

Special Report

Arkansas Legislative Audit

Review of Sources and Uses of Funds

Arkansas Department of Transportation

For the Period July 1, 2009 through June 30, 2016 and
Projected for Fiscal Years 2017 through 2020



INTRODUCTION

This report is presented in response to a request for Arkansas Legislative Audit (ALA) to review information, estimates, and calculations provided by the Arkansas Department of Transportation (ARDOT), formerly known as the Arkansas State Highway and Transportation Department, related to highway funding. ARDOT has indicated that additional state funding is needed to fully maximize available federal funds and to expand non-federal construction and maintenance projects.

OBJECTIVES

The objectives of this report were to:

1. Provide information regarding state funding sources and uses for highways, with associated construction and maintenance costs, for prior years.
2. Determine the amount of matching funds needed annually in order for ARDOT to receive the maximum federal aid available.
3. Determine the amount of additional state revenues needed to fund ARDOT's proposed construction and maintenance program for roads and facilities.
4. Provide a history of bond issuances, including balances and associated costs.

SCOPE AND METHODOLOGY

This report was prepared by reviewing activities for state fiscal years ended June 30, 2010 through 2016, and projections and estimates for federal fiscal years ending September 30, 2017 through 2020. ALA staff reviewed audit reports from prior years, particularly revenues and expenditures related to construction, and determined future federal funding from reports obtained from the Federal Highway Administration. All information for additional construction and maintenance projects was provided by ARDOT and tested for accuracy and reasonableness by ALA staff.

The methodology used in preparing this report was developed uniquely to address the stated objectives; therefore, this report is more limited in scope than an audit or attestation engagement performed in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States.

BACKGROUND

ARDOT recognizes revenues from both federal and state sources. State revenues include motor fuel taxes, registration fees, natural gas severance fees, and overload permits and penalties. Many highway construction projects are funded with both federal and state monies. The percentage of state participation in these projects varies depending on the federal program involved, but most programs require a 20% match.

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Report ID: SPSA02516

Report Date: August 31, 2017



Additionally, ARDOT conducts highway construction and maintenance projects without assistance of federal aid.

RESULTS OF REVIEW

The results of ALA staff review are discussed below by objective.

Objective 1: Provide Information Regarding State Funding Sources and Uses for Highways

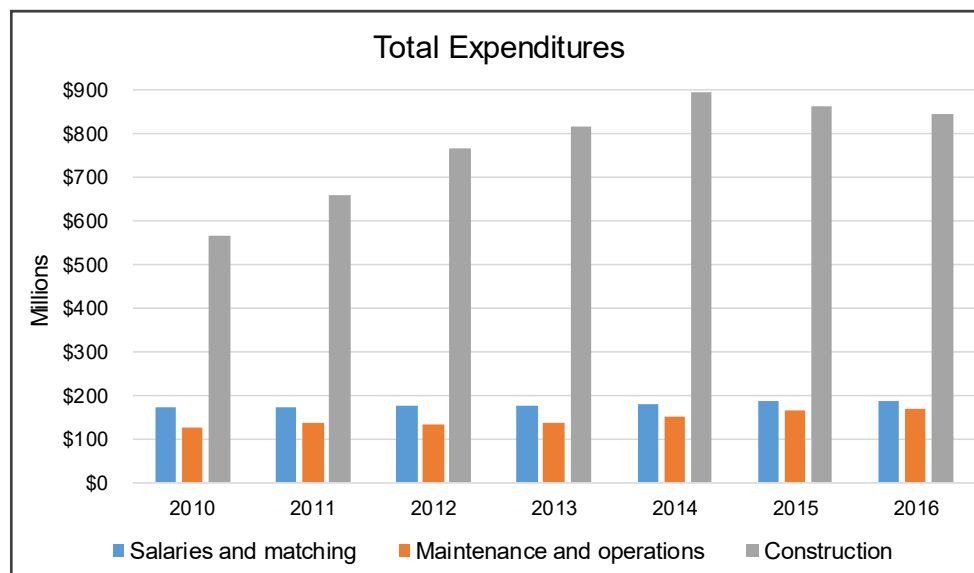
Exhibit I provides a summary of total state and federal expenditures for construction costs for fiscal years 2010 through 2016. **Appendix A** provides comparative state revenue and expenditure information related only to state funds available to match federal funds available for construction. **Exhibit II on page 3** provides additional information related to the change in ARDOT's unencumbered balance (i.e., available cash) for the State Highway and Transportation Fund (RRA Fund) for fiscal years 2010 through 2017.

All funds for highway construction and maintenance are accounted for by ARDOT in the RRA Fund, which is ARDOT's primary operating fund. All financial transactions are recorded in the Arkansas Administrative Statewide Information System (AASIS). ALA staff examined revenues and expenditures recorded in AASIS for fiscal years 2010 through 2016. Additionally, ALA staff reviewed projected revenues and expenditures for fiscal years 2017 through 2020, prepared by ARDOT using its in-house general ledger system, for consistency and reasonableness when compared with prior years.

