



Report to the Mississippi Legislature

Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction

#618
April 11, 2018

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A joint committee, the PEER Committee is composed of seven members of the House of Representatives appointed by the Speaker and seven members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms, with one Senator and one Representative appointed from each of the U.S. Congressional Districts and three at-large members appointed from each house. Committee officers are elected by the membership, with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of four Representatives and four Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues that may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

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The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

PEER Committee
Post Office Box 1204
Jackson, MS 39215-1204

(Tel.) 601-359-1226
(Fax) 601-359-1420
(Website) www.peer.ms.gov

The Mississippi Legislature

Joint Committee on Performance Evaluation and Expenditure Review
PEER Committee

SENATORS
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MARGARET ELLIS ROGERS
RAY ROGERS
PERCY W. WATSON

TELEPHONE:
(601) 359-1226

FAX:
(601) 359-1420

Post Office Box 1204
Jackson, Mississippi 39215-1204

James A. Barber
Executive Director

www.peer.ms.gov

OFFICES:
Woolfolk Building, Suite 301-A
501 North West Street
Jackson, Mississippi 39201

April 11, 2018

Honorable Phil Bryant, Governor
Honorable Tate Reeves, Lieutenant Governor
Honorable Philip Gunn, Speaker of the House
Members of the Mississippi State Legislature

On April 11, 2018, the PEER Committee authorized release of the report titled ***Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction.***

A handwritten signature in black ink that reads "Videt Carmichael". The signature is written in a cursive style.

Senator Videt Carmichael, Chair

This report does not recommend increased funding or additional staff.

Table of Contents

Letter of Transmittal i

Executive Summary v

Introduction 1

Background 3

MDOT Revenues and Future Commitments..... 7

MDOT Expenditures and Performance Metrics 14

Transparency and Accountability of MDOT’s Project Selection Processes and Project Information 22

Contracting Methods and Impact of the New Timber Bridge Inspections 26

Recommendations 39

Appendix A: Bridge Element Condition Guide 40

Appendix B: Federal Funding Program Description of Funds for MDOT Funds Received FY 2017 (October 1, 2016–September 30, 2017) 41

Appendix C: Estimated Accountability Program Expenditures and Full-Time Equivalent (FTEs) by Budget Program for FY 2017 44

Appendix D: Bridge Closures during FHWA Reinspection (Condition 2) 66

Appendix E: Bridge Closures during FHWA Reinspection (Condition 3) 67

Appendix F: Bridge Closures under New Timber Bridge Inspection Contracts 68

Agency Responses 69

List of Exhibits

Exhibit 1: MDOT Revenues by Source (FY 2013–FY 2017)..... 8

Exhibit 2: MDOT Federal Revenues (by Program) for Federal Fiscal Year 201710

Exhibit 3: MDOT Commitments (FY 2018–FY 2020).....12

Exhibit 4: MDOT Expenditures by Major Category (FY 2015–FY 2017)14

Exhibit 5: Consultants Accounting for More Than 5% of Total Expenditures Paid
for Engineering Services on MDOT Projects.....15

Exhibit 6: Ten Highest Total Payments to Contractors for Capital Outlay in Fiscal Year
201716

Exhibit 7: MDOT Major Expenditures in Subsidies, Loans, and Grants for Fiscal Years
2015 through 201716

Exhibit 8: FY 2017 Estimated Expenditures by Budget Program17

Exhibit 9: Potential Indicators of Efficiency of MDOT Operations, from the MDOT and FHWA
Stewardship and Oversight Agreement, April 2013.....20

Exhibit 10: Scope of Work for Projects in MDOT’s Five-Year Plan for Federal Fiscal Year
2018 23

Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction

Executive Summary

Introduction

In recent years, legislators have expressed concerns regarding how the Mississippi Department of Transportation expends its funds, whether it operates efficiently, and how it selects projects. Also, legislators have requested information regarding recent county and municipal bridge closures and how bridge inspections have changed.

PEER sought to answer the following questions:

- What are MDOT's revenues and future commitments?
- What are MDOT's expenditures and performance metrics?
- Are MDOT's project selection processes and project information transparent and accountable?
- How are timber bridge inspections being contracted and what is the impact of the new inspections?

Background

MISS. CODE ANN. Sections 65-1-3 through 65-1-9 (1972) establish the Mississippi Transportation Commission as the governing body for the Mississippi Department of Transportation. MISS. CODE ANN. Sections 65-9-5 (1972) establishes within the Department of Transportation the Office of State Aid Road Construction, which is responsible for managing "state aid roads," which are the network of collector and distributor routes that connect to the state highway system and other major county roads.

The nation's transportation is in need of rehabilitation, according to the American Society for Civil Engineers. MDOT data show that Mississippi has approximately 9,000 lane miles (33%) in poor or very poor condition as of 2016. Also, although the percentage of deficient bridges has decreased within the past five years (from 2012 to 2017), the state still has 861 deficient bridges (15%) as of 2017.

MDOT officials state that safety and system preservation are currently the highest priorities for the state's transportation system.

MDOT Revenues and Future Commitments

The Mississippi Department of Transportation receives the majority of its federal funds through the Federal Highway Administration (FHWA) based on specific allocation formulas and receives state funding through legislative appropriations of special funds derived from the state fuel tax and other state taxes and fees. See Exhibit A.

Exhibit A: MDOT Revenues by Source (FY 2013–FY 2017)

Revenue/ Loss Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Federal Funds	\$570,767,947	\$570,776,991	\$505,445,200	\$509,643,847	\$514,426,183
State Fuel Tax	\$283,267,625	\$286,177,885	\$283,345,871	\$315,769,123	\$303,842,248
State Taxes & Other Funds	\$224,046,515	\$260,295,227	\$225,428,503	\$141,589,940	\$234,592,540
Truck & Bus Taxes & Fees	\$64,504,691	\$67,149,385	\$70,275,392	\$69,048,623	\$68,630,971
State Support Special Funds	-	-	-	-	\$2,100,000
Governor's Budget Cuts	-	-	-	(\$1,143,214)	(\$2,953,121)
Total Funds	\$1,142,586,778	\$1,184,399,488	\$1,084,494,966	\$1,034,908,319	\$1,120,638,821

SOURCE: MDOT legislative budget request documents.

The majority of federal funds received by the Mississippi Department of Transportation are allocated based on formulas in federal statute.¹ According to MDOT, the type of federal funds received does not impact the timing or selection of MDOT projects for the five-year plan.

To satisfy 540 multiyear project commitments authorized in fiscal year 2017 (or from previous periods), MDOT will be required to expend additional federal and state funds over the next three fiscal years (2018–2020) totaling approximately \$652.3 million, and \$345.7 million, respectively.²

MDOT Expenditures and Performance Metrics

Expenditures for capital outlays (i.e., payments to contractors) represent the greatest expenditure category for the Mississippi Department of Transportation from FY 2015 to FY 2017, at approximately 55%. Other notable

¹The National Highway Performance Program as governed by 23 U.S.C. 119.

²State revenues include state fuel taxes, other state taxes and fees, and other sources, including funds from the Mississippi Development Authority Community Development Block Grants, HELP bonds, and Bridge Revenue Bonds.

expenditures include \$159 million for personal services and \$42.6 million for contractual engineering services in FY 2017.

Total MDOT expenditures were approximately \$1.07 billion, \$1.06 billion, and \$1.15 billion for fiscal years 2015, 2016, and 2017, respectively. MDOT's total expenditures increased by approximately 8% from FY 2015 to FY 2017 primarily because of increases in payments for capital outlays and subsidies, loans, and grants. Exhibit B presents MDOT's expenditures for the past three fiscal years by major category.

Exhibit B: MDOT Expenditures by Major Category (FY 2015–FY 2017)

Category	FY 2015	FY 2016	FY 2017	Average Percentage of Total Expenditures	Percentage Change from FY 2015 to FY 2017
Personal Services	\$159,718,973	\$156,974,697	\$159,060,035	14.48%	(0.41%)
Travel	\$2,002,817	\$2,067,460	\$1,949,051	0.18%	(2.68%)
Contractual Services	\$136,581,715	\$140,315,279	\$134,586,030	12.53%	(1.46%)
Commodities	\$36,267,182	\$41,854,361	\$36,507,474	3.49%	0.66%
Capital Outlays	\$588,415,080	\$571,285,792	\$657,497,599	55.32%	11.74%
Subsidies, Loans, and Grants	\$145,920,994	\$149,486,340	\$164,655,383	14.00%	12.84%
Total	\$1,068,906,761	\$1,061,983,929	\$1,154,255,572	100.00%	7.98%

SOURCE: MDOT legislative budget requests for FY 2015-16 and DFA/MDOT reports for FY 2017.

PEER also examined MDOT's expenditures by budget and accountability program. For FY 2017, the department spent 86% of its funds on construction and maintenance.

The Mississippi Department of Transportation conducts a well-developed assessment to show its transportation system needs, and the department has developed, implemented, and begun tracking efficiency indicators. However, the department needs improvement in communicating to stakeholders its ability to maximize its resources and its efficiency in completing projects on time and within budget.

Transparency and Accountability of MDOT's Project Selection Processes and Project Information

Over the past several years the Mississippi Department of Transportation has shifted its priorities from new construction and system preservation almost exclusively to

system preservation.³ For federal fiscal year 2018, MDOT's five-year plan includes work on 269 projects, with the majority involving bridge replacement/preservation, pavement overlay, and other system preservation projects.

Since PEER's January 2014 report, the Mississippi Department of Transportation has increased its transparency regarding project selection and prioritization processes. Specifically, the department has

- developed a written policy for prioritizing and selecting its bridge and pavement projects; and
- reprioritized its bridge projects in 2015 and created a bridge prioritization report that includes both quantitative data (replacement indexes) and qualitative data (comments from the Bridge Division and the districts) that provides more transparency and accountability for the projects on the list.

MDOT is in the process of adding and converting data into two new software systems that will provide for a new way to prioritize bridge projects and pavement projects in the future using optimization and cost-benefit tools. These systems, planned for use beginning in FY 2019, could provide for a more efficient approach to project selection and prioritization; however, transparency could decrease if the system is complex and not easily understood by stakeholders, and documenting the cost-effectiveness of the new pavement management system could be a challenge.

Since PEER's January 2014 report, the Mississippi Department of Transportation has placed its five-year plan online along with information on the various phases of projects and project changes (e.g., whether a project start date was moved and the reason for the change).

Contracting Methods and Impact of the New Timber Bridge Inspections

As a result of the FHWA's compliance review findings regarding deficiencies of the Office of State Aid Road Construction's current bridge load-rating system as well as a lack of bridge closure enforcement and concerns for the safety of the traveling public, OSARC and the Mississippi Department of Transportation developed an action plan to meet the requirements of the National Bridge Inspection Standards, a component of which included new timber bridge inspection contracts.

The Office of State Aid Road Construction and the Mississippi Department of Transportation jointly procured new contracts for county bridge inspections. OSARC contracted with nine consultants to conduct bridge inspections throughout the state. Because no consultants had been compensated under the new contracts at the time of this review, PEER was unable

³"System preservation" is defined as preserving existing transportation assets and maintaining a state of good repair for transportation infrastructure (e.g., roads, bridges).

to determine how much the new bridge inspection contracts would cost per bridge. However, based on the not-to-exceed costs of the total contracts and the number of bridges to be inspected, PEER estimates an approximate average not-to-exceed cost of \$10,500 per bridge.

Under the new bridge inspection contracts, as of December 7, 2017, consultants had inspected 1,005 bridges with 166 having critical findings that warranted immediate closure. After determining a bridge closure, a county, which bears the majority of the cost burden for bridge repair, may proceed in several ways; however, the chosen option may require extensive planning or there may be a long wait for funding.

The Office of State Aid Road Construction is exploring several options to help provide county engineers with the additional knowledge and equipment necessary to facilitate transition of the inspection of bridge contracts back to the engineers at the end of the current contract cycle. OSARC is also proposing changes to its quality assurance process (as highlighted in the action plan).

The Federal Highway Administration and the Mississippi Department of Transportation also stated that they would be working with OSARC to continue addressing the identified issues pertaining to the local bridge program.

Recommendations

1. In order to ensure sufficient transparency in its new project selection processes beginning in FY 2019, the Mississippi Department of Transportation should have clearly written policies for project selection and prioritization processes using the dTIMS and BrM software and ensure that resulting data are presented in a clear, relevant, and useful manner to decision-makers. Deviations from using the written policies to select or prioritize projects should include written justification that is spread upon the minutes of the Mississippi Transportation Commission.
2. In order to demonstrate the cost-effectiveness of the systems implemented, the Mississippi Department of Transportation should determine, to the extent possible, and communicate the benefits and costs of using the new pavement management for project selection. While benefits could include predicting future conditions given a variable budget or documenting the condition of the transportation system, a quantifiable benefit is preferred, such as cost savings from certain treatment selections. Costs could include data collection, software development and updates, analysis, and reporting.
3. In order to increase the transparency of its decision-making and to communicate to stakeholders its ability to maximize its resources and its efficiency in completing projects on time and within budget, the Mississippi

Department of Transportation should identify and implement the best reporting tools (both internal and external) to communicate its progress (e.g., online dashboard, as part of its annual report).

4. The Federal Highway Administration, the Mississippi Department of Transportation, and the Office of State Aid Road Construction should work together to address the issues presented in this report regarding county bridge inspections. In particular, these three entities should seek to
 - a. establish and communicate any new OSARC specific processes necessary for the implementation and usage of NBIS standards for local bridge inspections;
 - b. establish training programs and schedules for the implementation and usage of NBIS requirements and OSARC specific processes pertaining to the Bridge Inspection Program for locally owned bridges; and
 - c. implement a quality assurance program to ensure that bridges are inspected in accordance with the NBIS requirements and OSARC specific processes pertaining to the Bridge Inspection Program for locally owned bridges.

For more information or clarification, contact:

PEER Committee
P.O. Box 1204
Jackson, MS 39215-1204
(601) 359-1226
peer.ms.gov

Senator Videt Carmichael, Chair
Meridian, MS

Representative Becky Currie, Vice Chair
Brookhaven, MS

Representative Timmy Ladner, Secretary
Poplarville, MS

Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction

Introduction

Authority

The PEER Committee reviewed the funding, expenditures, performance metrics, and project selection processes of the Mississippi Department of Transportation (MDOT). In addition, the Committee reviewed contracts of the Office of State Aid Road Construction for timber bridge inspections. The Committee acted in accordance with MISS. CODE ANN. Section 5-3-51 et seq.

Problem Statement

In recent years, legislators have expressed concerns regarding how the Mississippi Department of Transportation expends its funds, whether it operates efficiently, and how it selects projects. Also, legislators have requested information regarding recent county and municipal bridge closures and how bridge inspections have changed.

Purpose and Scope

In performing this review, PEER sought to answer the following questions:

- What are MDOT's revenues and future commitments?
- What are MDOT's expenditures and performance metrics?
- Are MDOT's project selection processes and project information transparent and accountable?
- How are timber bridge inspections being contracted, and what is the impact of the new inspections?

Method

In conducting this review, PEER

- interviewed staff from the Office of State Aid Road Construction, the Mississippi Department of Transportation, and the Federal Highway Administration;
- analyzed revenue and expenditure documentation provided by the Mississippi Department of Transportation and included in Legislative Budget Office budget reports and requests;
- reviewed documentation related to MDOT's project selection processes and five-year project plan; and
- reviewed operational documents related to agency performance and timber bridge inspections provided by the Office of State Aid Road Construction, Mississippi Department of Transportation, and the Federal Highway Administration.

Background

This chapter examines

- statutory authority, responsibilities, and goals of the Mississippi Transportation Commission and the Mississippi Department of Transportation;
 - statutory authority and responsibilities of the Office of State Aid Road Construction (OSARC);
- FY 2017 revenues and expenditures of the Mississippi Department of Transportation; and
- trends in and status of transportation systems and funding.

Statutory Authority, Responsibilities, and Goals of the Mississippi Transportation Commission and the Department of Transportation

MISS. CODE ANN. Sections 65-1-3 through 65-1-9 (1972) establish the Mississippi Transportation Commission as the governing body for the Mississippi Department of Transportation. MISS. CODE ANN. Section 65-1-2 (1972) establishes the Mississippi Department of Transportation. MDOT officials indicate that safety and system preservation are the agency's top priorities for the state transportation system.

MISS. CODE ANN. Sections 65-1-3 through 65-1-9 (1972) establish the Mississippi Transportation Commission as the governing body for the Mississippi Department of Transportation and provide authority to appoint an Executive Director to carry out the day-to-day operation of the department subject to the commission's orders and directives.

