



TDOT 25-YEAR LONG-RANGE TRANSPORTATION POLICY PLAN



FINANCIAL REVENUES & FISCAL OUTLOOK POLICY PAPER

TN TDOT
Department of
Transportation

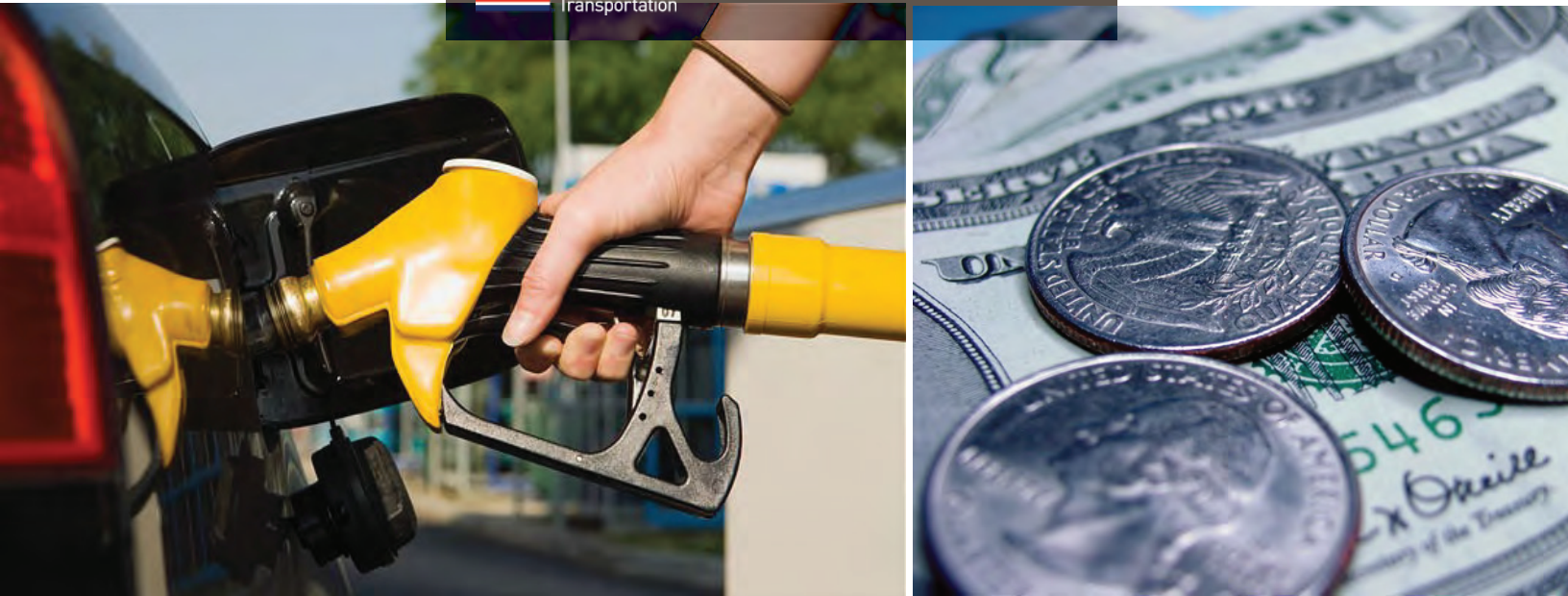





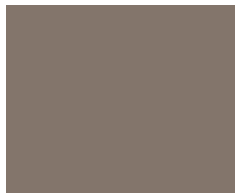
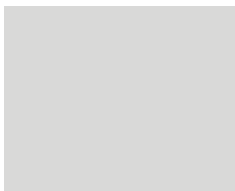


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1.0 INTRODUCTION

The purpose of this policy paper is to review the Tennessee Department of Transportation's (TDOT's) current funding landscape and provide feasible options for increased revenue based on examples of recent state and national legislative initiatives as well as a comparison of specific funding levels and strategies in surrounding and peer states.

This paper is also intended to identify new funding sources and strategies that are consistent with the guiding principles of TDOT's 25-Year Policy Plan. A brief description of the guiding principles related to this report is provided below:

- **Emphasize Financial Responsibility** – Provide reliable revenue forecasts that promote financial certainty and accountability in meeting Tennessee's future transportation needs;
- **Preserve and Manage the Existing System** – Identify reliable revenue sources (traditional and non-traditional) to help achieve adequate funding for maintenance needs and system capacity enhancements;
- **Support the State's Economy** – Transportation revenue certainty is vital to Tennessee's long-term economic competitiveness. Meeting the demands of current and future goods movement and the ability to respond to economic opportunities dictate the need for reliable revenues for Tennessee's multimodal transportation system;
- **Provide for the Efficient Movement of People and Freight** – Identify reliable revenue sources (traditional and non-traditional) to allow for the delivery of an integrated, multimodal transportation system.

For this policy paper various funding options are documented and explored as a means for the Department to make informed decisions when looking to alternative revenue sources in the future. The experiences of surrounding and peer states provide a valuable perspective on how funding policy changes can be used to aid in the long-term development and sustainability of an effective transportation system.

2.0 SUMMARY OF FINDINGS

The following is a brief summary of findings as it relates to TDOT's current funding landscape and possible funding options for increased revenues.

Summary of Findings

- Tennessee was one of only five states that did not use debt mechanism as a funding source for highways, instead using pay-as-you-go (PAYGO) strategies exclusively
- TDOT had a budget of \$1.84 billion for fiscal year (FY) 2014-2015
- Between 2007 to 2012, a (year of expenditure or YOE) annual average of \$149 billion in state highway funding nationally was allocated to the 50 states and Washington, DC
- Between 2007 and 2012, Tennessee averaged \$1.9 billion (YOE \$) in annual funding for state highway, making it the 26th highest-funded state over the time period
- The five primary grant programs of the Federal-Aid Highway Program that distribute federal aid to states for highways projects include the National Highway Performance Program (NHPP), Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Safety Improvement Program (HSIP), and the Transportation Alternatives Program (TAP). The estimated total funding for the Federal-Aid Highway Program in fiscal year 2014 was \$37.8 billion
- The Highway Trust Fund (HTF) is the most important revenue source for the Federal-Aid Highway Programs; however, there has been considerable concern over the last several years of HTF's sustainability and solvency due to declining receipts from the federal motor vehicle fuel tax, which provide around 90% of the HTF's total revenues
- An insolvent federal HTF or continued decreasing state motor fuel tax receipts would have a direct impact on the state's ability to maintain or build upon its existing highway system
- Between 2007 and 2012, Tennessee was more dependent on federal highway funds than the national average with 42% of all receipts coming from federal highway funds (versus the national average of 26%)
- Motor fuel taxes are Tennessee's second largest funding source for highways, constituting approximately 37% of all receipts from 2007 to 2012 and averaging \$704.8 million (YOE \$) annually
- The tax per gallon of gasoline to Tennessee consumers is lower than the national average tax per gallon. Tennessee's state gasoline tax (inclusive of excise tax and other state taxes) is currently 21.4 cents per gallon. Nationally, the average state gasoline tax is 28.1 cents per gallon
- Among the surrounding states, Tennessee was one of six that received no toll revenue from 2007 to 2012. Only Georgia, North Carolina, and Virginia had any revenue from this source

Recommendations

As a result of research documented in this policy paper as well as other supporting documents of the 25-Year Policy Plan, it is clear that current funding levels cannot keep up with the increasing costs of maintaining and providing Tennessee's transportation system. As such, Tennessee should move forward in evaluating all mechanisms and options available to address the gap between available funds and the growing transportation needs of the State.

3.0 CURRENT FUNDING LANDSCAPE

TDOT plans, designs, constructs, operates, and maintains the state’s highway, aeronautic, public transit, railroad, and waterway networks. For the 2014-15 fiscal year (FY), beginning July 1 and ending June 30, the Department has a budget of \$1.84 billion. Table 1 summarizes TDOT’s current budget by allotment code and by source.

Table 1 TDOT’s FY 2014-2015 Budget (Millions of \$)

Allotment Code	State Funds	Federal Funds	Other Funds	Total Budget
Headquarters	\$76.9	\$15.5	\$2.5	\$94.9
Bureau of Administration	59.7	15.0	0.5	75.2
Environment and Planning	75.9	147.6	0.8	224.3
Bureau of Engineering	75.2	97.7	4.9	177.8
Bureau of Operations	538.9	699.9	28.8	1,267.6
Total DOT	\$826.6	\$975.7	\$37.5	\$1,839.8

Source: State of Tennessee

This paper focuses largely on highway revenues, given the fact that 88% of TDOT’s \$1.84 billion budget is associated with the highway system. Funding data from Federal Highway Administration (FHWA) is used to assess Tennessee’s reliance on various funding sources and compare it to the reliance in other states.

State highway funding historically comes from a number of sources, including:

- Intergovernmental transfers, which include payments from the federal and local governments to state DOTs;
- Highway users fees, which include state motor fuel taxes, state motor vehicle fees, and tolls;
- Bond proceeds (typically leveraging the above revenue sources);
- State general fund;
- Other state funding; and
- Miscellaneous state sources.

This section of the policy paper summarizes and assesses Tennessee’s position in the national experience of state DOT highway funding.

3.1 TOTAL 50 STATE FUNDING

In the six years from 2007 to 2012, a (year of expenditure or YOE) annual average of \$149 billion in state highway funding was allocated to the 50 states and Washington, DC. The breakdown, by funding source, is summarized in Table 2 and Figure 1.

Table 2 Summary of State Highway Funding Nationally (Billions of YOE \$) 2007-2012 Six-Year Average

Source	Avg. Annual Receipts	Percent
Intergovernmental Transfers	\$ 41.04	27.5%
Federal Funds	38.31	25.7%
Local Funds	2.73	1.8%
Highway User Fees	61.73	41.4%
Motor Fuel Tax	31.98	21.5%
Vehicle Fees	21.33	14.3%
Tolls	8.41	5.6%
Bond Proceeds	22.36	15.0%
State General Fund (GF) Proceeds	7.08	4.7%
Other State Proceeds	7.38	5.0%
Miscellaneous State Proceeds	9.43	6.3%
Total Receipts	\$ 149.02	100.0%

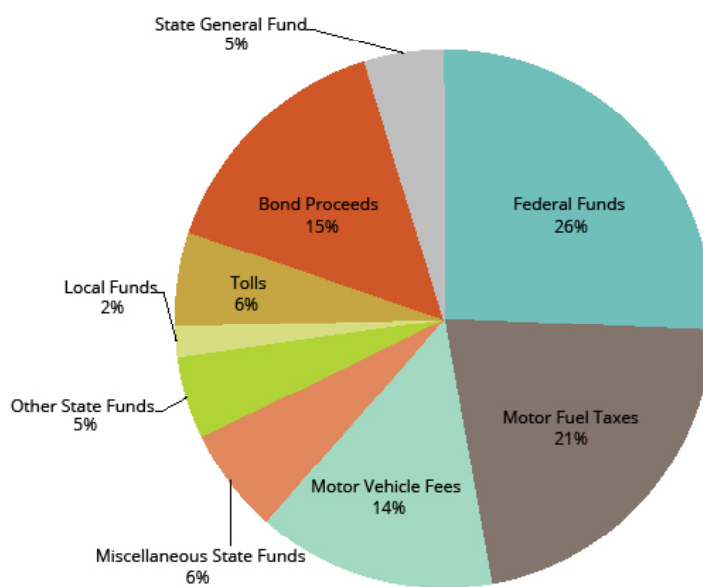
Source: Federal Highway Administration

Relevant to the following funding discussion, it is important to understand the difference between excise and sales taxes. Excise taxes are paid on the production of specific goods, such as alcohol or gasoline, or activities, such as highway usage by trucks. Excise taxes are typically applied on a per-unit basis instead of a percentage of the purchase price, which is characteristic of general sales taxes.

Nationally, funds from highway user fees made up the largest share of state highway funding over the six years—41% of all costs. Highway user fees are made up of state motor fuel taxes, motor vehicle fees,

and tolls. The motor fuel tax—a fee, typically an excise tax or sales tax charged by all states to consumers of gasoline and diesel fuel—made up 21% of all highway funding. Motor vehicle fees, which typically include vehicle registration costs, vehicle titling fees, and driver license fees, made up 14% of all funds over the six years. Highway and crossing tolls were used in 29 states, making up 5% of all funds nationally.

Intergovernmental transfers made up the second largest share of funds nationally—28%. Federal funds, which include funds from FHWA and other agencies, made up the majority of intergovernmental transfers. At 26% of all funding, federal dollars made up the largest individual source of state highway funds over the six years.



Source: Federal Highway Administration

Figure 1 Summary of State Highway Funding Nationally (% of Total Receipts) 2007-2012

Proceeds from bonding mechanisms funded 15% of all highway costs; bonds generally leverage annual cash revenue from the highway user fees. Proceeds from state general funds, other state proceeds, and miscellaneous state sources combined to make up 16% of all highway funds from 2007 to 2012. For more information about state highway funding for all 50 states and Washington, DC, refer to Appendix A: 50-State Highway Funding Analysis.

3.2 TOTAL FUNDING IN TENNESSEE

Between 2007 and 2012, Tennessee averaged \$1.9 billion (YOE \$) in annual funding for state highways, making it the 26th highest-funded state over the time period. The breakdown, by funding source for the Year of Expenditure (YOE), is summarized in Table 3 and Figure 2.

Table 3 Summary of Tennessee Highway Funding (Billions of YOE \$) 2007-2012 Six-Year Average

Source	Avg. Annual Receipts	Tennessee Percent	National Percent
Intergovernmental Transfers	\$ 0.83	43.2%	27.5%
Federal Funds	0.80	41.8%	25.7%
Local Funds	0.03	1.4%	1.8%
Highway User Fees	0.99	51.6%	41.4%
Motor Fuel Tax	0.70	36.8%	21.5%
Vehicle Fees	0.28	14.8%	14.3%
Tolls	-	0.0%	5.6%
Bond Proceeds	-	0.0%	15.0%
State GF Proceeds	-	0.0%	4.7%
Other State Proceeds	0.05	2.6%	5.0%
Miscellaneous State Proceeds	0.05	2.6%	6.3%
Total Receipts	\$ 1.91	100.0%	100.0%

Source: Federal Highway Administration

Highway user fees made up 52% of revenue over the six-year period. Like the nation as a whole, these combined to make up the largest source of Tennessee’s highway funding. At 37%, the largest portion of these revenues was the state motor fuel tax; motor vehicle fees made up 15% of all funds. Tennessee had no revenue from highway or crossing tolls.

Intergovernmental transfers were also a major source, constituting 43% of all revenue over the six years. Like the nation as a whole, federal funds were the largest individual source of highway funding, though Tennessee was more-dependent than the nation as a whole—42% to 26% (that is, federal funding makes up for a larger percent of Tennessee’s transportation funding than the national average).

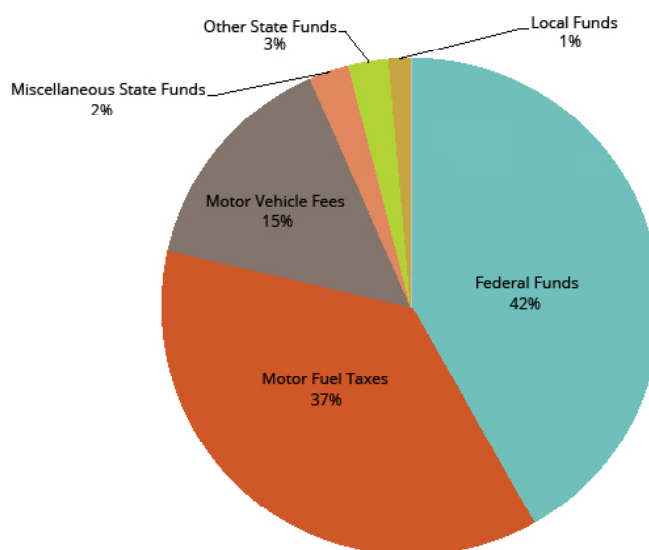
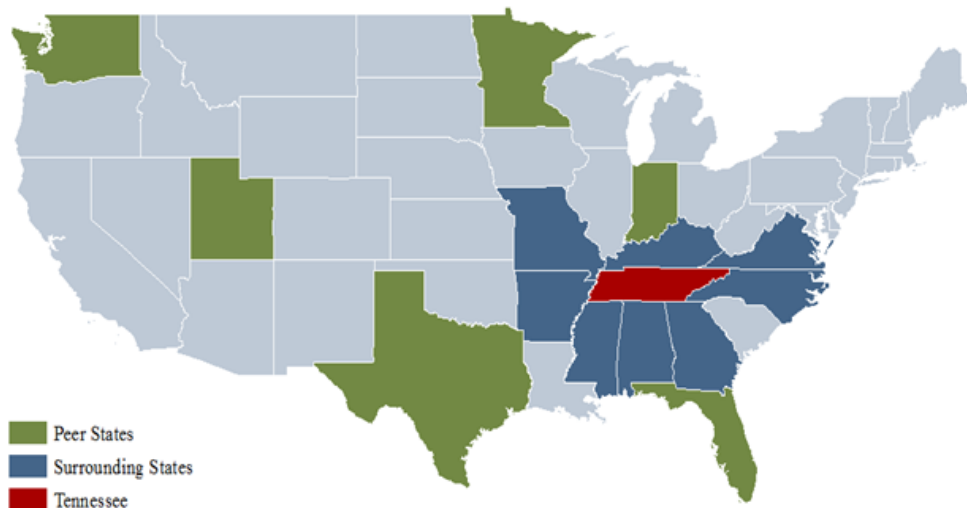


Figure 2 Summary of Tennessee Highway Funding (% of Total Receipts) 2007-2012 Six-Year Average

Source: Federal Highway Administration

The following sections go into further detail comparing Tennessee's dependence on the various revenue sources to the nation as a whole. There are also analyses comparing Tennessee's mix of funding sources with its eight surrounding states and with six peer states. These peer states shown in Figure 3 - Florida, Indiana, Minnesota, Texas, Utah, and Washington - were



Source: Federal Highway Administration

Figure 3 Surrounding and Peer States

chosen to align with those identified as peers in TDOT's 2013 Customer Survey, as they were similar to Tennessee in the areas of geographic size, demographics, growth trends, and/or DOT practices. The funding sources listed are arranged by the magnitude of their funding levels in Tennessee (largest first): federal funds, state motor fuel taxes, motor vehicle fees, miscellaneous state receipts, other state proceeds, tolls, bond proceeds, and state general funds. Figure 3 shows Tennessee, its eight surrounding states, and its six peer states. Table 4 shows how Tennessee compares to these 14 states in terms of revenue sources. For a discussion of Public-Private Partnerships (P3s) and their applicability to this discussion, see the Public-Private Partnerships section on page 53.

Table 4 Surrounding and Peer Summary Comparison of Funding Sources

	Tennessee	Alabama	Arkansas	Florida	Georgia	Indiana	Kentucky	Minnesota	Mississippi	Missouri	North Carolina	Texas	Utah	Virginia	Washington
Transportation Revenue Sources															
Motor Fuel Tax – Cents/Gallon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor Fuel Tax – Indexed				✓			✓							✓	
Motor Fuel Tax – Sales Tax				✓	✓	✓								✓	
Bonding		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tolling				✓	✓	✓					✓	✓	✓	✓	✓
Sales Tax													✓	✓	
Other Vehicle Fees (Registration, Titling Fees, Driver license)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State General Fund		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Authorized Public-Private Partnerships (P3s)	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

*Sales tax includes only state general sales tax dedicated to the state for highways. Most states implement sales tax on vehicle sales and rentals to be used for highways. Virginia’s Sales Tax on Motor Fuel is limited to the Hampton Roads Planning District and is in addition to all other state fuel taxes.

3.2.1 Federal Funds

Federal funds are Tennessee’s largest funding source for highways, making up 42% of all receipts from 2007 to 2012 and averaging \$800.8 million (YOE \$) annually. Federal funds for state highways are made up primarily of Federal Highway Administration (FHWA) funding programs. In fact, over the six years of this analysis, FHWA funds made up 95% of all federal revenue for state highways for Tennessee and 94% for the nation as a whole. Moving Ahead for Progress in the 21st Century (MAP-21), the transportation funding authorization bill signed into law in 2012, authorized the spending of \$37.8 billion on highways in FY 2014. The five primary programs that distribute federal aid to states for highways projects are listed below. The national Highway Trust Fund (HTF), which receives proceeds from the federal motor fuel tax, is the primary funder of these FHWA funding programs.