Exhibit I

Arkansas Department of Transportation (ARDOT) Total State and Federal Expenditures For Fiscal Years 2010 through 2016

	Fiscal Year						
	2010	2011	2012	2013	2014	2015	2016
Salaries and matching	\$ 171,500,000	\$ 173,900,000	\$ 174,300,000	\$ 177,300,000	\$ 178,900,000	\$ 186,300,000	\$ 188,400,000
Maintenance and operations	127,100,000	137,200,000	133,100,000	137,200,000	152,200,000	163,700,000	169,000,000
Construction	564,400,000	659,500,000	765,900,000	815,700,000	896,600,000	861,400,000	846,900,000
Total Expenditures	\$ 863,000,000	\$ 970,600,000	\$ 1,073,300,000	\$ 1,130,200,000	\$ 1,227,700,000	\$ 1,211,400,000	\$ 1,204,300,000



Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Exhibit II

**Arkansas Department of Transportation (ARDOT)
State Highway and Transportation Fund (RRA Fund) Cash Balance Encumbrances
For Fiscal Years 2010 through 2017**

Year Ended June 30,	Cash Balance	ArDOT Encumbrances						Unencumbered Balance
		Construction Projects	GARVEE Bonds	Fayetteville Shale	Transportation Lease Program	Monthly Operations	Building Projects	
2010	\$290,600,000	\$180,000,000		\$2,300,000	\$ 1,100,000	\$31,400,000	\$10,000,000	\$ 65,800,000
2011	341,300,000	180,000,000		6,100,000	900,000	32,200,000	10,000,000	112,100,000
2012	298,400,000	180,000,000		7,800,000	1,200,000	29,400,000	10,000,000	70,000,000
2013	426,500,000	180,000,000	\$183,300,000	9,000,000	1,000,000	30,000,000	10,000,000	13,200,000
2014	434,000,000	180,000,000	251,800,000	11,600,000	1,100,000	31,000,000	10,000,000	(51,500,000)
2015	522,400,000	180,000,000	322,700,000	13,800,000	1,500,000	33,000,000	10,000,000	(38,600,000)
2016	389,400,000	180,000,000	217,200,000	14,100,000	2,100,000	33,300,000	10,000,000	(67,300,000)
2017	361,900,000	180,000,000	110,400,000	14,600,000	2,400,000	33,000,000	10,000,000	11,500,000*

Construction Projects - These funds are encumbered to pay contractors for the work performed on construction contracts. After first using state funds to pay contractors, ArDOT may request reimbursement for the federal portion of the contract.

GARVEE Bonds - Grant Anticipation Revenue Vehicle (GARVEE) bonds allow states to pledge future federal funds to retire general obligation bond debt, a practice that had not been allowed before the late 1990s. This is the remaining balance from the GARVEE bonds that were sold as part of the 2011 Interstate Rehabilitation Program and can only be used for specified projects.

Fayetteville Shale - These funds are from the maintenance fees paid by companies drilling wells in the Fayetteville Shale area and are encumbered for maintenance activities on highways in this area.

Transportation Lease Program - These funds are encumbered for a revolving loan fund to purchase vans and buses for public transportation by cities and private nonprofit agencies. This program requires a 100% reimbursement from the city or nonprofit agency.

Monthly Operations - These funds are encumbered for salaries, travel, and road maintenance costs.

Building Projects - These funds are encumbered for programmed projects to construct buildings for maintenance headquarters, weigh stations, and resident engineer offices.

*Unencumbered balance increased due to \$41.5 million received from the Arkansas Highway Improvement Plan of 2016 and reduction of funds due on GARVEE bonds.

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Objective 2: Determine the Amount of Matching Funds Needed Annually for ARDOT to Receive Maximum Federal Aid

Appendix B summarizes actual federal aid received for federal fiscal year 2016 and estimated federal aid to be received for federal fiscal years 2017 through 2020, with amounts of state matching funds required to receive all federal aid for which ARDOT is entitled. ALA staff examined computational and estimated apportionment tables published by the Federal Highway Administration for the Fixing America's Surface Transportation (FAST) Act to determine the amount of federal aid ARDOT will receive for federal fiscal years 2017 through 2020. The FAST Act administers funds from several different programs, the largest of which are the National Highway Performance Program and the Surface Transportation Block Grant. Most programs or projects require state matching of 20% of total costs.

ALA staff also reviewed federal aid received by ARDOT for federal fiscal year 2016 and determined that the additional state funding received through the Arkansas Highway Improvement Plan, created by Act 1 of the Third Extraordinary Session of 2016, was necessary for matching purposes. Without the additional funding of \$41.5 million, as noted on **Appendix A**, ARDOT would have been \$26 million short of required state matching funds, which would have caused the State to forfeit \$104 million in available federal funding for that fiscal year. For subsequent fiscal years, ARDOT has estimated that the Arkansas Highway Improvement Plan could result in additional funding of (a) up to \$28.1 million via a transfer from the Arkansas Highway Transfer Fund (\$20 million), redirected diesel fuel tax from general revenue (\$2.7 million), and the elimination of the State Central Services Fund fee charged on the 1/2 cent sales tax to repay bonds (\$5.4 million) and (b) 25% of any state budget surplus.