According to MISS. CODE ANN. Section 65-1-8(1) (1972), the commission members, one elected from each of the state's three Supreme Court districts, are responsible for carrying out the following general powers, duties, and responsibilities:

- (a) To coordinate and develop a comprehensive, balanced transportation policy for the State of Mississippi;*
- (b) To promote the coordinated and efficient use of all available and future modes of transportation;*
- (c) To make recommendations to the Legislature regarding alterations or modifications in any existing transportation policies;*
- (d) To study means of encouraging travel and transportation of goods by the combination of motor vehicle and other modes of transportation;*
- (e) To take such actions as are necessary and proper to discharge its duties pursuant to the provisions of Chapter 496, Laws of 1992, and any other provision of law;*
- (f) To receive and provide for the expenditure of any funds made available to it by the Legislature, the federal government or any other source.*

MISS. CODE ANN. Section 65-1-2 (1972) establishes the Mississippi Department of Transportation. According to MDOT's Multiplan 2040 (i.e., Mississippi's long-range plan for transportation through fiscal year 2040), the following represent the goals for transportation in the state:

- *Accessibility and Mobility — Improve connectivity and travel for residents, commerce, and industry.*
- *Safety — Ensure a safe transportation network for all users.*
- *Maintenance and Preservation — Preserve and maintain existing transportation infrastructure.*
- *Environmental Stewardship — The expansion and modernization of the transportation network should be mindful of its effect on the environment and attempt to mitigate the impacts.*
- *Economic Development — Invest in strategic transportation improvements to support the state's economy and competitiveness.*
- *Awareness, Education, & Cooperative Processes — Establish effective transportation partnerships and collaborations while increasing awareness of the benefits and needs of an intermodal system.*
- *Funding and Finance — Provide reliable funding and financial options for the transportation system and allocate funds efficiently.*

According to MDOT officials, safety and system preservation are currently the highest priorities for the state's transportation system.

Statutory Authority, Responsibilities, and Goals of OSARC

MISS. CODE ANN. Section 65-9-5 (1972) establishes within the Mississippi Department of Transportation the Office of State Aid Road Construction, which is responsible for administering and managing the "state aid system."

MISS. CODE ANN. Section 65-9-5 (1972) establishes the Office of State Aid Road Construction (OSARC), which is administered by the State Aid Engineer, who is appointed by the Governor for a term of four years. OSARC administers the state aid system, the network of roads that connect to the state highway system and other major county roads, forming a web of collector and distributor routes across Mississippi's 82 counties.⁴

OSARC also was created as a mechanism to move funding from the Legislature (and later the federal government) to

⁴Collectors and distributors are components of the roadway network that facilitate the connection between local (intra-county) roads and larger, more traveled arterial routes. Although a road may be a part of the state aid system, ownership and the responsibility for the maintenance of that road remain the responsibility of local governments.

local governments to assist in the construction of roads and bridges.

The State Aid Engineer advises county boards of supervisors on policy, use of funds, priority of construction, and standards for state aid roads, among other matters. The State Aid Engineer also advises and collaborates with the boards of supervisors on which roads are to be a part of the state aid road system and approves or disapproves all contracts advertised and let by any board of supervisors for the construction or reconstruction of state aid roads.

At the county level, the Board of Supervisors is responsible for appointing a County Engineer to act for and on behalf of the board and to administer the county's engineering. The County Engineer's duties include assisting the board of supervisors in the designation and modification of its state aid system and preparing annual construction programs, detailed plans and designs, and proposals for advertisements for bids. (See pages 26-38 for a discussion related to the Office of State Aid Road Construction.)

MDOT's FY 2017 Revenues and Expenditures

In fiscal year 2017 the Mississippi Department of Transportation had revenues of approximately \$1.12 billion and expenditures of approximately \$1.15 billion.

According to MDOT's FY 2019 budget request, for FY 2017 the department had revenues of more than \$1.12 billion (not including cash on hand at the beginning or end of the fiscal year), more than \$514 million of which came from federal sources. MDOT had more than \$1.15 billion in expenditures, of which capital outlay (which includes payments to contractors) accounted for over \$642 million (for more information on revenues and expenditures, see pages 7-17).

Trends in and Status of Transportation Systems and Funding

The nation's transportation system is in need of rehabilitation, and MDOT data indicate the same is true in Mississippi. In response to these needs, several states in recent years have raised gasoline taxes or adjusted tax formulas to increase revenues for transportation.

According to the American Society of Civil Engineers' (ASCE) 2017 Infrastructure Report Card,⁵ the nation's roads are frequently in poor condition, often crowded, and becoming more dangerous. ASCE gave the nation a grade of "D" for roads and a grade of "C+" for bridges. According to the report, one out of every five miles of highway pavement is in poor condition, and there is an increasing backlog of rehabilitation needs. Also, traffic fatalities increased 7.2% from 2014 to 2015.

The condition of Mississippi's roads and bridges follow the national trend. According to MDOT data, the state has

⁵<https://www.infrastructurereportcard.org/>.

approximately 9,000 lane miles (33%) in poor or very poor condition as of 2016. Also, although the percentage of deficient bridges has decreased within the past five years (from 2012 to 2017), the state still has 861 deficient bridges (15%) as of 2017.

According to the National Conference of State Legislatures, transportation funding has been in a “near constant state of crisis for about a decade.” Since 2013, 26 states and Washington, D.C., have enacted legislation that will increase or may increase their overall gasoline taxes.⁶

⁶<http://www.ncsl.org/bookstore/state-legislatures-magazine/deep-dive-transportation-funding.aspx>.

MDOT Revenues and Future Commitments

Mississippi, like other states, receives transportation funds primarily from federal and state sources based on formulas defined in federal and state laws. Some MDOT revenue streams are restricted by such criteria as type of projects or the amount the expenditure of state dollars is reimbursed. In addition, some funds are utilized on projects that will span multiple years, and, as such, may require future commitments of state resources. This chapter will address

- Mississippi Department of Transportation funding methods;
- flow of federal funds received by MDOT; and
- state obligations for future expenditures arising from the use of federal funds.

Mississippi Department of Transportation Funding

The Mississippi Department of Transportation receives the majority of its federal funds through the Federal Highway Administration based on specific allocation formulas and receives state funding through legislative appropriations of special funds derived from the state fuel tax and other state taxes and fees.

Similar to other states' transportation agencies, the Mississippi Department of Transportation receives funding from federal and state sources. Its federal revenue sources are appropriations made by Congress, and state revenues are appropriated by the Legislature.

MDOT, like all other state agencies, must submit a budget request to the Legislature annually. From MDOT budget requests for fiscal years 2013–2017, PEER compiled the department's sources of revenue, as shown in Exhibit 1, page 8.

Federal Revenues

The Mississippi Department of Transportation receives the majority of its federal funds through the Federal Highway Administration (FHWA). The department also receives federal funds from other sources, such as the Federal Transit Administration.

Exhibit 1: MDOT Revenues by Source (FY 2013–FY 2017)

Revenue/ Loss Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Federal Funds	\$570,767,947	\$570,776,991	\$505,445,200	\$509,643,847	\$514,426,183
State Fuel Tax	\$283,267,625	\$286,177,885	\$283,345,871	\$315,769,123	\$303,842,248
State Taxes & Other Funds	\$224,046,515	\$260,295,227	\$225,428,503	\$141,589,940	\$234,592,540
Truck & Bus Taxes & Fees	\$64,504,691	\$67,149,385	\$70,275,392	\$69,048,623	\$68,630,971
State Support Special Funds		-	-	-	\$2,100,000
Governor’s Budget Cuts		-	-	(\$1,143,214)	(\$2,953,121)
Total Funds	\$1,142,586,778	\$1,184,399,488	\$1,084,494,966	\$1,034,908,319	\$1,120,638,821

SOURCE: MDOT legislative budget request documents.

Federal funds from the FHWA come from multiple programs under the umbrella of the “Fixing America’s Surface Transportation (FAST) Act.”⁷ The FAST Act continues the efforts of the “Moving Ahead for Progress for the 21st Century Act” (MAP-21), some of which include increasing public safety, reducing traffic congestion, and reducing delays in project delivery while also creating jobs and promoting innovation.

The FAST Act, like its predecessor, is composed of many programs with individual purposes, funding features, federal matching percentages (the amount of federal reimbursement that can be received for each state dollar spent), and eligible activities. Most of the programs’ conditions and characteristics are governed by federal statute.⁸ However, some facets of the program are designated to be spent in specific geographic areas or earmarked for specific types of projects.

As depicted in Exhibit 1, federal funds have constituted an average of 48% of MDOT revenues for the past five fiscal years. While the amount of federal funds received for FY 2017 has decreased significantly since fiscal years 2013 and 2014, the state has seen an increase in federal funds for each of the past three fiscal years.

State Revenues

The Mississippi Department of Transportation receives state funds from multiple sources, which are appropriated by the Mississippi Legislature, including special funds derived from fees and taxes, state-supported special funds, proceeds from the issuance of bonds, and grants from other state agencies.

⁷The FAST Act was enacted during December 2015.

⁸For more information on program specifics, visit www.fhwa.dot.gov/fastact/factsheets/.

Mississippi has a fuel excise tax of 18.4 cents per gallon on gasoline and other rates for other fuel types, such as diesel or aircraft fuel. These tax rates are set in statute and have not changed since 1987. Under current law,⁹ MDOT receives approximately 70% of total fuel taxes collected. According to the Department of Revenue, the remainder is distributed to various entities or funds, such as the State Aid Road Fund, counties, the Locomotive Fuel Railroad Revitalization Fund, and the Department of Marine Resources. For the five-year period shown in Exhibit 1, page 8, the state fuel tax constituted an average of 26% of MDOT's revenues.

The Mississippi Department of Transportation also receives a portion of the proceeds generated from privilege tax collections on large trucks and buses. These revenues are based on gross vehicle weights and vehicle intended usage. During the past five fiscal years, bus and truck privilege taxes accounted for an average of 6% of MDOT revenues.

The department also receives revenue from additional sources, including proceeds from other state taxes and fees (e.g., contractor's taxes and license plate fees), issuance of bonds (e.g., bridge revenue bonds and HELP¹⁰ bonds), and grants from other state agencies (e.g., Community Development Block grants from the Mississippi Development Authority). These state taxes and other revenues are reported in the budget process aggregated under the category of state taxes and other fees, and they accounted for an average of 20% of MDOT revenues over the past five fiscal years. (In fiscal years 2016 and 2017, budget reductions mandated by Governor Phil Bryant affected MDOT funding along with that of other state agencies.)

Flow of Federal Funds Received by MDOT

The majority of federal funds received by the Mississippi Department of Transportation are allocated based on formulas in federal statute.¹¹ Federal funds are accessed as reimbursement for state expenditures based on each program's funding guidelines. The type of federal funds received does not impact the timing or selection of MDOT projects for the five-year plan.

State-received federal funds come from many programs, each with its own purpose, funding features, federal matching percentage, and eligible activities.

Exhibit 2, page 10, details MDOT's federal funding, by federal program for federal fiscal year 2017 (October 1, 2016–September 30, 2017). See Appendix B on page 41 for a description of the federal funds received.

⁹Current state laws for fuel taxes are an amalgamation of various statutes authorizing the collection and distribution of these revenues to various state agencies. These taxes may differ in rate by fuel type, revenue source, and distribution formula.

¹⁰Highway Enhancements through Local Partnerships Program (HELP) is a state program that allows the transportation commission to enter into interlocal agreements with local governments to finance and accelerate scheduled highway construction projects in local government jurisdictions.

¹¹The National Highway Performance Program as governed by 23 U.S.C. 119.

Exhibit 2: MDOT Federal Revenues (by Program) for Federal Fiscal Year 2017^a

Federal Program	FY 2017 Apportionment	FY 2017 Obligations	Standard Federal/State Share ^b
Repurposed Earmark Formula	\$919,104	\$ -	Variable
Recreational Trails Program	\$1,343,986	\$1,515,633	80/20
Metropolitan Planning Program	\$1,716,607	\$1,716,607	80/20
Transportation Alternatives (Section 133(h)) - Areas with Population 5,000	\$2,580,016	\$399,168	80/20
Transportation Alternatives (Section 133(h)) - Areas with Population 5,001 to 200,000	\$1,030,559	\$1,529,903	80/20
Transportation Alternatives (Section 133(h)) - Areas with Population over 200,000	\$1,096,723	-	80/20
Transportation Alternatives (Section 133(h)) Flex	\$4,725,037	-	80/20
Railway - Highway - Hazard Elimination	\$1,782,090	\$1,145,517	100/0
Railway - Highway - Protective Devices	\$1,782,090	\$1,782,090	100/0
Highway Safety Improvement Program (HSIP)	\$27,996,817	\$27,996,817	90/10
Section 154 Penalties - Use for HSIP Activities	\$5,485,488	\$5,485,488	90/10
State Planning and Research	\$7,176,330	\$8,875,629	80/20
Research, Development, and Technology Transfer	\$1,417,746	\$2,563,220	80/20
National Highway Freight Program	\$12,694,684	\$12,694,684	80/20
National Highway Performance Program	\$137,790,064	\$137,732,702	80/20
Congestion Mitigation & Air Quality Improvement	\$11,122,912	\$10,251,655	80/20
Surface Transportation Block Grant Program Off-System Bridge	\$8,841,102	\$7,171,469	80/20
STBG Program - Urbanized Areas with Population over 200,000 ^c	\$15,967,384	\$1,115,522	80/20
STBG Program - Areas with Population 5,001 to 200,000	\$15,262,347	\$12,362,426	80/20
STBG Program - Areas with Population 5,001 and under	\$37,562,913	\$47,932,172	80/20
Redistribution of Certain Authorized Funds	\$2,110,208	\$3,286,241	80/20
STBG Program Flex	\$184,659,800	\$166,458,990	80/20
Total^d	\$485,064,007	\$452,015,933	--

^aFunding totals in this exhibit are for federal fiscal year 2017 (October 1, 2016–September 30, 2017). These totals do not tie to the revenue figures presented in Exhibit 1 on page 8 of this report because those figures represent federal revenues received for state fiscal year 2017 (July 1, 2016–June 30, 2017).

^bThese are the average percentages used when obligating federal funds.

^cFunding for Metropolitan Planning Operations (MPOs). An MPO is a federally mandated and federally funded transportation policy-making organization made up of representatives from local government and governmental transportation authorities.

^dTotal apportionment does not match total obligations because often the total yearly apportionment of funds is greater than the yearly obligation authority available.

SOURCE: Mississippi Department of Transportation.

Flow of Federal Funds

As previously noted, federal statutes set allocations for the majority of federal funds. The amount of federal funds calculated by these formulas for Mississippi to receive is represented in the “Apportionment” column of Exhibit 2, page 10.

The Mississippi Department of Transportation does not always receive equal amounts of obligation authority when compared to the grants apportioned for any given year. If the federal government does not provide equal obligation authority as compared to the various grants apportioned from the program calculations, the department is unable to obligate all of the apportioned grants provided it within that fiscal year. The unobligated apportioned grants remain available unless there are substantive changes in federal law. The amounts MDOT obligated from each federal fund are represented by the “Obligations” column of Exhibit 2.

For its construction program, the Mississippi Department of Transportation is able to authorize a project with the FHWA providing the department the ability to later obligate federal funds and allow reimbursement of expenditures over an extended period of time. This method is known as advanced construction and allows MDOT to monitor project spending and authorize additional projects.

As the FHWA approves projects, the aggregate dollar amount of each related state contract is obligated against the remaining amount of annual appropriation of funds and respective available obligation authority. The state then pays the amounts owed under each contract as the work progresses and receives reimbursement from the FHWA for the federal share of the cost. The fourth column in Exhibit 2 shows the average share rate between federal and state funds to access the various program’s dollars.

The aggregate amount of reimbursements received by a state in any year is not necessarily equal to the state’s apportionment for that year. Many projects and related contracts extend over a number of years. The aggregate amount made available to a state in any one year, if fully obligated, may be received as reimbursement over a longer period relating the actual period of construction. If that is the case, approval of these projects, depending on the federal/state share rate, can commit Mississippi to expenditures in future periods. For more information on future MDOT commitments, see pages 12-13.

The federal funds listed in Exhibit 2 are arranged from most to least restrictive (ease of which program revenues are able to be committed to specific projects). It is MDOT policy to expend funds accordingly in order to maximize the use of federal funds. However, according to MDOT, this policy of fund usage does not have an impact on which projects are placed on its five-year plan or on when individual projects will

be contracted. For more information on project selection and MDOT's five-year plan, see pages 22-25.

State Obligations for Future Expenditures Arising from Use of Federal Funds

To satisfy 540 multiyear project¹² commitments authorized in fiscal year 2017 (or from previous periods), the Mississippi Department of Transportation will be required to expend additional federal, state, and other funds during fiscal years 2018-2020 totaling approximately \$652.3 million, \$140.6 million, and \$205 million for federal, state, and other funds, respectively. Of these funding commitments, approximately \$345.7 million constitutes the commitment of state-sourced revenues.¹³

Many MDOT contracts require more than one fiscal year to complete. When these projects utilize federal funds, expenditure of state dollars in future fiscal years may be required to satisfy the federal/state funds share as outlined in the program's requirements. Exhibit 3 lists the total amounts of future funds required to satisfy all multiyear project commitments authorized by MDOT in fiscal year 2017, or previous periods, for fiscal years 2018-2020.