- *National Highway Performance Program (NHPP)*: The NHPP is a formula grant given to states to fund the national highway system (NHS). The NHS includes the interstate system and all urban and rural principal arterials. Additionally, it includes the Strategic Highway Network (STRAHNET), a network of highways considered important to the nation’s strategic defense policy; major strategic highway network connectors which provide access between major military installations; and, finally, highways that provide access between major intermodal facilities and the rest of the NHS. Funding for this program in FY14 was \$22.39 billion, nationally.
- *Surface Transportation Program (STP)*: The STP is a formula grant that provides flexible funding that states may use for projects on any federal-aid highway or bridge including the NHS. The STP offers the most flexibility in project-selection to states. Funding for this

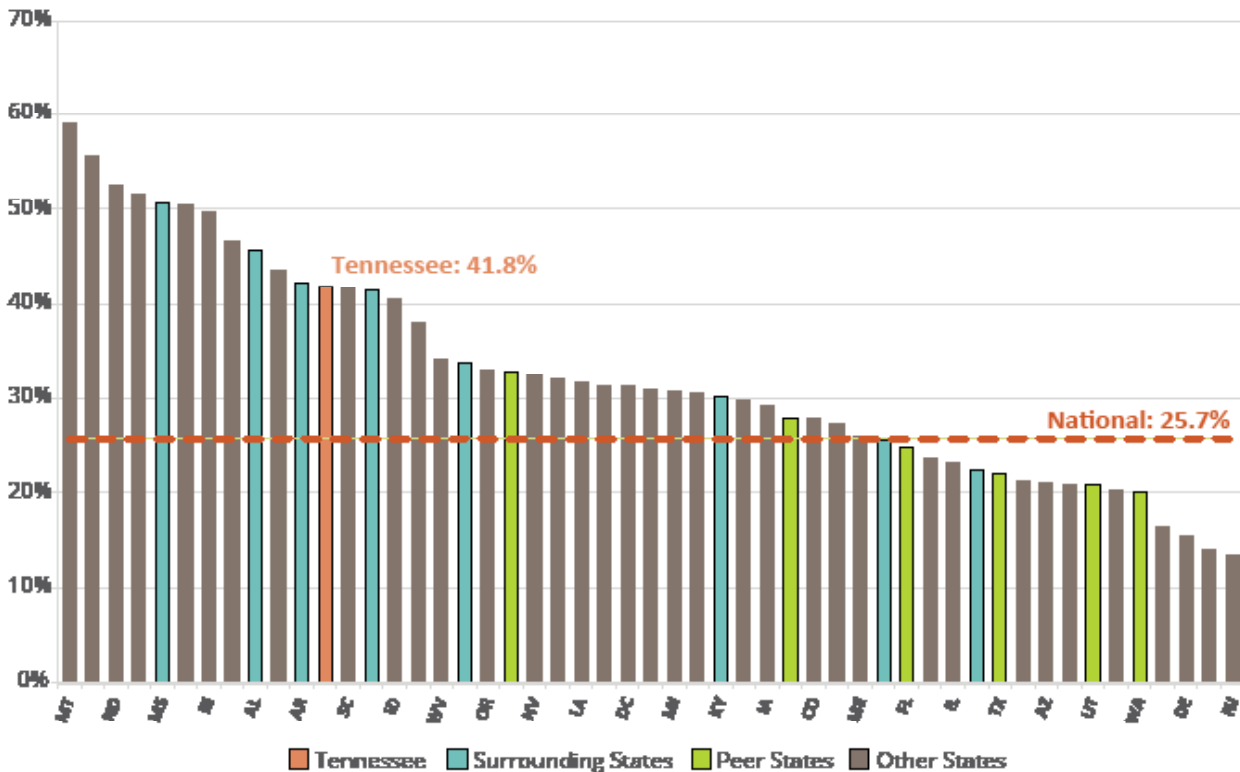
program in FY14 was \$10.30 billion, nationally.

- *Congestion Mitigation and Air Quality Improvement (CMAQ) Program:* CMAQ provides a flexible funding source to states for transportation projects and programs to help meet the requirements of the Clean Air Act of 1990. CMAQ funding is available for eligible projects located in all ozone, CO, and PM nonattainment and maintenance areas, including former areas where the NAAQS has been revoked. Funds may also be used for projects in proximity to nonattainment and maintenance areas if benefits will be realized primarily within the nonattainment or maintenance area. Tennessee counties eligible for CMAQ projects include Anderson, Blount, Cocke (partial county), Davidson, Hamilton, Jefferson, Knox, Loudon, Montgomery, Roane (partial county), Rutherford, Sevier, Shelby, Sumner, Williamson and Wilson. In order for projects to be eligible for CMAQ funds, uses must address reducing emissions and improving air quality. Funding for the CMAQ program in FY14 was \$2.31 billion, nationally.
- *Highway Safety Improvement Program (HSIP):* The goal of the HSIP is to achieve a reduction in traffic fatalities and serious accidents on public roads. Eligible projects must improve, correct, or address a hazardous road location or feature. Funding for the HSIP in FY14 was \$2.24 billion, nationally.
- *Transportation Alternatives Program (TAP):* TAP provides funding for projects considered “alternative” to traditional highway construction. The TA Program combines three former federal programs: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails (RTP). Eligible projects include, but are not limited to, bicycle and pedestrian facilities, safe routes to school, complete streets, environmental mitigation, and community improvement activities. Funding for TAP in FY14 was approximately \$820 million, nationally.

Prior to MAP-21, each apportioned program had its own formula for distribution, and each State’s total was the sum of the amount it received for each program. MAP-21’s approach to distribution of formula funds is based on the amount of formula funds each State received under SAFETEA-LU. A single amount (as previously mentioned \$37.8 billion per year) is authorized to fund the core programs - NHPP, STP, HSIP, and CMAQ. For FY 2013, each State received virtually the same total apportionment as in FY 2012. For FY 2014, the total amount available for distribution was divided proportionally among the States based on the share of apportionments each State received for FY 2012, adjusted, if necessary, to ensure that no State received less than 95 cents of every dollar it contributed to the Highway Account of the HTF. Once each State’s total Federal-aid apportionment is calculated, amounts are set aside for CMAQ via a calculation based on the relative size of the State’s FY 2009 apportionment of that program. The remainder is then divided among the rest of the formula programs as follows: NHPP (63.7%), STP (29.3%), and HSIP (7%). An amount is set aside from HSIP to fund the Rail-Highway Crossings program, and amounts are set aside proportionally from each State’s NHPP, STP, HSIP, and CMAQ apportionments to fund the State’s Transportation Alternatives Program.

Among all states, Tennessee was the 12th most-dependent on federal highway funds over the six years. Montana was the most-dependent with 60% of all receipts coming from federal funds; New Jersey was the least-dependent with 13% of all receipts coming from this source. Tennessee was also more-dependent than the nation as a whole, which received 26% of all highway receipts through federal funds. Figure 4 summarizes the federal revenues received by the 50 states and Washington, DC as a percentage of total receipts. Note that Tennessee and its eight surrounding states are highlighted in red and blue, respectively. The six peer states (Florida, Indiana, Minnesota, Texas, Utah, and Washington) are highlighted in green.

Federal Funds (% of Total Receipts)



Source: Federal Highway Administration

Figure 4 50-State Summary of Federal Highway Funds (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the fourth most-dependent on federal highway funds from 2007 to 2012. Over the six years, Mississippi was the most-dependent with 51% of all receipts coming from federal funds; Virginia was the least-dependent with 22% of all receipts coming from this source. As a whole, the nine states were more-dependent than the nation. Federal revenues provided 34% of all highway funding in the nine states compared to 26% for the nation. Table 5 summarizes the federal revenues received by the surrounding states as a percentage of total receipts.

Table 5 Surrounding State Summary of Federal Highway Funds (Billions of YOE \$) 2007-2012

Rank	State	Federal Receipts	Total Receipts	Percent
1	Mississippi	\$ 0.68	\$ 1.35	50.7%
2	Alabama	0.85	1.86	45.6%
3	Arkansas	0.51	1.21	42.3%
4	Tennessee	0.80	1.91	41.8%
5	Georgia	1.38	3.32	41.4%
6	Missouri	1.08	3.20	33.7%
7	Kentucky	0.68	2.23	30.3%
8	North Carolina	1.04	4.06	25.7%
9	Virginia	0.88	3.92	22.4%
TOTAL		7.90	23.07	34.2%

Source: Federal Highway Administration

Among the peer states, Tennessee was the most-dependent on federal highway funds from 2007 to 2012; Washington was the least-dependent with 20% of all receipts coming from this source. As a whole, the peer states were slightly less-dependent than the nation. Federal revenues provided 25% of all highway funding in the peer states compared to 26% for the nation. Table 6 summarizes the federal revenues received by the peer states as a percentage of total receipts.

Table 6 Peer State Summary of Federal Highway Funds (Billions of YOE \$) 2007-2012

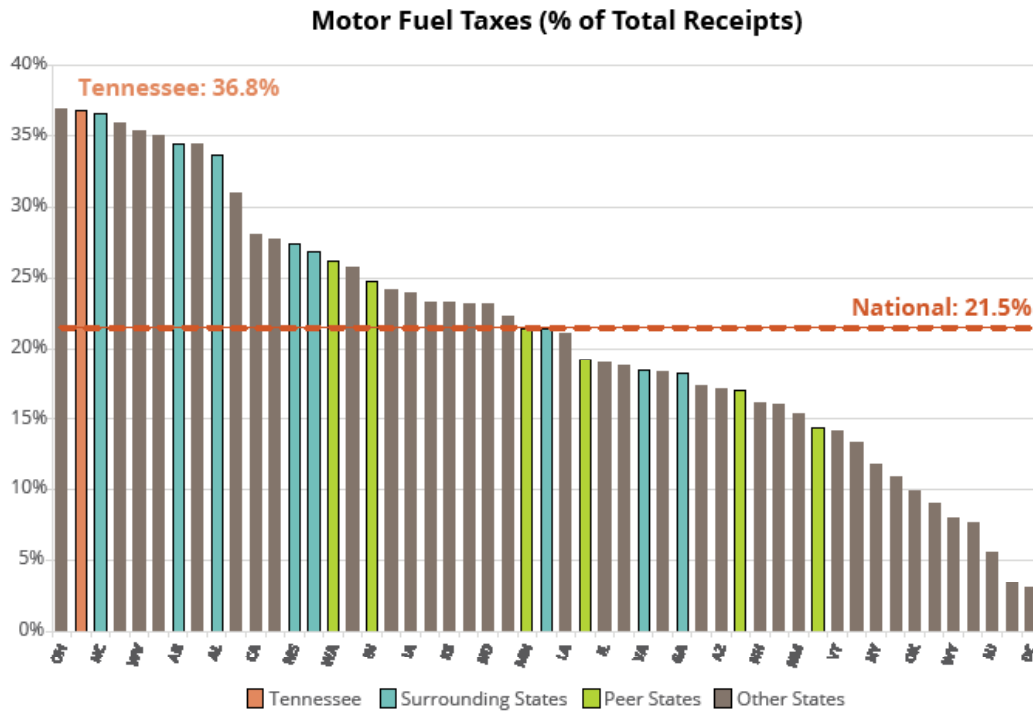
Rank	State	Federal Receipts	Total Receipts	Percent
1	Tennessee	\$ 0.80	\$ 1.91	41.8%
2	Indiana	1.03	3.13	32.9%
3	Minnesota	0.73	2.61	28.0%
4	Florida	1.96	7.91	24.8%
5	Texas	2.81	12.84	21.9%
6	Utah	0.41	1.95	20.9%
7	Washington	0.89	4.40	20.2%
TOTAL		8.62	34.75	24.8%

Source: Federal Highway Administration

3.2.2 State Motor Fuel Tax

Motor fuel taxes are Tennessee's second largest funding source for highways, constituting approximately 37% of all receipts from 2007 to 2012 and averaging \$704.8 million (YOE \$) annually. Like most states, Tennessee's motor fuel tax is a per-gallon excise tax charged on the consumption of both gasoline and diesel fuel. Currently, Tennessee's tax rate is 21.4 cents per-gallon for gasoline and 18.4 cents per gallon for diesel fuel. This rate includes 20 cents for the motor fuel tax and 1.4 cents for a special petroleum fee. Tennessee divides the proceeds from the motor fuel tax among cities and counties, the state general fund, and TDOT. Currently, local governments receive 37% of the proceeds, the state general fund receives 3% of the proceeds, and TDOT receives 60% of the proceeds.

Among all states, Tennessee was the second most-dependent on proceeds from state motor fuel taxes over the six years. Ohio was slightly more-dependent with 36.9% of all receipts coming from state motor fuel taxes (Tennessee received 36.8% from motor fuel taxes); Washington, DC was the least-dependent with 3% of all receipts coming from this source. Tennessee was more-dependent than the nation as a whole, which received 22% of all highway receipts from the proceeds from state motor fuel taxes. Figure 5 summarizes the state motor fuel taxes received by the 50 states and Washington, DC as a percentage of total receipts.



Source: Federal Highway Administration

Figure 5 50-State Summary of State Motor Fuel Taxes (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the most-dependent on state motor fuel taxes from 2007 to 2012; Georgia was the least-dependent with 18% of all receipts coming from this source. As a whole, the nine states were more-dependent than the nation. State motor fuel taxes in the nine states funded 27% of all highway costs compared to 22% for the nation. Table 7 summarizes the federal revenues received by the surrounding states as a percentage of total receipts.

Table 7 Surrounding State Summary of State Motor Fuel Taxes (Billions of YOE \$) 2007-2012

Rank	State	State Motor Fuel Tax Receipts	Total Receipts	Percent
1	Tennessee	\$ 0.70	\$ 1.91	36.8%
2	North Carolina	1.48	4.06	36.6%
3	Arkansas	0.42	1.21	34.4%
4	Alabama	0.62	1.86	33.6%
5	Mississippi	0.37	1.35	27.4%
6	Kentucky	0.60	2.23	26.8%
7	Missouri	0.68	3.20	21.3%
8	Virginia	0.72	3.92	18.4%
9	Georgia	0.60	3.32	18.2%
TOTAL		6.21	23.07	26.9%

Source: Federal Highway Administration

Among the peer states, Tennessee was the most-dependent on state motor fuel taxes from 2007 to 2012; Texas was the least-dependent with 14% of all receipts coming from this source. As a whole, the peer states were slightly less-dependent than the nation. State motor fuel taxes in the peer states funded 20% of all highway costs compared to 22% for the nation. Table 8 summarizes the federal revenues received by the peer states as a percentage of total receipts.

Table 8 Peer State Summary of State Motor Fuel Taxes (Billions of YOE \$) 2007-2012

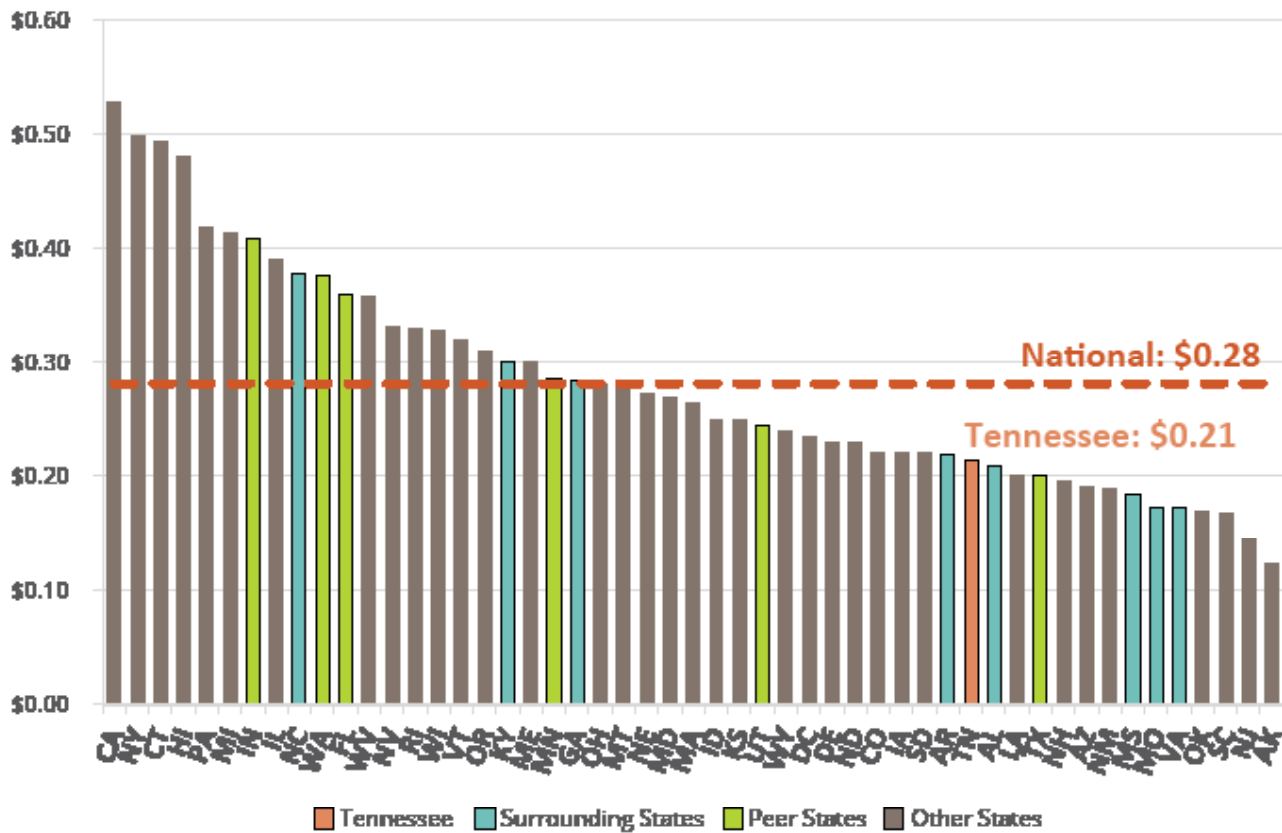
Rank	State	State Motor Fuel Tax Receipts	Total Receipts	Percent
1	Tennessee	\$ 0.70	\$ 1.91	36.8%
2	Washington	1.15	4.40	26.2%
3	Indiana	0.77	3.13	24.7%
4	Minnesota	0.56	2.61	21.4%
5	Florida	1.52	7.91	19.2%
6	Utah	0.33	1.95	17.0%
7	Texas	1.85	12.84	14.4%
TOTAL		6.89	34.75	19.8%

Source: Federal Highway Administration

Like most states, Tennessee receives tax proceeds from the sale of both gasoline and diesel fuel. The following sections assess the proceeds from each source.

State Gasoline Tax

Although Tennessee was the second most-dependent state on motor fuel taxes from 2007 to 2012, there is potential to further leverage the tax to increase highway funding due to its relatively low rate. The tax per gallon of gasoline to Tennessee consumers is lower than the national average tax per gallon. Tennessee's state gasoline tax (inclusive of excise tax and other state taxes) is currently 21.4 cents per gallon. Nationally, the average state gasoline tax is 28.1 cents per gallon. Figure 6 summarizes the effective state gasoline tax rates for the 50 states and Washington, DC.

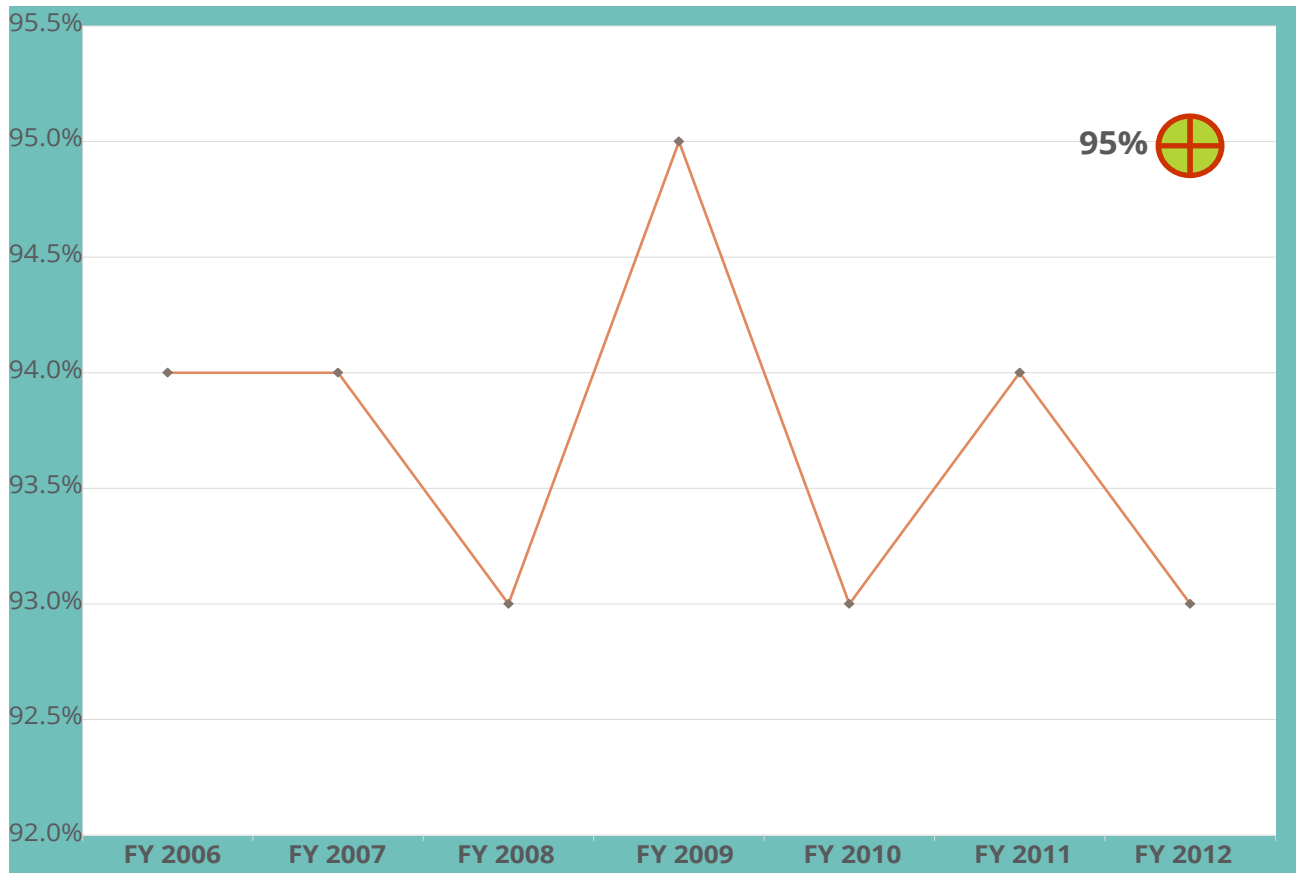


Source: American Petroleum Institute
Figure 6 State Gasoline Taxes

Tennessee’s total gasoline tax includes an excise tax of 20 cents per gallon, a special petroleum tax of 1 cent per gallon and an environmental assurance fee of 0.4 cents per gallon. Among the surrounding states, only Georgia has introduced a statewide sales tax on gasoline (as opposed to a flat per gallon excise tax). For an analysis comparing gasoline taxes in Tennessee with surrounding and peer states, see the Highway User Fees in Tennessee and in Surrounding & Peer States section on page 31.