Objective 3: Determine the Amount of Additional State Revenues Needed to Fund Proposed Construction and Maintenance Program

The total amount needed to meet the additional, proposed construction program is \$478 million per year, as shown in **Exhibit III**. ARDOT has established a construction and maintenance program based on system preservation for pavement and bridges, capacity relief, safety improvements, and maintenance. **Exhibit IV on page 5** summarizes the anticipated average amount of federal and state funding available for construction for fiscal years 2016 through 2020 after all fixed expenditures.

Exhibit III

Arkansas Department of Transportation (ARDOT) Summary of Annual State Funds Needed to Meet Proposed Highway Construction Plan Over a 10-Year Period

Description	Annual Funds Needed for Highway Construction Plan	Annual Funds Available for Highway Construction	Additional Annual State Revenues Needed for Highway Construction Plan
System Preservation			
Pavement	\$ 387,000,000	\$ 137,000,000	\$ 250,000,000
Bridges	117,000,000	90,000,000	27,000,000
Total System Preservation	504,000,000	227,000,000	277,000,000
Capacity Relief	305,000,000	157,000,000	148,000,000
Safety Improvements	86,000,000	44,000,000	42,000,000
Maintenance			
Equipment upgrades	19,000,000	19,000,000	
Facilities upgrades	8,000,000		8,000,000
Intelligent Transportation System (ITS)	3,000,000		3,000,000
Total Maintenance	30,000,000	19,000,000	11,000,000
Totals	\$ 925,000,000	\$ 447,000,000	\$ 478,000,000

Note: Amounts shown are rounded.

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

ALA staff reviewed supporting documentation obtained from ARDOT to verify that costs for the projects were reasonable, based on historical information. ARDOT was able to provide support for all cost calculations included in the proposed construction and maintenance program for roads and facilities. A description and discussion of each category noted in **Exhibit III**, which summarizes the usage of current and any additional state funding, is provided in the sections that follow.

System Preservation - Pavement

The System Preservation - Pavement category consists of highway system road repair or replacement projects that ARDOT has deemed necessary. The highway system is comprised of two categories:

- The Arkansas Primary Highway Network (APHN) – Contains the National Highway System (NHS), which is made up of interstates, federal highways, and other principal arterials, as well as other arterial highways, critical service routes, and other high-traffic routes. **Appendix C** presents a map of the APHN.

Exhibit IV

**Arkansas Department of Transportation (ARDOT)
Anticipated Average Annual Construction Funds Available
For Fiscal Years 2016 through 2020**

Description	Amount (Note)
Average Annual Federal Revenue	\$ 535,000,000
Average Annual State Revenue	455,000,000
Total Annual Federal and State Revenues	990,000,000
Less Federal Funds for:	
Fixed budgeted expenditures	30,000,000
Non-construction Programs:	
Statewide planning and research	11,000,000
Metropolitan planning	2,000,000
Surface transportation set aside	10,000,000
Surface transportation set aside - recreation trails	2,000,000
Right-of-way and utilities	25,000,000
Obligation limitation	25,000,000
Total Reduction - Federal Funds	105,000,000
Less State Funds for:	
Fixed operating expenditures	318,000,000
State match for non-construction programs	3,000,000
Total Reduction - State Funds	321,000,000
Less Federal and State Funds for:	
Interstate Rehabilitation Program (IRP)	100,000,000
4¢ diesel fuel tax	17,000,000
Total Reduction - Federal and State Funds	117,000,000
Total Annual Funds Available for Highway Construction	\$ 447,000,000

Note: Amounts shown are rounded.

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

- The Non-Arkansas Primary Highway Network (Non-APHN) – Contains all other state roads that are not part of the APHN.

Pavement performance data are collected using a vehicle equipped with tools that provide pavement condition data and a visual record of the state highway system. Data are used to compile a Pavement Condition Index (PCI). The PCI is a tool developed by ARDOT to determine the condition of a pavement section relative to other pavement sections using a 0 to 100 score based on roughness, rutting, and cracking. For asphalt-surface pavements, roughness is weighted at 50%, while rutting and cracking are weighted at 25% each, because the public considers smoothness to be the most important characteristic of pavement; the PCI for concrete pavements is solely based on roughness. The PCI values for asphalt-surface pavements and concrete pavements are categorized by A, B, C, D, and F grades using the parameters shown at right, as developed by ARDOT. ALA staff reviewed PCI calculations, verified each pavement section was classified properly according to the grading scale, and noted no exceptions. **Exhibit V on page 6** provides a summary of conditions for the Arkansas Highway System, and **Exhibit VI on page 6** provides a 10-year summary of pavement rehabilitation costs.

A > 0 and <= 15
B > 15 and <= 30
C > 30 and <= 45
D > 45 and <= 60
F > 60

Exhibit V

Arkansas Department of Transportation (ARDOT) Arkansas Highway System Conditions As of June 30, 2017

Lane Miles					
PCI Grade	Arkansas Primary Highway Network (APHN)*			Non-APHN	Total
	National Highway System (NHS)		Non-NHS		
	Interstate	Non-Interstate			
A	1,027	260	113	79	1,479
B	1,239	1,907	1,206	718	5,070
C	611	2,689	3,282	3,176	9,758
D	228	1,896	3,483	6,318	11,925
F	98	923	1,757	6,322	9,100
Total Lane Miles	3,203	7,675	9,841	16,613	37,332

PCI = Pavement Condition Index

*The APHN contains the NHS (i.e., interstates, federal highways, and other principal arterials) as well as other arterial highways, critical service routes, and other high-traffic routes.