Exhibit 3: MDOT Commitments, FY 2018-FY 2020^a

Period	Federal Funds	State Funds	Other Funds ^b	Total Commitments (by Fiscal Year)
Fiscal Year 2018	\$424,547,555	\$91,454,508	\$170,187,836	\$686,189,899
Fiscal Year 2019	\$174,572,750	\$33,835,955	\$34,689,270	\$243,097,975
Fiscal Year 2020	\$53,214,754	\$15,355,615	\$127,435	\$68,697,804
Total Obligations (by Type)	\$652,335,059	\$140,646,078	\$205,004,541	\$997,985,678

^aThese figures represent the total future commitments for all MDOT funds and all pass-through funds for Local Public Agency and OSARC projects.

^bThe other funds category represents the commitment of revenue received from various state sources other than from state fuel tax receipts and other state taxes and fees (e.g., Mississippi Development Authority Community Development Block Grants Program, HELP bonds, or Bridge Revenue bonds).

SOURCE: Mississippi Department of Transportation.

Future funding commitments are totaled by fiscal year of commitment and funding source. The amounts shown in Exhibit 3 represent the total amounts of future commitments for all MDOT projects as well as all pass-through funds for

¹²Different phases or components of projects may be considered separate projects by MDOT. For example, a road construction could include multiple project numbers for preliminary engineering (i.e., environmental and design work), right-of-way acquisition, and actual construction.

¹³State revenues include state fuel taxes, other state taxes and fees, and other sources, including funds from the Mississippi Development Authority Community Development Block Grants, HELP bonds, and Bridge Revenue Bonds.

local public agency (LPA)¹⁴ and Office of State Aid Road Construction¹⁵ projects. Because the Federal Highway Administration only recognizes one transportation authority from each state, any federal funds that can be accessed for projects outside the scope of MDOT's normal operation must first be received by MDOT and passed through.

Column 2 of Exhibit 3 on page 12 represents the amount of future federal funds committed to projects; these funds will be received after the state has expended them and requested reimbursement. Future federal funding commitments total approximately \$652.3 million for the three fiscal years.

Column 3 represents the expenditure of MDOT's state revenues generated from fuel tax receipts and other state taxes and fees. These expenditures represent some of the state's share of future project expenditures (based on the percentage of state matching funds necessary to access the federal program funds). Future state funding commitments, shown in column 3, total approximately \$140.6 million over fiscal years 2018-2020.

Column 4 represents the future expenditures of other types of revenue received from various state sources (including Mississippi Development Authority Community Development Block Grants Program, HELP bonds, or Bridge Revenue bonds). These "other" expenditures will also be utilized to satisfy the state's share of expenditures on future projects. Future other funding commitments total approximately \$205 million over fiscal years 2018-2020.

For these three fiscal years, the state has multiyear project commitments that will require the expenditure of approximately \$345.7 million in state-sourced revenues.

¹⁴Local public agencies are any city, county, township, municipality, or other political subdivision that may be empowered to cooperate with the state transportation department in highway matters. MDOT's LPA Division oversees the planning, design, and construction of all LPA projects funded by the FHWA.

¹⁵The Office of State Aid Road Construction administers Mississippi's State Aid Road Program to assist Mississippi's 82 counties in the construction and maintenance of secondary, non-state-owned roads and bridges. OSARC also administers the Local System Bridge Replacement and Rehabilitation Program for the repair or replacement of the neediest local bridges in Mississippi, as well as administering special projects funded through the FHWA and the Mississippi Development Authority. Additionally, OSARC administers the FHWA's National Bridge Inspection and Inventory program for the approximately 11,000 county and locally owned bridges in Mississippi.

MDOT Expenditures and Performance Metrics

This chapter addresses

- MDOT expenditures by major category;
- estimated FY 2017 expenditures by budget and accountability program; and
- MDOT measurement of its performance and efficiency.

MDOT Expenditures by Major Category

Expenditures for capital outlays (i.e., payments to contractors) represent the greatest expenditure category for the Mississippi Department of Transportation from FY 2015 to FY 2017 at 55%. Other notable expenditures include \$158.7 million for personal services and \$42.6 million for contractual engineering services in FY 2017.

MDOT as a state agency, is required by statute (MISS. CODE ANN. Section 7-7-3 (1972)) to utilize the centralized automated accounting system mandated by the State Fiscal Officer as the Chief of the State's Fiscal Management Division (DFA), for financial reporting purposes. During this review, PEER examined MDOT expenditures within the framework of this system's chart of accounts.

Total MDOT expenditures were approximately \$1.07 billion, \$1.06 billion, and \$1.15 billion for fiscal years 2015, 2016, and 2017, respectively. Total expenditures increased by approximately 8% from FY 2015 to FY 2017 primarily as the result of increases in expenditures in the capital outlay and subsidies, loans, and grants categories. Exhibit 4 presents MDOT's expenditures for the past three fiscal years by major category.

Exhibit 4: MDOT Expenditures by Major Category (FY 2015–FY 2017)

Category	FY 2015	FY 2016	FY 2017	Average Percentage of Total Expenditures	Percentage Change from FY 2015 to FY 2017
Personal Services	\$159,718,973	\$156,974,697	\$159,060,035	14.48%	(0.41%)
Travel	\$2,002,817	\$2,067,460	\$1,949,051	0.18%	(2.68%)
Contractual Services	\$136,581,715	\$140,315,279	\$134,586,030	12.53%	(1.46%)
Commodities	\$36,267,182	\$41,854,361	\$36,507,474	3.49%	0.66%
Capital Outlay	\$588,415,080	\$571,285,792	\$657,497,599	55.32%	11.74%
Subsidies, Loans, and Grants	\$145,920,994	\$149,486,340	\$164,655,383	14.00%	12.84%
Total	\$1,068,906,761	\$1,061,983,929	\$1,154,255,572*	100.00%	7.98%

*\$145,441 difference from what MDOT reported for the accountability program inventory. See Exhibit 8, page 17.

SOURCE: MDOT legislative budget requests for FY 2015-16, and DFA/MDOT reports for FY 2017.

Notable Expenditures

- In the category of “Personal Services,” MDOT’s expenditures decreased by more than \$650,000 from FY 2015 to FY 2017, which corresponds with a loss of 48 authorized full-time positions during that period (3,432 in FY 2015 to 3,384 in FY 2017).
- In the “Contractual Services” category payments for engineering services represented the largest component of contractual services expenditures for the three fiscal years reviewed. For fiscal year 2017, MDOT paid approximately \$42.6 million for these services. Exhibit 5 shows total payments made to and services provided for any engineering consultant services that accounted for more than 5% of MDOT’s share of engineering services during FY 2017.
- In the category of “Capital Outlay,” which is primarily payments to road contractors, MDOT’s expenditures increased by 11.74% from FY 2015 to FY 2017. Exhibit 6, page 16, shows the 10 highest total payments to road contractors for capital outlay in fiscal year 2017.
- Expenditures “Subsidies, Loans, and Grants” increased by 12.84% from FY 2013 to FY 2015. Exhibit 7, page 16, shows MDOT’s major expenditures in this category. “Transfers to Other Funds” increased substantially (by 32.5%). Of the \$62 million in transfers to other funds in FY 2017, approximately \$53.9 million (87%) was transferred to the Office of State Aid Road Construction.

Exhibit 5: FY 2017 Engineering Services Payments*

Consultant	FY 2017 Expenditures	Description of Services Provided
Neel-Schaffer Inc.	\$5,510,068	Roadway engineering design, bridge design and structural engineering, traffic engineering, planning and environmental, and environmental compliance
Michael Baker International Inc.	\$3,458,055	Roadway engineering design, bridge design and structural engineering, professional land surveying, traffic engineering, and planning and environmental
Garver, LLC	\$3,391,930	Roadway engineering design, bridge design and structural engineering, mechanical and electrical engineering, hydraulic engineering and design assessment, wetlands and waters assessment, and traffic engineering
Stantec Consulting Services	\$2,906,653	Roadway engineering design, bridge design and structural engineering, traffic engineering, and hydraulic engineering and design assessment
Gresham Smith & Partners	\$2,558,177	Roadway engineering design, bridge design and structural engineering, traffic engineering, planning and environmental, and intelligent traffic systems design and engineering
Pathway Services Inc.	\$1,843,466	Pavement condition survey and HPMS data collection

*The 5% threshold of total expenditures paid for engineering services paid on MDOT projects is anything over \$1,687,933.75.

SOURCE: PEER analysis of Mississippi Department of Transportation engineering services expenditures.

Exhibit 6: Ten Highest Total Payments to Contractors for Capital Outlay in Fiscal Year 2017

Contractor	FY 2017 Expenditures	Number of Projects
APAC - Mississippi Inc.	\$72,699,537	39
Lehman-Roberts Co. Inc./Eutaw Construction Co. Inc.*	\$57,131,972	1
W.G. Yates & Sons Construction Co.	\$37,695,336	6
Joe McGee Construction Co.	\$31,093,712	18
W.E. Blain & Sons Inc.	\$30,477,590	11
Superior Asphalt Inc.	\$29,811,658	6
Dickerson & Bowen Inc.	\$29,356,766	16
Mallette Brothers Construction Co. Inc.	\$25,858,664	3
T.L. Wallace Construction Co. Inc.	\$24,765,685	19
Lehman-Roberts Co. Inc.	\$22,162,892	13

*These expenditures are related to a contract between MDOT and a partnership formed between Lehman-Roberts Co. Inc. and Eutaw Construction Co. Inc. This project involves paving SR 304/I-269 from SR 305 to SR 302.

SOURCE: PEER analysis of Mississippi Department of Transportation Engineering Services expenditures.

Exhibit 7: MDOT Major Expenditures in Subsidies, Loans, and Grants for Fiscal Years 2015-2017

Minor Object Code	FY 2015	FY 2016	FY 2017
Transfers to Other Funds	\$46,931,741	\$49,333,995	\$62,183,966
Interest on Other Indebtedness*	\$37,750,616	\$36,153,843	\$35,906,229
Principal on Other Indebtedness*	\$31,163,013	\$30,234,870	\$30,725,000

**Other Indebtedness" is attributable to bonds issued through the Highway Enhancement through Local Partnerships (HELP) Program, a program authorized by the Legislature in 2000 to finance and accelerate highway projects in local jurisdictions, and general obligation bonds.

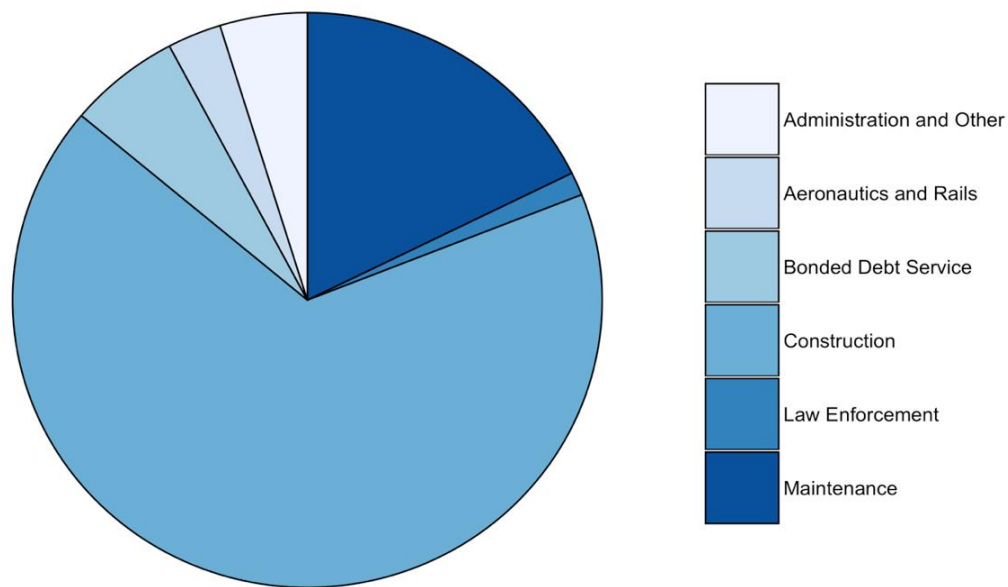
SOURCE: Mississippi Department of Transportation.

Estimated 2017 Expenditures by Budget and Accountability Program

In FY 2017, the Mississippi Department of Transportation spent 86% of its budget on construction and maintenance.

As shown in Exhibit 8, page 17, MDOT spent a total of \$1.15 billion in FY 2017, 86% of which was spent on construction and maintenance.

Exhibit 8: FY 2017 Expenditures by Budget Program



Budget Program	Expenditures for FY 2017	Percentage of Total Expenditures
Construction	\$779,337,345.68	68%
Maintenance	205,915,832.57	18%
Bonded Debt Service	71,522,537.00	6%
Administration and Other	47,753,278.06	4%
Aeronautics and Rails	34,409,181.00	3%
Law Enforcement	15,171,957.02	1%
Total	\$1,154,110,131.33	100%

SOURCE: PEER analysis of data provided by MDOT to PEER's Performance Accountability Office as of November 2017.

For a breakout of budget program expenditures by accountability program, see Appendix C on page 44.

Measurement and Communication of Performance and Efficiency

The Mississippi Department of Transportation conducts a well-developed assessment to show its transportation system needs, and the department has developed, implemented, and begun tracking efficiency indicators. However, the department needs improvement in communicating to stakeholders its ability to maximize its resources and its efficiency in completing projects on time and within budget.

In 2013, PEER conducted an MDOT review and in January 2014 published its findings in the report *Mississippi Department of Transportation: A Review of Departmental Accountability and Transparency* (#581).

Well-Developed Needs Assessment

MDOT's needs assessment, known as the Multiplan,¹⁶ focuses heavily on describing the critical system needs of the state.

In the 2014 report, PEER determined that MDOT (a) conducted a well-developed needs assessment to define the critical transportation system needs of the state; and that it (b) annually reports data related to bridge conditions, road conditions, and fatalities to the Federal Highway Administration. Such practices remain in place.

MDOT's Multiplan 2040 clearly defines its seven critical goals: safety; maintenance and preservation; accessibility and mobility; economic development; environmental stewardship; awareness, education, and cooperative processes; and funding and finance. MDOT's systemwide goals, which are similar to the transportation goals in other states, generally follow national performance goals. Like other state departments of transportation, MDOT annually reports data related to bridge conditions, road conditions, and fatalities to the Federal Highway Administration. These data allow for studying trends and making comparisons on three important measures of system performance that relate to MDOT's safety and maintenance/preservation goals: (a) deficient bridges (as a percentage of total bridges); (b) highway road fatalities; and (c) percentage of roadways in mediocre or poor condition.

MDOT's Current Use of Performance Measures and Efficiency Indicators

The Mississippi Department of Transportation develops performance indicators, either as part of the legislative budget process or in coordination with the Federal Highway Administration, and MDOT has developed several in-house tools to monitor its performance in various areas. In addition, MDOT is one of four pilot agencies¹⁷ the Legislature chose to partake in performance-based budgeting, as part of the Legislature's performance budgeting revitalization effort.

Performance measures are critical tools that can be used to determine whether the Mississippi Department of Transportation is meeting its goals, to identify system deficiencies and opportunities for improvement, and to help guide allocation of resources.

Other states track and measure whether projects are on time and on budget, for example, Washington, which consistently measures different types of projects, such as road and rail, against those standards.

The Mississippi Department of Transportation develops external performance indicators, either as part of the legislative budget process or in coordination with the FHWA:

¹⁶MDOT's MULTIPLAN 2040, dated January 2016, is *2040 Mississippi Unified Long-Range Transportation Infrastructure Plan* with a planning horizon of 2040.

¹⁷The three other agencies are the Mississippi Department of Corrections, the Mississippi State Department of Health, and the Mississippi Department of Education.

- *Performance indicators included in MDOT's budget requests* — As part of the legislative budget process,¹⁸ the Mississippi Department of Transportation reports program output,¹⁹ program efficiency,²⁰ and program outcome²¹ measures in its annual budget requests submitted to the Legislature each year. While tracking maintenance measures, such as “bridge replacement cost per square foot” and “cost per mile to maintain state highways,” address how much MDOT estimates such costs to be, such measures do not address the efficiency at which the department plans, designs, bids, contracts, and oversees construction and maintenance projects. In addition, as PEER discussed in the 2014 report, such measures include factors beyond MDOT's control, such as the cost of construction materials.
- *MDOT's efficiency indicators included in the 2015 Stewardship and Oversight Agreement with the Federal Highway Administration* — As part of the Stewardship and Oversight Agreement process between the department and the FHWA, MDOT develops goals and reports results for 13 program areas (e.g., planning, design, and bridge). MDOT reported its current performance on these indicators in 2017. See Exhibit 9, page 20, for examples of indicators MDOT uses to monitor the efficiency of its operations. While some of the measures do evaluate the department's ability to administer and complete construction projects on time and on budget, adding other measures could demonstrate the extent to which MDOT is maximizing its resources for public use.

Additionally, MDOT has developed several internal tools to monitor its performance in various areas, including the following:

- *MDOT's Pavement Management System (PMS)* — MDOT collects pavement condition survey data every two years as part of the PMS. MDOT reported it utilizes the PMS to attempt to identify the correct treatment on a section of pavement at the best time. Pavement smoothness is one of the indicators reported to the FHWA.

¹⁸Program data collected in accordance with the “Mississippi Performance Budget and Strategic Planning Act of 1994.”

¹⁹*Program output* is the measure of the process necessary to carry on the goals and objectives of this program. This is the volume produced, i.e., how many people served, how many documents generated.