State Diesel Fuel Tax

There is also potential for Tennessee to leverage the state diesel fuel tax in order to increase funding for highways. The tax per gallon of diesel fuel to Tennessee consumers is lower than the average tax per gallon nationally. Tennessee’s state diesel fuel tax (inclusive of excise tax and other state taxes) is currently 18.4 cents per gallon. Nationally, the average state diesel fuel tax is 29.0 cents per gallon. Figure 7 summarizes the effective state diesel fuel tax rates for the 50 states and Washington, DC.



Source: American Petroleum Institute

Figure 7 State Diesel Fuel Taxes

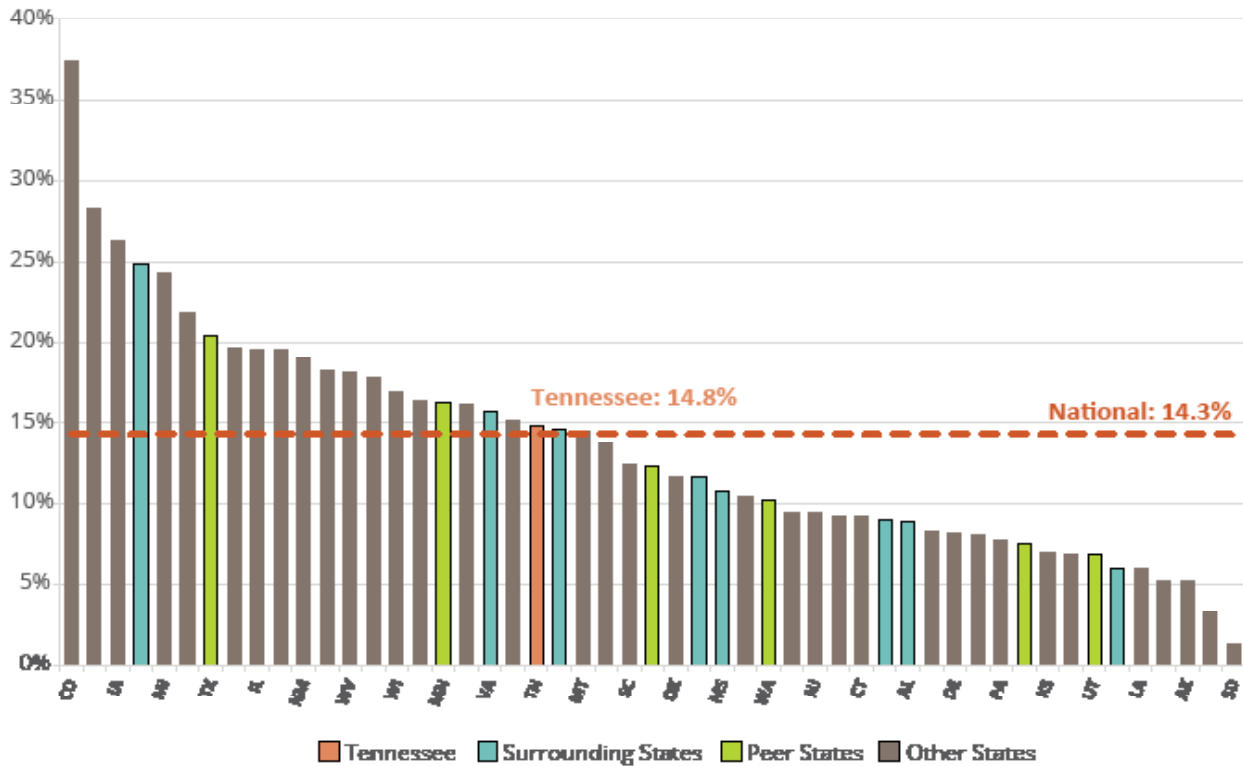
Tennessee's total diesel fuel tax includes an excise tax of 17 cents per gallon, a special petroleum tax 1 cent per gallon and an environmental assurance fee of 0.4 cents per gallon. Among the surrounding states, only Georgia has introduced a state sales tax on diesel fuel (as opposed to a flat per-gallon excise tax). For an analysis comparing state diesel fuel taxes in Tennessee with surrounding and peer states, see the Highway User Fees in Tennessee and in Surrounding & Peer States section on page 31.

3.2.3 Motor Vehicle Fees

State motor vehicle fees are Tennessee's third largest funding source, making up 15% of all receipts from 2007 to 2012 and averaging \$283.3 million (YOE \$) annually. Motor vehicle fees, sometimes called Department of Motor Vehicles (DMV) fees, are included with motor vehicle fuel taxes as a high user fee. Usually vehicle fees include annual vehicle registration charges, vehicle titling fees, and annual driver license fees.

Among all the states, Tennessee was the 21st most-dependent on motor vehicle fees over the six years. Colorado was the most-dependent with 37% of all receipts coming from motor vehicle fees; South Dakota was the least-dependent with 1% of all receipts coming from this source. Tennessee was slightly more-dependent than the nation as a whole, which received 14% of all receipts through motor vehicle fees. Figure 8 summarizes the motor vehicle fees received by the 50 states and Washington, DC as a percentage of total receipts.

DMV Fees (% of Total Receipts)



Source: Federal Highway Administration

Figure 8 50-State Summary of Motor Vehicle Fees (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the third most-dependent on motor vehicle fees from 2007 to 2012. Kentucky was the most-dependent with 25% of all receipts coming from motor vehicle fees; Georgia was the least-dependent with 6% of all receipts coming from this source. As a whole, the nine states were slightly less-dependent than the nation. Vehicle fees in the nine states funded 13% of all highway costs compared to 14% for the nation. Table 9 summarizes the federal revenues received by the surrounding states as a percentage of total receipts.

Table 9 Surrounding State Summary of Motor Vehicle Fees (Billions of YOE \$) 2007-2012

Rank	State	State Motor Vehicle Receipts	Total Receipts	Percent
1	Kentucky	\$ 0.55	\$ 2.23	24.8%
2	Virginia	0.62	3.92	15.7%
3	Tennessee	0.28	1.91	14.8%
4	North Carolina	0.59	4.06	14.6%
5	Arkansas	0.14	1.21	11.6%
6	Mississippi	0.14	1.35	10.7%
7	Missouri	0.29	3.20	9.0%
8	Alabama	0.17	1.86	9.0%
9	Georgia	0.20	3.32	6.0%
TOTAL		\$ 2.99	\$ 23.07	13.0%

Source: Federal Highway Administration

Among the peer states, Tennessee was the third most-dependent on motor vehicle fees from 2007 to 2012. Texas was the most-dependent with 20% of all receipts coming from motor vehicle fees; Utah was the least-dependent with 7% of all receipts coming from this source. As a whole, the peer states were slightly more-dependent than the nation. Vehicle fees in the peer states funded 15% of all highway costs compared to 14% for the nation. Table 10 summarizes the federal revenues received by the peer states as a percentage of total receipts.

Table 10 Peer State Summary of Motor Vehicle Fees (Billions of YOE \$) 2007-2012

Rank	State	State Motor Vehicle Receipts	Total Receipts	Percent
1	Texas	\$ 2.61	\$ 12.84	20.4%
2	Minnesota	0.42	2.61	16.2%
3	Tennessee	0.28	1.91	14.8%
4	Florida	0.97	7.91	12.3%
5	Washington	0.45	4.40	10.3%
6	Indiana	0.23	3.13	7.5%
7	Utah	0.13	1.95	6.8%
TOTAL		\$ 5.11	\$ 34.75	14.7%

Source: Federal Highway Administration

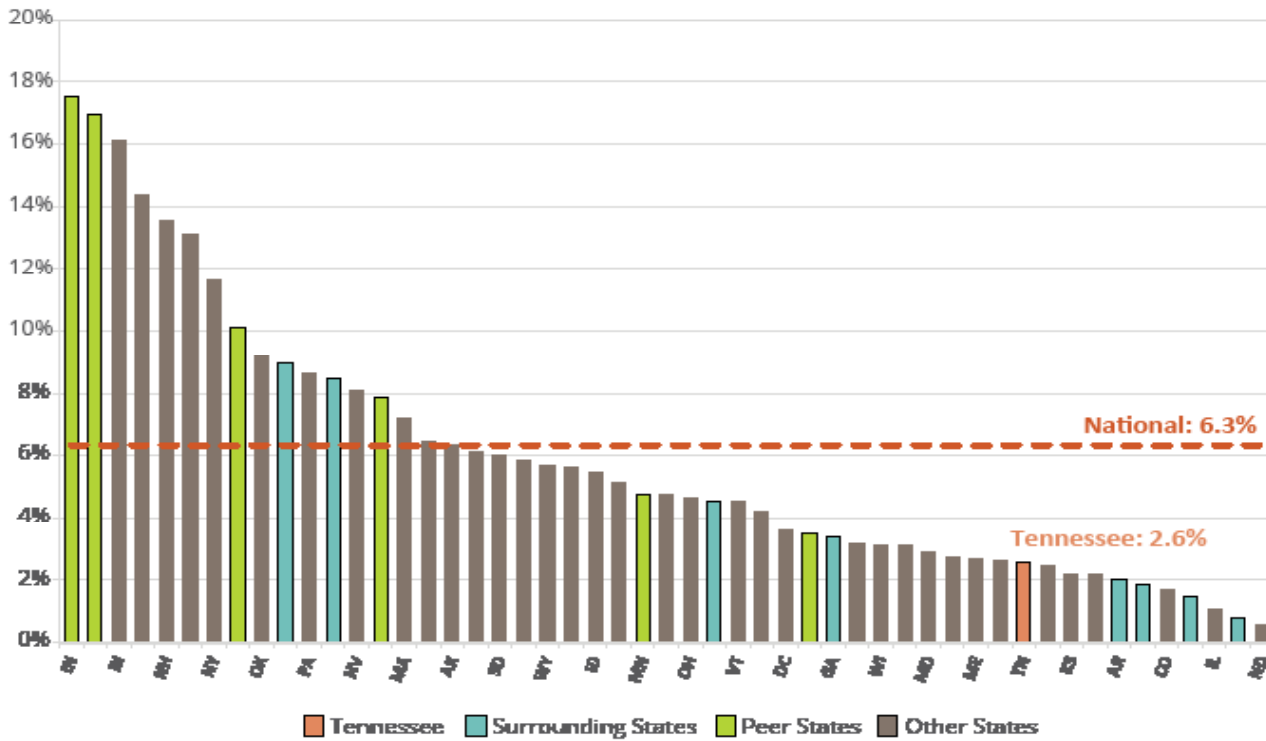
Like most states, Tennessee receives proceeds from annual vehicle registrations, vehicle titling fees, and driver license fees. The following sections assess the proceeds from each source. For an analysis comparing the Tennessee state motor vehicle fees with surrounding states' motor vehicle fees, see the Highway User Fees in Tennessee and in Surrounding & Peer States section on page 31.

3.2.4 Miscellaneous State Receipts

Miscellaneous state sources are Tennessee's fourth largest funding source, making up 3% of all receipts from 2007 to 2012 and averaging \$49.1 million (YOE \$) annually. Miscellaneous state funds include all revenues received that cannot be specifically classified as a state highway user fee (fuel tax, vehicle fee, or toll), appropriation from the general fund, bond proceeds, or other state funds (other state sales and use taxes, oil royalties, severance taxes, corporate income taxes used for highways, specific ownership taxes, traffic impact fees, or proceeds from benefit assessments, among others). The most-common sources of miscellaneous state receipts include private donations (including cash contributions and transfers of real property), sign fees, insurance recoveries, rentals, and permit fees.

Among all the states, Tennessee was the 41st most-dependent on miscellaneous state sources over the six years. Indiana was the most-dependent with 18% of all receipts coming from miscellaneous state sources; North Dakota was the least-dependent with less than 1% of all receipts coming from these sources. Tennessee was also less-dependent than the nation as a whole, which received 6% of all receipts through miscellaneous state sources. Figure 9 summarizes the miscellaneous state funds received by the 50 states and Washington, DC as a percentage of total receipts.

Miscellaneous (% of Total Receipts)



Source: Federal Highway Administration

Figure 9 50-State Summary of Miscellaneous State Funds (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the fifth most-dependent on miscellaneous state funds from 2007 to 2012. Kentucky was the most-dependent with 9% of all receipts coming from miscellaneous state funds; Mississippi was the least-dependent with 1% of all receipts coming from this source. As a whole, the nine states were less-dependent than the nation. Miscellaneous state proceeds in the nine states funded 4% of all highway costs compared to 6% for the nation. Table 11 summarizes the miscellaneous state revenues received by the surrounding states as a percentage of total receipts.

Table 11 Surrounding State Summary of Miscellaneous State Funds (Billions of YOE \$) 2007-2012

Rank	State	Misc. Receipts	Total Receipts	Percent
1	Kentucky	\$ 0.20	\$ 2.23	9.0%
2	Missouri	0.27	3.20	8.4%
3	Virginia	0.18	3.92	4.5%
4	Georgia	0.11	3.32	3.4%
5	Tennessee	0.05	1.91	2.6%
6	Arkansas	0.02	1.21	2.0%
7	Alabama	0.03	1.86	1.9%
8	North Carolina	0.06	4.06	1.4%
9	Mississippi	0.01	1.35	0.8%
TOTAL		\$ 0.94	\$ 23.07	4.1%

Source: Federal Highway Administration

Among the peer states, Tennessee was the least-dependent on miscellaneous state funds from 2007 to 2012. Indiana was the most-dependent with 18% of all receipts coming from miscellaneous state funds. As a whole, the peer states were more-dependent than the nation. Miscellaneous state proceeds in the peer states funded 10% of all highway costs compared to 6% for the nation. Table 12 summarizes the miscellaneous state revenues received by the peer states as a percentage of total receipts.

Table 12 Peer State Summary of Miscellaneous State Funds (Billions of YOE \$) 2007-2012

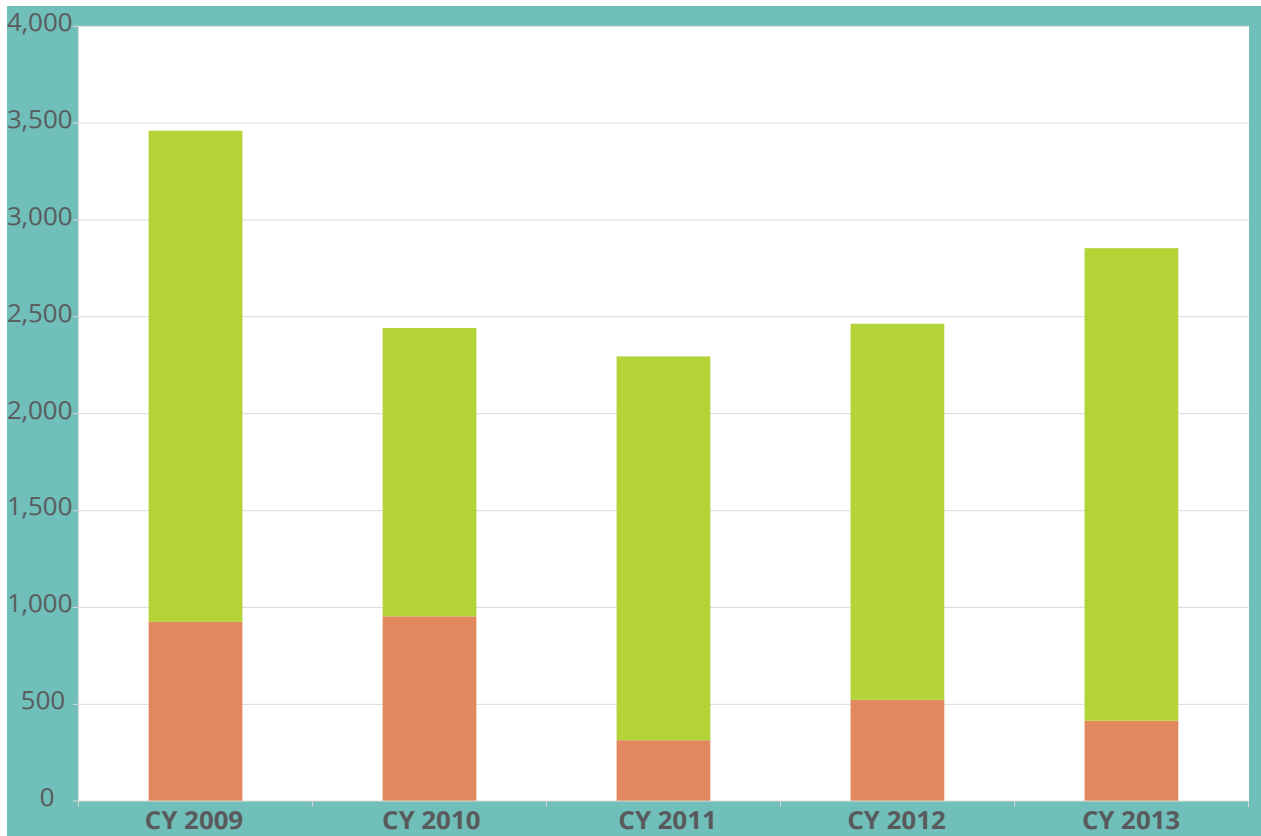
Rank	State	Misc. Receipts	Total Receipts	Percent
1	Indiana	\$ 0.55	\$ 3.13	17.5%
2	Washington	0.74	4.40	16.9%
3	Texas	1.29	12.84	10.1%
4	Florida	0.62	7.91	7.9%
5	Minnesota	0.12	2.61	4.7%
6	Utah	0.07	1.95	3.5%
7	Tennessee	0.05	1.91	2.6%
TOTAL		\$ 3.45	\$ 34.75	9.9%

Source: Federal Highway Administration

3.2.5 Other State Funds

Other state sources are Tennessee's fifth largest funding source, making up 3% of all receipts from 2007 to 2012 and averaging \$49.8 million (YOE \$) annually. Other state funds include all revenues received from state sources other than state motor fuel taxes and motor vehicles fees. Examples include other state sales and use taxes, oil royalties, severance taxes, corporate income taxes used for highways, specific ownership taxes, traffic impact fees, and proceeds from benefit assessments, among others.

Among all the states, Tennessee was the 21st most-dependent on other state sources over the six years. Arizona was the most-dependent with 23% of all receipts coming from other state sources; Illinois was the least-dependent with less than 1% of all receipts coming from these sources. Fourteen states had no receipts from other state sources. Tennessee was also less-dependent than the nation as a whole, which received 5% of all receipts other state funds. Figure 10 summarizes the other state funds received by the 50 states and Washington, DC as a percentage of total receipts.



Source: Federal Highway Administration

Figure 10 50-State Summary of Other State Funds (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the sixth most-dependent on other state funds from 2007 to 2012. Virginia was the most-dependent with 17% of all receipts coming from other state funds; Arkansas was the least-dependent with 2% of all receipts coming from this source. Kentucky had no receipts from other state funds over the six years. As a whole, the nine states were more-dependent than the nation. Other state proceeds in the nine states funded 8% of all highway costs compared to 5% for the nation. Table 13 summarizes the other state revenues received by the surrounding states as a percentage of total receipts.

Table 13 Surrounding State Summary of Other State Funds (Billions of YOE \$) 2007-2012

Rank	State	Other State Receipts	Total Receipts	Percent
1	Virginia	\$ 0.65	\$ 3.92	16.5%
2	North Carolina	0.51	4.06	12.7%
3	Missouri	0.29	3.20	9.2%
4	Georgia	0.21	3.32	6.4%
5	Mississippi	0.04	1.35	3.3%
6	Tennessee	0.05	1.91	2.6%
7	Alabama	0.05	1.86	2.6%
8	Arkansas	0.02	1.21	1.7%
9	Kentucky	-	2.23	0.0%
TOTAL		\$ 1.83	\$ 23.07	7.9%

Source: Federal Highway Administration

Among the peer states, Tennessee was the third most-dependent on other state funds from 2007 to 2012. Utah was the most-dependent with 15% of all receipts coming from other state funds; Texas was the least-dependent with less than 1% of all receipts coming from this source. As a whole, the peer states were less-dependent than the nation. Other state proceeds in the peer states funded 3% of all highway costs compared to 5% for the nation. Table 14 summarizes the other state revenues received by the peer states as a percentage of total receipts.