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Exhibit VI

Arkansas Department of Transportation (ARDOT) Summary of Pavement Rehabilitation Costs Over a 10-Year Period As of June 30, 2017

Non-Interstate National Highway System (NHS) (Bring to B Level)			
Pavement Condition	Lane Miles	Treatment Cost Per Mile	Total Cost
C	2,689	\$ 93,000	\$ 250,077,000
D	1,896	130,000	246,480,000
F	923	320,000	295,360,000
Total Non-Interstate NHS Rehabilitation Costs			791,917,000
Non-NHS Arkansas Primary Highway Network (APHN) (Bring to C Level)			
Category	Lane Miles Amount	Treatment Cost Per Mile	Total Cost
D	3,483	122,000	424,926,000
F	1,757	305,000	535,885,000
Total Non-NHS APHN Rehabilitation Costs			960,811,000
Non-Arkansas Primary Highway Network (Bring to C Level)			
Category	Lane Miles Amount	Treatment Cost Per Mile	Total Cost
D	6,318	85,000	537,030,000
F	6,322	250,000	1,580,500,000
Total Non-APHN Rehabilitation Costs			2,117,530,000
Total Rehabilitation Costs			\$ 3,870,258,000
Annual Rehabilitation Costs			\$ 387,025,800

Note: Pavement rehabilitation for interstates is not included because it is funded by bond issues.

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

System Preservation - Bridges

The state highway system contains 7,282 bridges that ARDOT is responsible for replacing, maintaining, and preserving. The average age for all bridges is 45 years old, with the majority of these designed for a 50-year life. Bridges are designated for replacement if inspection indicates they are structurally deficient or posted. A bridge is considered structurally deficient when significant load-bearing elements are found to be in poor condition or the waterway adequacy (i.e., the ability of the bridge to remain open to traffic during varying levels of flooding) is insufficient. A bridge is considered posted when vehicle weight is restricted to a level that can safely cross without overstressing any of the bridge components.

ARDOT has established a 10-year bridge replacement schedule, costing \$97 million annually, based on inspections conducted. Additionally, to extend the useful service life of bridges, ARDOT has established a preservation schedule, costing \$20 million annually, that includes painting, deck overlays, and joint sealing. Based on review of inspection reports and cost estimates for the replacement and preservation schedules, ALA staff determined that the bridges listed met the criteria established by ARDOT for repair or replacement. Cost estimates were determined by ARDOT using historical data for previously-completed bridge projects and were found to be reasonable.

Capacity Relief

Capacity relief refers to either capital improvement or Level of Service (LOS) projects proposed by ARDOT to relieve congestion. To identify capacity relief needs, the type of roadway for each highway segment was first identified using information from ARDOT's roadway inventory database. Data elements included number of lanes, access control, and route area (i.e., rural or urban). Based on the data, every route was assigned into one of the categories below:

- Rural Freeway.
- Urban Freeway.
- Rural Multi-Lane.
- Rural Two-Lane Highway.
- Rural Two-Lane Highway with Passing.
- Urban Arterial.

Once ARDOT determined the roadway type, traffic volumes were projected for each segment using average daily traffic volumes and historical growth rates for each of ARDOT's 10 districts. Congestion is typically described using LOS, a measure that assigns a grade (LOS A through LOS F) to the operational performance of a roadway. To determine the LOS of each segment of highway, ARDOT developed threshold tables using the National Highway Capacity Manual. These tables, which were customized to represent typical Arkansas conditions, establish the maximum volume for each roadway type. Generally, LOS C or better in rural areas and LOS D or better in urban areas are considered acceptable.

Once the LOS of each highway segment was determined, all segments that did not meet the acceptable threshold were identified as needing capacity relief improvements. To estimate improvement costs, a per-mile cost to add two additional lanes to each segment was calculated based on recent widening projects (\$3.6 million per mile in rural areas or \$5 million per mile in urban areas). The cost of right-of way, utility relocations, preliminary engineering, and construction inspection was also estimated as a percentage of the construction cost, again based on recent projects. Finally, a 20% contingency was added to account for additional expenses such as bridges, difficult topography, floodplain issues, and environmental constraints.

ALA staff reviewed supporting documentation provided by ARDOT to verify that highway segments met the criteria for widening established by ARDOT and tested the cost per mile figures to determine reasonableness and accuracy. No exceptions were noted. **Exhibit VII on page 8** summarizes the costs for capacity relief.

