SUFFICIENCY OF THE TRANSPORTATION TRUST FUND IN MEETING THE STATE'S TRANSPORTATION NEEDS

STATE OF LOUISIANA

PERFORMANCE AUDIT SERVICES
ISSUED SEPTEMBER 1, 2022

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LOUISIANA LEGISLATIVE AUDITOR
MICHAEL J. "MIKE" WAGUESPACK, CPA

September 1, 2022

The Honorable Patrick Page Cortez,
President of the Senate
The Honorable Clay Schexnayder,
Speaker of the House of Representatives

Dear Senator Cortez and Representative Schexnayder:

This report provides the results of our performance audit of the Transportation Trust Fund (TTF). The purpose of this audit was to evaluate the sufficiency of TTF funding to meet Louisiana's transportation needs and to identify ways to increase that funding.

We conducted this audit because the Department of Transportation and Development's *2019 State Highway and Bridge Needs* report identified $14.87 billion in unmet transportation infrastructure needs in Louisiana.

We found TTF funding has not been sufficient because motor fuel taxes, which are the TTF's largest revenue source, have not increased since 1990 and are not indexed for inflation. In addition, the average fuel efficiency of light-duty passenger cars in the United States increased from 18.8 miles per gallon in 1990 to 22.9 miles per gallon in 2020, which decreased the amount of revenue the state receives per Vehicle Miles Traveled (VMT).

We found as well that, from fiscal years 2015 through 2021, $309.6 million in TTF-Regular revenues was used to supplement the debt service associated with Transportation Infrastructure Model for Economic Development (TIMED) projects and for constitutionally allowed local transportation needs. That reduced the amount of revenue for state transportation needs. Furthermore, we estimated that $902.6 million of projected TTF-Regular funds over the next 24 years will be needed to supplement the TIMED debt, which also would reduce the amount of TTF funding available for the backlog of transportation projects.

We projected that higher fuel efficiency and external electric charging will result in $563.6 million less in motor fuel tax revenues for the state from calendar years 2023 to 2032. In 2032 alone, we estimated the state will take in $107.5 million less, assuming electric vehicles account for 30% of new vehicles sold in Louisiana by then. However, Act 578 of the 2022 Regular Legislative Session will enable the state to begin collecting road usage fees from these types of vehicles, assuming that all Act 578 road usage fees will be collected as required. We

projected these fees will be sufficient to offset the impact of external electric charging vehicles on motor fuel tax collections, but not the impact of more fuel-efficient vehicles. As a result, the state still could lose $322.9 million from calendar years 2023 to 2032.

We also found that other states have approved alternative funding measures to provide diversified, dedicated, predictable, and sustainable revenue for statewide roads and bridges. Diversifying Louisiana's revenue sources for transportation needs is important because, even accounting for the new road usage fees passed in the 2022 Regular Legislative Session, TTF revenues still will be insufficient to address the state's current and future transportation needs.

The report contains our findings, conclusions, and recommendations. I hope this report will benefit you in your legislative decision-making process.

We would like to express our appreciation to the Department of Transportation and Development for its assistance during this audit.

Respectfully submitted,

Michael J. "Mike" Waguespack, CPA
Legislative Auditor

MJW/aa

TTF

Louisiana Legislative Auditor

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Sufficiency of the Transportation Trust Fund in Meeting the State's Transportation Needs

September 2022

Audit Control # 40210029

Introduction

We evaluated the sufficiency of the Louisiana Transportation Trust Fund (TTF)[1] in meeting the transportation needs of the state. The TTF is the main funding source used to meet the state's transportation needs and was established January 1, 1990. The TTF provides funding for the costs associated with construction and maintenance of roads and bridges of the state and federal highway systems. The TTF also provides funding for the Statewide Flood-Control program, ports, aviation, transit, and the Parish Transportation Fund (PTF).[2] We conducted this audit because the Department of Transportation and Development's (DOTD) *2019 State Highway and Bridge Needs* report[3] (i.e., the state transportation backlog) identified $14.87 billion in unmet transportation infrastructure needs in Louisiana as shown in Exhibit 1. Appendix B provides more detail on these needs.