²⁰*Program efficiency* is the measure of the cost, unit cost, or productivity associated with a given outcome or output. This measure indicates linkage between services and funding, i.e., cost per investigation, cost per student, or number of days to complete investigation.

²¹*Program outcome* is the measure of the quality or effectiveness of the services provided by this program. This measure provides an assessment of the actual impact or public benefit of agency actions. This is the results produced, i.e., increased customer satisfaction by “x” percent within a 12-month period, reduce the number of traffic fatalities due to drunk drivers within a 12-month period.

Exhibit 9: Examples of Indicators of Efficiency of MDOT Operations, from the MDOT and FHWA Stewardship and Oversight Agreement, April 2015

Program Area	Measure
Consultant Selection and Management	Percentage of active consultant contracts in the fiscal year in which termination date has been extended
Planning	Percentage of preliminary engineering, right-of-way, and construction projects in current year statewide transportation improvement program advanced to construction during the fiscal year
Environmental	Percentage of environmental impact statements completed within 36 months
Right-of-Way	Percentage of projects with right-of-way cost not exceeding the estimate by more than 15% upon right-of-way closeout
Design	Percentage of projects advertised for bids that had two or more bid addendums issued (measured after project letting) Percentage of projects with final preliminary engineering costs less than or equal to 10% of low bid amount Percentage of construction projects with supplemental agreements or change orders attributed to design errors or omissions (measured after final estimate is paid)
Construction	Construction costs: Percentage of state-administered construction projects completed less than or equal to 105% of low bid amount (determined at final estimate stage) Construction time: Percentage of state-administered construction projects completed within approved original contract time (determined at final estimate stage)
Research	Percentage of research projects from approved State Planning and Research work program both completed within original contract time and resulting in a deliverable

SOURCE: MDOT and FHWA Stewardship and Oversight Agreement, April 2013.

- *Project Development Project Management (PDPM) Application* — MDOT reported that it utilizes the PDPM application to track the critical path of the preconstruction process, including establishment of a project schedule when each project is placed into MDOT’s five-year plan and setting due dates for each task. MDOT utilizes data from the PDPM system to report performance indicators to the FHWA (e.g., the percentage of projects in which acquisition was completed by acquisition due date).
- *Parcel Tracking System (PTS)* — MDOT reported it utilizes the PTS application to track the right-of-way acquisition

process, including evaluation of the initial estimate compared to the actual cost. MDOT utilizes data from the PTS system to report performance indicators to the FHWA (e.g., the percentage of projects not exceeding the estimate).

MDOT's Role in Performance-Based Budgeting

As one of four pilot agencies the Legislature chose to partake in performance-based budgeting, MDOT is in the process of developing performance measures for each of its accountability programs.

Pursuant to its performance budgeting revitalization effort, the Mississippi Legislature passed H.B. 677 during the 2014 Regular Session. MISS. CODE ANN. Section 27-103-159 (1972) requires the development of a detailed inventory of state agency programs and activities for use in the state budgeting and appropriations process, beginning with Transportation, Corrections, Education, and Health. For purposes of the inventory, each agency is required to provide a breakout of budget program expenditures, agency full-time equivalents (FTEs), and performance data by "accountability" program. PEER defines an "accountability" program as a discrete set of activities designed to achieve a specific objective(s). While the Mississippi Department of Transportation has identified its accountability programs and associated estimated expenditures and FTEs, it is in the process of developing performance measures for each of its accountability programs.

MDOT Needs Improvement in Communicating Its Performance to Stakeholders

Although the Mississippi Department of Transportation has various methods by which it tracks its performance in-house, it needs improvement in communicating to stakeholders its ability to maximize its resources and its efficiency in completing projects on time and within budget.

Although MDOT has implemented performance measures/indicators, these are primarily tracked in-house and not available to the department's stakeholders (e.g., the public, the Legislature), except by request.

Given that the Mississippi Department of Transportation is one of the largest agencies in the state, with FY 2017 revenues of \$1.12 billion and expenditures of \$1.15 billion, maximizing its performance and resources is of considerable value to the state. Using efficiency indicators to monitor its ability to design, bid, start, and complete projects on time and on budget enables MDOT to communicate to stakeholders (i.e., legislative decision-makers, taxpayers, and consumers of its services) its ability to maximize state resources for public use. Maximizing resources not only requires the continued pursuit and modification of efficiency and performance measures to meet programmatic goals, but also the publication of such measures in a method in which communicates the extent to which the MDOT efficiently uses state resources.

Transparency and Accountability of MDOT's Project Selection Processes and Project Information

The primary focus of the Mississippi Department of Transportation's project selection process is system preservation rather than new construction. The department has increased its transparency regarding project selection and prioritization in recent years; however, new software systems are being implemented that will change MDOT's selection and prioritization systems beginning in FY 2019. Regarding access to MDOT's project information, it has made efforts to increase the transparency of its five-year plan.

This chapter examines

- MDOT's project priorities;
- the transparency and accountability of MDOT's processes for selecting and prioritizing projects; and
- the accessibility of MDOT's project information.

MDOT Project Priorities

Over the past several years the Mississippi Department of Transportation has shifted its priorities from new construction and system preservation almost exclusively to system preservation.²² For federal fiscal year 2018, MDOT's five-year plan includes work on 269 projects, with the majority involving bridge replacement/preservation, pavement overlay, and other system preservation initiatives.

The Mississippi Department of Transportation contends that the safety of the traveling public and preservation of the state's existing highways and bridges are its first priority. Thus there has been a shift from new capacity projects to system preservation projects over the past several years.

MDOT's five-year plan for federal fiscal year 2018 includes 269 projects on which the department is working. Most involve bridge replacement/preservation, pavement overlay, and other preservation-type projects. Only two are for new construction of additional lanes.

See Exhibit 10, page 23, which illustrates the scope of work for all 269 projects in the five-year plan for federal fiscal year 2018.

²²"System preservation" is defined as preserving existing transportation assets and maintaining a state of good repair for transportation infrastructure (e.g., roads, bridges).

Exhibit 10: Scope of Work for Projects in MDOT’s Five-Year Plan for Federal Fiscal Year 2018

Scope of Work	Number of Projects
Bridge replacement	53
Mill and overlay	32
Bridge preservation	28
Overlay	26
Intersection improvements	12
Preventive maintenance	12
Not assigned*	12
Building construction	9
Building improvements	8
Building	7
Bridge inspection	6
Safety	6
Traffic signals	5
Interchange	5
Bridge widening	2
Add lanes	2
All other**	44
TOTAL	269

*“Not Assigned” includes statewide projects, such as the statewide pavement rehab program, federal highway safety improvement program, geotech on-call services, and construction software training.

**“All other” includes such projects as bridge jacking, bridge painting, bridge removal/repair, interchanges, J-turns, lot improvements, median installation, pavement restoration, and roundabouts.

SOURCE: Analysis of MDOT’s five-year plan from mdot.ms.gov (access date January 3, 2018).

Transparency and Accountability of MDOT’s Processes for Project Selection and Prioritization

Since PEER’s January 2014 report, the Mississippi Department of Transportation has increased its transparency regarding project selection and prioritization processes. MDOT is in the process of adding and converting data into two new software systems that will provide for a new way to prioritize bridge projects and pavement projects using optimization and cost-benefit tools. These systems, planned for use beginning in FY 2019, could provide for a more efficient approach to project selection and prioritization; however, transparency could decrease if the system is complex and not easily understood by stakeholders. In addition, documenting the cost-effectiveness of the new pavement management system could be a challenge.

A well-documented selection and prioritization system promotes both transparency and accountability in the decision-making process. PEER’s January 2014 report, *Mississippi Department of Transportation: A Review of Departmental Accountability and Transparency* (#581),

indicated that in some cases the Mississippi Department of Transportation was unable to document the selection and prioritization process used in the past to justify projects on its prioritized lists. Since then, MDOT has increased its transparency and documentation regarding selection and prioritization processes used in recent years. Specifically, the department has

- developed a written policy for prioritizing and selecting its bridge and pavement projects; and
- reprioritized its bridge projects in 2015 and created a bridge prioritization report that includes both quantitative data (replacement indexes) and qualitative data (comments from the Bridge Division and the districts) that provides more transparency and accountability for the projects on the list.

Regarding pavement projects, the Mississippi Department of Transportation has been converting its data currently housed in its Pavement Management System to the Deighton Total Infrastructure Management System (dTIMS),²³ which will offer optimization and cost-benefit tools. The department uses prioritization to assist in selecting projects based on need, while optimization focuses on the efficient allocation of limited resources to achieve an objective. MDOT contends that dTIMS will have the capacity to forecast pavement deterioration and recommend and optimize future treatments based on pavement condition and available funds.

After all data are converted and the optimization piece is piloted, MDOT expects to begin using dTIMS in FY 2019. Deighton reports that 22 state departments of transportation use its system for pavement management.

In October 2014 the department began collecting and adding to an InspectTech system element-level bridge inspection data mandated by the Federal Highway Administration for all national highway system bridges. Ultimately, MDOT will transfer its data to the American Association of State Highway Transportation Officials (AASHTO) Bridge Management (BrM) software. Two cycles of element-level bridge inspections are needed to reliably use the software, and these two cycles are scheduled to be completed in October 2018. MDOT anticipates use of the BrM in the last quarter of 2018 to help prioritize bridge funds.

AASHTO reports that 44 state, federal, local, and international agencies use the BrM software. The system can incorporate

²³The state entered into a contract with Deighton Associates Limited for dTIMS after a competitively bid process, which was managed by the Department of Information Technology Services. The contract dates are from June 28, 2014, through June 30, 2022, at a cost of \$800,885. The contract indicates that the system “allows MDOT to manage the entire lifecycle of infrastructure assets including MDOT’s pavement assets.” Note: PEER did not conduct a review of dTIMS.

risks and provide deterioration models, life-cycle cost analysis, and project planning.²⁴

While dTIMS and InspectTech could provide for a more efficient and data-driven approach to project selection and prioritization, transparency could decrease if the systems are complex and difficult for stakeholders to understand. The Federal Highway Administration notes that state departments of transportation face challenges in using cost-benefit analyses because results might not be readily understood due to monetization and discounting factors and other economic techniques the systems require for analysis to be performed. MDOT should place emphasis on ensuring sufficient transparency because it is key to stakeholders' trust that decisions are based on data.

Documenting the cost-effectiveness of the new pavement management system also could be a challenge. According to the FHWA, pavement management practitioners have identified numerous benefits associated with the use of pavement management systems (e.g., ability to document the network condition, ability to predict future conditions given a variable budget, and increased credibility among stakeholders). However, benefits have been difficult to quantify. In view of the economic situation surrounding the transportation system, the Mississippi Department of Transportation should place emphasis on quantifying the benefits and costs of the new pavement management system to the maximum extent possible. To be cost-effective, the benefits must outweigh the costs of data collection, software development and updates, analysis, and reporting.

Provision of Project Information to Stakeholders

Since PEER's January 2014 report, the Mississippi Department of Transportation has placed its five-year plan online along with information on project phases and changes (e.g., whether a start date was moved and the reason for the change).

The January 2014 PEER report, *Mississippi Department of Transportation: A Review of Departmental Accountability and Transparency* (#581), indicated that MDOT's five-year plan²⁵ was not sufficiently transparent to show users how projects change from year to year or what the department's priorities are for a particular year or years. MDOT has since placed its five-year plan online,²⁶ and users can sort it by numerous fields, such as year, county, project type. Also, the plan provides information on the various phases of projects and project changes, including whether a project start date was moved and the reason for the change.

²⁴PEER did not conduct a review of the system.

²⁵MISS. CODE ANN. Section 65-3-97(5)(a)(i) (1972) requires MDOT to prepare annually a five-year schedule for construction, upgrades, and improvements to the state highway system.

²⁶http://mdot.ms.gov/applications/five_year_plan/Five_Year_Plan.aspx.

Contracting Methods and Impact of the New Timber Bridge Inspections

As a component of an action plan developed by the Mississippi Department of Transportation and the Office of State Aid Road Construction to address compliance issues raised by the Federal Highway Administration regarding the inspection of timber bridges, the Office of State Aid Road Construction entered into new contracts with engineering consultants to perform timber bridge inspections that had historically been performed by each county's designated county engineer.

This chapter examines

- the events that contributed to the need for new timber bridge inspection contracts;
- the new timber bridge inspection contract development process;
- the potential costs for inspections under the new contracts;
- the results of the inspections under the new contracts; and
- the future of timber bridge inspections.

Events Contributing to the Need for New Timber Bridge Inspection Contracts

As a result of the FHWA's compliance review findings regarding deficiencies of the Office of State Aid Road Construction's current bridge load-rating system as well as a lack of bridge closure enforcement and concerns for the safety of the traveling public, OSARC and the Mississippi Department of Transportation developed an action plan to meet the requirements of the National Bridge Inspection Standards, a component of which included new timber bridge inspection contracts.

The following items contributed to the need for new timber bridge inspection contracts:

- the reinspection of timber bridges;
- results of FHWA compliance reviews;
- issues with bridge posting enforcement; and
- the development of the MDOT/OSARC action plan.

Reinspection of Timber Bridges

In early 2017, FHWA, MDOT, and OSARC personnel formed collaborative teams to inspect approximately 120 county and local bridges having a component condition rating of “2” that remained open to traffic. Although these bridges had been previously inspected by county engineers, reinspections by the collaborative teams resulted in recommendations for 72 bridges (60%) to be fully or partially closed or immediately repaired while remaining open.

In November of 2016, personnel of the Federal Highway Administration conducted a review of the March 2016 National Bridge Inventory²⁷ data for the state of Mississippi. During this review, the personnel identified 120 bridges with a component²⁸ condition rating of “2” (critical condition)²⁹ that were still open to traffic³⁰ and not temporarily shored (i.e., braced or held up) (the most of such rated bridges in the country).

All bridges in question from this review were locally owned (county and municipality) with timber pile substructures (timber pilings) and had been inspected by the counties through their county engineers. National Bridge Inspection Standards (NBIS) are governed by federal statute³¹ and are the same for all bridges (including these bridges with timber piling supports).

Based on these data, the Federal Highway Administration personnel decided to inspect a random sample of 17 of the 120 bridges to determine if the bridges were safe to remain open to traffic. The FHWA personnel, in cooperation with personnel from the Office of State Aid Road Construction (OSARC), began inspecting the sampled bridges in November 2016. Of the first six bridges inspected, the FHWA and OSARC personnel agreed that four bridges needed to be immediately closed or repaired in order to remain open. Based on the results of the first six inspections, the FHWA personnel chose to suspend the remaining inspections of the sampled bridges to allow OSARC to notify the respective counties of the need to verify whether the remaining bridges of the initial 120 bridges were safe to remain open.

The Office of State Aid Road Construction issued a letter on December 20, 2016, to the affected county engineers—i.e., 39 counties—requesting immediate bridge inspections and written documentation attesting that each bridge was safe to

²⁷The National Bridge Inventory (NBI) is a database, compiled by the FHWA, with information on all bridges and tunnels in the United States that have roads passing above or below them.

²⁸Either the bridge’s deck, superstructure, or substructure.

²⁹The “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges” requires inspectors to rate various bridge components based on their condition. For more information on these condition ratings, see Appendix A on page 40.

³⁰Open to passenger car and truck traffic less than 3 tons.

³¹Bridge inspection standards are governed under 23 C.F.R. Part 650, Subpart C. The current inspection standards were last updated in 2004.

remain open. OSARC required the county engineers to provide a response by January 15, 2017.

Of 120 bridges with a rating of “2,” the county engineers deemed 114 of the bridges to be safe to remain open based on their inspections. (In actuality, some of the bridges remained open by default when a county engineer failed to address the issue or address it clearly in his or her response).

For example, one county engineer responded to OSARC’s inquiry, stating:

Due to no changes in the last several inspections, to the best of my knowledge and belief, the bridge is safe to remain in service at this time. You can find the Inspect-Tech³² [sic] report attached.

The attached InspectTech report, which provided general comments on the structural components of the bridge in question, contained comments that appear to directly refute the previous conclusion. The comments included the following:

- *Deck — Due to the weight of the deck alone, failure is probable.*
- *Bridge Ends — Unconventional design. Bridge should be closed.*

Based on the county engineers’ responses that allowed all 114 bridges to remain open, bridge inspection teams consisting of FHWA, MDOT, and OSARC personnel were formed. The multi-agency inspection teams, including a county’s engineer (when available) inspected all 114 bridges having a rating of “2” that had not been initially inspected. These inspections resulted in recommendations for 65 bridges to be totally closed, five bridges to be partially closed, and two bridges to be immediately repaired while remaining open to traffic. All members of the inspections teams ultimately agreed upon the recommendations. The inspection teams agreed that substandard bridges that remained open to traffic would jeopardize public safety. (For more information on which counties were affected by these closures, see Appendix D on page 66.)

³²InspectTech, by Bentley Systems, Inc., is a program that allows inspectors to input bridge inspection information directly on location. These data are available, in real-time, to authorized users, such as OSARC and the FHWA.