Exhibit VII

Arkansas Department of Transportation (ARDOT)
Summary of Capacity Relief Improvements Costs Over a 10-Year Period
As of June 30, 2017

	Freeway		Other		Total Cost
	Rural	Urban	Rural	Urban	
Miles of capacity relief improvements	71	91	154	134	
Cost per mile	\$ 3,600,000	\$ 5,000,000	\$ 3,600,000	\$ 5,000,000	
Construction cost	255,600,000	455,000,000	554,400,000	670,000,000	\$1,935,000,000
Right-of-way and utilities (17% Rural and 20% Urban)	43,452,000	91,000,000	94,248,000	134,000,000	362,700,000
Preliminary engineering (5% Rural and 4% Urban)	12,780,000	18,200,000	27,720,000	26,800,000	85,500,000
Construction inspections (9% Rural and 8% Urban)	23,004,000	36,400,000	49,896,000	53,600,000	162,900,000
Total construction costs before contingency	334,836,000	600,600,000	726,264,000	884,400,000	2,546,100,000
Contingency costs (20%)	66,967,200	120,120,000	145,252,800	176,880,000	509,220,000
Total Capacity Relief Improvement Costs	\$ 401,803,200	\$ 720,720,000	\$ 871,516,800	\$ 1,061,280,000	\$ 3,055,320,000
Annual Capacity Relief Improvement Costs	\$ 40,180,320	\$ 72,072,000	\$ 87,151,680	\$ 106,128,000	\$ 305,532,000

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Safety Improvements

ARDOT is responsible for the safety performance of all public roads in the state, regardless of ownership, per Federal Highway Administration regulations. As a result, ARDOT established a safety program to reduce fatalities on state roadways and identified potentially life-saving highway improvements, such as rumble strips, high friction surface treatments, signage, geometric improvements (e.g., straightening roads), and raised pavement markers. Based on ARDOT determinations, \$86 million will be required annually for a 10-year period to make the improvements and reduce fatalities. ALA staff compared cost estimates associated with each type of improvement, as noted in **Exhibit VIII**, to current ARDOT construction projects and found these cost estimates to be reasonable.

Exhibit VIII

Arkansas Department of Transportation (ARDOT)
Summary of Safety Improvement Costs Over a 10-Year Period
As of June 30, 2017

Improvement Project	State Highway System	Non-State Highways	Total Cost
Widening and geometric improvements	\$ 300,000,000		\$ 300,000,000
Striping	128,000,000	\$ 44,200,000	172,200,000
Pedestrian improvements	50,000,000	50,000,000	100,000,000
Sign retroreflectivity maintenance	41,100,000	41,100,000	82,200,000
Raised pavement markers	49,400,000		49,400,000
Education and enforcement	35,000,000	10,000,000	45,000,000
Signage upgrades	21,800,000	21,800,000	43,600,000
Shoulder rumble strips	16,500,000	11,500,000	28,000,000
Center rumble strips	9,200,000	9,700,000	18,900,000
High-friction surface treatments	11,400,000		11,400,000
Tree removal	5,900,000	2,900,000	8,800,000
Total Safety Improvement Costs	\$ 668,300,000	\$ 191,200,000	\$ 859,500,000
Annual Safety Improvement Costs	\$ 66,830,000	\$ 19,120,000	\$ 85,950,000

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Maintenance - Equipment Upgrades

ARDOT's equipment purchase budget was \$12 million annually until the end of fiscal year 2014, when it was increased to \$19 million annually, which includes \$1 million from the annual equipment auction. According to the U.S. Department of Transportation, the average age for equipment should be 7.5 years; however, the average age of the ARDOT fleet was 12.22 years at the end of fiscal year 2014. By increasing the yearly equipment purchase budget, ARDOT is working toward lowering the average fleet age to 10.5 years. At June 30, 2017, the average age had decreased to 11.05 years. ALA staff reviewed the equipment aging schedule for reasonableness and accuracy and noted no exceptions.

Maintenance - Facilities Upgrades

ARDOT has developed a schedule for replacement and renovation of the Central Headquarters Administration Building, 10 Area Headquarters and Resident Engineer offices, four Weigh Stations, and two District Headquarters at a cost of \$8.4 million annually over a 10-year period. **Exhibit IX** provides a summary of facilities upgrade costs.

Maintenance – Intelligent Transportation System (ITS)

The ITS would consist of the Traffic Management Center located at Central Headquarters, dynamic message signs on the interstates, traffic cameras, highway advisory radios, and bridge de-icing systems at a cost of \$3 million annually.

Exhibit IX

Arkansas Department of Transportation (ARDOT) Summary of Facilities Upgrade Costs Over a 10-Year Period As of June 30, 2017

Facilities	Total Cost
Area headquarters	\$ 24,000,000
Weigh stations	22,000,000
Central headquarters	10,000,000
District headquarters	17,500,000
Resident engineer offices	4,800,000
Property purchases	5,600,000
Total Facilities Upgrade Costs	\$ 83,900,000
Annual Facilities Upgrade Costs	\$ 8,390,000

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Objective 4: Provide a History of Bond Issuances

In the late 1990s, the Federal Highway Administration created a new funding mechanism called Grant Anticipation Revenue Vehicle (GARVEE) bonds. GARVEE bonds allow states to pledge future federal funds to retire general obligation bond debt, a practice that was previously not allowed.

In November 1999, voters passed the **1999 Interstate Rehabilitation Program (IRP)**, which authorized the Highway Commission to issue up to \$575 million in GARVEE bonds to fund highway improvements. ARDOT pledged \$58 million of its interstate maintenance category of federal funds to retire the bonds. Additionally, in 1999, the General Assembly passed a 4-cent per gallon diesel tax increase (approximately \$17 million annually) to be used to retire the bonds. All bonds issued under the 1999 IRP have been retired.