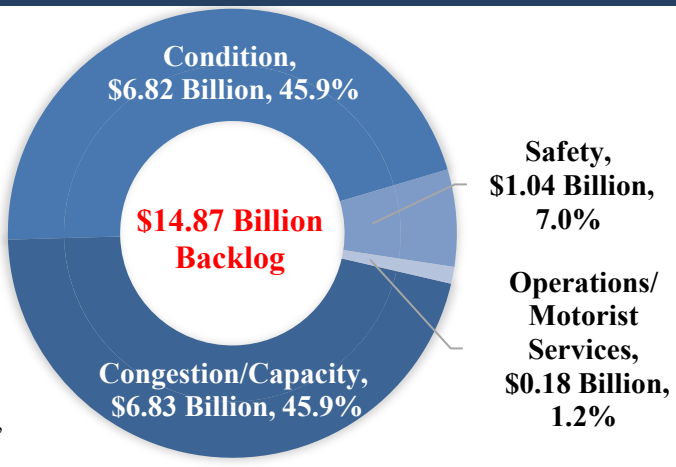
Exhibit 1
DOTD State Highway and Bridge Needs
Calendar Year 2019

Congestion/Capacity consists of major road widening and adding lanes.

Condition consists of resurfacing roads, repairing structurally deficient bridges, bridge painting, etc.

Safety consists of isolated reconstruction, minor widening, shoulders, railroad crossings, etc.

Operations/Motorist Services consists of interstate striping and signs, rest areas, ferries, etc.

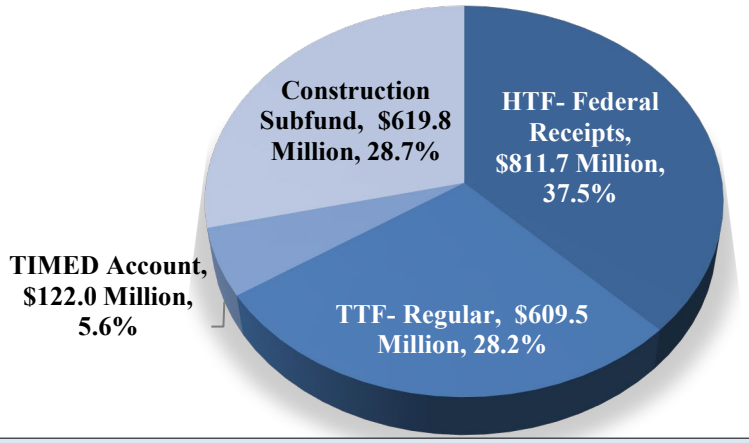


Source: Prepared by legislative auditor's staff using information from DOTD's State Highway and Bridge Needs Report for calendar year 2019.

[1] A special permanent trust in the state treasury established by Act 847 of the 1989 Regular Legislative Session (Article 7, Part IV of the 1974 Louisiana Constitution).
[2] TTF monies used to be appropriated to the State Police for traffic control; however, Act 720 of the 2018 Regular Legislative Session stopped such appropriations.
[3] A more recent version of this report has not been released.

The TTF includes revenues from motor fuel taxes (gasoline, diesel, and special fuels), federal Highway Trust Fund (HTF) receipts (from federal motor fuel taxes), motor vehicle license taxes, aviation fuel sales taxes, miscellaneous fees and fines, and interest earnings. Some of these revenues are statutorily dedicated to certain accounts within the TTF, including the Transportation Infrastructure Model for Economic Development (TIMED) Account. In addition, the revenues to the Construction Subfund within TTF include any new motor fuel tax increases, special permit fees in excess of $20 million, motor vehicle sales taxes starting in fiscal year 2024, and some non-recurring revenues. As shown in Exhibit 2, TTF received approximately $2.2 billion in revenue in fiscal year 2021.

Exhibit 2
TTF Revenue Summary
Fiscal Year 2021



*$566 million (91.3%) of the $619.8 million Construction Subfund is earmarked for specific projects listed in HB2 of 2021. Furthermore, Act 443 of the 2019 Regular Legislative Session earmarked BP Settlement Agreement funds solely and exclusively for listed projects in the Act.
Source: Prepared by legislative auditor's staff using data from LaGov.

Previous Louisiana Legislative Auditor (LLA) audits have found that TTF revenue is insufficient to meet Louisiana's transportation needs. In 1992, LLA issued a performance audit[4] on the TTF, which found that actual TTF revenues fell short of revenue forecasts in its first two years of existence and were insufficient to fund both operating expenses and authorized transportation projects. In 2015, LLA's Financial Audit Services issued an informational report[5] on the TTF, which found that while TTF revenues were being distributed as required by law, TTF revenues were still not sufficient to address the transportation infrastructure needs of the state without additional or increased revenue sources and/or changes to the allocation of TTF funds.

