Total Funding** | **N/A** | | **$2,589 Million** | |

### 6.1.3 Highway-Bridge Investment Summary

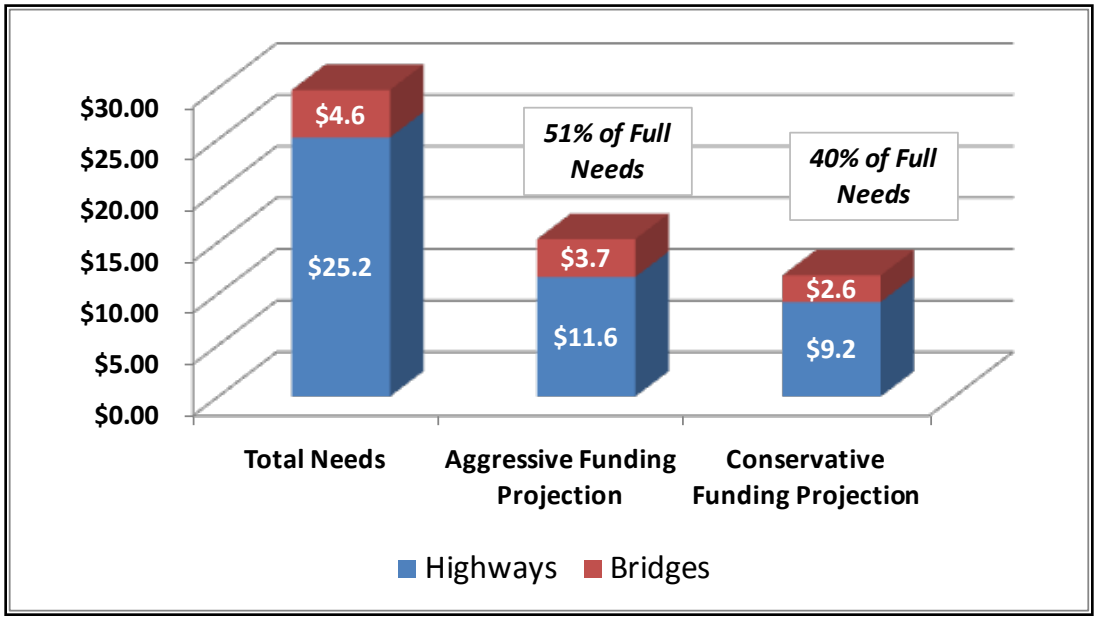
The consequences of the conservative funding level investment on Mississippi's highways and bridges are great:

- For highways, conservative funding projections are limited to only 36 percent of the future full needs on Mississippi's state-maintained highway system.
- For bridges, conservative funding projects will likely meet 56 percent of full future needs.
- Considered together the conservative funding projection would meet 40 percent of highway and bridge needs.
- Even a more aggressive (optimistic) projection based on a 4 percent annual growth in Federal transportation revenues would barely meet half the state's needs, as shown in **Figure 6-3**.

*While far from ideal, strategy 3 is likely optimal for MDOT to maintain the condition and performance of its state highway system and, without significant increases in funding, is the likely course of investment for the department.*

While far from ideal, strategy 3 is likely optimal for MDOT to maintain the condition and performance of its state highway system and, without significant increases in funding, is the likely course of investment for the department.

**Figure 6-3: Full Needs Compared to Projected Funding for Highways and Bridges**



For bridges – using projected conservative funding - MDOT will continue to focus on eliminating functionally obsolete bridges, increasing safety, and maintaining all state bridges adequately in the MULTIPLAN 2035 period.