In November 2011, voters passed the **2011 Interstate Rehabilitation Program**, which again authorized the issuance of up to \$575 million in GARVEE bonds to fund interstate highway improvements *using the same funding sources that were in place for the 1999 IRP bond issues*. These bonds are scheduled to be retired in 2027.

In November 2012, voters passed the **Connecting Arkansas Program (CAP)**, which implemented a temporary 10-year, ½-cent general sales tax increase to finance specified highway improvements. It authorized the sale of up to \$1.3 billion in General Obligation bonds to be retired using the proceeds from the ½-cent temporary tax. CAP bonds totaling \$468.9 million were issued and are scheduled to be retired in 2023 when the ½-cent sales tax expires.

Exhibit X summarizes all bond issuance proceeds and associated costs, and **Exhibit XI on page 11** summarizes future principal and interest payments due on outstanding bond balances.

Exhibit X

**Arkansas Department of Transportation (ARDOT)
Summary of Bond Issuance Proceeds and Associated Costs
As of June 30, 2017**

1999 Interstate Rehabilitation Program (IRP) Bond Issues				
	Series 2000	Series 2001	Series 2002	Refunding Series 2010
Principal Amount of Bonds	\$ 175,000,000	\$ 185,000,000	\$ 215,000,000	\$ 253,225,000
Date of Sale	March 7, 2000	July 10, 2001	July 9, 2002	June 2, 2010
Coupon Rates	5.25% - 5.50%	4.00% - 5.25%	3.50% - 5.00%	2.50% - 5.00%
Interest Paid	\$ 72,101,011	\$ 72,355,638	\$ 76,253,203	\$ 30,388,798
Premium Received	\$ 3,137,794	\$ 9,769,266	\$ 10,727,813	\$ 21,314,419
Underwriters Discount	\$ 365,620	\$ 584,600	\$ 603,100	\$ 946,632
Closing Costs	\$ 319,595	\$ 303,825	\$ 314,613	\$ 270,048
2011 Interstate Rehabilitation Program (IRP) Bond Issues				
	Series 2012	Series 2013	Series 2014	
Principal Amount of Bonds	\$ 197,005,000	\$ 171,465,000	\$ 206,530,000	
Date of Sale	October 1, 2012	November 1, 2013	December 9, 2014	
Coupon Rates	3.00% - 5.00%	4.00% - 5.00%	5.00%	
Interest Paid	\$ 36,179,125	\$ 26,899,288	\$ 22,274,167	
Premium Received	\$ 33,723,490	\$ 29,181,459	\$ 37,031,658	
Underwriters Discount	\$ 327,766	\$ 269,506	\$ 700,137	
Closing Costs	\$ 378,752	\$ 376,954	\$ 349,118	
Connecting Arkansas Program (CAP) Bond Issues				
	Series 2013			
Principal Amount of Bonds	\$ 468,895,000			
Date of Sale	October 1, 2013			
Coupon Rates	1.00% - 5.00%			
Interest Paid	\$ 66,514,151			
Premium Received	\$ 25,186,507			
Underwriters Discount	\$ 525,162			
Closing Costs	\$ 554,548			

Source: Prior-year audit reports for the Arkansas Department of Transportation

Exhibit XI

Arkansas Department of Transportation (ARDOT)
Summary of Future Principal and Interest Payments on Outstanding Bond Balances
As of June 30, 2017

Future Principal Payments					
Fiscal Year	Total	2011 Interstate Rehabilitation Program Bond Issues			Connecting Arkansas Program Bond Issues
		Series 2012	Series 2013	Series 2014	Series 2013
2018	\$ 47,940,000	\$ 17,840,000	\$ 13,615,000	\$ 14,485,000	\$ 2,000,000
2019	50,270,000	18,745,000	14,305,000	15,220,000	2,000,000
2020	84,165,000	19,695,000	15,030,000	15,990,000	33,450,000
2021	188,075,000	20,695,000	15,795,000	16,795,000	134,790,000
2022	197,510,000	21,740,000	16,590,000	17,650,000	141,530,000
2023	204,600,000	22,505,000	17,430,000	18,540,000	146,125,000
2024	60,980,000	23,185,000	18,315,000	19,480,000	
2025	51,560,000	11,855,000	19,240,000	20,465,000	
2026	31,440,000		9,935,000	21,505,000	
2027	11,155,000			11,155,000	
Totals	\$ 927,695,000	\$ 156,260,000	\$ 140,255,000	\$ 171,285,000	\$ 459,895,000

Future Interest Payments					
Fiscal Year	Total	2011 Interstate Rehabilitation Program Bond Issues			Connecting Arkansas Program Bond Issues
		Series 2012	Series 2013	Series 2014	Series 2013
2018	\$ 39,126,600	\$ 6,221,750	\$ 6,647,875	\$ 8,385,375	\$ 17,871,600
2019	36,760,975	5,318,625	5,958,625	7,652,125	17,831,600
2020	34,277,350	4,369,625	5,234,500	6,881,625	17,791,600
2021	30,371,725	3,372,500	4,473,500	6,072,125	16,453,600
2022	20,934,725	2,324,875	3,673,875	5,221,875	9,714,100
2023	13,835,675	1,558,800	2,834,125	4,328,375	5,114,375
2024	6,220,000	878,625	1,951,625	3,389,750	
2025	3,605,950	177,825	1,024,500	2,403,625	
2026	1,566,200		198,700	1,367,500	
2027	278,875			278,875	
Totals	\$ 186,978,075	\$ 24,222,625	\$ 31,997,325	\$ 45,981,250	\$ 84,776,875