Table 14 Peer State Summary of Other State Funds (Billions of YOE \$) 2007-2012

Rank	State	Other State Receipts	Total Receipts	Percent
1	Utah	\$ 0.29	\$ 1.95	14.8%
2	Minnesota	0.25	2.61	9.5%
3	Tennessee	0.05	1.91	2.6%
4	Indiana	0.07	3.13	2.2%
5	Florida	0.16	7.91	2.1%
6	Washington	0.03	4.40	0.7%
7	Texas	0.04	12.84	0.3%
TOTAL		\$ 0.89	\$ 34.75	2.6%

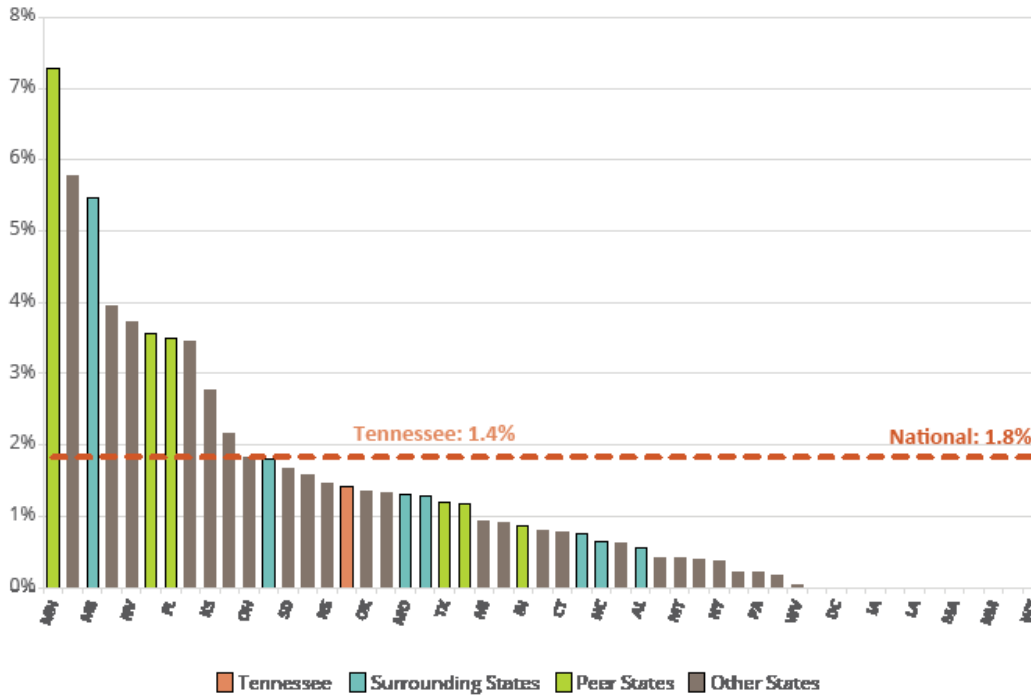
Source: Federal Highway Administration

3.2.6 Local Funds

Local funds are Tennessee's sixth largest funding source, making up 1% of all receipts from 2007 to 2012 and averaging \$27.1 million (YOE \$) annually.

Among all the states, Tennessee was the 16th most-dependent on local funds over the six years. Minnesota was the most-dependent with 7% of all receipts coming from local funds; West Virginia was the least-dependent with less than 1% of all receipts coming from local funds. Twelve states had no receipts from local funds. Tennessee was also less-dependent than the nation as a whole, which received 2% of all receipts from local funds. Figure 11 summarizes the local funds received by the 50 states and Washington, DC as a percentage of total receipts.

Local Funds (% of Total Receipts)



Source: Federal Highway Administration

Figure 11 50-State Summary of Local Funds (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the third most-dependent on local funds from 2007 to 2012. Mississippi was the most-dependent with 6% of all receipts coming from local funds; Alabama was the least-dependent with less than 1% of all receipts coming from this source. Kentucky had no receipts from local funds over the six years. As a whole, the nine states were less-dependent than the nation. Local proceeds in the nine states funded 1% of all highway costs compared to 2% for the nation. Table 15 summarizes the local revenues received by the surrounding states as a percentage of total receipts

Table 15 Surrounding State Summary of Local Funds (Billions of YOE \$) 2007-2012

Rank	State	Local Receipts	Total Receipts	Percent
1	Mississippi	\$ 0.07	\$ 1.35	5.5%
2	Virginia	0.07	3.92	1.8%
3	Tennessee	0.03	1.91	1.4%
4	Missouri	0.04	3.20	1.3%
5	Arkansas	0.02	1.21	1.3%
6	Georgia	0.03	3.32	0.8%
7	North Carolina	0.03	4.06	0.7%
8	Alabama	0.01	1.86	0.6%
9	Kentucky	-	2.23	0.0%
TOTAL		\$ 0.29	\$ 23.07	1.3%

Source: Federal Highway Administration

Among the peer states, Tennessee was the fourth most-dependent on local funds from 2007 to 2012. Minnesota was the most-dependent with 7% of all receipts coming from local funds; Indiana was the least-dependent with 1% of all receipts coming from this source. As a whole, the peer states were slightly more-dependent than the nation. Local proceeds in the peer states funded 2.3% of all highway costs compared to 1.8% for the nation. Table 16 summarizes the local revenues received by the peer states as a percentage of total receipts.

Table 16 Peer State Summary of Local Funds (Billions of YOY \$) 2007-2012

Rank	State	Local Receipts	Total Receipts	Percent
1	Minnesota	\$ 0.19	\$ 2.61	7.3%
2	Utah	0.07	1.95	3.6%
3	Florida	0.28	7.91	3.5%
4	Tennessee	0.03	1.91	1.4%
5	Texas	0.15	12.84	1.2%
6	Washington	0.05	4.40	1.2%
7	Indiana	0.03	3.13	0.9%
TOTAL		\$ 0.79	\$ 34.75	2.3%

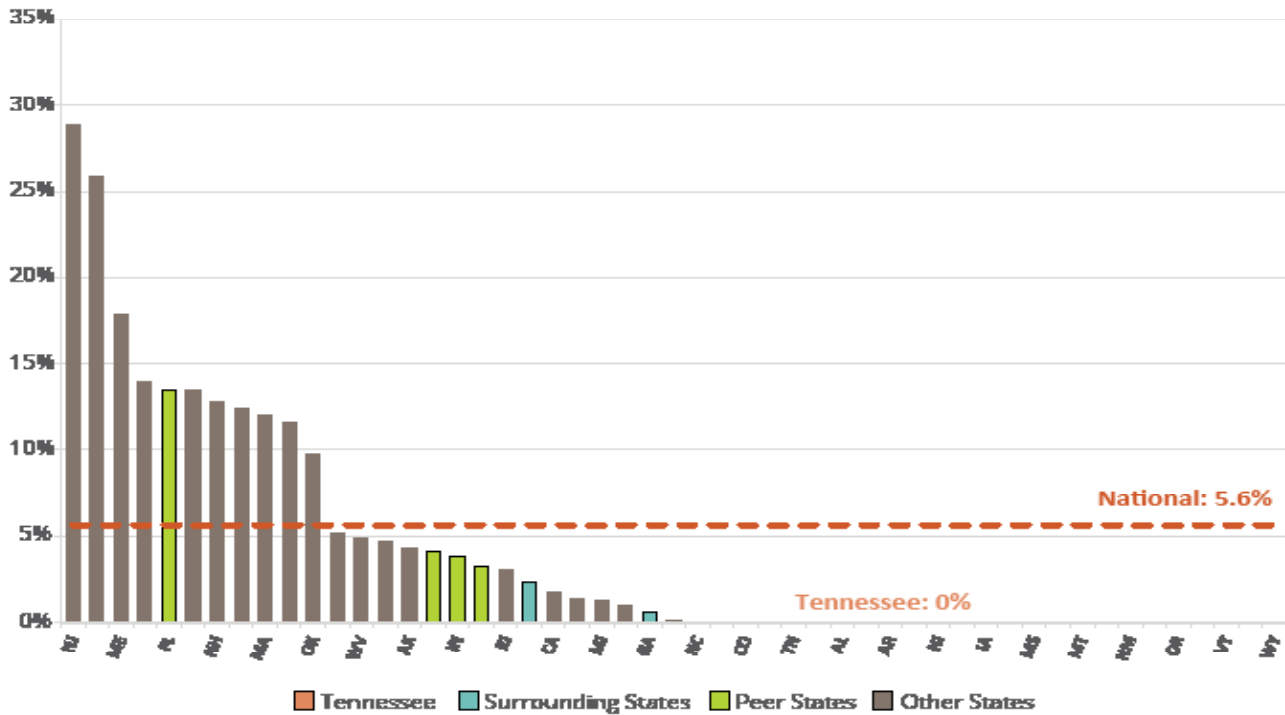
Source: Federal Highway Administration

3.2.7 Tolls

Tolls are a direct user fee charged to drivers as they use certain highway facilities or services. Across the country, restraints from traditional funding sources (federal funds, motor fuel taxes) have created more interest in using tolls to create a sustainable revenue source to support major highway investments. Recent federal transportation funding legislation has further fueled the growth in tolling as they have incentivized the use of federal funds in conjunction with private resources for highway projects. This arrangement is known as a public-private partnership (P3). For more information about P3s and their use in constrained funding environments, see Public-Private Partnerships on page 53.

Tennessee had no toll revenue from 2007 to 2012. Among all the states, New Jersey was the most-dependent with 29% of all receipts coming from tolls; Connecticut was the least-dependent with less than 1% of all receipts coming from this source. Twenty-one states had no toll revenue. As a whole, the nation received 6% of all receipts from tolls. Figure 12 summarizes the toll revenue received by the 50 states and Washington, DC as a percentage of total receipts.

Tolling (% of Total Receipts)



Source: Federal Highway Administration

Figure 12 50-State Summary of Toll Revenue (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was one of six that received no toll revenue from 2007 to 2012. Only Georgia, North Carolina, and Virginia had any revenue from this source. Virginia was the most-dependent with 2% of all receipts coming from tolls; North Carolina was the least-dependent with less than 1% of all receipts coming from this source. As a whole, the nine states were less-dependent than the nation. Toll revenue in the nine states funded less than 1% of all highway costs compared to 6% for the nation. Table 17 summarizes the toll revenues received by the surrounding states as a percentage of total receipts.

Table 17 Surrounding State Summary of Toll Revenue (Billions of YOE \$) 2007-2012

Rank	State	Toll Receipts	Total Receipts	Percent
1	Virginia	\$ 0.09	\$ 3.92	2.3%
2	Georgia	0.02	3.32	0.6%
3	North Carolina	0.00	4.06	0.1%
4	Alabama	-	1.86	0.0%
4	Arkansas	-	1.21	0.0%
4	Kentucky	-	2.23	0.0%
4	Mississippi	-	1.35	0.0%
4	Missouri	-	3.20	0.0%
4	Tennessee	-	1.91	0.0%
TOTAL		\$ 0.11	\$ 23.07	0.5%

Source: Federal Highway Administration

Among the peer states, Tennessee was one of two that received no toll revenue from 2007 to 2012. Florida was the most-dependent with 14% of all receipts coming from tolls. As a whole, the peer states were less-dependent than the nation. Toll revenue in the peer states funded less 5% of all highway costs compared to 6% for the nation. Table 18 summarizes the toll revenues

received by the peer states as a percentage of total receipts.

Table 18 Peer State Summary of Toll Revenue (Billions of YOE \$) 2007-2012

Rank	State	Toll Receipts	Total Receipts	Percent
1	Florida	\$ 1.07	\$ 7.91	13.5%
2	Washington	0.18	4.40	4.2%
3	Indiana	0.12	3.13	3.9%
4	Texas	0.42	12.84	3.2%
5	Utah	0.00	1.95	0.0%
6	Minnesota	-	2.61	0.0%
6	Tennessee	-	1.91	0.0%
TOTAL		\$ 1.79	\$ 34.75	5.1%

Source: Federal Highway Administration

3.2.8 Bond Proceeds

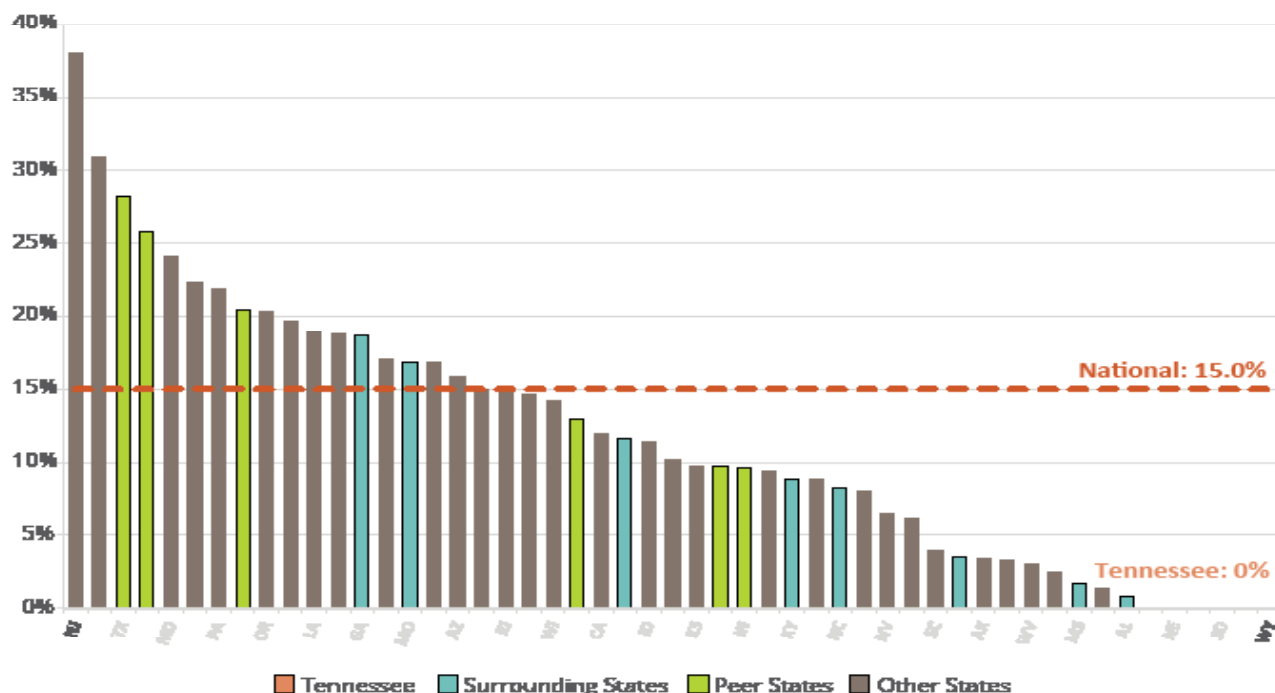
The costs of some transportation projects exceed available funds from traditional sources like tax receipts and user fees. For this reason, many states look to borrowing in order to pay for highway projects—usually by issuing bonds. Leveraging debt to fund transportation projects requires a revenue source pledged for repayment, usually in the form of future state taxes and user fees (for a discussion of using toll receipts to repay debt, see Public-Private Partnerships on page 53). For the most part, using debt to fund highway projects accelerates project delivery compared to using traditional pay-as-you-go (PAYGO) funds like tax receipts and user fees. Delaying projects can impose inflation costs and lead to deferred economic activity.

Using debt mechanisms to fund major transportation projects does, however, impose additional costs related to debt service and adds to the state's overall debt burden. However, some of these costs are offset by the accelerated project delivery. For more discussion of debt financing, see Debt Financing on page 53.

Tennessee had no revenue from bond proceeds from 2007 to 2012. It is one of only a handful of states whose highway projects are completely PAYGO. Other states that are also completely PAYGO include Iowa, Montana, Nebraska, North and South Dakota, and Wyoming. Note that in 2009, Tennessee won legislative approval for a four-year, \$350 million bond program to fund bridge repairs. Although these bonds were never issued, bond mechanisms to fund highway projects still remain a very popular tool nationally.

Among all the states, New Jersey was the most-dependent with 38% of all receipts coming through bonding mechanisms; Alabama was the least-dependent with 1% of all receipts coming from this source. Six states did not use bonding mechanisms for highway finance (Iowa, Nebraska, North Dakota, South Dakota, Tennessee, and Wyoming). As a whole, the state departments of transportation received 15% of all receipts from bonds. Figure 13 summarizes the bond proceeds received by the 50 states and Washington, DC as a percentage of total receipts.

Bond Proceeds (% of Total Receipts)



Source: Federal Highway Administration

Figure 13 50-State Summary of Bond Proceeds (% of Total Receipts) 2007-2012

Among the surrounding states, Tennessee was the only state that received no revenue from bond mechanisms from 2007 to 2012. Georgia was the most-dependent with 19% of all receipts coming from bond proceeds. As a whole, the nine states were less-dependent than the nation. Bond proceeds in the nine states funded 10% of all highway costs compared to 15% for the nation. Table 19 summarizes the bond proceeds received by the surrounding states as a percentage of total receipts.

Table 19 Surrounding State Summary of Bond Proceeds (Billions of YOE \$) 2007-2012

Rank	State	Bond Receipts	Total Receipts	Percent
1	Georgia	\$ 0.62	\$ 3.32	18.7%
2	Missouri	0.54	3.20	16.9%
3	Virginia	0.46	3.92	11.6%
4	Kentucky	0.20	2.23	8.8%
5	North Carolina	0.33	4.06	8.2%
6	Arkansas	0.04	1.21	3.5%
7	Mississippi	0.02	1.35	1.7%
8	Alabama	0.02	1.86	0.8%
9	Tennessee	-	1.91	0.0%
TOTAL		\$ 2.23	\$ 23.07	9.7%

Source: Federal Highway Administration

Among the peer states, Tennessee was the only state that received no revenue from bond mechanisms from 2007 to 2012. Texas was the most-dependent with 28% of all receipts coming from bond proceeds. As a whole, the peer states were more-dependent than the nation. Bond proceeds in the peer states funded 19% of all highway costs compared to 15% for the nation. Table 20 summarizes the bond proceeds received by the peer states as a percentage of total receipts.

Among the surrounding states, Tennessee and Mississippi received no revenue from the state general fund from 2007 to 2012. Virginia was the most-dependent with 7% of all receipts coming from the general fund; North Carolina was the least-dependent with less than 1% of all receipts coming from this source. As a whole, the nine states were less-dependent than the nation. General fund proceeds in the nine states funded 2% of all highway costs compared to 5% for the nation. Table 21 summarizes the proceeds from state general funds received by the surrounding states as a percentage of total receipts.

Table 21 Surrounding State Summary of General Fund Proceeds (Billions of YOE \$) 2007-2012

Rank	State	General Fund Receipts	Total Receipts	Percent
1	Virginia	\$ 0.26	\$ 3.92	6.7%
2	Alabama	0.11	1.86	5.9%
3	Georgia	0.15	3.32	4.5%
4	Arkansas	0.04	1.21	3.2%
5	Kentucky	0.01	2.23	0.3%
6	Missouri	0.00	3.20	0.1%
7	North Carolina	0.00	4.06	0.1%
8	Mississippi	-	1.35	0.0%
8	Tennessee	-	1.91	0.0%
TOTAL		\$ 0.58	\$ 23.07	2.5%

Source: Federal Highway Administration

Among the peer states, Tennessee was the only state that received no revenue from the state general fund from 2007 to 2012. Utah was the most-dependent with 8% of all receipts coming from the general fund. As a whole, the peer states were less-dependent than the nation. General fund proceeds in the peer states funded 2% of all highway costs compared to 5% for the nation. Table 22 summarizes the proceeds from state general funds received by the peer states as a percentage of total receipts.

Table 22 Peer State Summary of General Fund Proceeds (Billions of YOE \$) 2007-2012

Rank	State	General Fund Receipts	Total Receipts	Percent
1	Utah	\$ 0.15	\$ 1.95	7.7%
2	Florida	0.30	7.91	3.9%
3	Minnesota	0.08	2.61	3.2%
4	Indiana	0.02	3.13	0.8%
5	Texas	0.04	12.84	0.3%
6	Washington	0.00	4.40	0.0%
7	Tennessee	-	1.91	0.0%
TOTAL		\$ 0.61	\$ 34.75	1.7%

Source: Federal Highway Administration

3.3 HIGHWAY USER FEES IN TENNESSEE AND IN SURROUNDING & PEER STATES

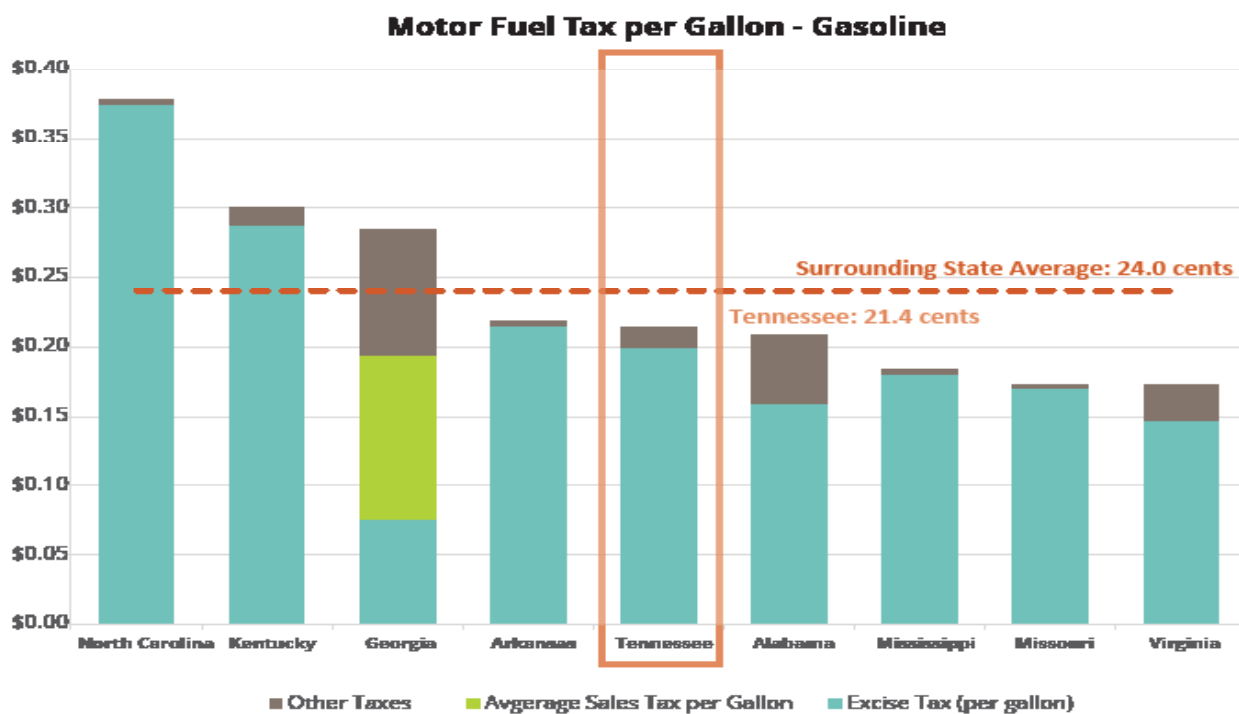
The following section compares the taxes and fees seen by drivers in Tennessee with the taxes and fees paid in the eight bordering states (Alabama, Arkansas, Georgia, Kentucky, Mississippi, Missouri, North Carolina, and Virginia) and the six peer states (Florida, Indiana, Minnesota, Texas, Utah, and Washington).