## 6.2 Next Steps for Implementing a Multimodal Corridor Approach

Corridor strategies and short-term key projects were identified for each corridor in Section 4. These represent the early steps in leading to long-term use of a corridor approach for transportation projects in Mississippi. There are future steps that should be considered to implement a corridor approach. These steps are discussed in detail in Section 4.1 and would include:

- Individual review of the short-term and long-term needs for each corridor to build on the material developed for MULTIPLAN 2035.
- Development of more detailed corridor strategies and analysis of long-term project needs.
- Enhancing the multimodal analysis so that long-term corridor considerations include more emphasis on bicycle, pedestrian, and transit modes, as well as compatible land use planning.
- Greater environmental analysis including more detailed examination of key environmental resource issues, environmental justice issues, and potentially climate change.
- Development of a series of long-term corridor master plans for the corridors of statewide significance to accomplish the items listed above.
- Development of a guidance manual for projects on the corridors of statewide significance.

## 6.3 Advancing Multimodal and Intermodal Solutions

MDOT remains progressive and optimistic in its role in multimodal/ intermodal transportation initiatives. A consequence of those innovative efforts has been an increased expectation from many stakeholders for MDOT to increase funding for these programs. An example of this has been the implementation and administration of the state funded Multimodal Capital Improvement Program. This program currently funds multimodal projects at a level of $10.0 million per year. The genesis of this program came from the MDOT's "Comprehensive Assessment of the Ports of Mississippi," completed in 2000. The study established and quantified the level of need to assist the ports in the state with capital improvements. A collaborative effort by the MDOT and other operators of aviation, public transportation, railroads, and water ports, resulted in the passage of the Multimodal Capital Improvement Program. This law built from the recommendations for ports to include not only water ports, but also, public transit agencies, publically owned railroads, and public airports. The vital importance of multimodal and intermodal transportation to the state's economy is clearly illustrated in the following discussion of the economic benefits related to ports and rail.

*MDOT remains progressive and optimistic in its role in multimodal/ intermodal transportation initiatives.*

### 6.3.1 Modal Economic Impacts

Rail and port activity impacts in Mississippi address transport operations, as well as firms that use rail and ports to trade goods. Transearch inbound, outbound and intra-state commodity flows and values were used in conjunction with the IMPLAN economic model to determine how Mississippi firms use such commodities to generate direct economic impacts. Further, the indirect impacts associated with suppliers, and the induced impacts associated with the respending of income, were also quantified. Such impacts were measured in terms of employment, income and value-added (i.e., Gross State Product).

**Rail Economic Impacts** - Rail operations in Mississippi generate $429 million in value-added expenditures, of which $206 million is paid in income to 3,500 jobs. (**Table 6-6**) However, the impact associated with the firms that receive commodities and/or ship products by rail is much greater with direct employment totaling 68,520. When the indirect and induced impacts are factored in, the total trade impact associated with rail totals 147,450 jobs. Combined, the employment impact associated with rail operations and trade totals 150,950.

**Table 6-6: Rail Economic Impacts (2008)**

| | Operations | Trade[4] | Total |
|---|---|---|---|
| **Value Added**[1,2] | $429 | $10,724 | $11,153 |
| **Labor Income**[1] | $206 | $6,181 | $6,387 |
| **Employment**[3] | | | |
| Direct | 1,380 | 68,520 | 69,900 |
| Indirect | 1,000 | 45,040 | 46,040 |
| Induced | 1,120 | 33,890 | 35,010 |
| **Total** | 3,500 | 147,450 | 150,950 |

[1] Millions of 2008 dollars
[2] Comparable with Gross State Product (GSP)
[3] Employment impacts are presented in job-years
[4] Potential overlap impacts associated with cargo that potentially moves in and out by rail is subtracted-out. Doing so, provides a conservative estimate.
*Source: Wilbur Smith Associates*

**Port Economic Impacts** - Similarly, port operations in Mississippi generate a modest $256 million in value-added expenditures, of which $146 million is paid in income to 2,950 jobs. (**Table 6-7**) However, the impact associated with the firms that receive commodities and/or ship products by port is much greater with direct employment totaling 50,820. When the indirect and induced impacts are factored in the total trade impact associated with ports totals 90,200 jobs. Combined, the employment impact associated with port operations and trade totals 93,150.