Results of FHWA Compliance Reviews

For at least 10 years, FHWA personnel have noted in their compliance reviews that OSARC needed a system for county engineers to load-rate all nonstandard bridges.

FHWA personnel perform National Bridge Inspection Program compliance reviews annually to provide oversight to state bridge inspection programs. FHWA personnel assess the inspections and load ratings of county and local bridges (including timber bridges) during these compliance reviews.

Comparison of the results of the bridge inspections performed by county engineers and those conducted by the multiagency inspection teams in December 2016 revealed that the most commonly noted difference between the inspections was not the condition of substructure elements, but rather the recommended capacity of bridges that figures into a decision whether to close a particular bridge.

PEER reviewed documentation that showed similarities between bridge inspection comments from county engineers and those of the multiagency inspection teams for specific bridge elements but very different recommendations for posting or closing the bridges based on piling and structural component conditions.³³

For the past 10 years, FHWA personnel have noted in their compliance reviews that OSARC needed a system for county engineers to load rate all nonstandard bridges. Regarding this issue, the FHWA responded to PEER as follows:

...FHWA has been patiently working with State Aid for over 10 years to have all locally owned bridges load rated. FHWA's Annual National Bridge Inspection Program reviews have repeatedly cited load ratings as a compliance issue. State Aid has made progress. However, the bulk of the remaining bridges still in need of a load rating are those with timber substructure, also referred to as non-standard bridges. FHWA's last Annual NBI compliance review was completed in September 2016. This review continued to cite compliance issues with load ratings. In fact, during FHWA's September 2016 closeout meeting with State Aid, the lone compliance related plan of corrective action was to "Develop a system for the county engineers to load rate all non-standard bridges/culverts..." During this meeting, State Aid agreed with this action item and a new completion date of November 2017. Since progress was being made on load rating many of the other types of bridges, FHWA has granted several extensions to past target dates pertaining to these load ratings.

³³PEER did not review the bridge inspections for completeness or accuracy and is making no comment on the work performed by existing bridge inspectors from OSARC, MDOT, or the FHWA.

The FHWA required OSARC to complete the development of these new capabilities by December 31, 2014, with the deadline later extended to November 30, 2017.

Issues Regarding Bridge Posting Enforcement

During inspections of the 114 county bridges, the multiagency inspection teams noted problems regarding bridge posting enforcement.

During their inspections of the 114 county bridges, the multiagency inspection teams noted issues regarding bridge posting enforcement. For example, the inspectors observed heavy-duty vehicles—e.g., loaded logging trucks and school buses—crossing bridges in violation of posted weight limits. While use of a bridge by a vehicle that exceeds the posted limit may not cause the bridge to immediately fail, it could cause additional damage that may lead to future or more rapid bridge deterioration.

Additionally, according to the FHWA, some bridges that were deemed unsafe were not properly closed, allowing vehicles to continue to cross the bridges, and, at least one of these unsafe bridges was allowed to remain open without completing the necessary repairs. The FHWA asserts it was told the repairs were complete, but upon an immediate site visit, it verified the county had not even started the repair work.

MDOT/OSARC Action Plan

The State of Mississippi is responsible for meeting National Bridge Inspection Standards, including oversight of inspections on county and municipal bridges. The Federal Highway Administration, the federal agency responsible for ensuring that states are meeting NBIS requirements, required the State to develop an action plan that ensures bridge safety and improves the NBIS program for local bridges, as well as to provide assurances that it has the necessary tools in place to effectively post and close bridges as warranted from the bridge inspection process.

Under federal law,³⁴ the State of Mississippi is ultimately responsible for meeting the requirements of the NBIS, including oversight of inspections by county and municipal governments of bridges under their jurisdiction. The Federal Highway Administration is responsible for ensuring that states follow these bridge inspection requirements.

The FHWA states that, based on the facts surrounding the inspection of the 120 bridges, on March 7, 2017, it notified MDOT and OSARC by letter that OSARC is not adequately ensuring the prompt closure of unsafe locally owned bridges in accordance with the NBIS.

³⁴23 U.S.C. Section 144 and 23 C.F.R. Part 650.

In this letter the FHWA cited the unique organizational structure of Mississippi's transportation departments³⁵ as the sole reason for not imposing sanctions at the time.³⁶ Rather, the FHWA requested both transportation agencies promptly develop an action plan to address the issues of noncompliance. The FHWA required the plan to address

- the management and implementation of the NBIS program for locally owned bridges;
- the State's authority to ensure the locally owned bridges are properly inspected and physically posted or closed to ensure compliance with the NBIS.

The Federal Highway Administration also emphasized that failure to satisfactorily address these issues in a timely manner could result in sanctions, including withholding project approvals or federal aid highway funds from Mississippi.

On March 27, 2017, the Mississippi Department of Transportation and the Office of State Aid Road Construction jointly responded to the Federal Highway Administration with an action plan and assured the FHWA that the State has the necessary tools in place to effectively cause bridges to be posted and closed as warranted through the bridge inspection process. The action plan was subsequently approved by the FHWA on March 28, 2017.

The action plan included some immediate actions to ensure that bridges are safe and some longer-term actions to improve the NBIS program for local bridges in Mississippi.

The plan's immediate actions to ensure bridges are safe include the following:

- Follow-up on the actions taken with the 72 bridges identified in the reinspections and determine whether counties took the appropriate actions.³⁷
- Identify all bridges with a component condition rating of "3" or less and have these bridges inspected within 180 days by qualified state bridge inspectors. Ensure appropriate follow-up actions are implemented.³⁸

The plan's longer-term actions to improve the NBIS program for local bridges in Mississippi included

³⁵Mississippi is the only state in which the state agency accomplishing the functions of OSARC operates independently from the state agency accomplishing the function of the state's department of transportation.

³⁶The FHWA's authority to enforce compliance is found in 23 C.F.R. 1.36.

³⁷All appropriate actions were taken. For more information on which counties were affected by these closures, see Appendix D on page 66.

³⁸The new criteria led to 144 locally owned bridges being identified and inspected by the State and/or the FHWA, resulting in 95 bridge closures. All appropriate actions were taken. For more information on which counties were affected by these closures, see Appendix E on page 67.

- the issuance and management by OSARC of new contracts for inspection and load rating of all bridges with timber substructures within two years;³⁹ and
- review of OSARC’s National Bridge Inspection Program Local System Manual, both within 90 days and annually, its critical findings process, and quality assurance procedures with any required updates being made.

New Timber Bridge Inspection Contract Development Process

The Office of State Aid Road Construction and the Mississippi Department of Transportation jointly procured new contracts for county timber bridge inspections. OSARC contracted with nine consultants to conduct bridge inspections throughout the state.

As stated on page 31, one component of the MDOT/OSARC action plan was the issuance and management of new contracts for the inspection and load rating of all bridges with timber substructures within two years. Because the costs of such inspections are paid with federal dollars, federal procurement processes as directed in 23 Code of Federal Regulations Section 172 had to be followed. Historically, federal dollars had been used to pay for bridge inspections, but the formal federal contracting guidelines were not a factor because the contracts were typically less than the \$150,000 threshold included in federal statute.

Because the Office of State Aid Road Construction is the state-level agency responsible for the timber bridge inspections, the office took the lead in the contracting process. Early in the contracting process, FHWA personnel requested assistance from MDOT personnel, to which the MDOT personnel agreed. According to FHWA personnel, they made the request because of MDOT personnel’s technical expertise with the contracting process—e.g., development of contract requirements, origination of cost estimates, contract negotiations, and contract administration. In addition, the request was made because the FHWA ultimately holds MDOT responsible for the implementation of the National Bridge Inspection Standards on locally owned bridges.⁴⁰ MDOT and OSARC formed a five-member selection committee consisting of three MDOT personnel and two OSARC personnel, with MDOT’s Chief Engineer serving as chair of the committee.

OSARC issued a request for qualifications (RFQ) on April 12, 2017, and received proposals from 15 consultants. The selection committee members independently reviewed and scored the proposals based on each proposal’s merits as compared to the RFQ requirements. The independent scores were then consolidated and consultants’ scores were ranked from highest to lowest. OSARC and MDOT personnel contend

³⁹Most bridges fall under a two-year routine inspection schedule. Inspection time frames are governed by 23 C.F.R. Part 650 Subpart C § 650.311.

⁴⁰MDOT is held responsible under 23 C.F.R. Part 650.307

that the contracting process complied with all federal contracting guidelines.⁴¹

The request for qualifications stated that OSARC could select a maximum of 10 consultants. Ultimately, OSARC selected the nine highest-scoring consultants to perform bridge inspections within the state. (The composite scores for the 10th- and 11th-highest proposals were comparatively close to each other, but varied significantly from the 9th-highest scored proposal. MDOT personnel indicated to PEER that selecting either the 10th- or 11th-highest scored proposal would appear to be subjective. Therefore, OSARC chose the top nine consultants.) Of those consultants, two have personnel currently serving as county engineers. The FHWA stipulated that for these specific contracts those two firms would be prohibited from inspecting bridges located in the counties in which their personnel serve as county engineers. (Other firms that had personnel serving as county engineers submitted proposals but were not selected because their proposals did not score in the top 10.)

Following the selection team's identification of the top nine consultant proposals, OSARC began the contract preparation process. According to FHWA personnel, to ensure that the work remained eligible for federal aid highway program funding and to ensure that the scope of work being developed adequately addressed the identified noncompliance issues pertaining to the National Bridge Inspections Standards, the personnel again requested that MDOT personnel assist with the contracting process. MDOT personnel negotiated the limits of cost (through the negotiation of billable hours for each consultant's total work under the consultant's contract) for each selected consultant.⁴² OSARC entered into the new timber bridge inspection contracts with the nine selected consultants in September of 2017. Because of federal contracting guidelines, the cost of the contracts was negotiated after selection of consultants.

In addition to the professional aspects of these contracts—e.g., number of hours each contractor could use to complete its total work assignments—the contracts also prescribe the method consultants were required to use to identify and report any critical findings. In the event that a consultant identified a critical finding during a bridge inspection, the consultant reported the finding to OSARC personnel who reported the inspection finding to the affected county or local municipality (the bridge owner).

⁴¹PEER did not audit the contracting process to determine if all procedures required under federal contracting guidelines were satisfied.

⁴²Federal contracting guidelines for these types of consulting services allow for three different methods of cost contracting. The new timber bridge inspection contracts utilize labor hour rate contracts.

Potential Cost for Inspections under the New Contracts

Because no consultants had yet been compensated under the new contracts at the time of this review, PEER was unable to determine how much the new bridge inspection contracts would cost per bridge. However, based on the not-to-exceed costs of the total contracts and the number of bridges to be inspected, PEER estimates an approximate average not-to-exceed cost of \$10,500 per bridge.

While OSARC is not responsible for the design, construction, maintenance or inspection of the bridges on Mississippi's county and local bridge systems, OSARC does coordinate and provide funding for their inspection. These inspections include the inspections conducted under the new timber bridge inspection contracts.

As previously described, OSARC selected nine consultants to conduct inspections of timber bridges located in counties. The initial not-to-exceed cost of the new timber bridge inspection contracts is projected to be \$31.5 million. The contracts were signed during September 2017 and run through July 16, 2019, and will include a two-year inspection cycle for all bridges with timber substructures that fall under OSARC purview.⁴³

The cost outlined above for the inspections under the new timber bridge inspection contracts does not represent the total cost of bridge inspections under OSARC purview. County engineers and other consultants will continue to inspect other county bridges that are not timber bridges—e.g., bridges with concrete or nonmember substructures or bridges that require complex inspections, such as those having specialized equipment.

First Year of Inspection Cycle

All work performed under the new timber bridge inspection contracts must come from work assignments, which are negotiated individually with each of the nine selected consultants. For the first year covered under the two-year inspection cycle, the consultants will be assigned to inspect and load rate 1,543 timber bridges.

Although the consultants' work assignment contracts run until July 16, 2018, the data associated with their inspections (and load ratings) were due to be submitted to OSARC in February 2018. This time frame allowed OSARC and MDOT to prepare and submit the federally required annual bridge data to the Federal Highway Administration in March 2018 for inclusion in the National Bridge Inventory.

In the first year of the new timber bridge inspection contracts, each consultant negotiated a second work assignment to cover any required follow-up bridge inspections. If a bridge is closed as the result of an inspection, the bridge must have a follow-

⁴³Federal contracting guidelines for these types of consulting services allow for three different methods of cost contracting. The new timber bridge inspection contracts utilize labor hour rate contracts.

up inspection after the repairs have been completed in order to be reopened. These work assignments were executed for \$100,000 per consultant. OSARC verifies the need for these follow-up inspections as they arise, and the cost of each specific follow-up inspection is negotiated prior to work commencing.

Second Year of Inspection Cycle

A second round of work assignments, to perform bridge inspections scheduled for fiscal year 2019 (the second year of the inspection cycle), will be negotiated with the consultants later in 2018.

During development of the new timber bridge inspection contracts, OSARC projected the need to assign approximately 1,739 bridges to the consultants. However, this number is only an estimate, and may change depending on the results of year one's inspections.⁴⁴ Consultants' work under this second year of work assignments will be completed in early calendar year 2019, prior to the July 16, 2019, contract termination date.

Cost-Per-Bridge Estimates

Because no consultants had yet to be compensated under the new timber bridge contracts at the time of this review, PEER could not determine the inspection costs per bridge under the new contracts. However, based on the not-to-exceed costs of the total contracts and the number of bridges to be inspected, PEER estimates an average not-to-exceed cost of \$10,500 per bridge. Because each bridge is unique, costs per inspection will vary. As field inspections are completed and load rating and data entry begin, the actual costs of these activities will become clearer.

The average projected cost of \$10,500 per bridge is in excess of the fees historically paid to county engineers for inspection of these bridges. County engineers were inspecting these bridges at a rate of \$350 to \$480 per structure, depending on the work necessary for the inspections. The difference in the historical costs for the inspections and the projected costs under the new contracts may be due to the types of personnel conducting the inspections. Federal requirements that govern bridge inspections state that Bridge Inspection Team Leaders must possess specific qualifications and be on site during inspections, and while the personnel performing the inspection work under the old and new contracts both had to

⁴⁴Although the normal time frame for bridge inspections is every two years, a bridge may be placed on a one-year inspection cycle when deteriorating conditions are observed. Thus, some bridges inspected during the first year of the cycle may require another inspection during the second year. Additionally, the number inspections could decrease if bridges to be inspected are deleted from the National Bridge Inventory (replaced with smaller structures that no longer meet the NBIS minimum bridge length requirements of greater than 20 feet) or are replaced with concrete structures (and no longer fall under the purview of the new timber bridge inspection contracts).

meet these minimum qualifications, the federal requirements do not require an inspector to be a licensed professional engineer. Under the new contracts, many of the selected consultants may be using professional engineers to conduct these inspections, which would make the inspections more expensive than those conducted in the past.

According to FHWA staff, the work required by the historical contracts was not being performed, especially in regard to the documentation and implementation of the need to post or close bridges. The FHWA's previous Annual National Bridge Inspection Program Reviews cited issues with the existing load ratings of many county and local bridges. The completion of load ratings for bridges to satisfy the National Bridge Inspection Standards under the new contracts could require additional time and resources to complete and could cost more than existing load rating procedures that were not in compliance with NBIS standards. Exacerbating this, many of these bridges have no documented plans and will require consultants to obtain exact measurements of all bridge components. These components will then have to be entered into computer software that will assist in calculating the load ratings of each bridge. As a mitigating factor, because of the nature of the new contracts, the results of these bridge inspections will become the property of the counties for which they have been prepared.

Because this is the consultants' initial inspection, more data gathering and verification of the data are required. Some of these additional steps can be viewed as a nonrecurring cost and will not have to be performed in future contracts.

As a practical example, approximately 1,100 of the bridges inspected during the first year of the inspection cycle will require reinspection during the second year of the inspection cycle (these bridges are on a 12-month inspection cycle). With bridge dimension data obtained and properly recorded, unless the conditions of the bridge components change significantly enough to warrant a new load rating, it is possible that future contracts for these bridge inspections may be less costly than current ones.

Results of the Inspections under the New Contracts

Under the new bridge inspection contracts, as of December 7, 2017, consultants had inspected 1,005 bridges with 166 having critical findings that warranted immediate closure. After determining a bridge closure, a county, which bears the majority of the cost burden for bridge repair, may proceed in several ways; however, the chosen option may require extensive planning or there may be a long wait for funding.

Under the new bridge inspection contracts, as of December 7, 2017, consultants had inspected 1,005 bridges with 166 having critical findings that warranted immediate closure (for the counties affected by these closures) (see Appendix F on page 68).

However, not all of these bridges were permanently closed. Bridge closing guidelines allow for a two-phased approach. After a bridge has been marked for closure, the county has 24 hours to temporarily close it to traffic. This step requires signage posting the bridge closure and the blocking of traffic over the bridge. (Blocking can be accomplished by any of several methods, including the use of portable concrete barriers or amassing a dirt barrier.)

The next phase requires the owner of the bridge (in this case the county) to fully close the bridge using specific barriers outlined in federal statute. The county has 45 days to procure the approved materials, close the bridge, and provide proof of closure to OSARC. Some counties, during this period, have repaired the specific findings that led to the recommendation for closure.