3.3.1 State Motor Fuel Tax

Among all states, Tennessee was the second most-dependevnt on state motor fuel taxes for transportation funding over the six years from 2007 to 2012. Although already very dependent, there is potential to further leverage the motor fuel tax to increase transportation funding due its relatively low rate. Like most states, Tennessee receives tax proceeds from the sale of both gasoline and diesel fuel.

Gasoline Tax

Tennessee’s excise tax on gasoline is 21.4 cents per gallon. Among the surrounding states, the average tax is 24.0 cents per gallon. North Carolina has the highest tax rate of 37.8 cents per gallon; Virginia has the lowest rate of 17.3 cents per gallon. Figure 15 and Table 23 summarize the state gasoline taxes in the surrounding states.



Source: American Petroleum Institute

Figure 15 Surrounding State Gasoline Taxes

Table 23 Surrounding State Average Gasoline Taxes and Effective Dates

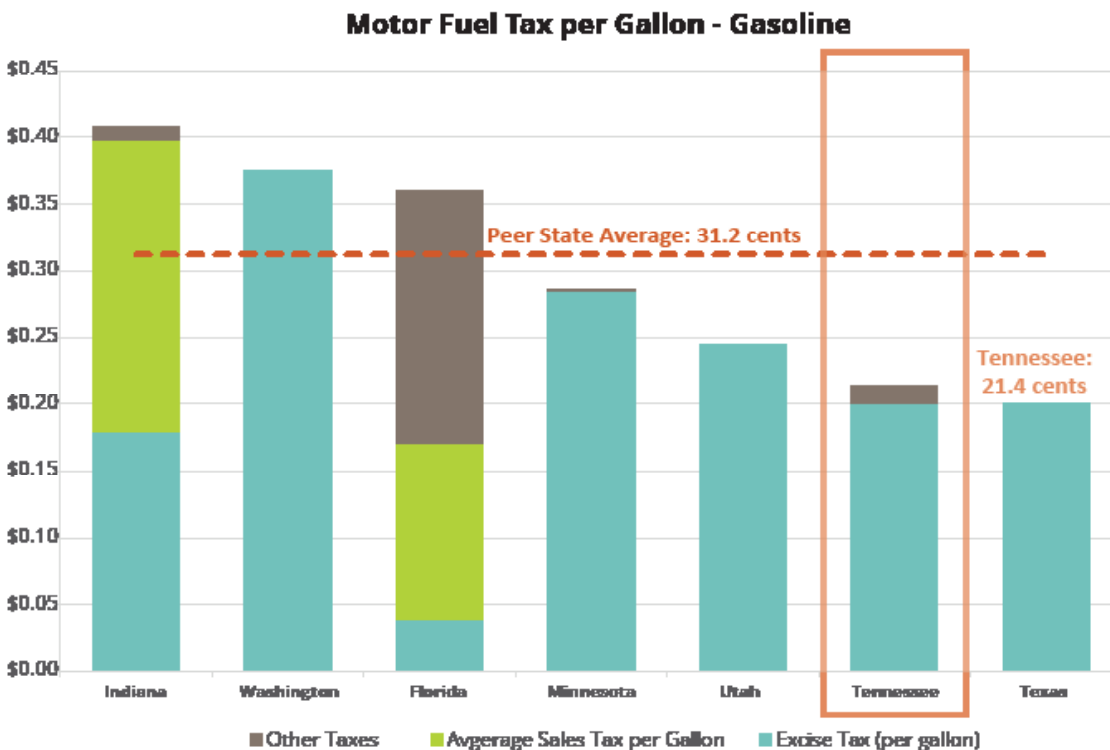
Rank	State	State Excise Tax per Gallon	Other State Taxes per Gallon	Total State Taxes per Gallon	Effective Date
1	N. Carolina	\$ 0.375	\$ 0.003	\$ 0.378	2011
2	Kentucky	0.287	0.014	0.301	2012
3	Georgia	0.075	0.210	0.285	1971*
4	Arkansas	0.215	0.003	0.218	2001
5	Tennessee	0.200	0.014	0.214	1989
6	Alabama	0.160	0.049	0.209	1995
7	Mississippi	0.180	0.004	0.184	2000
8	Missouri	0.170	0.003	0.173	1996
9	Virginia	0.148	0.025	0.173	1987

*Excise tax only

Source: American Petroleum Institute; Federal Highway Administration

Tennessee's total gasoline tax includes an excise tax of 20 cents per gallon and 1.4 cents per gallon in other taxes (a special petroleum tax of one cent per gallon and an environmental assurance fee of 0.4 cents per gallon). Among the surrounding states, only Georgia has introduced a sales tax on gasoline (as opposed to a flat per-gallon excise tax).

Among the peer states, the average tax is 31.2 cents per gallon. Indiana has the highest tax rate of 40.8 cents per gallon; Texas has the lowest rate of 20.0 cents per gallon. Figure 16 and Table 24 summarize the state gasoline taxes in the peer states.



Source: American Petroleum Institute

Figure 16 Peer State Gasoline Taxes

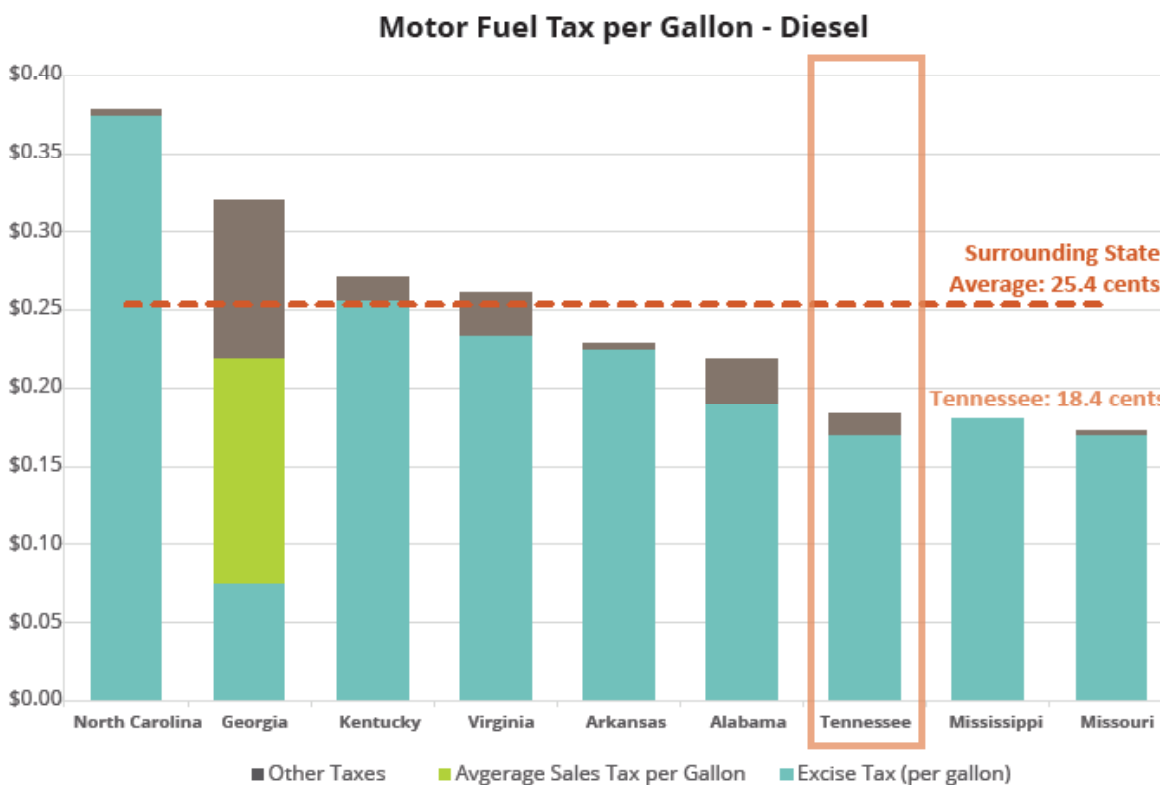
Table 24 Peer State Average Gasoline Taxes and Effective Dates

Rank	State	State Excise Tax per Gallon	Other State Taxes per Gallon	Total State Taxes per Gallon	Effective Date
1	Indiana	\$ 0.180	\$ 0.228	\$ 0.408	2003
2	Washington	0.375	-	0.375	2008
3	Florida	0.040	0.320	0.360	2012
4	Minnesota	0.285	0.001	0.286	2012
5	Utah	0.245	-	0.245	1997
6	Tennessee	0.200	0.014	0.214	1989
7	Texas	0.200	-	0.200	1991

Source: American Petroleum Institute; Federal Highway Administration

Diesel Fuel Tax

Tennessee’s excise tax on diesel fuel is 18.4 cents per gallon. Among the surrounding states, the average tax is 25.4 cents per gallon. North Carolina has the highest tax rate of 37.8 cents per gallon; Missouri has the lowest rate of 17.3 cents per gallon. Figure 17 and Table 25 summarize the state diesel fuel taxes in the surrounding states.



Source: American Petroleum Institute

Figure 17 Surrounding State Average Diesel Fuel Taxes

Table 25 Surrounding State Average Diesel Fuel Taxes and Effective Dates

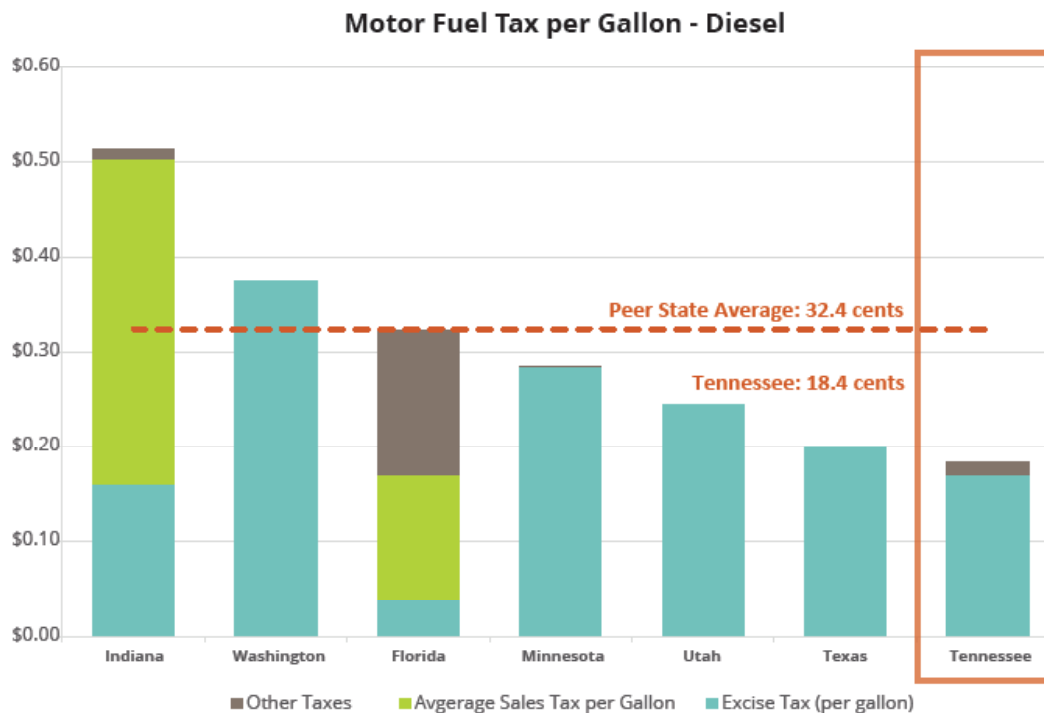
Rank	State	State Excise Tax per Gallon	Other State Taxes per Gallon	Total State Taxes per Gallon	Effective Date
1	North Carolina	\$ 0.375	\$ 0.003	\$ 0.378	2011
2	Georgia	0.075	0.245	0.320	1971*
3	Kentucky	0.257	0.014	0.271	2012
4	Virginia	0.234	0.027	0.261	1987
5	Arkansas	0.225	0.003	0.228	2001
6	Alabama	0.190	0.029	0.219	1992
7	Tennessee	0.170	0.014	0.184	1990
8	Mississippi	0.180	-	0.180	2000
9	Missouri	0.170	0.003	0.173	1996

*Excise tax only

Source: American Petroleum Institute; Federal Highway Administration

Tennessee’s total diesel fuel tax includes an excise tax of 17 cents per gallon and 1.4 cents per gallon in other taxes (a special petroleum tax of 1 cent per gallon and an environmental assurance fee of 0.4 cents per gallon). Among the surrounding states, only Georgia has introduced a state sales tax on diesel fuel (as opposed to a flat per-gallon excise tax).

Among the peer states, the average tax is 32.4 cents per gallon. Indiana has the highest tax rate of 51.3 cents per gallon; Tennessee has the lowest rate of 18.4 cents per gallon. Figure 18 and Table 26 summarize the state diesel fuel taxes in the peer states.



Source: American Petroleum Institute

Figure 18 Peer State Average Diesel Fuel Taxes

Table 26 Peer State Average Diesel Fuel Taxes and Effective Dates

Rank	State	State Excise Tax per Gallon	Other State Taxes per Gallon	Total State Taxes per Gallon	Effective Date
1	Indiana	\$ 0.160	\$ 0.353	\$ 0.513	1997
2	Washington	0.375	-	0.375	2008
3	Florida	0.040	0.284	0.324	2012
4	Minnesota	0.285	0.001	0.286	2012
5	Utah	0.245	-	0.245	1997
6	Texas	0.200	-	0.200	1991
7	Tennessee	0.170	0.014	0.184	1990

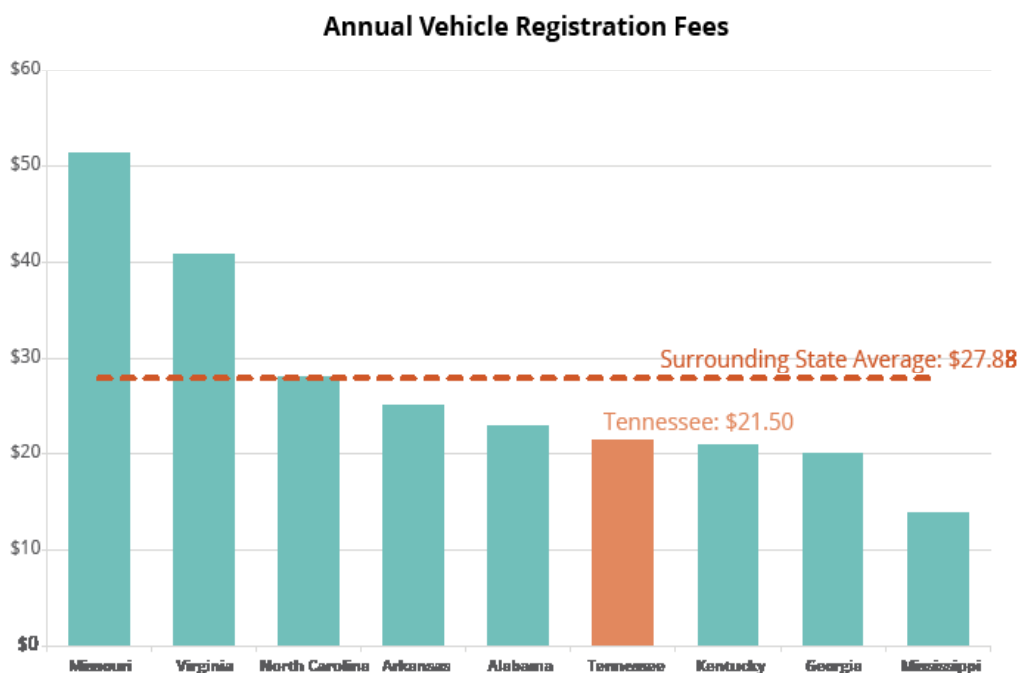
Source: American Petroleum Institute; Federal Highway Administration

Motor Vehicle Fees

Recall from the previous section assessing Tennessee's current funding picture that among all states, it was the 21st most-dependent on state motor vehicle over the six years from 2007 to 2012. There is potential to further leverage these motor vehicle fees to increase transportation funding due to their relatively low rates. Tennessee currently levies a lower gasoline and diesel fuel tax than its surrounding states. Like most states, Tennessee receives proceeds from annual vehicle registrations, vehicle titling fees, and driver license fees.

Annual Vehicle Registration Fees

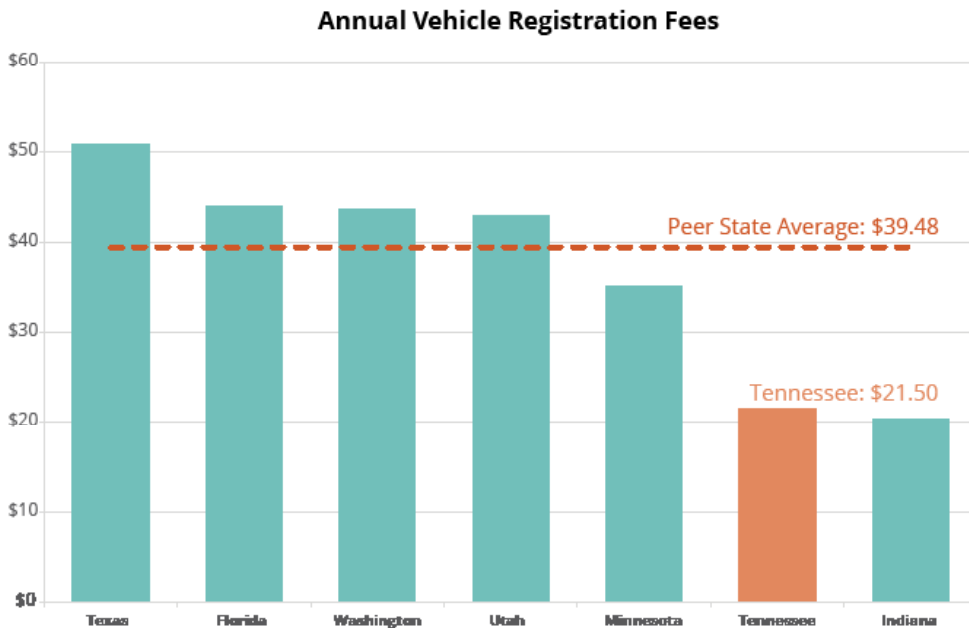
Tennessee has the potential to leverage their annual vehicle registration fees to increase funding for transportation investments. The average annual fee for Tennessee drivers is lower than the average fee among the surrounding states. Tennessee's average annual registration is currently \$21.50; among the surrounding states, the average fee is \$27.88. Missouri has the highest average fee of \$51.25; Mississippi has the lowest average fee of \$14.00. Figure 19 summarizes the average annual vehicle registration fees in the surrounding states.



Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 19 Surrounding State Average Annual Vehicle Registration Fees

Among the peer states, the average fee is \$39.48. Texas has the highest average fee of \$50.75; Indiana has the lowest average fee of \$20.35. Figure 20 summarizes the average annual vehicle registration fees in the peer states.