Source: Prior-year audit reports for the Arkansas Department of Transportation

SUMMARY

Based on ALA staff review of information provided by ARDOT, and as noted in **Appendix A**, ARDOT's average annual state matching requirements will be \$124.2 million for fiscal years 2017 through 2020. For the same period, ARDOT would be \$6.5 million short of the amount of matching funds needed annually to receive the maximum federal aid available. ARDOT has developed a construction and maintenance program for roads and facilities, which includes the shortfall of state revenues, that would require an additional \$478 million annually, as noted in **Exhibit III on page 4**.

Additionally, as shown in **Exhibit XI**, \$928 million in principal and \$187 million in interest will be paid on outstanding bond balances over the next 10 fiscal years.

MANAGEMENT RESPONSE

ARDOT concurs with the information contained in the report.

APPENDIXES

Appendix A – Arkansas Department of Transportation (ARDOT) – Summary of Actual and Projected State Funds Available to Match Federal Funds for Construction – For Fiscal Years 2010 through 2020

Appendix B – Arkansas Department of Transportation (ARDOT) – Actual and Projected Federal Funding and State Matching Requirements – For Federal Fiscal Years 2016 through 2020

Appendix C – Arkansas Department of Transportation (ARDOT) – Arkansas Primary Highway Network (APRN) Map

Appendix A

Arkansas Department of Transportation (ARDOT) Summary of Actual and Projected State Funds Available to Match Federal Funds for Construction For Fiscal Years 2010 through 2020

	Fiscal Year										Projected		
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
Net State Revenues													
Motor fuel taxes	\$ 287,800,000	\$ 289,400,000	\$ 287,700,000	\$ 271,600,000	\$ 265,800,000	\$ 270,600,000	\$ 281,900,000	\$ 285,000,000	\$ 285,000,000	\$ 286,000,000	\$ 288,000,000		
Registration fees	79,100,000	81,100,000	85,000,000	82,100,000	84,800,000	87,700,000	91,800,000	93,000,000	93,000,000	95,000,000	97,000,000		
Natural gas severance fees	29,100,000	35,500,000	33,600,000	32,300,000	48,800,000	50,300,000	20,900,000	25,000,000	25,300,000	25,500,000	25,800,000		
Overload permits and penalties	19,300,000	20,400,000	20,200,000	18,200,000	17,700,000	17,300,000	16,500,000	16,500,000	16,500,000	16,500,000	16,500,000		
Miscellaneous revenue	10,000,000	10,000,000	8,100,000	10,600,000	8,600,000	9,800,000	11,600,000	3,000,000	3,000,000	3,800,000	3,700,000		
Total Net State Revenues	425,300,000	436,400,000	434,600,000	414,800,000	425,700,000	435,700,000	422,700,000	422,500,000	422,800,000	426,800,000	431,000,000		
Additional Funding from the Arkansas Highway Improvement Plan of 2016							41,500,000						
Total Available State Funding	425,300,000	436,400,000	434,600,000	414,800,000	425,700,000	435,700,000	464,200,000 ¹	446,500,000 ¹	450,900,000 ¹	454,900,000 ¹	459,100,000 ¹		
Net State Expenditures													
Administration	18,700,000	19,300,000	19,500,000	20,600,000	21,200,000	21,200,000	20,000,000	21,900,000	22,000,000	22,100,000	22,200,000		
Maintenance	166,700,000	178,600,000	178,300,000	183,500,000	197,200,000	209,800,000	219,500,000	222,900,000	224,000,000	225,100,000	226,300,000		
Operations	21,800,000	24,100,000	22,900,000	24,700,000	23,900,000	29,800,000	30,300,000	26,400,000	26,500,000	26,600,000	26,800,000		
Budgeted construction	42,200,000	42,400,000	39,300,000	41,800,000	42,000,000	49,100,000	44,900,000	45,100,000	45,400,000	45,600,000	45,800,000		
Interstate Rehabilitation Program debt service	14,700,000	1,200,000	16,500,000	16,300,000	16,200,000	16,300,000	16,700,000	16,500,000	16,500,000	16,500,000	16,500,000		
Total Net State Expenditures	264,100,000	265,600,000	276,500,000	286,900,000	300,500,000	328,200,000	331,400,000 ²	332,800,000 ²	334,400,000 ²	335,900,000 ²	337,600,000 ²		
Total Funds Available to Match Federal Aid	161,200,000	170,800,000	158,100,000	127,900,000	125,200,000	109,500,000	132,800,000	113,700,000	116,500,000	119,000,000	121,500,000		
Required State Match	125,200,000	134,900,000	143,200,000	146,200,000	142,400,000	131,800,000	117,300,000	119,400,000 ³	122,800,000 ³	125,700,000 ³	128,800,000 ³		
Remaining Available State Funds (Note)	\$ 36,000,000	\$ 35,900,000	\$ 14,900,000	\$ (18,300,000)	\$ (17,200,000)	\$ (22,300,000)	\$ 15,500,000	\$ (5,700,000) ⁴	\$ (6,300,000) ⁴	\$ (6,700,000) ⁴	\$ (7,300,000) ⁴		
100% State Funded Programs													
State Funded Overlay Program	\$ 48,200,000	\$ 49,000,000	\$ 49,800,000	\$ 48,500,000	\$ 27,000,000								
Fayetteville Shale Roads Program		36,400,000	39,500,000	13,800,000	19,300,000	\$ 4,900,000							
Total 100% State Funded Programs	\$ 48,200,000	\$ 85,400,000	\$ 89,300,000	\$ 62,300,000	\$ 46,300,000	\$ 4,900,000							

Note: Shortfalls through fiscal year 2016 were met using carryover of fund balances.