As inspections of locally owned bridges proceed, OSARC is responsible for informing the county and its engineers of closure recommendations from the consultant inspectors, documenting the county's response to the recommendations, and administering the contracts. Language to this effect was included in the new timber bridge inspection contracts to allow for a more direct method of closure requirements and to remove any appearance of undue influence or impropriety in the inspection process.

After a bridge has been slated for closure, a county has options for how to proceed; however, the chosen option may require extensive planning or there may be a long wait for funding (if available). The majority of the cost burden for repairing identified bridges falls on counties, and even if the identified bridges can and are repaired, most will be reopened at reduced postings or operation (one lane only) and will need to be replaced or more extensively repaired in the future.

The Future of Timber Bridge Inspections

The Office of State Aid Road Construction is exploring several options to help provide county engineers with the additional knowledge and equipment necessary to facilitate transition of the inspection of bridge contracts back to the engineers at the end of the current contract cycle. OSARC is also proposing changes to its quality assurance process (as highlighted in the action plan).

As described on page 35, the costs associated with the new bridge inspections probably will be more expensive than the inspections previously conducted or overseen by the county engineers. In addition, based on the deficiencies noted in the inspections conducted by the inspection teams (see pages 27-28), county engineers will be required to include additional elements in their bridge inspections in the future (some for which they may lack the expertise or equipment to provide). During the consultant selection process for timber bridge inspection, some of the county engineering firms that responded were found to lack the capability to load rate

bridges. Future contracts for bridge inspection are expected to require these capabilities.

OSARC was considering several options to help provide the county engineers with the additional knowledge and equipment necessary to help transition the inspection of bridge contracts back to the county engineers at the end of the current contract cycle. Potential changes include the following:

- teaching a session on the new statewide bridge inspection manual to the Mississippi Association of county engineers' meeting in January 2018 (held January 9);
- exploring the possibility of sponsoring a load-rating class for the county engineers;
- exploring the possibility of expanding the authorized users for new software that is being used to report bridge inspection data directly from the field-to county road managers; and
- exploring with MDOT the possibility of allowing county engineers to purchase a license to use the load-rating software that is owned and used by MDOT. If successful, this will give the county engineers the capability to both inspect and load-rate bridges.

In addition to these possibilities, OSARC is proposing changes to its quality assurance process (as highlighted in the action plan). These changes include

- intentionally increasing the frequency of quality assurance inspections by OSARC personnel to verify inspection findings as consultants complete inspections and communicate the findings to consultants, counties, and the FHWA;
- requesting and scheduling office and site reviews of program requirements and bridge inspection findings with the FHWA's bridge engineer to better ensure that requirements are being met; and
- cross-training other members of OSARC staff to support inspections and other aspects of the bridge inspection program as required.

The Federal Highway Administration and the Mississippi Department of Transportation also stated that they would be working with OSARC to continue addressing the identified issues pertaining to the local bridge program. For example, the FHWA indicated that it will be conducting an in-depth review of the local bridge inspections conducted by the county engineers in the inspection cycle begun in summer (expected completion late February 2018). This review will verify whether the inspections were conducted in accordance with National Bridge Inspection Standards and OSARC procedures, particularly the final post/close or repair recommendations/actions. The results of this review will influence OSARC's quality assurance procedures and the future of this well-established inspection process well beyond the newly implemented timber bridge inspection process.

Recommendations

1. In order to ensure sufficient transparency in its new project selection processes beginning in FY 2019, the Mississippi Department of Transportation should have clearly written policies for project selection and prioritization processes using the dTIMS and BrM software and ensure that resulting data are presented in a clear, relevant, and useful manner to decision-makers. Deviations from using the written policies to select or prioritize projects should include written justification that is spread upon the minutes of the Mississippi Transportation Commission.
2. In order to demonstrate the cost-effectiveness of the systems implemented, the Mississippi Department of Transportation should determine, to the extent possible, and communicate the benefits and costs of using the new pavement management for project selection. While benefits could include predicting future conditions given a variable budget or documenting the condition of the transportation system, a quantifiable benefit is preferred, such as cost savings from certain treatment selections. Costs could include data collection, software development and updates, analysis, and reporting.
3. In order to increase the transparency of its decision-making and to communicate to stakeholders its ability to maximize its resources and its efficiency in completing projects on time and within budget, the Mississippi Department of Transportation should identify and implement the best reporting tools (both internal and external) to communicate its progress (e.g., online dashboard, as part of its annual report).
4. The Federal Highway Administration, the Mississippi Department of Transportation, and the Office of State Aid Road Construction should work together to address the issues presented in this report regarding county bridge inspections. In particular, these three entities should seek to
 - a. establish and communicate any new OSARC specific processes necessary for the implementation and usage of NBIS standards for local bridge inspections;
 - b. establish training programs and schedules for the implementation and usage of NBIS requirements and OSARC specific processes pertaining to the Bridge Inspection Program for locally owned bridges; and
 - c. implement a quality assurance program to ensure that bridges are inspected in accordance with the NBIS requirements and OSARC specific processes pertaining to the Bridge Inspection Program for locally owned bridges.

Appendix A: Bridge Element Condition Guide

Information from bridge inspections must be compiled in a standard format for reporting and inclusion in the National Bridge Inventory. The FHWA publishes *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges* to assist bridge inspectors with this task. As a part of the coding guide, inspectors are instructed to use one set of values to rate the condition of each bridge's deck, superstructure, and substructure. Condition ratings are used to describe the existing, in-place bridge components, as compared to their as-built condition.

Code	Description
N	Not Applicable
9	Excellent Condition
8	Very Good Condition – No problems noted.
7	Good Condition – Some minor problems.
6	Satisfactory Condition – Structural elements show some minor deterioration.
5	Fair Condition – All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	Poor Condition – Advanced section loss, deterioration, spalling, or scour.
3	Serious Condition – Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2*	Critical Condition – Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	“Imminent” Failure Condition – Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	Failed Condition – Out of service/Beyond corrective action.

*A condition rating of “2” is the lowest rating in which a bridge can remain open, if deemed safe by the inspection team.

SOURCE: Federal Highway Administration *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges* (Report No. FHWA-PD-96-001).

Appendix B: Federal Funding Program Description of Funds for MDOT Funds Received FY 2017 (October 1, 2016–September 30, 2017)

Federal Program*	Description of Funds
Repurposed Earmark Formula	Funds that become available from earmarks and designated projects that have not been advanced by state DOTs. The limitations in the provision are to ensure the projects are obligated promptly and used in the same geographic area as the original earmark to provide funding for other needed projects.
Recreational Trails Program	The Recreational Trails Program provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.
Metropolitan Planning Program	Metropolitan Planning establishes a cooperative, continuous, and comprehensive framework for making transportation investment decisions in metropolitan areas.
Transportation Alternatives (Section 133(h)) – Areas with Population 5,000 and under	The FAST Act eliminated the MAP-21 Transportation Alternatives Program (TAP) and replaced it with a set-aside of Surface Transportation Block Grant funding for transportation alternatives. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity.
Transportation Alternatives (Section 133(h)) – Areas with Population over 5,000 to 200,000	The FAST Act eliminated the MAP-21 Transportation Alternatives Program (TAP) and replaced it with a set-aside of Surface Transportation Block Grant funding for transportation alternatives. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity.
Transportation Alternatives (Section 133(h)) – Areas with Population over 200,000	The FAST Act eliminated the MAP-21 Transportation Alternatives Program (TAP) and replaced it with a set-aside of Surface Transportation Block Grant funding for transportation alternatives. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity.
Transportation Alternatives (Section 133(h)) Flex	The FAST Act eliminated the MAP-21 Transportation Alternatives Program (TAP) and replaced it with a set-aside of Surface Transportation Block Grant funding for transportation alternatives. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity.

Railway – Highway – Hazard Elimination	The Railway-Highway Crossings Program provides funds for safety improvements to reduce the number of fatalities, injuries, and crashes at public railway-highway grade crossings. The funding is a set-aside from Highway Safety Improvement Program, which the FAST Act reserves at an average of \$235 million per year
Railway – Highway – Protective Devices	The Railway-Highway Crossings Program provides funds for safety improvements to reduce the number of fatalities, injuries, and crashes at public railway-highway grade crossings. The funding is a set-aside from Highway Safety Improvement Program, which the FAST Act reserves at an average of \$235 million per year
Highway Safety Improvement Program (HSIP)	HSIP funds are to be used for safety projects that are consistent with the state’s strategic highway safety plan and that correct or improve a hazardous road location or feature or address a highway safety problem. The FAST Act limits HSIP eligibility to only those listed in statute—most of which are infrastructure-safety related. In addition to this change, the FAST Act specifically identifies the following activities on the inclusions list: Installation of vehicle-to-infrastructure communication equipment. Pedestrian hybrid beacons. Roadway improvements that provide separation between pedestrians and motor vehicles, including medians and pedestrian crossing islands. Other physical infrastructure projects not specifically enumerated in the list of eligible projects. The FAST Act continues the prohibition on the use of HSIP funds for the purchase, operation, or maintenance of an automated traffic enforcement system (except in a school zone). Workforce development, training, and education activities remain an eligible use of HSIP funds.
Section 154 Penalties – Use for HSIP Activities	States that are subject to penalties on Federal-Aid Highway Program apportionments for noncompliance with the minimum requirements for the Open Container Law (23 U.S.C. § 154). With No open container law, Mississippi fails to meet the certain federal requirements and is penalized.
State Planning and Research (SPR)	The statewide and nonmetropolitan planning is part of a 2% set-aside for planning and research activities from each state’s apportionments of five core programs: National Highway Performance Program, Surface Transportation Block Grant Program, Highway Safety Improvement Program, Congestion Mitigation and Air Quality Improvement Program, and National Highway Freight Program.
Research, Development, and Technology Transfer (RD&T)	The statewide and nonmetropolitan planning is part of a 2% set-aside for planning and research activities from each state’s apportionments of five core programs: National Highway Performance Program, Surface Transportation Block Grant Program, Highway Safety Improvement Program, Congestion Mitigation and Air Quality Improvement Program, and National Highway Freight Program.
National Highway Freight Program (NHFP)	NHFP funds must contribute to the efficient movement of freight on the National Highway Freight Network (NHFN) and be identified in a freight investment plan included in the state’s freight plan. The NHFP focuses on improving the efficient movement of freight on the NHFN. Funds are distributed to states by formula for eligible activities, such as construction, operational improvements, freight planning, and performance measurement. Although the program is highway-focused, each state may use up to 10% of its NHFP funds for each fiscal year for public or private freight rail, water facilities (including ports), and intermodal facilities.

National Highway Performance Program (NHPP)	The NHPP will support the condition and performance of the National Highway System, enable the construction of new facilities on the NHS, and ensure that investments of federal-aid funds in highway construction are directed to support progress toward achieving performance targets established in a state's asset management plan for the NHS. NHPP funds can be used for reconstruction, resurfacing, restoration, rehabilitation, or preservation of a non-NHS bridge if the bridge is on a federal-aid highway.
Congestion Mitigation & Air Quality Improvement (CMAQ)	CMAQ provides a funding source for transportation projects and programs to help meet the requirements of the Clean Air Act. Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and that is included in the metropolitan planning organization's (MPO's) current transportation plan and transportation improvement program or the current state transportation improvement program in areas without an MPO.
Surface Transportation Block Grant (STBG) Program - Off-System Bridge	STBG Program - Amount is to be not less than 15% of the state's FY 2009 Highway Bridge Program apportionment. The Secretary, after consultation with state and local officials, may reduce a state's set-aside requirement if the state has insufficient off-system bridge needs. These funds are historically made available to State Aid to be used by the counties.
Surface Transportation Block Grant (STBG) - Urbanized Areas with Population over 200,000	A percentage of a state's STBG apportionment (after set-asides for Transportation Alternatives) is to be obligated in the following areas in proportion to their relative shares of the state's population: These funds are sub-allocated to Transportation Management Associations (TMAs). The commitment of these funds to be obligated must be made by the TMA area that received said funds. The STBG Program has the most flexible eligibilities among all federal-aid highway programs.
STBG Program - Areas with Population over 5,000 to 200,000	A percentage of a state's STBG apportionment (after set-asides for Transportation Alternatives) is to be obligated in the following areas in proportion to their relative shares of the state's population.
STBG Program - Areas with Population 5,000 and under	A percentage of a state's STBG apportionment (after set-asides for Transportation Alternatives) is to be obligated in the following areas in proportion to their relative shares of the state's population.
Redistribution of Certain Authorized Funds	Funds appropriated for federal-aid highway programs in a given year that will not be allocated to the states and will not be available for obligation in a given year due to the imposition of any obligation limitation for such fiscal year.
Surface Transportation Block Grant Program (STBG) Program Flex	STBG Program has the most flexible eligibilities among all federal-aid highway programs. A percentage of a state's STBG apportionment (after set-asides) is to be obligated to the other STBG programs identified in this chart in proportion to their relative shares of the state's population.

*For additional information about federal funds, visit the FHWA website, www.fhwa.dot.gov/fastact/factsheets/.

SOURCE: Mississippi Department of Transportation.

Appendix C: Accountability Program Expenditures and Full-Time Equivalents* (FTEs) by Budget Program for FY 2017

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Construction				
System Preservation Contracts	Payments to contractors for system preservation of the state-owned transportation network, primarily roadway paving and bridge projects	\$344,758,360.00	44.24%	0
HELP Projects	Project expenditures utilizing the HELP bond program	\$67,912,567.00	8.71%	0
Capacity Contracts	Payments to contractors on existing facilities that add capacity (MDOT-initiated projects are prioritized according to volume/capacity ratio, taking into account economic development and safety. Most new capacity projects are legislatively mandated.)	\$64,864,033.00	8.32%	0
Local Public Agency (LPA)/ Metropolitan Planning Organization (MPO) Reimbursements	Federal Highway Administration project reimbursements to local public agencies/entities and reimbursements to MPOs for operational costs	\$56,147,819.78	7.20%	0
State Aid Reimbursements	Federal Highway Administration Project Reimbursements to State Aid	\$54,305,127.00	6.97%	0
Construction Engineering and Inspection	Costs associated with project inspection and oversight in accordance with state and federal laws for all roadway and bridge projects	\$30,096,599.00	3.86%	498
Right-of-Way (ROW) Acquisition	Acquisition of real property and relocation of individuals and businesses as needed to accommodate transportation projects; includes property management and property disposal	\$24,910,200.00	3.20%	22.5

*For the purposes of this analysis, one full-time employee equivalent is measured as 2,080 hours worked, i.e., 52 weeks multiplied by 40 hours per week.

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Right-of-Way (ROW) Utility Relocation	Coordination of utility relocation agreements, removal of utilities, and reinstallation of utilities located on property to be acquired or on existing ROW that are in conflict with road and bridge construction projects	\$18,570,909.00	2.38%	2
Safety Contracts	Payments to contractors for systematic safety improvements, such as rumble strips/stripe and cable median barrier	\$18,555,037.00	2.38%	0
Design - Roadway	Design and preparation of plans for construction of roadway projects	\$15,971,943.00	2.05%	42
District Construction Administration	Involves all administrative and operational functions at the district level that include construction of roads and bridges	\$11,931,616.00	1.53%	159.8
Design - Bridges, New or Replacement	Includes design and construction plan preparation and revisions, railroad right-of-way negotiation, checking construction submittals, and revising orders	\$7,320,311.00	.94%	20
Federal Studies Analysis	Includes feasibility, noise, freight, air quality studies, and analysis at the local, regional, and statewide level	\$5,235,747.20	.67%	8
Bridge Rating and Inspection	Inspection and rating activities as well as programed project activities in accordance with federal highway requirements; includes staff from the bridge division and districts	\$4,973,197.00	.64%	35
Mitigation Stewardship	Restoration and conservation activities to offset unavoidable impacts to the streams, rivers, wetlands, forests, and species of concern from the effects of transportation projects	\$4,386,016.00	.56%	2