**Table 6-7: Port Economic Impacts (2008)**

| | Operations | Trade[4] | Total |
|---|---|---|---|
| **Value Added[1,2]** | $256 | $6,202 | $6,458 |
| **Labor Income[1]** | $146 | $3,327 | $3,473 |
| **Employment[3]** | | | |
| Direct | 830 | 50,820 | 51,650 |
| Indirect | 1,320 | 20,170 | 21,490 |
| Induced | 800 | 19,210 | 20,010 |
| **Total** | **2,950** | **90,200** | **93,150** |

[1] Millions of 2008 dollars
[2] Comparable with Gross State Product (GSP)
[3] Employment impacts are presented in job-years
[4] Potential overlap impacts associated with cargo that potentially moves in and out by rail is subtracted-out. Doing so provides a conservative estimate.
*Source: Wilbur Smith Associates*

**Rail and Port Impacts** - The combined impact associated with both rail and port operations addressed the potential overlap associated with, for example, inbound *port* commodities (i.e., oil and gas) used by Mississippi firms to produce outbound products (i.e., refined petroleum) transported by *rail*. Removing such potential overlap, the impacts associated with rail and port transport in Mississippi totals $16.8 billion in annual value-added output, of which $9.5 billion is paid in income to 232,950 jobs. (**Table 6-8**) Comparatively, the 115,920 direct jobs associated with rail and port activity account for 7.6% of Mississippi's employment. Accounting for the resulting indirect and induced effects suggests that the total 232,950 jobs comprise 15.2% of statewide employment.

**Table 6-8: Combined Rail and Port Impacts (2008)**

| | Operations | Trade[4] | Total |
|---|---|---|---|
| **Value Added[1,2]** | $685 | $16,137 | $16,822 |
| **Labor Income[1]** | $352 | $9,148 | $9,500 |
| **Employment[3]** | | | |
| Direct | 2,210 | 113,610 | 115,820 |
| Indirect | 2,320 | 62,260 | 64,580 |
| Induced | 1,920 | 50,630 | 52,550 |
| **Total** | **6,450** | **226,500** | **232,950** |

[1] Millions of 2008 dollars
[2] Comparable with Gross State Product (GSP)
[3] Employment impacts are presented in job-years
[4] Potential overlap impacts associated with cargo that potentially moves in and out by rail is subtracted-out. Doing so provides a conservative estimate.
*Source: Wilbur Smith Associates*

## 6.4 Understanding Our Challenges

The challenges to effective long-range planning are numerous. Many factors contribute to the formation of a good long-range plan. One element that is interwoven into almost all the issues is funding.

- The ongoing lack of a federal reauthorization of the transportation bill continues to hinder not only MDOT's (and all DOTs) program delivery, but also the transportation planning process. This continuing and unresolved debate of the Highway Trust Fund, fuel tax methodology, funding levels, etc., all contribute to uncertainty in how to balance needs and resources. This combination of balancing new construction and maintenance, more diverse modal expectations, and funding uncertainties all contribute to challenge the MDOT in its planning efforts. Although there are many challenges, the overriding issue and challenge to all DOTs is funding.
- Multimodal planning presents funding challenges to the MDOT in the long-range transportation plan. The overwhelming majority of transportation funding for the Department comes from federal and state fuel taxes for highways, with small percentages of these state funds used to fund the Multimodal Capital Improvement Program. Funding for public transportation comes largely from the Federal Transit Administration's programs. Aviation programs are funded by the Federal Aviation Administration. Neither the Federal Railroad Administration, nor any other Federal agency, provides regularly programmed funding to the Department for rail or water transportation projects. The only exceptions are occasional earmarked funds for those type projects. The Department's role for freight, rail, and water transportation is oriented towards planning and policy activities.