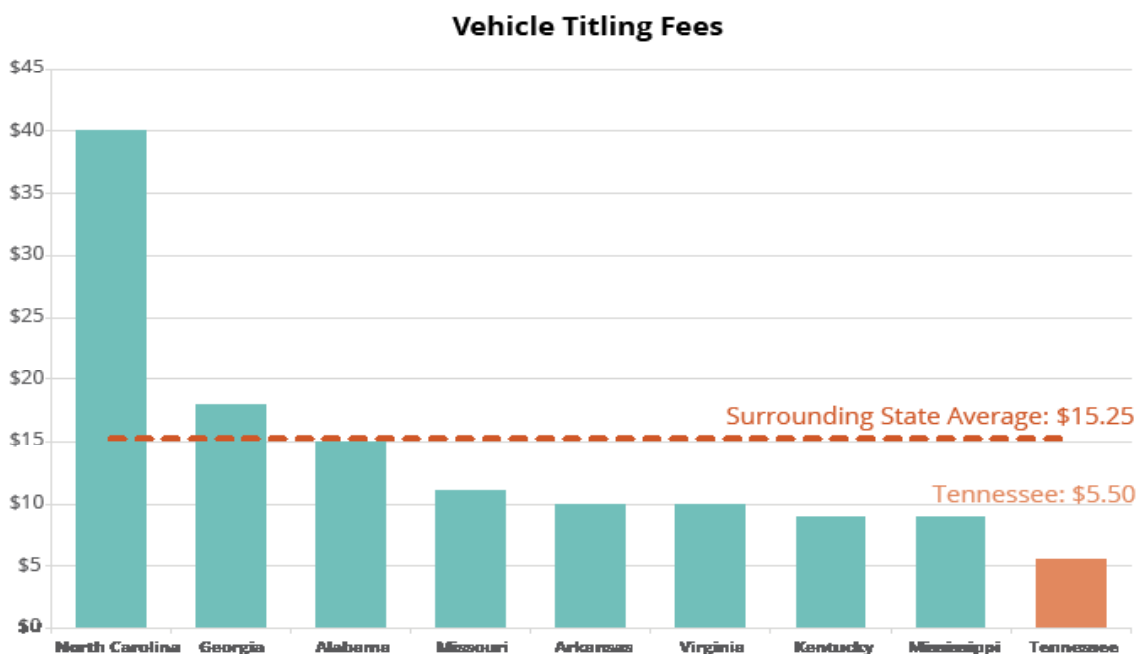


Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 20 Peer State Average Annual Vehicle Registration Fees

Vehicle Titling Fees

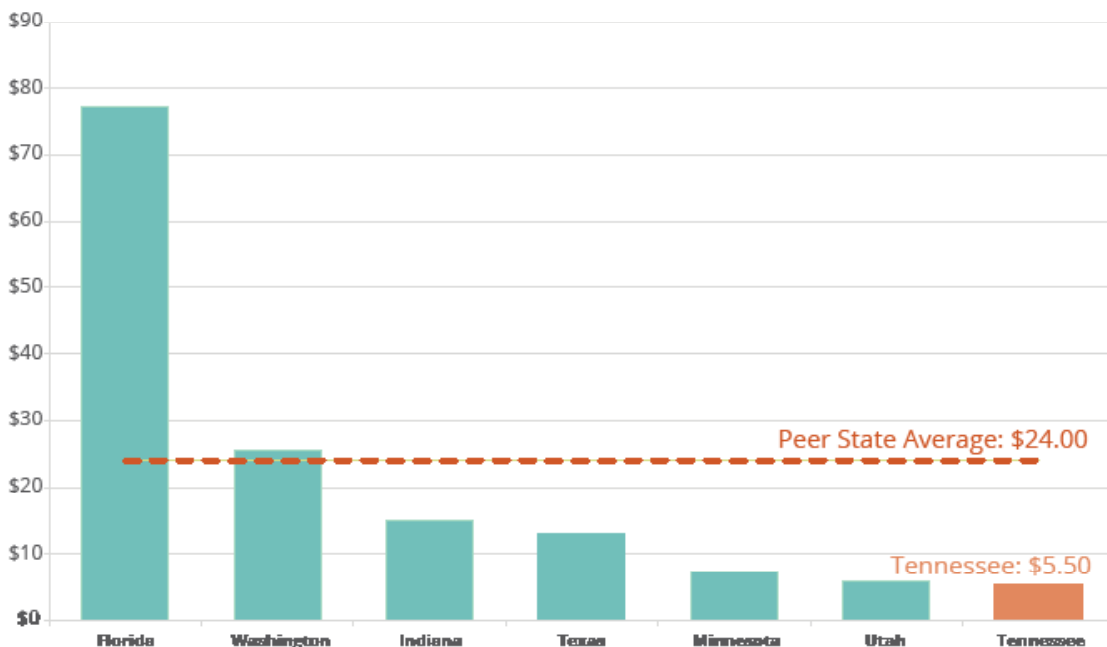
Tennessee could potentially leverage vehicle titling fees to increasing for transportation investments. Currently, the average titling fee for Tennessee drivers is the lowest among the surrounding states at \$5.50; among the surrounding states, the average fee is \$15.25. North Carolina has the highest average fee of \$40.00. Figure 21 summarizes the vehicle titling fees in the surrounding states. Among the peer states, the average titling fee is \$24.00. Florida has the highest average fee of \$77.25; Tennessee has the lowest average fee of \$5.50. Figure 22 summarizes the vehicle titling fees in the peer states.



Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 21 Surrounding State Vehicle Titling Fees

Vehicle Titling Fees



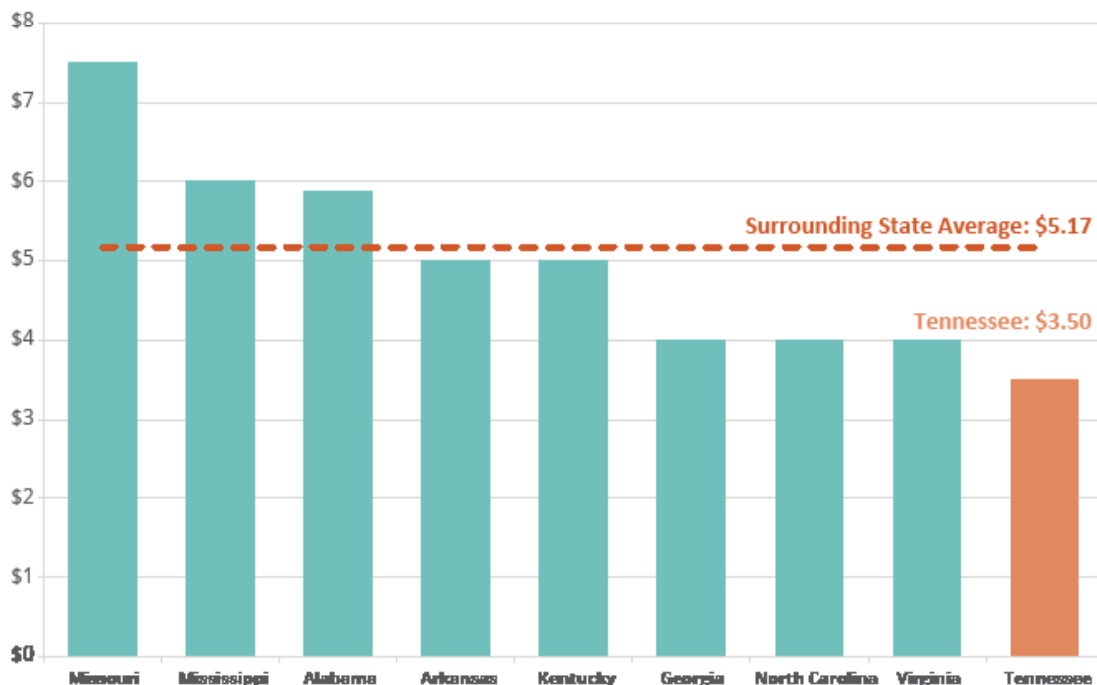
Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 22 Peer State Vehicle Titling Fees

Driver License Fees

Tennessee has the potential to leverage driver license fees to increase funding for transportation investments. Currently, the annualized license fee for Tennessee drivers is the lowest among the surrounding states at \$3.50; among the surrounding states, the average annualized fee is \$5.17. Missouri has the highest annualized fee of \$7.50. Figure 23 summarizes the annualized driver license fees in the surrounding states.

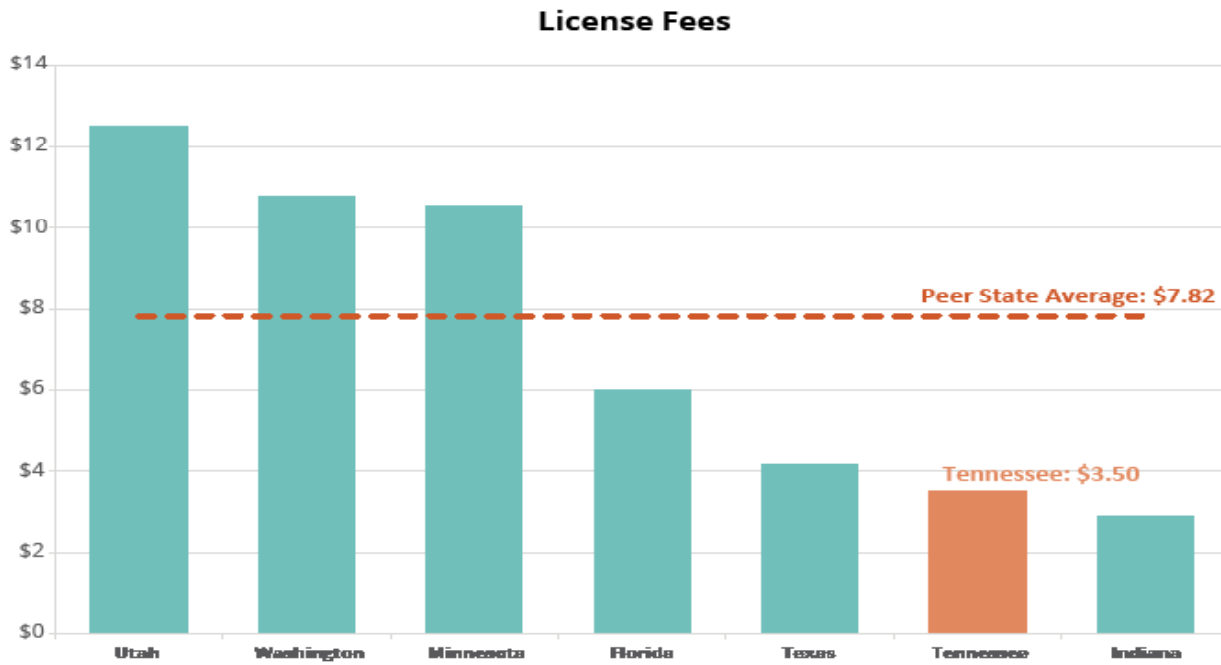
Average Annual Driver's License Fees



Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 23 Surrounding State Annualized Driver License Fees

Among the peer states, the average annualized license fee is \$7.82. Utah has the highest annualized fee of \$12.50; Indiana has the lowest annualized fee of \$2.92. Figure 24 summarizes the annualized driver license fees in the peer states.



Sources: Various state Departments of Revenue and DMVs; National Conference of State Legislatures

Figure 24 Peer State Annualized Driver license Fees

4.0 TRENDS AND RECENT FUNDING LEGISLATION

The following sections discuss trends affecting state DOT revenue sources and how some states are proactively addressing their funding challenges. Trends such as increasing fuel efficiency and changing travel behavior make the continuing reliance on the motor fuel tax as a major revenue source increasingly risky for state departments of transportation. As traditional sources of transportation funding become less robust, some states have introduced legislation increasing tax rates and other fees in order to maintain adequate funding.

4.1 PRESSURES ON EXISTING SOURCES OF FUNDS

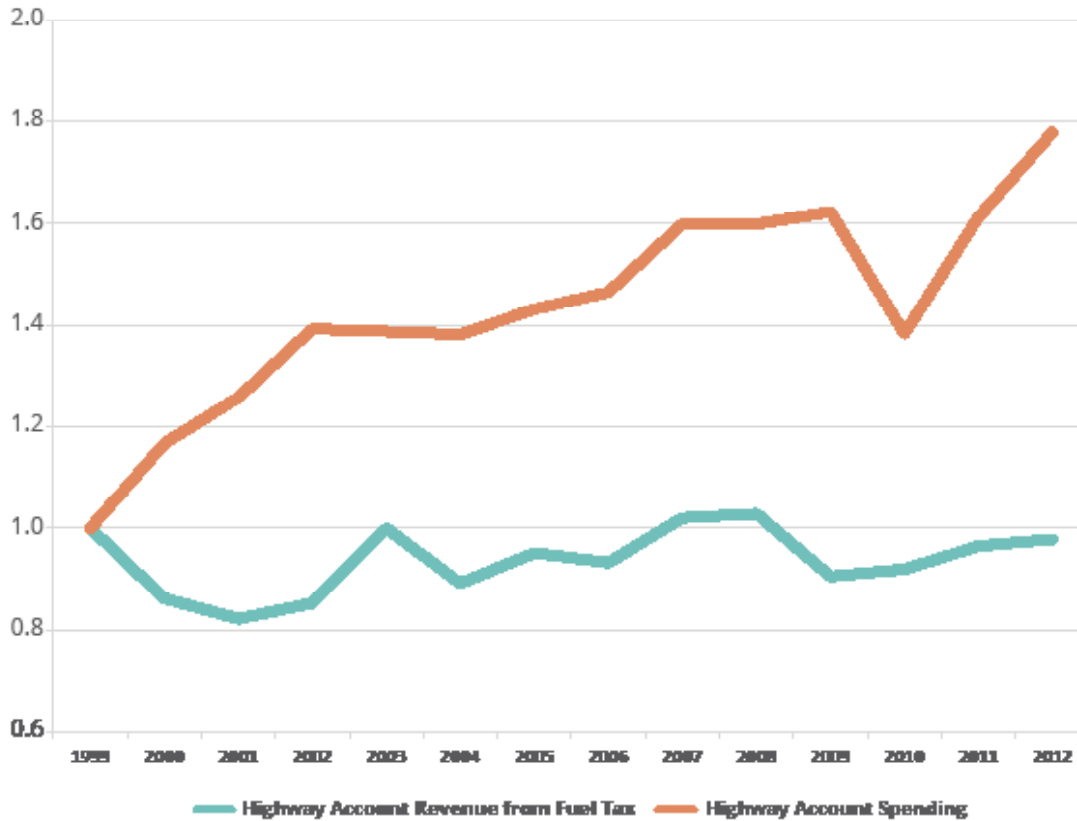
As discussed in the previous section, there are four primary grant programs of the Federal-Aid Highway Program: the National Highway Performance Program (NHPP), the Surface Transportation Program (STP), the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, and the Highway Safety Improvement Program (HSIP). The estimated total funding for the Federal-Aid Highway Program in fiscal year 2014 is \$37.8 billion, to be distributed to state and local governments in formula grants.

The highway account of the Highway Trust Fund (HTF) is the most-important revenue source for these Federal-Aid Highway Programs, providing the vast majority of funding. There is considerable concern over the last several years about the sustainability and solvency of the HTF due to declining proceeds from the federal motor fuel tax, which provide around 90% of the HTF's total revenues.

In Tennessee, around 78% of all highway funds are reliant on either federal or state motor fuel taxes. Recall that over the last six years, Tennessee was reliant on federal funds (HTF) for 42% of its highway funding, while state motor fuel taxes provided 37% of all funding for state roads. An insolvent federal HTF or decreasing state motor fuel tax receipts would therefore have a direct impact on the state's ability to maintain or build upon its existing highway system.

At the national level, revenues from the federal motor fuel tax disbursed to the highway account of the HTF have essentially been flat over the last 15 years. From 1999 to 2012, annual revenues fell by 2% from \$29.8 billion to \$29.1 billion (adjusting for inflation, this decrease worsens to 29%). In the same time period, expenditures from the highway account of the HTF have increased by 78%, creating the insolvency predicted by the U.S. DOT. Figure 25 compares the rate of change in HTF fuel tax revenues and expenses over the 14 years from 1999 to 2012.

At the state level, Tennessee experienced a steady decline in motor fuel tax revenue from 2007 to 2012. Recall that over that time, the state motor fuel tax generated an average of \$705 million for state roads annually, or 37% of all funding. The receipts from the tax peaked in 2007 at \$757 million and declined to \$679 million by 2012—a decrease of more than 10% (adjusting for inflation, this decrease worsens to 19%). Table 27 summarizes the proceeds from the Tennessee state motor fuel tax that were used for highways.



Source: Federal Highway Administration

Figure 25 Changes in HTF Fuel Tax Revenues and Expenses 1999-2012 (unadjusted)

Table 27 Proceeds from the State Motor Fuel Tax 2007-2012 (unadjusted)

Year	Receipts
2007	\$ 756,832,000
2008	727,931,000
2009	703,203,000
2010	699,950,000
2011	661,720,000
2012	679,311,000

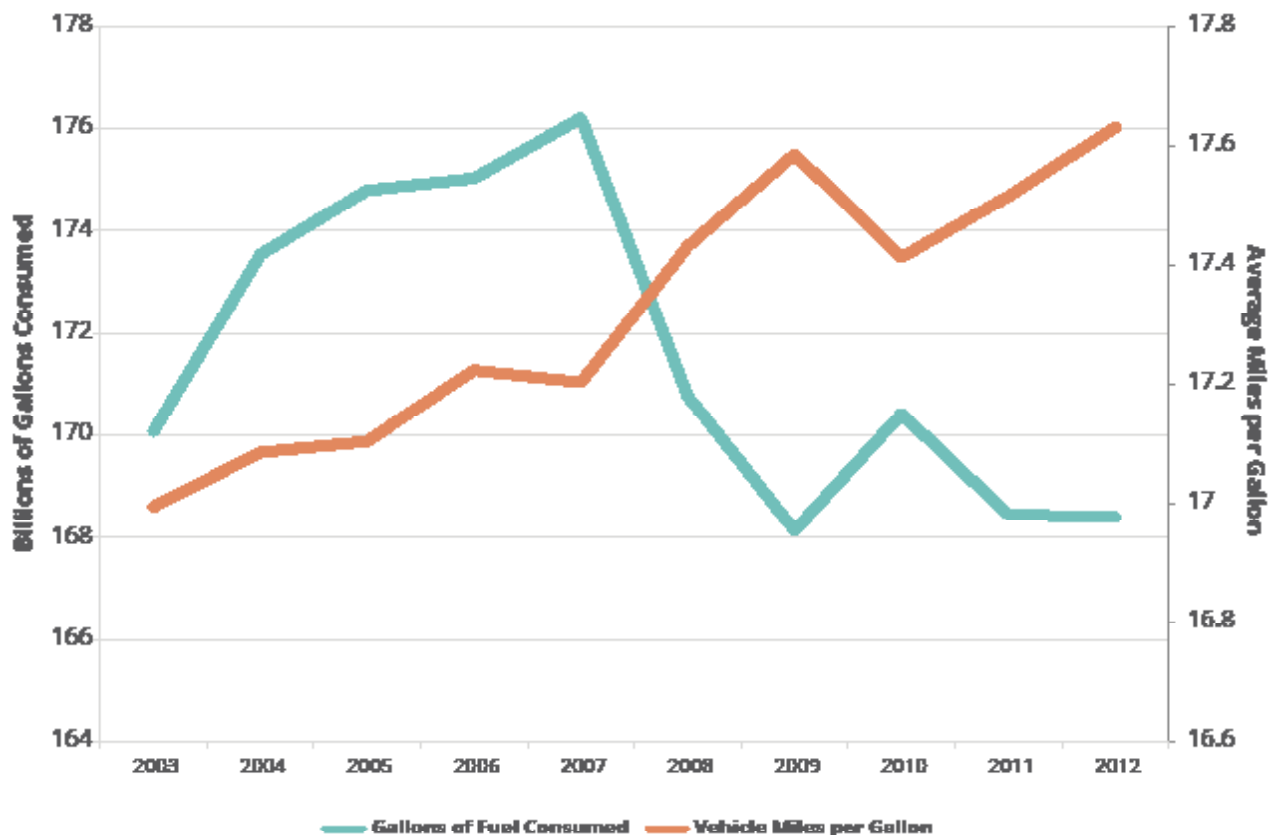
There are several reasons for the diminishing reliability of the federal and state motor fuel taxes as a source for funding such as increases in fuel efficiency, decreases in vehicle miles traveled, and increases in construction costs. Revenue projections for TDOT take into consideration such

changing behaviors and technologies. For instance, with Tennessee's gasoline excise tax, the forecast included the US Energy Information Administration's (EIA) estimates for projected national gasoline consumption. In turn, EIA's projections anticipated and included the influence of existing and planned corporate average fuel economy (CAFE) standards. Incorporating such variables, especially existing binding federal policies, is important for depicting future revenues as accurately as possible.

4.1.1 Increases in Fuel Efficiency

The increasing popularity of electric and hybrid vehicles and overall increases in the fuel efficiency of new vehicles has led to a decrease in gasoline consumption. According to the Environmental Protection Agency, model year 2013 automobiles achieved the highest fuel economy in history—24.0 miles per gallon (mpg).⁴⁷ This upward trend in fuel efficiency has been marked since the mid-2000s. Since the 2004 model year, the fuel economy has increased 4.7 miles per gallon. This means that a new vehicle now consumes, on average, almost 20% less fuel to drive the same distance as a vehicle built in 2004. Since the last time the federal motor fuel tax changed (1993), the fuel economy of new vehicles has increased 13%; since Tennessee last changed the state motor fuel tax (1989), the fuel efficiency of new vehicles has increased 15%.

According to the FHWA, nationally miles traveled per gallon of gasoline increased from 17.0 miles per gallon to 17.6 miles per gallon over the ten year period from 2003 to 2012. Fuel consumption subsequently decreased over the same ten year period. In 2012, 168.4 billion gallons of gasoline were consumed, down from a ten year peak of 176.2 billion gallons in 2007. Figure 26 depicts the changes in fuel consumption and fuel economy over the last ten years at the national level.