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Project Related Testing (Materials Lab)	Testing related to road and bridge construction projects	\$4,110,107.00	.53%	59
Emergency Repairs	Emergency repair projects including slides, damage to bridges, federal recovery projects, etc.	\$3,963,358.71	.51%	0
Design - Hydraulics	Responsible for the hydraulic design of stream encroachments with drainage areas in excess of 1,000 acres and any subordinate hydraulic structures within the same floodplain and tasked with the successful completion of hydraulic design and river engineering to ensure roadways are designed in a safe, effective, and environmentally sensitive manner	\$3,722,233.00	.48%	8
Transportation Software Engineering Development and Support	Application development and support for transportation-specific engineering software that meet federal regulations and guidelines	\$3,309,897.00	.42%	6
Environmental Projects	Conducting environmental studies and collaborating with various MDOT districts and divisions as well as other state and federal resource agencies to ensure project schedules	\$3,056,428.00	.39%	9.25
Road Network Data Collection/Processing	Activities related to field inventorying all public roads in the State; use of data in engineering analysis, federal reports, and for statistical compilations	\$2,917,712.70	.37%	19
Design - Traffic Engineering	Project-related activities for the design of highway intersections, signs, traffic signals, lighting, safety improvements, etc.	\$2,772,296.00	.36%	1
Railroad Crossing Safety Program	Identifies and installs appropriate warning devices at public highway-railroad grade crossings	\$2,486,245.00	.32%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Construction Contract Compliance and Oversight	Develops specifications and standards for construction contracts, produces MDOT contract estimates, performs construction contract compliance and oversight, conducts project inspections, oversees construction contract modifications, and processes contractor claims, includes auditing contracts for compliance with federal guidelines	\$2,338,931.00	.30%	10.95
Intelligent Transportation Systems Projects	Design and installation of specialized equipment used to monitor traffic flow and assets to improve safety and functionality of the road system	\$2,268,005.00	.29%	0
General Testing (Materials Lab)	Testing for road and bridge construction projects approved products list, quality assurance/control, etc.	\$2,099,898.00	.27%	13
Overweight Penalties/Fines Transfers	MDOT transfer (required by statute) of all overweight fines/penalties to the counties	\$1,788,923.00	.23%	0
Local Public Agency (LPA) Federal Compliance Oversight	Federally required oversight of the planning, design, and construction of LPA projects funded through the Federal Highway Administration	\$1,694,164.00	.22%	17.5
Federal Research Work Program	Includes research studies unique to Mississippi; regional and national research efforts; and development of an annual research work program, approved by MDOT's Research Advisory Committee and FHWA	\$1,384,529.53	.18%	13
Stormwater Compliance	Compliance activities related to the Clean Water Act in accordance with the National Pollutant Discharge System	\$1,107,685.00	.14%	1.75

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Right-of-Way (ROW) Preliminary Engineering	Preparation by ROW personnel during preconstruction phase of ROW cost estimates and input on the effects of proposed project locations and designs on ROW costs and lead time; field inspections on a continuing basis by an inspection party consisting of representatives from MDOT and the FHWA to help determine highway locations and develop plans and written reports of field inspections that become part of the project records	\$1,083,721.00	.14%	7
Federal Railroad Administration (FRA) Grant Program	Funds spent on projects qualifying for FRA grants	\$845,032.00	.11%	0
Worker's Compensation for Construction Employees	Claims paid out on employees assigned to construction program	\$779,831.00	.10%	0
Procurement for Highway Construction Contracts	Contract procurement activities for construction projects, including the processing of monthly contractor estimates for payment	\$725,279.00	.09%	8.25
Federal Agency Expedited Project Compliance Review - U.S. Geological Survey	Fees paid to the U.S. Geological Survey for reviewing and processing MDOT projects expeditiously to ensure project schedules and federal compliance	\$658,412.00	.08%	0
Federal Commercial Vehicle Information Systems Networks Grant	Provides financial assistance to eligible states to improve the safety and productivity of commercial motor vehicle operations and reduce costs associated with commercial vehicle operations and federal and state commercial vehicle regulatory requirements	\$552,277.00	.07%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Federal Planning Program Oversight	Activities related to program oversight for the federally mandated State Planning and Research Program	\$536,082.29	.07%	7
Roadway Design Administration	Oversight responsible related activities dedicated to administrative and support functions of roadway design	\$528,951.00	.07%	7
Planning and Research Administration	Non-project-related activities dedicated to administrative and support functions for planning and research activities of state-maintained and state- designated road system	\$517,796.80	.07%	2
Transportation Engineering Educational Programs	Provides teachers training and resources for hands-on activities that improve critical thinking skills for solving real-world problems in the transportation industry and helps with workforce development and recruitment	\$504,386.00	.06%	0
Federal Disadvantaged Business Enterprise (DBE) Program	MDOT's costs to oversee the federal DBE program	\$467,879.00	.06%	0
Federal Training and Workforce Development	Training and development for both MDOT personnel and Local Public Agency personnel per Federal Highway Administration regulations and guidelines	\$414,730.32	.05%	3
Federal Reporting and Publications	Includes statistical, financial, or general information reports published as required by federal law and the publication of county, city, regional, and statewide maps	\$367,694.35	.05%	8
Harvest Permit Transfer	MDOT transfer (required by statute) of all harvest permit collections to the counties	\$318,399.00	.04%	0
Hydraulics Administration	Oversight activities dedicated to administrative and support functions of the Hydraulics division	299,337.00	.04%	4

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Bridge Administration	Oversight activities dedicated to administrative and support functions of the Bridge division	\$298,804.00	.04%	5
Right-of-Way (ROW) Administration	Oversight activities dedicated to administrative and support functions of the ROW division	\$275,342.00	.04%	5
State Aid Support	Technical support to State Aid for the Federal Highway Administration grant program	\$198,795.00	.03%	2
Federal Agency Expedited Project Compliance Review – U.S. Fish and Wildlife Service	Fees paid for reviewing and processing MDOT projects expeditiously to ensure project schedules and federal compliance	\$185,521.00	.02%	0
Environmental Administration	Oversight for activities dedicated to administrative and support functions of the environmental division	\$180,483.00	.02%	2
Federal Agency Expedited Project Compliance Review – U.S. Environmental Protection	Fees paid for reviewing and processing MDOT projects expeditiously to ensure project schedules and federal compliance	\$151,693.00	.02%	0
National Environmental Policy Act (NEPA)	Compliance activities related to the National Environmental Policy Act, 23 U.S.C. 109(h), and all other environmental laws and regulations that fall under NEPA, such as 23 U.S.C. 138 (Section 4(f) of the DOT Act)	\$145,512.00	.02%	4
Federal Agency Expedited Project Compliance Review – U.S. Army Corps of Engineers	Fees paid to the U.S. Army Corps of Engineers for reviewing and processing MDOT projects expeditiously to ensure project schedules and federal compliance	\$126,330.00	.02%	0
Safety Analysis Management System (SAMS)	Activities related to the Safety Analysis Management System, including system enhancement and support, as well as data cleanup	\$109,096.00	.01%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Transportation Safety Educational Programs	MDOT's two transportation safety educational programs: Survive Your Drive (aimed at raising awareness of highway traffic safety issues) and Safe Routes to School (which encourages kids in grades K-12 to walk and bicycle to school safely)	\$106,067.00	.01%	0
Total Construction Budget Program Expenditures by Accountability Program		\$779,337,345.68	100%	
Maintenance				
Maintenance Overlay Projects (Highway)	Competitively bid resurfacing and bridge repair projects not eligible for federal reimbursements	\$70,189,932.00	34.09%	0
Roadway Maintenance	Activities to correct surface deficiencies and underlying layers that affect the safety, riding quality, and capital investment for both asphalt roadways and concrete roadways	\$19,242,557.00	9.34%	111
Roadside Maintenance	Activities to control vegetation within the right-of-way to prevent obstruction of sight distance or overhanging obstruction to the roadway, to control erosion, and to minimize fire hazards	\$17,870,368.00	8.68%	205
General Maintenance	Includes field maintenance supervision, training and safety meetings, control of outdoor advertising, maintenance analysis, bridge inspection, permit inspections, and vandalism cleanup	\$16,289,113.00	7.91%	156
Traffic Service Maintenance	Includes pavement striping, signal maintenance, sign maintenance, detail striping, highway lights, raised pavement markers, traffic control, guardrail maintenance, and sign shop; includes central office and district staff	\$15,945,406.00	7.74%	161

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
District Maintenance Administration	Involves all administrative and operational functions at the district level for the maintenance of roads and bridges; includes management, accounting, procurement, and warehouses/inventory	\$11,287,972.00	5.48%	410.75
General Physical Maintenance	Activities to restore roadway conditions/features necessitated by the occurrence of unusual or unforeseen events; includes mudjacking, ice/snow removal, pavement sweeping, storm damage, sand removal, minor slides, and cleanup of accidents, debris on roadway, and hazardous material spills	\$8,105,095.00	3.94%	113
Building Operations	Operations and maintenance for all MDOT buildings statewide, including weigh stations; includes central office and district staff	\$7,959,814.56	3.87%	95
Rest Areas and Hospitality Stations	Maintenance activities for rest areas and welcome centers-buildings, landscaping/ mowing, janitorial, security, etc.; does not include expenditures for MDA transfer	\$7,246,529.00	3.52%	11
Shoulder and Approach Maintenance	Maintenance activities that provide horizontal stability to the road base, conduct water away from the pavement edge, provide emergency parking area for vehicles, and safe access to roadways from private property and local streets	\$6,158,781.00	2.99%	71
Drainage Maintenance	Maintenance of ditches, channels, gutters, drains, culverts, storm sewers	\$4,840,782.00	2.35%	71
Maintenance Repair Projects (Highway)	Work required as a result of traffic accidents or major weather events that damage roads or property	\$4,339,298.00	2.11%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Bridge Maintenance	Preventative maintenance activities, such as keeping bridges clean of debris, controlling vegetation underneath bridges, and performing timely inspections; includes painting, steel pile encapsulation, removal of drift from bridge piling, replacing isolated board in a wooden deck, repairing broken hand rail or posts, correct settlement in approaches, cleaning, and correction of minor washouts or erosion	\$3,972,463.00	1.93%	31
Worker's Compensation Administration for Maintenance Employees	Claims paid out on employees assigned to maintenance program	\$2,934,075.00	1.42%	0
Building Repairs	Repairs to MDOT buildings and facilities	\$1,649,055.00	.80%	0
Central Traffic Engineering Administration	Oversight, administrative, and support functions of the Traffic Engineering Division, including developing guidance on the proper use of traffic control devices and advance safe and efficient traffic operations; also performs studies to determine necessary traffic control measures to address traffic operation problems and studies to establish appropriate speed zones; includes MS Lifesaver Program	\$1,554,369.00	.75%	21.5
Intelligent Transportation System (ITS) Traffic Management Center	Use of Intelligent ITS technologies and strategies to improve management and operations of the transportation system; includes operation of traffic management centers and the 511 system	\$1,282,004.00	.62%	4

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Central Maintenance Administration	Oversight, administrative, and support functions of the Maintenance Division, including development of uniform technical methods and standards for maintenance of roadways and bridges used by the districts, inspection for maintenance quality and conditions of roadways and bridges on the state-designated highway system, processing of claims or complaints relating to maintenance activities, maintenance budgeting, and coordination of maintenance reporting	\$1,141,607.00	.55%	14
Central Equipment Shop/Operations	Preventative maintenance, repair, and operation of vehicles and equipment for divisions located in Jackson Central Office Complex; includes central office and district staff	\$1,068,676.00	.52%	71
Welcome Centers Transfer to MDA	Transfer directed in annual appropriation to MDA for operating welcome centers (personnel, brochures, furniture, and phones)	\$950,000.00	.46%	0
Litter Prevention Educational Program	Provision of educational materials, including printed brochures, video presentations, and access to additional resources online, to students and teachers; program staff accounted for in maintenance administration	\$669,083.00	.32%	0
Beaver Control Transfer to Agriculture & Commerce	Transfer directed in annual appropriation to Department of Agriculture and Commerce for the Beaver Control or Eradication Program	\$650,000.00	.32%	0
Procurement for Maintenance Highway Contracts	Contract procurement activities for maintenance projects, including the processing of monthly contractor estimates for payment, contract compliance and oversight, project inspections, contract modifications, and contractor claims	\$242,276.00	.12%	5.75

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Radio Shop	Installation, maintenance, and repair of flashing light systems; radios; and wiring/mounting of equipment in enforcement vehicles and field vehicles; provision, testing, and maintenance of weather service radios at welcome centers; and maintenance, testing, and repair of emergency satellite units	\$163,320.35	.08%	2
Keep Mississippi Beautiful Litter Removal Program	Payments to "Keep Mississippi Beautiful" in accordance with state law requiring MDOT to have a statewide litter prevention program and as designated in MDOT's appropriation bill	\$163,256.66	.08%	0
Total Maintenance Budget Program Expenditures by Accountability Program		\$205,915,832.57	100%	
Bonded Debt Service				
HELP Bonds	Costs related to bond debt on the HELP bonds program (issuance costs, principal payments, and interest payments)	\$66,425,930.00	92.87%	0
State General Obligation (GO) Bonds	MDOT annual transfer (per statute) of \$5 million to the Highway Construction, Bridge Rehabilitation and State Aid Road Bond Sinking Fund until principal and interest on bonds is paid	\$5,000,000.00	6.99%	0
Master Lease Interest	Interest paid from the Debt Service Program; Master Lease Purchase Plan, managed by the DFA, for paying for high-cost equipment over five years, rather than depleting an agency's equipment budget in one year	\$96,607.00	.14%	0
Total Bonded Debt Service Budget Program Expenditures by Accountability Program		\$71,522,537.00	100%	

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Administration and Other				
Building Construction	Design, construction, additions, and betterments to buildings and facilities; includes architectural services	\$9,021,613.72	18.89%	8
Network and Database Operations	Network, computer support, database, and security; includes Microsoft Exchange server administration; Network and Data Center support; Oracle, Microsoft SQL and Sybase Database support; Service Desk PC deployment, repair, upgrade and support Mobile Device Management; includes the statewide network to support ITS equipment and the Traffic Management Center	\$4,572,043.06	9.57%	55
Road Machinery	Pavers, bulldozers, skid steers, front-end loaders, excavators, backhoes, drilling equipment, rollers, spreaders, motor graders, etc.	\$3,172,915.00	6.64%	0
Heavy-Duty and Specialty Vehicles	Truck-mounted specialized road working equipment, including spray trucks, tractor trucks, spreader trucks, under bridge inspection trucks, aerial bucket/platform lift trucks, asphalt trucks, dump trucks, and service body trucks	\$2,823,267.00	5.91%	0
Passenger Vehicles	Automobiles, SUVs, vans, and pickup trucks of less than 1 ton used for bridge inspection, construction inspection, crew and equipment transport, surveying, cargo delivery, traffic inventory, materials transport and testing, equipment maintenance and repair, roadside development, sign and signal maintenance, pool vehicles, and administrative use	\$2,805,264.00	5.87%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Enterprise Software Development and Support	Business process automation and improvement utilizing enterprise software, such as Microsoft, SharePoint, Exchange, Document Management, and Development Tools	\$2,639,062.33	5.53%	13
Other Equipment Management	Includes maintenance and shop equipment, traffic control and safety devices, compressors, generators, forklifts, cranes, road markers, radio equipment, furniture, etc.	\$2,067,433.00	4.33%	0
Financial Management	Activities concerned with maintaining records of the financial operations and transactions of the agency, such as accounting and interpreting financial transactions and account records; Accounts Payable; Accounting for revenues and fees; Travel and Payroll; Insurance Benefits; and Financial Reporting/GAAP; federal project billing; billing for other projects (MDA, HELP, GO, etc.)	\$1,911,980.02	4.00%	35
Human Resource Management	Recruitment, selection, performance management, and compliance management for all offices and districts statewide	\$1,662,055.31	3.48%	22
Internal and External Communications	Includes goMDOT website, internal newsletters, press releases, annual reports, advertising, constituent services, public relations, informational inquiries from the press and other organizations; provides the public with necessary resources to facilitate the safety of the traveling public, sufficient transparency, and the availability of adequate informational tools; also provides support for educational outreach programs	\$1,570,252.58	3.29%	11

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Executive Management	Consists of the Executive Director, 2 Deputy Executive Directors (Chief Engineer and Administrative Services), the Office of Intermodal Planning Director, 3 Assistant Chief Engineers and all direct support staff (the Office of Enforcement Director reports directly to the Executive Director but is part of the Law Enforcement Budget Program)	\$1,525,844.42	3.20%	17
Transportation Finance Software Development and Support	Application development and support for transportation-specific financial systems that meet federal billing requirements	\$1,454,200.39	3.05%	9
Farming and Landscaping Equipment	Includes tractors, mowers, chemical sprayers, tree trimmers, wood chippers, etc.	\$1,175,007.00	2.46%	0
Information Systems Equipment	Includes servers, network equipment, desktop computers, plotters, Computer-Aided Drafting and Design (CADD) equipment, printers, etc.	\$1,122,810.00	2.35%	0
Legal Division	Outside legal counsel fees, including eminent domain attorneys, title attorneys, and tort attorneys; includes expenditures on support staff and commodities for Attorney General personnel	\$1,022,906.81	2.14%	1
Mail, Records Management, and Other General Agency Support	Other support functions, including mail room, meeting room management, map sales, administration personnel, and records management	\$840,180.02	1.76%	14
Master Lease Principal	Principal paid from the Debt Service Program	\$814,757.00	1.71%	0
Print Shop	Design, printing, and binding of departmental design plans, bid proposals, maps, contracts, manuals, annual reports, etc.	\$782,805.30	1.64%	9

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Mississippi Transportation Commission	Three-member elected commission representing the electorate in the Northern, Central and Southern districts of the State (as defined by the Supreme Court Districts), per state law responsible for planning, developing, and coordinating a comprehensive, balanced intermodal transportation policy for the state; includes the three elected Commissioners, the Secretary to the Commission, and support staff, all funded through MDOT	\$657,531.31	1.38%	11
General Agency Worker's Compensation Administration	MDOT's self-funded worker's compensation insurance program, which retains a Workers' Compensation Administrator on contract; includes claims paid out on employees assigned to the administration program and cost to retain an Administrator	\$611,775.37	1.28%	3
Transportation Geographic Information Systems	Activities to facilitate the use of geospatially enabled data throughout MDOT including software support, technical guidance and initial data acquisition for geospatial data through the use of enterprise applications and network data storage	\$574,956.19	1.20%	4
Agency Contract Worker FICA/Medicare	FICA and Medicare withholding/payment on contract workers	\$515,2805.77	1.08%	0
General Agency Procurement	Oversees all procurement activities for equipment, commodities, and services except engineering services, information technology, and construction contracts and the procurement of buses for the public transit grant program	\$487,345.78	1.02%	12