¹\$455 million on average per year for fiscal years 2016 through 2020.

²\$334.5 million on average per year for fiscal years 2016 through 2020.

³\$124.2 million on average per year for fiscal years 2017 through 2020.

⁴\$66.5 million on average per year for fiscal years 2017 through 2020.

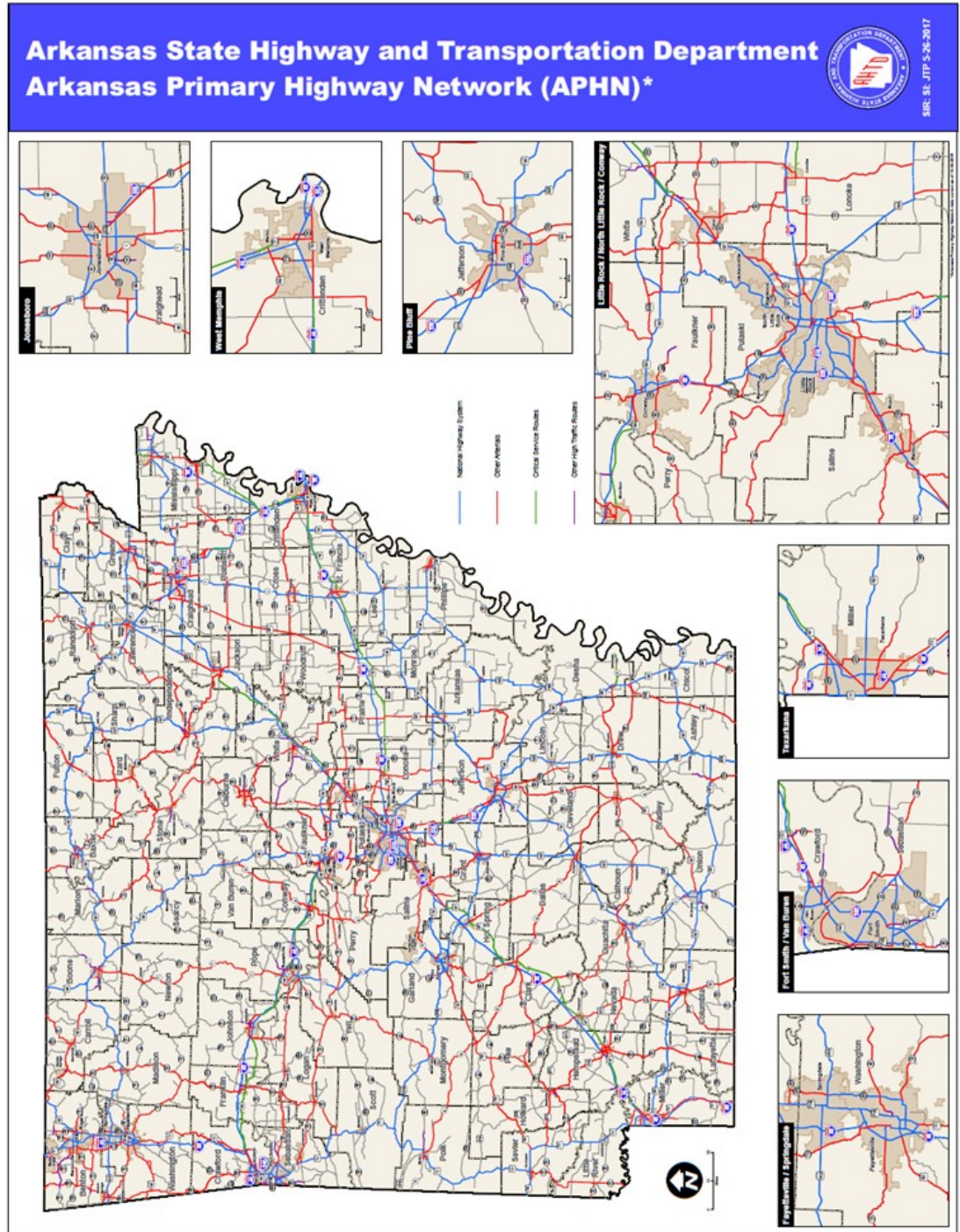
Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Arkansas Department of Transportation (ARDOT)
Actual and Projected Federal Funding and State Matching Requirements
For Federal Fiscal Years 2016 through 2020

Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

Appendix C

Arkansas Department of Transportation (ARDOT)
Arkansas Primary Highway Network (APRN) Map



Source: Arkansas Department of Transportation (unaudited by Arkansas Legislative Audit)