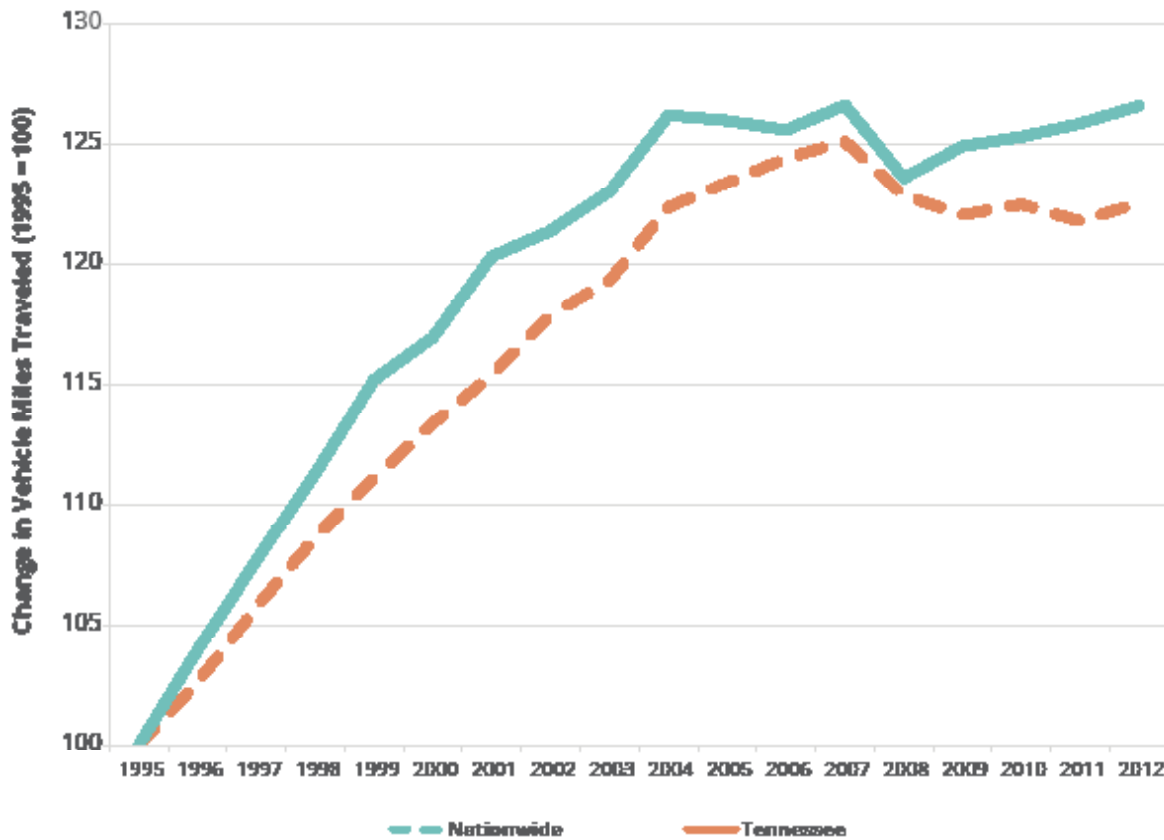


Source: Federal Highway Administration

Figure 26 Changes in Average MPG and Fuel Consumption (2003-2012)

4.1.2 Decreasing Vehicle Miles Traveled

An aging population, decreasing automobile ownership, and changing attitudes toward alternative transportation modes have all contributed to a decrease in vehicle miles traveled (VMT). Figure 27 summarizes the changes in VMT at the national and state level.



Source: Federal Highway Administration

Figure 27 Changes in Vehicle Miles Traveled 1995-2012 (Base Year 1995)

VMT levels increased steadily from the last time the federal government increased the motor fuel tax (1993) until the mid-2000s. From 1995 to 2007, VMT increased by 25% on the national level and by 27% in Tennessee. Since 2007, VMT has fallen at the national level and has essentially been flat at the state level. This fact, coupled with the increases in automobile fuel economy seen over the last 10 years, has decreased the amount of fuel consumed at both the state and national level, reducing the sustainability of federal and state motor fuel taxes.

4.1.3 Increasing Construction Costs

Since 2003, the FHWA has been calculating a National Highway Construction Cost Index (NHCCI), which is a price index used to track pure cost changes associated with highway construction. According to the NHCCI, over the 10 years between 2003 and 2013, highway construction costs have increased by 12%.

4.2 RECENT STATE TRANSPORTATION FUNDING LEGISLATION

The following section provides a snapshot of recent legislation states have passed to increase funding for transportation in times of increased volatility of usually reliable funding sources. Three

states in particular—Virginia, Maryland, and Pennsylvania—have made significant changes to their funding strategies. Summaries of proposed or enacted legislation in other states, including the six peer states, are also included. Figure 28 shows the states whose transportation funding legislation is outlined in this section.

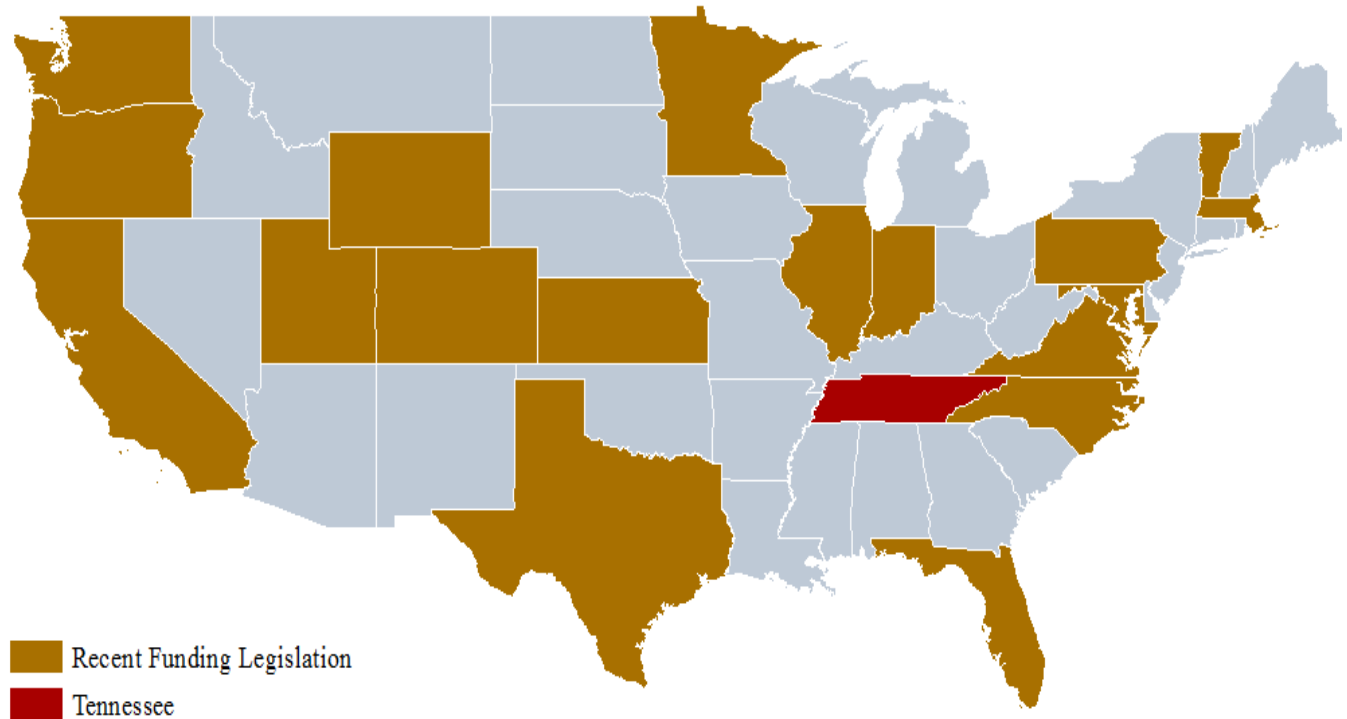


Figure 28 States with Recent Funding Legislation

Virginia

Virginia HB 2313 increases funding to state highways through wholesale changes to state motor fuel tax, increases in motor vehicle fees, use of the state’s general fund, and the increase of the state’s sales and use tax. A summary of the major funding changes is listed below:

- Eliminating the 17.5 cents per gallon motor fuel tax and replacing it with a 3.5% tax wholesale price of gasoline and 6% tax on the wholesale price of diesel fuel
- Increasing annual license tax on electric vehicles from \$50 to \$64. The idea to charge an additional fee to owners of electric or hybrid vehicles has to do with the fact that, while causing as much wear and tear on the highway system as gasoline automobiles, these vehicles do not pay their share of the maintenance costs that are traditionally recouped through the tax on gasoline consumption.
- Increasing motor vehicles sales tax from 3% to 4.15%
- Transferring a portion of the state’s general fund to transportation
- Increasing the state sales and use tax by 0.3%, of which 0.175% will benefit the Highway Maintenance and Operations Fund (HMOF)

The alterations to the motor fuel tax, electric vehicle fees, vehicle sales tax, state sales and use tax, and transferring of funds from the general fund are projected to increase state transportation funding by \$500 million annually by FY 2018. This increase is roughly equivalent to 5% of all highway

funding in Virginia in 2012. Figure 29 summarizes the fiscal impacts of each of these major changes over the first five years.

Table 28 Fiscal Impacts of Virginia HB 2313 (Millions of \$)

Funding Change	FY14	FY15	FY16	FY17	FY18	Total
Gas tax elimination	\$(735.4)	\$(751.6)	\$(767.5)	\$(781.3)	\$(795.4)	\$(3,831.2)
Wholesale fuels tax	501.0	578.4	599.7	622.8	643.8	2,945.7
Annual license increase	6.5	7.3	8.3	9.6	10.9	42.6
Motor vehicle sales tax increase	184.0	213.7	228.0	246.3	246.5	1,118.5
GF transfer to HMOF	49.0	101.7	158.4	191.8	198.2	699.1
Sales and use tax increase	155.0	175.6	182.6	189.6	196.2	899.0
Total	\$ 160.1	\$ 325.1	\$ 409.5	\$ 478.8	\$ 500.2	\$ 1,873.7

Source: Virginia Department of Planning and Budget

Maryland

Maryland HB 1515: Transportation Infrastructure Investment Act of 2013 increases funding to state highways through changes to the state motor fuel tax and increases in motor vehicle fees. A summary of the major funding changes is listed below.

- Indexing motor fuel tax rates to inflation beginning in 2014
- Imposing a 1% sales and use tax on all motor fuel (except aviation) beginning in 2014, increasing to a 2% tax in 2015, then a 3% tax in 2016
- Increasing the annual vehicle registration surcharge by \$3.50 to \$17

The alterations to the motor fuel tax and vehicle registration fees are projected to increase funding by \$455 million annually by 2018. This increase is equivalent to 18% of all highway funding in Maryland in 2012. Table 29 summarizes the fiscal impacts of each of the three major funding changes as compared to FY13 (prior to Maryland HB 1515's implementation)

Table 29 Fiscal Impacts of Maryland HB 1515 (Millions of \$)

Funding Change	FY13	FY14	FY15	FY16	FY17	FY18	Total
Indexing fuel tax to inflation	\$ -	\$ 15.7	\$ 30.7	\$ 49.4	\$ 68.3	\$ 87.4	\$ 251.5
Sales tax on fuel sales	-	100.4	157.4	328.7	339.6	350.4	1,276.5
Registration fee increases	1.4	16.7	16.9	17.1	17.4	17.5	87.0
Total	\$ 1.4	\$ 132.8	\$ 205.0	\$ 395.2	\$ 425.3	\$ 455.3	\$1,615.0

Source: Maryland Department of Legislative Services

Pennsylvania

Pennsylvania HB 1060 increases funding to state highways through changes to the state motor fuel tax, increases in motor vehicle fees, and increases in registration and moving violations. A summary of the major funding changes is listed below:

- Replacing the 12 cent motor fuel excise tax with the Oil Company Franchise Tax (OCFT)
- Increasing the current \$1.25 cap on the average wholesale price of gas used to calculate the OCFT to at least \$2.99 by 2017. The current \$1.25 cap is based on 1983 prices.

- Increasing annual vehicle registration and driver license fees and indexing them to inflation beginning in 2015
- Increasing fines associated with registration and licensing failures and moving violations

The alterations to the motor fuel tax, vehicle registration fees, and fines are projected to increase state transportation funding by \$1.2 billion by FY 2014-15. This increase is roughly equivalent to 18% of all highway funding in Pennsylvania in 2012. Table 30 summarizes the fiscal impacts of each of these major changes over the first two fiscal years.

Table 30 Fiscal Impacts of Pennsylvania HB 1060 (Millions of \$)

Funding Change	FY 13-14	FY 14-15	Total
Replace 12 cent fuel tax	\$ (1.0)	\$ 4.0	\$ 3.0
Uncapping OCFT	271.0	925.0	1,196.0
Increase fees and fines	34.0	223.0	257.0
Total	\$ 304.0	\$1,152.0	\$1,456.0

Source: Pennsylvania Senate Appropriations Committee

Florida

In 2010, the Florida MPO Advisory Council developed recommendations for more innovative and sustainable sources of revenue for transportation investment in Florida. The following are some of the recommendations for legislative action:

- Index all state and local fuel taxes not currently indexed
- Increase the motor fuel tax by two-cents annually for 5 years (10 cents) and indexed for inflation
- Return the proceeds from increases to motor vehicle license fees, initial vehicle registration fees, and titling fees to the State Transportation Trust Fund (these revenue streams had been diverted to the state General Fund to address broader revenue shortfalls)
- Conduct a VMT study to guide the implementation of a mileage-based transportation funding mechanism

Other revenue options recommended for consideration included:

- Imposing a 6% state sales tax in lieu of both state fuel taxes;
- Instituting a sales tax on motor vehicle parts and services; and
- Shifting sales tax on battery-electric vehicles to the State Transportation Trust Fund;

Indiana

HB 1001, the state's omnibus transportation budget legislation approved in 2013, increased the State's overall amount of transportation funding by supplementing the revenues from the state motor fuel tax with funds redirected from other state agencies and a one-percent state sales and use tax. These changes increased transportation funding for state transportation by approximately \$118 million annually for county and local roads.

Minnesota

In February, MOVEMN, a coalition of transportation advocates, testified before a joint hearing of the House and Senate Transportation Committees regarding long-term recommendations for state transportation funding. Some of the recommendations they supported include:

- The introduction of a 5% sales tax on wholesale fuel in Minnesota to generate \$360 million annually;
- An increase of the 0.25 cent sales tax in seven-county Twin Cities area to 1.0 cent to generate \$335 million annually
- Closing the sale tax loophole on leased vehicles to generate \$32 million annually.

Together, these changes would generate \$727 million for transportation annually. This increase is roughly equivalent to 24 percent of all highway funding in Minnesota in 2012

Washington

In February 2014, Washington State Senate majority leaders unveiled a \$12.3 billion transportation revenue package that includes an 11.5-cent gas tax increase, addressing long-term funding for highway projects and a 20% increase in state support for transit.

Utah

In 2013, The Utah Foundation published a research report addressing the risk associated with the state's continued reliance on the motor fuel tax as a major source of transportation revenue. This report suggests several options to address this challenge. Some of the highlights are listed below:

- Increase the fuel tax by two cents every two years or by five cents every ten years, or index the tax rate to inflation. Depending on the choice, the increase in fuel tax proceeds is projected to be between \$4 billion and \$7 billion over the next 30 years.
- Apply the state sales tax to fuel sales. This change could generate \$10 to \$20 billion in additional revenue over 30 years, depending on how fuel prices change and how the tax is levied. However, this would be more volatile than the excise tax on fuel because revenue would vary with changes in fuel prices.
- Implement a vehicle-miles-traveled tax in lieu of a tax on motor fuel. Such a tax, if tied to inflation, could generate an additional \$6 billion over the next 30 years.

Texas

In 2013, the Texas legislature passed HB 1, a transportation funding bill that included an amendment diverting half of the oil and gas severance tax that funds the state's emergency fund, or Rainy Day Fund, to roads, generating a projected \$1.2 billion annually. The legislature acknowledges that this bill is merely a stop-gap measure since the projected increase in funding is far less than the \$4 billion funding gap.

The bill also seeks to protect the Rainy Day Fund by requiring a minimum balance to be maintained before any money can be diverted to roads. It also requires the Texas Department of Transportation to find \$100 million in savings within its operations to apply toward the agency's mounting debt. The amendment will go to the voters for approval in November 2014.

Illinois

In 1999, Illinois enacted a series of four bills which together created the Illinois FIRST program, a \$12 billion major public works program. The program made use of “challenge grants,” which required local funding matches. Proceeds from this program were used to repair and upgrade unmet infrastructure needs of the state’s highway system, public transit systems, schools, and other major public infrastructure. The need for the new program was identified after a task force found that 74% of the state’s interstates had surpassed their 20 year useful lives, a new road had not been built in Illinois in nearly a decade, and there was a backlog of 2,400 miles of roads and 750 bridges that needed to be repaired and upgraded. A summary of the major funding changes is listed below:

- Annual vehicle registration fees increased from \$48 to \$78, a 63% increase
- Large truck and trailer registrations increased by 25%
- Titling fees increased from \$13 to \$65, a 500% increase
- Increased tax on the sale of alcohol
- Reducing the annual diversion of road funds from highway to non-highway uses

These changes were expected to increase state revenues by \$573 million annually.

Oregon

Oregon SB 810 of 2013 became the first legislation in the U.S. to establish a road usage charge system for transportation funding. The bill authorizes the Oregon DOT to set up a mileage collection system based on vehicle miles traveled (VMT) for 5,000 volunteer motorists beginning in 2015. The DOT will assess a fee of 1.5 cents per mile in lieu of the state motor fuel tax.

Other Recent Initiatives

In 2013, four other states successfully passed legislation to significantly increase revenues from the state motor fuel tax—California, Massachusetts, Vermont, and Wyoming.

- *California:* The Board of Equalization passed a ruling to raise the state’s excise tax on motor fuels by 3.5 cents per gallon, a 10% increase. This increase is expected to generate an additional \$500 million in transportation funds in its first year.
- *Massachusetts:* Massachusetts HB 3535 increases the state’s excise tax on motor fuels by three cents and indexes the tax to inflation beginning in 2015. These changes are projected to increase transportation funding by over \$100 million annually.
- *Vermont:* Vermont HB 510 decreases the excise tax on gasoline by 6.9 cents per gallon while imposing a new 4% sales tax on the average price of gasoline over the next two years. The Bill also increases the state’s excise tax on diesel fuel by 3 cents per gallon. These changes together are expected to increase transportation funding by \$37 million annually.
- *Wyoming:* Wyoming HB 69 increases the state’s excise tax on motor fuel by 10 cents per gallon, to 24 cents. This increase is expected to generate \$48 million in additional transportation funds annually.

Colorado and Kansas have also recently introduced new legislation significantly increasing revenues from vehicle registration fees.

- *Colorado:* Colorado SB 108 (2009) increased the average annual registration fee for a passenger

vehicle from \$10 to \$41. This fee increase was projected to generate \$425 million in additional transportation funds over its first two years.

- *Kansas*: Kansas HB 2650 (2009) increased average annual registration fees on passenger vehicles, small trucks, and large trucks by \$20, \$100, and \$135, respectively. These increases were projected to generate an additional \$132 million in transportation funding over the first eight years.
- *North Carolina*: North Carolina SB 402 establishes a \$100 fee for plug-in vehicles and an additional \$50 fee for certain hybrid vehicles at the time of the initial registration or registration renewal.

4.3 FEDERAL FUNDING AT THE NATIONAL LEVEL

MAP-21, the previous federal transportation funding and authorization bill, expired at the end of the past fiscal year—September 30, 2014. By that point, state departments of transportation had come to expect that transportation bills rarely pass on time and that short-term extensions are usually required to maintain funding levels. The expiration of MAP-21 was different, though, because the HTF did not have sufficient funds to pay for these extensions. As stated above, the U.S. Department of Transportation had anticipated that the HTF would become insolvent before the end of the last fiscal year. In anticipation, many states began to slow down procurements, further exposing the need for adequate funding for the nation’s transportation system.

5.0 INNOVATIVE PROJECT DELIVERY

The following section assesses the prospects of using innovative highway funding and project delivery mechanisms in Tennessee. The focus is on using debt financing, tolling, and public-private partnerships (P3s) as a means to deliver highway improvement projects.

5.1 DEBT FINANCING

Tennessee was one of only five states that did not use debt mechanism as a funding source for highways. The most significant advantage of debt financing is the ability to realize the benefits of the transportation project sooner than if the project was financed on a pay-as-you-go basis. It should be noted, however, that the timing of the implementation of the project can significantly affect the desirability of debt financing.

If the project is not self-financed – that is, if it does not generate revenues itself (e.g., toll revenue) and is to be funded with dedicated funds (e.g., a motor fuels tax or any other dedicated revenue stream), the resulting cash flow reveals a challenging policy dilemma:

- Building a project too soon, before a sufficient pool of cash is amassed, may result in excessive borrowing and financing costs.
- Building a project too late may result in excessive inflationary costs.

These issues can be accounted for as the financial plan and an optimum delivery schedule for the project are developed. It should be recognized, however, that the optimum date from a cash flow perspective, may be much later than desired from the perspective of other public policy goals, such as benefitting from the economic development impacts of the project.

5.2 LOANS AND CREDIT ASSISTANCE

Federal credit assistance can be provided in two forms: loans and credit enhancement. Loans can provide the necessary capital for moving forward with a project or help to reduce the amount of capital that is borrowed from other sources. Credit enhancement helps reduce risk to investors which in turn helps lower the borrowing interest rate for project sponsors. The Transportation Infrastructure Finance and Innovation Act (TIFIA) program is a means for providing such Federal credit assistance in the form of secured (direct) loans, standby lines of credit, and loan guarantees to finance surface transportation projects significant to the region or nation. The amount of assistance may not exceed 33% of total eligible project costs, which include STP-qualified projects. Additional eligible projects include intercity passenger bus and rail facilities and vehicles, intermodal freight-transfer facilities, access and service improvements to such freight facilities including investments for intelligent transportation systems, public freight-rail facilities or private facilities which provide benefits to highway users. TIFIA assistance helps to fill financial gaps for significant projects and provides state DOTs with an alternative to grant funding. Each dollar of Federal funds has the potential for providing up to \$10 in TIFIA assistance and leveraging up to \$30 in transportation investments.

5.3 PUBLIC-PRIVATE PARTNERSHIPS

Budget-constrained environments around the country have necessitated states to become more innovative in the financing and delivery of highway projects. P3s are proven, performance-based solutions to deliver projects faster, cheaper, and with less financial risk to the public. More than 33 states have enacted legislation allowing these partnerships to improve infrastructure. In doing so,

states have been able to undertake more projects in less time and saved billions of dollars in public funds.