*This combination of balancing new construction and maintenance, more diverse modal expectations, and funding uncertainties all contribute to challenge the MDOT in its planning efforts.*

Even with the leadership role that MDOT has taken in multimodal and intermodal transportation, the challenge of making the best use of the available funds remains. The intention of the MCIP, for example, was to identify a dedicated funding source for funding the program. Ideally, the funding for the program can be increased to keep pace with increased needs and costs; however, finding an additional funding source outside the fuel tax revenues has been a significant barrier.

Implementation of MULTIPLAN 2035 must also recognize the many issues that affect a state DOT's ability to plan transportation projects. There are several others beyond those addressed previously that also have impacts on the planning process and create challenges for the MDOT to address. Some of those other issues continue to evolve and their impacts on long-range plans are difficult to assess. Among these are:

- Security Planning – Since the events of September 11, 2001, security has become a more significant concern. Although safety and security of the transportation system have long been of importance, the implications and responses are subject to constant change. SAFETEA-LU required that they be addressed separately for both the state and MPO long-range plans.

- Safety Planning - Mississippi completed its first Strategic Highway Safety Plan (SHSP) in 2007. Review of recent safety data shows progress is being made to achieve the goals established in the Plan; however, continued efforts in education, enforcement, and engineering are required to maintain positive crash trends. Specific corridor safety strategies were identified in Chapter 4. Additional overarching goals could include continued work toward a comprehensive graduated driver license (GDL) and enforcement of young driver privileges and restrictions, continued seat belt enforcement campaigns, and educational and enforcement measures against impaired driving, especially drunk driving. All are identified as critical emphasis areas in the SHSP.

- Socio-Economic Trends – Demand for transportation services are primarily driven by socio-economic factors such as population and employment. The evaluation of population growth and shifts within the state has to be assessed in the planning process. The aftermath of Hurricane Katrina resulted in fairly significant displacement of the coastal population. During the time since the hurricane, the Gulf Coast has begun to re-populate, however, in different patterns than prior to the hurricane. This presents challenges to addressing the future transportation needs for the region of the state as where people live and work have changed and continue to evolve. Those changes in patterns influence what the transportation types and needs for those citizens become.
- Economic Development – As the economy of the state continues to evolve, transportation can help to drive economic development. There is a provision included in the state statute establishing the Vision 21 program that allows for economic development opportunities to be considered in the prioritization of projects. This has to be done in conjunction with the ranking of projects and prioritization based on need.
- Air Quality – Currently, Mississippi has no areas that are not in conformity with the Clean Air Act. Due to the geographical location near some areas outside the state of Mississippi that do have non-attainment status, there are areas in Mississippi that warrant concern. The Mississippi Gulf Coast, located between New Orleans, LA and Mobile, AL is one area of concern. Also, areas of northwest Mississippi impacted by the Memphis, Tennessee metropolitan area, which has struggled with non-attainment status, are also of concern.

## 6.5 Implementing MULTIPLAN 2035 and Monitoring Performance

An important objective of the MULTIPLAN 2035 effort is to expand the use of performance measurement in Mississippi's planning processes such that MULTIPLAN 2035 is implemented and progress is tracked over time (**Table 6-9**). Like most state departments of transportation, MDOT

currently uses performance measures in one form or another to influence a wide range of investment decisions and system operations strategies.

**Table 6-9: Recommended MULTIPLAN 2035 Performance Measures**

| Goal Area | Recommended Measures |
|---|---|
| Accessibility and Mobility | • Number of rural state highway miles improved<br>• Percentage of roadway miles or amount of VMT at "tolerable" congestion levels<br>• Percent of system airports meeting runway length objective for the primary runway |
| Safety | • Illustrative benefits<br>• Incidents or crashes and fatalities and injuries by mode |
| Maintenance and Preservation | • Percent of lane miles in "fair" condition or better<br>• Level of unmet bridge improvement needs<br>• Percent of system airports with "good" pavement condition on their primary runways |
| Environmental Stewardship | • VMT growth |
| Economic Development | • Same as mobility and accessibility measures for roads<br>• Percent of system airports meeting business user needs |
| Awareness, Education and Cooperative Processes | N/A |
| Finance | N/A |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