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Procurement for Engineering Services Contracts	Administration of all nontechnical aspects related to the selection of engineering firms in accordance with federal regulations; includes administration of the selection process, contract execution, invoice processing, correspondence related to the contract, supplemental agreements, and performance evaluations	\$475,688.10	1.00%	8
Civil Rights Administration	Activities related to administrative and support functions of the division; includes oversight of the agency's Title VI activities, internal Equal Employment Opportunity compliance, and the American with Disabilities Act compliance	\$423,286.08	.89%	7
Asset Management	All activities required to properly classify, inventory and maintain MDOT assets	\$419,346.77	.88%	8
State Agency Fees	Fees paid to the Attorney General's office and DFA/MMRS for services provided in FY 2016	\$414,944.25	.87%	0
Engineering Equipment	Engineering equipment, including levels, lab testing equipment, research equipment, etc.	\$412,440.00	.86%	0
Budget	Supervising budget planning, formulation, control and analysis, and cash forecasting	\$307,953.24	.64%	5
Information Technology Administration	All administrative and support functions for information systems division	\$289,028.62	.61%	5
Federal Highway Grant Administration	Maintains project schedules, project funding management plan and oversees all projects that receive federal aid funds	\$231,662.45	.49%	5
Transportation Engineering Software Development and Support	Application development and support for transportation-specific engineering software that meet federal regulations and guidelines	\$217,446.91	.46%	7
Procurement for Information Technology	Oversees all procurement activities for equipment, commodities, and services for information technology purchases	\$214,551.91	.45%	4

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Training and Development	Plans, coordinates, and delivers training programs to MDOT employees; MDOT Training and Development staff liaisons with the State Personnel Board (SPB) Training and Development Office and maintains employee training transcripts	\$174,733.82	.37%	3
Internal Audit	Audits and desk reviews of third-party contracts and sub-recipients who receive federal funds passed through the MDOT; upon request, performs independent appraisals of MDOT divisions and districts to ensure compliance with MDOT policies and procedures and applicable federal and state laws and regulations; the reliability, accuracy and completeness of division/district records and reports; and the proper protection and use of funds and resources	\$170,260.33	.36%	2.8
Employee Assistance Program	The cost of a confidential, voluntary counseling program at no cost to MDOT employees and dependent family members	\$102,996.96	.22%	0
External Audit Fees	Fees paid for professional auditing services in conjunction with rendering audit reports on federal programs of MDOT	\$67,652.24	.14%	0
Total Administration and Other Budget Program Expenditures by Accountability Program		\$47,753,278.06	100%	

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Aeronautics and Rails				
Federal Transit Administration Grant Program	Aims to enhance mobility for seniors and persons with disabilities; to provide capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000; and to provide capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities	\$19,263,427.00	55.98%	12.25
Ports and Waterway Multimodal Transportation Improvement Program (MTIP)	Improvement projects funded through the MTIP; a competitive selection process, whereby port owners submit applications for projects, which are reviewed and approved by a committee composed of seven port directors appointed by the President of the Mississippi Waters Resource Association, Executive Director of the Mississippi Waters Resource Association, and the Executive Directors of the MDA and MDOT	\$5,440,651.00	15.81%	0
Aeronautics Multimodal Transportation Improvement Program (MTIP)	Airport improvement projects funded through the MTIP; a competitive process whereby airport owners submit applications for projects, which are reviewed and approved by a seven-member committee composed of (five airport directors appointed by the President of the Mississippi Airports Association, and the Executive Directors of the MDA and MDOT)	\$4,118,163.00	11.97%	0

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Public Transit Multimodal Transportation Improvement Program (MTIP)	Transit improvement projects funded through the MTIP; a competitive process whereby operators of federally funded transportation services submit applications for projects, which are reviewed and approved by a committee composed of three directors of transit systems appointed by the President of the Mississippi Public Transit Association, and the Executive Directors of the MDA and MDOT	\$1,551,731.00	4.51%	0
Federal Aviation Administration Airport Improvement Program	Airport planning, construction, and development projects	\$1,521,518.00	4.42%	0
Rails Multimodal Program	Railroad improvement projects funded through the Multimodal Transportation Improvement Program; a competitive process whereby railroad owners submit applications for projects, which are reviewed and approved by a committee composed of the publicly owned railroad directors, and the Executive Directors of the MDA and MDOT	\$1,402,977.00	4.08%	0
Railroad Loan Program Oversight	Administration costs to oversee the railroad revitalization loan program (which is in a separate fund)	\$422,055.00	1.23%	.5
Ports and Waterways Administration	MDOT's costs to fulfill its oversight responsibilities of the state's ports and the Multimodal Transportation Improvement Program	\$293,678.00	.85%	4
Aeronautics Administration	MDOT's costs to oversee and administer the FAA Grant Program and the Multimodal Transportation Improvement Program	\$261,077.00	.76%	3

Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Public Transit Administration	MDOT's costs to oversee, administer, and audit the FTA Grant Program and the Multimodal Transportation Improvement Program	\$133,904.00	.39%	1
Total Aeronautics and Rails Budget Program Expenditures by Accountability Program		\$34,409,181.00	100%	
Law Enforcement				
Weight and Safety Enforcement	Activities to enforce the weight laws that protect and prolong the lifespan of the state-owned roads and bridges; includes weigh stations, portable scales, law enforcement officers, and commodities, e.g., fuel, vehicle maintenance, and uniforms	\$11,718,001.78	77.23%	177
Enforcement Administration	Responsible for fiscal accountability, personnel, permit programs, and scale maintenance	\$2,339,025.72	15.42%	12
Permits for the Enforcement Division	Issues harvest permits, over-dimensional permits (blanket and oversize/overweight), legal trip permits, governmental haul permits, and intrastate registration	\$605,748.95	3.99%	14
Rail Safety and Inspections	Inspections of all public at-grade railroad crossings for conformity with federal safety standards; conducted to verify that the signage, pavement markings and other traffic control devices are in compliance with the current national design standards	\$282,795.75	1.86%	7

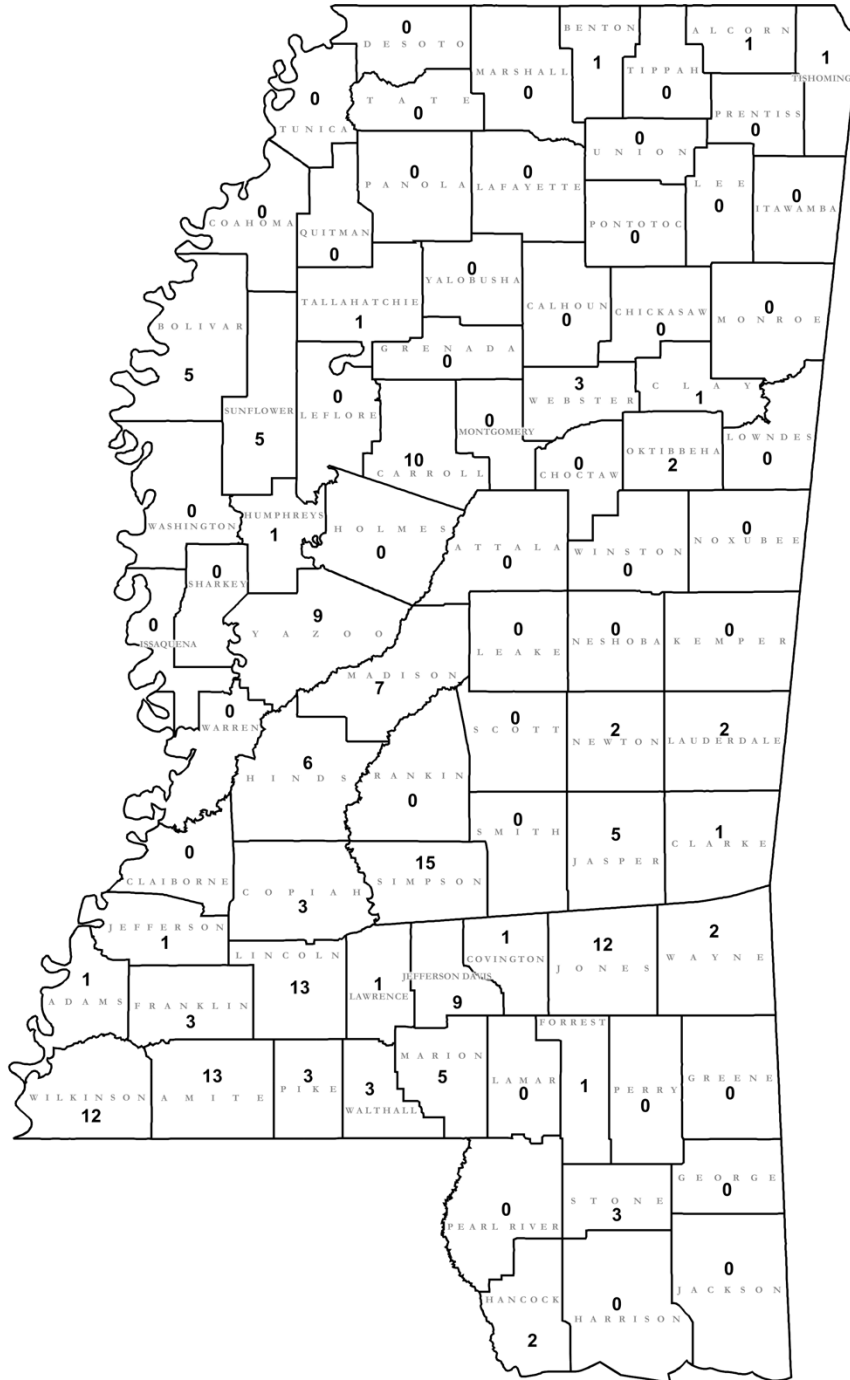
Accountability Program	Description	Expenditures	Percentage of Total Expenditures by Budget Program	FTEs
Overweight Penalties/Fines Appeals Board	MDOT's costs to support the Appeals Board process available to any person that feels aggrieved by a penalty assessed for excess weight or failure to obtain appropriate permits	\$226,384.82	1.49%	0
Total Law Enforcement Budget Program Expenditures by Accountability Program		\$15,171,957.02	100%	

Note: Percentages rounded to the nearest hundredth.

SOURCE: PEER analysis of data provided by MDOT to PEER's Performance Accountability Office as of November 2017.

For more information regarding PEER's program inventory effort, see the Measuring Mississippi Data Analysis Tool at <https://applocation.shinyapps.io/PerformanceWebapp/>.

Appendix F: Bridge Closures under New Timber Bridge Inspection Contracts



SOURCE: Map compiled by PEER/Standing Joint Legislative Committee on Reapportionment from information provided by the Federal Highway Administration.

Agency Responses

Melinda L. McGrath
Executive Director

P. O. Box 1850
Jackson, MS 39215-1850
Telephone (601) 359-7249
FAX (601) 359-7050
GoMDOT.com



James A. Williams, III
Deputy Executive Director/Chief Engineer
Lisa M. Hancock
Deputy Executive Director/Administration
Willie Huff
Director, Office of Enforcement
Charles R. Carr
Director, Office of Intermodal Planning

March 27, 2018

Mr. James A. Barber
Executive Director
Joint Committee on Performance Evaluation
and Expenditure Review (PEER)
P.O. Box 1204
Jackson, MS 39215-1204

Dear Mr. Barber:

Thank you for the opportunity to review the draft copy of *Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction*. I appreciate the hard work and professionalism demonstrated by your staff during this review.

We agree that transparency is a cornerstone of responsible government. As noted in your report, MDOT staff has worked diligently to implement recommendations from the 2014 PEER report regarding transparency of our project prioritization process and providing real-time online access to the Five Year plan. We will continue to ensure that our written policies documenting the project prioritization process are clear and thorough as we transition to new data systems. As also recommended in this report, we will focus on increasing communication to the public by making performance measures easily available on our website through a dashboard. We are accomplishing many great things at the department and better communication of our performance measures will increase the transparency of how we are spending the taxpayer's dollar.

Regarding the report's recommendation on county bridge inspections, MDOT will work with the Federal Highway Administration (FHWA) and assist the Office of State Aid Road Construction (OSARC) to revise their County Engineer bridge inspection contracts prior to execution of the state FY 2019 contracts to emphasize all federal guidelines. Additionally, MDOT is working with FHWA and OSARC to schedule training for County Engineers on load rating bridges. FHWA will provide quality assurance through process reviews of the OSARC bridge inspection data and MDOT will assist FHWA as needed.

Transportation: The Driving Force of a Strong Economy

Mr. James A. Barber
Page 2
March 27, 2017

I was disappointed that the report did not include any recommended actions at the local level regarding county bridge inspections and the enforcement of posted bridge limits. The state is in the midst of a major public safety crisis especially with county bridges that are already on average 25 years beyond life expectancy and deteriorating at an increasingly rapid pace due to repeated use by vehicles weighing more than the restricted weight limit. A bridge posting limits the maximum vehicular weight a bridge can safely hold without causing further damage. Posted local bridges are generally inspected annually, and the bridge is safe for the restricted weight and should remain safe within the inspection cycle provided all vehicles crossing the bridge do not exceed the posted weight limit. Unfortunately, these bridge postings are routinely ignored and rarely enforced. As the number of overweight vehicles crossing posted bridges increases, the structural damage increases; the more weight the vehicle is over the restricted limit, the greater the structural damage. As a result, posted bridges may become unsafe between inspection cycles. Once a bridge has been compromised to the point of failure, every vehicle traveling over the bridge is at risk; therefore, the bridge must be closed. County officials and local law enforcement must work hand in hand to enforce posted load limits.

Once again, I appreciate the diligence and effort expended by your staff in compiling this report. Please contact me at (601) 359-7002 if I can be of any further assistance.

Sincerely,



Melinda L. McGrath, PE
Executive Director

MLM:JL:ce



**OFFICE OF
STATE AID ROAD CONSTRUCTION**

P. O. BOX 1850
JACKSON, MISSISSIPPI 39215-1850

H. Carey Webb, P.E.
State Aid Engineer
Telephone (601) 359-7150
www.msstateaidroads.us

412 E. Woodrow Wilson Avenue
Jackson, Mississippi 39216
Fax (601) 359-7141
mail@osarc.ms.gov

March 28, 2018

James A Barber, Executive Director
PEER Committee
501 North West Street
Woolfolk Building, Suite 301-A
Jackson, Mississippi 39201

Dear Mr. Barber:

Thank you for the opportunity to review the draft PEER report entitled *Selected Issues: Mississippi Department of Transportation and the Office of State Aid Road Construction*. As you know, the Office of State Aid Road Construction (OSARC) is charged with the responsibility of administering, at the state level, the State Aid Program (SAP) and the Local System Bridge Replacement and Rehabilitation Program (LSBP) to benefit the Counties. As such, OSARC does not have ownership or operational authority on any road or bridge in the State, but administers funds as allocated to the Counties by State and Federal Law. OSARC is responsible for certain oversight through the SAP and LSBP programs, as well as federally required bridge inspections. The powers of the State Aid Engineer are with reference to the expenditures of state funds and are not intended to interfere in any way with the constitutional jurisdiction of any board of supervisors.

In regards to the recommendations in the report addressing county bridge inspections, OSARC will work with Federal Highway Administration (FHWA) and Mississippi Department of Transportation (MDOT) to ensure federal guidelines are adhered to, provide additional training for County Engineers, and increase quality assurance procedures as it relates to bridge inspections. As stated above, actions taken by OSARC may be limited, as the ultimate responsibility for bridge inspections and bridge posting limits belong to the County officials at the local level. However, OSARC, with the assistance of FHWA and MDOT, will continue to evaluate our procedures in an effort to ensure state and federal guidelines are met.

Again, I appreciate the opportunity to review the draft report and provide feedback. I have the utmost respect for the professionalism shown by your staff in compiling information for this report. If I may be of any assistance to you and the committee, please do not hesitate to contact me.

Sincerely,

H. Carey Webb, P.E.
State Aid Engineer

PEER Committee Staff

James A. Barber, Executive Director

Legal and Reapportionment

Ted Booth, General Counsel
Ben Collins
Barton Norfleet

Administration

Alicia Russell-Gilbert
Deborah Hardy
Gale Taylor

Quality Assurance and Reporting

Tracy Bobo
Kelly Saxton

Performance Evaluation

Lonnie Edgar, Principal Analyst
David Pray, Principal Analyst
Jennifer Sebren, Principal Analyst
Kim Cummins
Matthew Dry
Samuel Hearn
Matthew Holmes
Sarah Williamson
Julie Winkeljohn
Ray Wright

Performance Accountability

Linda Triplett, Director
Kirby Arinder
Debra Monroe-Lax
Meri Clare Steelman