P3s are contractual agreements between the government and private partners that allow the private industry to take on traditionally public roles in highway projects, including the financing, management, operations, and maintenance of a facility. The value of P3s lies in the risk transfer from the public to private sectors, which ensures budget certainty, on-time delivery, increased accountability and performance, greater efficiency, and an expansion of financing options and budgetary flexibility which ultimately help accelerate project delivery. There are many types of P3 project delivery arrangements:

- *Design-Build (DB)*: In a DB arrangement, the private sector assumes the risks associated with the project design, construction, and delivery risks. Because it is usually a fixed price agreement, the risk of cost overruns associated with the construction of a facility is transferred from the public sector to the private sector. At project completion, the project is handed over to the public sector for long-term operations and maintenance. Currently, Design-Build projects are the only P3 arrangements allowed in Tennessee.
- *Design-Build-Finance (DBF)*: A DBF arrangement is similar to a DB arrangement, except the private entity provides all or partial funding and financing for the facility. The private entity is responsible for obtaining private financing to fill the gap between project costs and the anticipated level of public funding. DBF arrangements provide price and schedule assurances to the public sector. However, in order to take on the financing risks of this arrangement, the private sector demands a sufficiently high effective interest rate.
- *Design-Build-Operate-Maintain (DBOM)*: In a DBOM arrangement, the private sector designs, constructs, operates, and/or maintains a new facility. Unlike a DB arrangement, at the completion of the project, the private sector retains responsibility for operating and maintaining the facility—typically for 35 or more years. This transfers more risk away from the public sector. Remaining in charge of a facility's long-term operations and maintenance incentivizes life-cycle cost considerations by the private sector, increasing efficiency and innovation.
- *Design-Build-Finance-Operate-Maintain (DBFOM)*: In addition to providing DBOM functions, in a DBFOM arrangement the private entity provides private funding and financing for all or a portion of the project cost and is compensated through guaranteed future funds, often tolls. DBFOM arrangements provide price and schedule assurances to the public sector. However, in order to take on the financing risks of this arrangement, the private sector demands a sufficiently high effective interest rate.

Typically, a successful P3 project includes the following criteria:

1. The project is critically needed or part of a capital plan;
2. The project has a financial shortfall;
3. The project's goals include accelerated delivery, reduced costs, and increased performance;
4. The project entails high public risk; and
5. A dedicated revenue stream exists to finance the project over the long-term³.

¹ "U.S. Infrastructure: Ignore the Need or Retake the Lead?" AECOM White Paper, Prepared for ACEC Annual Convention and Legislative Summit, March 2011

Table 31 Selection of Public-Private Partnership Toll Facilities around the U.S

Facility	Location	Revenue Date	Project Description	Project Delivery Arrangement	Capital Cost (Millions)	Public Funds (Millions)
91 Express Lanes	Orange County, CA	1995	Variable Toll Highway	DBFOM	\$ 135	\$ -
Downtown Tunnel	Norfolk, VA	2014	Toll Highway	DBFOM	\$ 2,089	\$ 408
Dulles Greenway	Loudon County, VA	1995	Toll Highway	DBFOM	\$ 350	\$ -
Capital Beltway HOT Lanes	Fairfax County, VA	2012	HOT Lanes	DBFOM	\$ 2,068	\$ 495
IH 635 Managed Lanes	Dallas-Fort Worth Metroplex, TX	2016	Variable Toll	DBFOM	\$ 2,615	\$ 490
North Tarrant Express Segments 1 and 2A	Dallas-Fort Worth Metroplex, TX	2015	Toll Highway	DBFOM	\$ 2,047	\$ 573
North Tarrant Express Segments 3A and 3B	Dallas-Fort Worth Metroplex, TX	2017	Toll Highway	DBFOM	\$ 1,637	\$ 164
SH 130	Austin, TX	2012	Toll Highway	DBFOM	\$ 1,328	\$ -
Southern Connector	Greenville, SC	2001	Toll Highway	DBFOM	\$ 240	\$ -

Source: Federal Highway Administration

For highway construction, toll projects are the best candidates for implementing a P3 arrangement. As previously discussed, Tennessee is one of 21 states which received no highway funds through tolls over the six years from 2007 to 2012. MAP-21, the previous federal transportation funding authorization bill, relaxed some of the prohibitions against tolling on public roads, making it easier for states to implement P3 arrangements to improve their roads. States are now allowed to construct new lanes on existing highways, bridges, and tunnels as long as the number of toll-free lanes remains unchanged. The bill specifies, though, that “if a state does not have a highway, bridge, or tunnel toll facility as of the date of enactment of MAP-21, before commencing any [tolling] activity...the state shall have in effect a law that permits tolling on a highway, bridge, or tunnel.”

Many states have introduced toll facilities using a DBFOM project delivery arrangement—the P3 arrangement which minimizes public sector risk. A selection of these projects is summarized in Table 31.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

In conclusion, the following summarizes findings on the financial landscape for transportation infrastructure investments in Tennessee.

- Tennessee was one of only five states that did not use debt mechanism as a funding source for highways, instead using pay-as-you-go (PAYGO) strategies exclusively
- TDOT had a budget of \$1.84 billion for fiscal year (FY) 2014-2015
- Between 2007 to 2012, a (year of expenditure or YOE) annual average of \$149 billion in state highway funding nationally was allocated to the 50 states and Washington, DC
- Between 2007 and 2012, Tennessee averaged \$1.9 billion (YOE \$) in annual funding for state highways, making it the 26th highest-funded state over the time period
- The four primary grant programs of the Federal-Aid Highway Program that distribute federal aid to states for highways projects include the National Highway Performance Program (NHPP), Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Safety Improvement Program (HSIP), and the Transportation Alternatives Program (TAP). The estimated total funding for the Federal-Aid Highway Program in fiscal year 2014 was \$37.8 billion
- The Highway Trust Fund (HTF) is the most important revenue source for the Federal-Aid Highway Programs; however, there has been considerable concern over the last several years of HTF's sustainability and solvency due to declining receipts from the federal motor vehicle fuel tax, which provide around 90% of the HTF's total revenues
- An insolvent federal HTF or continued decreasing state motor fuel tax receipts would have a direct impact on the state's ability to maintain or build upon its existing highway system
- Between 2007 and 2012, Tennessee was more dependent on federal highway funds than the national average with 42% of all receipts coming from federal highway funds (versus the national average of 26%)
- Motor fuel taxes are Tennessee's second largest funding source for highways, constituting approximately 37% of all receipts from 2007 to 2012 and averaging \$704.8 million (YOE \$) annually
- The tax per gallon of gasoline to Tennessee consumers is lower than the national average tax per gallon. Tennessee's state gasoline tax (inclusive of excise tax and other state taxes) is currently 21.4 cents per gallon. Nationally, the average state gasoline tax is 28.1 cents per gallon
- Among the surrounding states, Tennessee was one of six that received no toll revenue from 2007 to 2012. Only Georgia, North Carolina, and Virginia had any revenue from this source

Recommendations

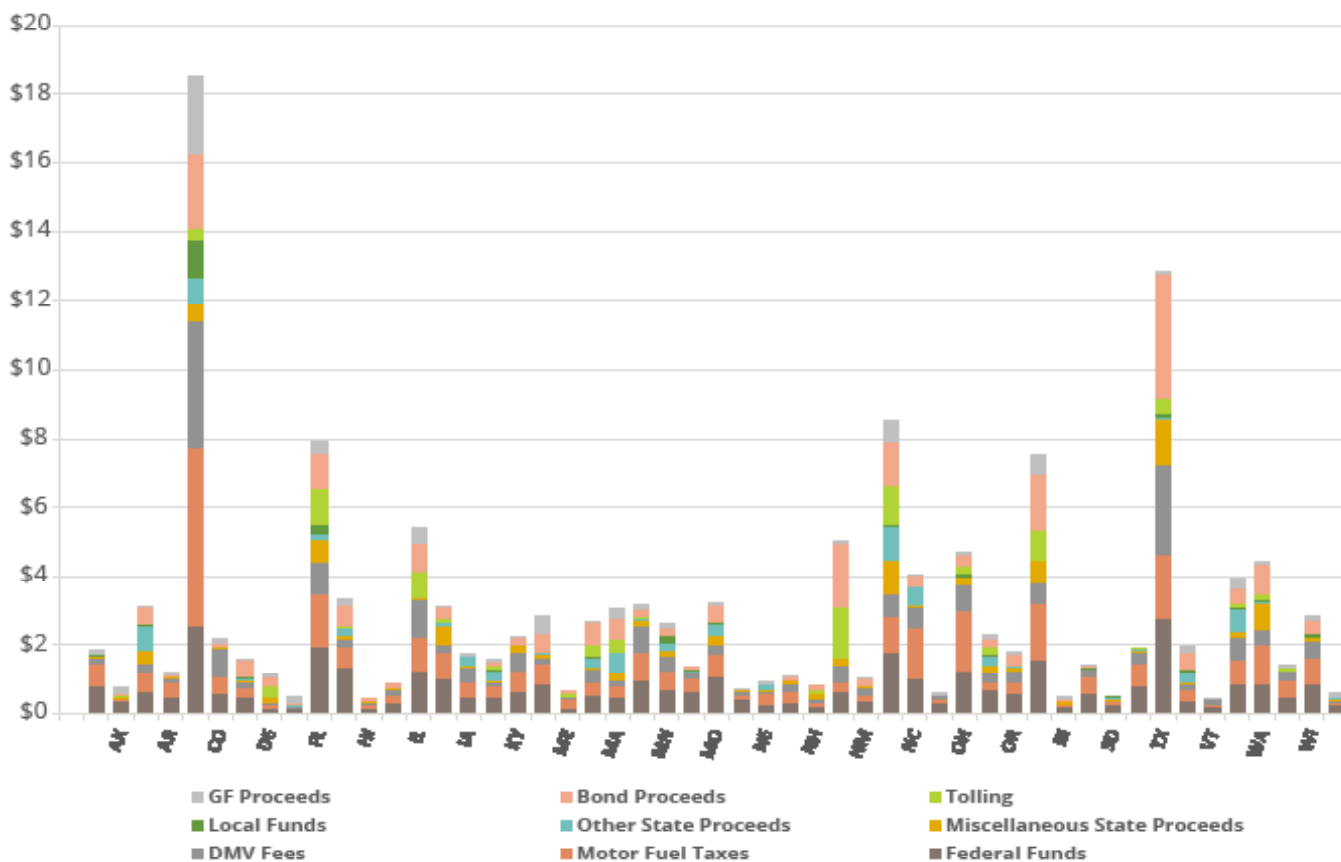
As a result of research documented in this policy paper as well as other supporting documents of the 25-Year Policy Plan, it is clear that current funding levels cannot keep up with the increasing costs of maintaining and providing Tennessee's transportation system. As such, Tennessee should move forward in evaluating all mechanisms and options available to address the gap between available funds and the growing transportation needs of the State.

APPENDIX A: 50-STATE HIGHWAY FUNDING ANALYSIS

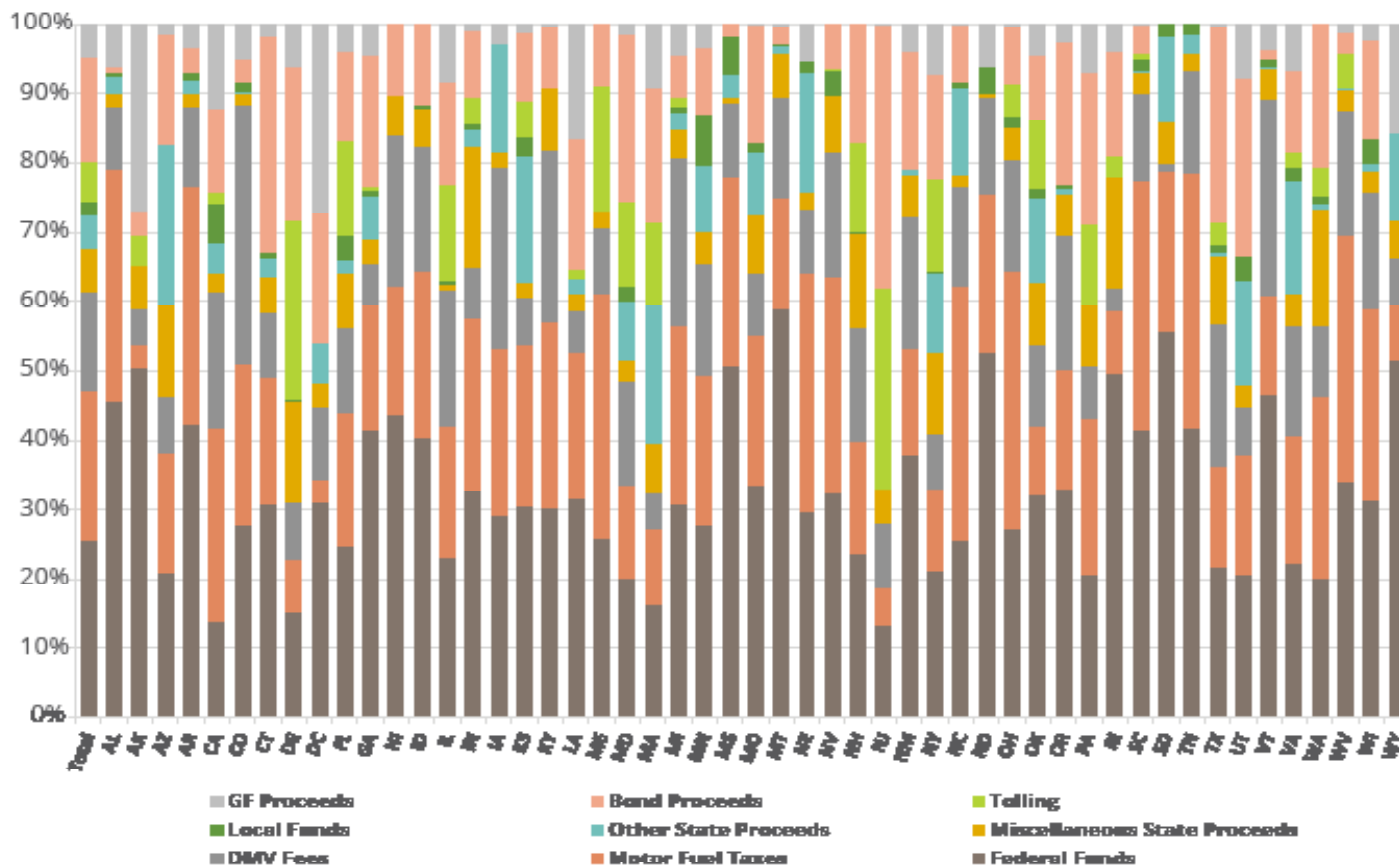
Over the six years from 2007 to 2012, total highway funding from all sources averaged \$150 billion per year. The sources of this revenue included federal funds, state motor fuel taxes, states motor vehicle fees, local funding, tolls, bond proceeds, state general funds, miscellaneous state funds, and other state proceeds. The breakdown of the \$150 billion in annual funding, by state and by funding source, is summarized in Figure 29.

Table 32 on the following page provides the detailed funding for all 50 states and Washington, DC by funding source.

Total Receipts (billions of \$)



Total Receipts (% of Total Receipts)



Source: Federal Highway Administration

Figure 29 50-State Summary of Highway Funding, 2007-2012 Six-Year Average

Table 32 50-State Average Annual Highway Funding (Millions of YOE \$) 2007-2012

Source: Federal Highway Administration

State	Highway-User Revenues				General Fund Transfers	Other State Funds	Misc. State Funds	Bond Proceeds		Intergovernmental Transfers			Total Receipts
	Motor Fuels Taxes	Motor Vehicle Fees	Tolls	Total User Fees				Original Issues	Refunding Issues	Federal Government		Local Govt.	
										FHWA	Other Agencies		
AL	624	166	-	791	110	48	35	-	15	784	62	11	1,856
AK	26	41	34	102	212	-	50	27	-	374	25	-	791
AZ	538	258	-	796	41	727	412	357	140	633	30	5	3,141
AR	415	140	-	555	39	21	24	42	-	464	46	15	1,208
CA	5,187	3,635	322	9,144	2,238	782	503	1,883	322	2,398	173	1,067	18,512
CO	503	810	0	1,313	109	4	37	53	18	562	42	29	2,166
CT	292	147	0	439	29	46	82	355	139	474	19	12	1,596
DE	87	93	295	476	68	-	164	140	113	162	13	2	1,138
DC	15	50	-	65	130	28	17	69	21	147	4	-	481
FL	1,518	973	1,067	3,558	305	162	624	771	251	1,676	282	275	7,905
GA	604	199	20	824	150	212	113	491	132	1,275	103	25	3,324
HI	79	92	-	170	-	-	24	42	1	180	3	-	420
ID	206	152	-	358	-	-	47	97	-	319	28	7	856
IL	1,024	1,055	752	2,831	451	0	56	551	240	1,220	27	22	5,399
IN	774	235	121	1,130	25	69	549	286	16	1,022	8	27	3,133
IA	415	455	-	870	49	271	38	-	-	408	99	-	1,735
KS	365	109	82	557	18	286	35	72	81	469	13	43	1,574
KY	599	555	0	1,153	6	-	200	174	23	662	14	-	2,234
LA	598	168	38	804	467	56	75	388	150	848	52	-	2,840
ME	238	65	122	425	-	-	18	49	11	171	6	-	680
MD	359	408	336	1,103	36	227	79	620	29	516	31	58	2,700
MA	335	160	369	864	273	602	221	601	-	492	9	-	3,061
MI	823	776	40	1,638	140	73	134	149	46	965	18	30	3,192
MN	558	425	-	983	85	248	124	208	46	687	44	190	2,615
MS	371	145	-	516	-	44	10	23	-	668	17	74	1,351
MO	683	289	-	971	4	293	270	516	24	1,033	45	42	3,198
MT	116	105	-	221	2	7	46	9	9	397	30	3	722
NE	314	85	-	399	49	158	23	-	-	263	10	13	914
NV	336	197	1	533	0	0	87	58	12	343	10	40	1,083
NH	135	136	107	378	-	-	113	127	15	149	49	3	835
NJ	275	472	1,445	2,192	6	-	237	1,762	140	652	16	-	5,005
NM	164	202	-	367	41	9	65	60	120	356	49	-	1,067
NY	1,004	690	1,153	2,847	607	970	996	968	310	1,787	29	31	8,545
NC	1,484	594	3	2,081	4	514	59	332	-	1,009	33	27	4,058
ND	142	84	-	226	37	-	3	-	-	316	7	24	614
OH	1,732	756	220	2,707	18	-	218	327	48	1,247	37	86	4,689
OK	225	266	223	714	99	281	210	115	98	720	13	31	2,281
OR	316	356	-	672	48	14	107	294	78	458	145	11	1,828
PA	1,673	583	873	3,128	515	-	648	1,574	75	1,536	39	16	7,531
RI	44	16	15	74	19	-	78	50	22	233	8	-	485
SC	516	179	14	710	2	3	45	3	53	586	12	23	1,437
SD	115	6	-	121	-	61	30	-	-	266	12	8	498
TN	705	283	0	988	-	50	49	-	-	757	44	27	1,915
TX	1,854	2,615	417	4,886	44	40	1,294	2,661	953	2,704	106	153	12,840
UT	331	132	1	465	149	289	68	478	24	335	72	69	1,948
VT	67	132	-	199	18	2	21	6	-	192	27	4	468
VA	721	616	90	1,428	262	649	178	394	61	841	39	71	3,924
WA	1,153	451	183	1,786	0	30	744	795	104	807	79	51	4,397
WV	499	256	69	823	17	3	44	32	9	465	19	0	1,413
WI	783	475	-	1,258	60	32	88	312	90	781	101	97	2,820
WY	47	40	-	87	93	74	34	-	-	269	36	-	593
Total	31,984	21,329	8,413	61,727	7,078	7,384	9,425	18,324	4,039	36,079	2,235	2,726	149,097

appendix

APPENDIX B: FEDERAL HIGHWAY ADMINISTRATION FUNDING PROGRAMS

Below is a list of major types of Federal Highway Administration (FHWA) grant programs. Local streets and roads are not generally eligible for federal funding. These funds may be applied to both motorized and non-motorized projects.

1. National Highway Performance Program
 - a. Context: 220,000 mile designated urban and rural highways, including Interstates
 - b. Distribution: By formula to the states
 - c. Funding: \$21.9 billion in FY14
 - d. Eligible projects
 - Rural and urban roads on NHS System
 - Links to intermodal terminals
 - Transit, bicycle and pedestrian improvements in NHS corridors
2. Surface Transportation Program (STP)
 - a. Context: Flexible funding of state and local surface transportation projects
 - b. Distribution: By formula to the states
 - c. Funding: \$10.1 billion in FY14
 - d. Eligible projects
 - Any Federal-Aid highway
 - Transit
 - Enhancements and Safety improvements
 - Planning
3. Congestion Mitigation and Air Quality Improvement (CMAQ)
 - a. Distribution: By formula to air quality maintenance or non-attainment areas
 - b. Funding: \$2.23 billion in FY14
 - c. Eligible projects: Improvements that reduce emissions or improve air quality, including
 - Transit and highway projects
 - Intermodal freight facilities and operations
 - Expanded authority for transit operations
4. Highway Safety Improvement Program (HSIP)
 - a. Context: funding available for all public roads, including non-state-owned public roads and roads on tribal lands
 - b. Funding: \$2.4 billion in FY14
 - c. Eligible projects must improve, correct, or address a hazardous road location or feature