[4] LLA Transportation Trust Fund Report (1992) (https://lla.la.gov/PublicReports.nsf/D533C27986E6A5BD8625764E005A4842/$FILE/00013590.pdf)
[5] LLA Transportation Trust Fund Report (2015) (https://lla.la.gov/PublicReports.nsf/AF54A25C565F288486257E98006A04B2/$FILE/00009541.pdf)

This audit provides an update to LLA's 2015 report on the sources and uses of the TTF, and also includes an economic analysis of the impact that more fuel-efficient and electric cars will have on Louisiana's future TTF collections, and identifies funding mechanisms used by other states to increase transportation funding.

The objective of this audit was:

To evaluate the sufficiency of the Transportation Trust Fund funding for Louisiana's transportation needs and to identify ways to increase transportation funding.

Our results are summarized on the next two pages and discussed in detail throughout the remainder of the report. This report has the following appendices:

- Appendix A contains our scope and methodology.
- Appendix B provides information on DOTD's 2019 transportation backlog.
- Appendix C provides examples of TTF revenue sources with their statutory authority.
- Appendix D provides actual TTF revenue sources for the period of Fiscal Year 2015 through Fiscal Year 2021.
- Appendix E provides legislation considered by the Louisiana Legislature to raise or reform motor fuel taxes during the period of 2015 through 2021.
- Appendix F lists fees/taxes on electric and hybrid vehicles in other states.
- Appendix G provides a map with gasoline tax rates and electric/hybrid vehicle fees by state.

Objective: To evaluate the sufficiency of the Transportation Trust Fund funding for Louisiana's transportation needs and to identify ways to increase transportation funding.

Overall, we found that TTF funding has not been sufficient to fund state transportation needs because stagnant motor fuel taxes and constitutionally-authorized uses of TTF revenues have reduced the amount that can be used toward the state transportation backlog. In addition, TTF revenues will further decrease because of the impact of electric and fuel-efficient vehicles. Other states are adopting additional mechanisms, such as requiring a special registration fee for plug-in electric vehicles (PEVs) and plug-in hybrid vehicles (PHEVs) to make up funding shortfalls and increase transportation funding beyond increasing motor fuel taxes. Specifically, we found that:

We estimate that the average fuel efficiency of Internal Combustion Engine Vehicles (ICEV) in Louisiana increased from 16.5 miles per gallon in 2014 to 17.3 miles per gallon in 2021, a 4.9% increase, which translates to a 4.6% decrease in motor fuel tax revenue per vehicle mile traveled.

- **TTF funding has not been sufficient because motor fuel taxes, which are the TTF's largest revenue source, have not increased since 1990 and are not indexed for inflation. Twenty-two states have variable-rate gas taxes that automatically adjust with economic measures such as the price of gas or the general inflation rate. In addition, the average fuel efficiency of light duty passenger cars in the United States increased from 18.8 miles per gallon in 1990 to 22.9 miles per gallon in 2020, a 21.8% increase, which decreased the amount of revenue that the state receives per Vehicle Miles Traveled (VMT)[6]** (pp. 5-12). As a result of inflation and fuel efficiency, the inflation-adjusted funding per VMT has decreased by 64.4% since 1990, from 2.81 cents per VMT in 1990 to 1.00 cent per VMT in 2020 dollars. If the 1990 motor fuel tax of 20 cents were indexed to the Consumer Price Index (CPI), the tax would have been at 41 cents in 2021. If the tax were indexed to the Producer Price Index (PPI)/the National Highway Construction Cost Index (NHCCI), the tax would have been at 49 cents in 2021.

- **From fiscal year 2015 through fiscal year 2021, $309.6 million of TTF-Regular revenues were used to supplement the debt service associated with TIMED projects and were used for constitutionally-allowed local[7] transportation needs, which reduced the amount of revenues for state transportation needs** (pp. 13-18)**.** Furthermore, we estimate that $902.6 million[8] of projected TTF-Regular funds over the next 24 years will be needed to

[6] Vehicle Miles Traveled (VMT) measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one-year period.
[7] Parish and municipal roads, airports, ports, etc.
[8] According to DOTD, this amount includes savings realized from debt service refinancing due to low interest rate.

supplement the TIMED debt, which would also reduce TTF funds available for the state backlog of transportation projects.

- **We estimate that higher fuel efficiency and external electric charging will result in $563.6 million less in motor fuel tax revenues to the state over calendar years 2023 to 2032, and $107.5 million less in 2032 alone, assuming that electric vehicles will account for 30% of new vehicles sold in Louisiana by 2032. However, Act 578 of the 2022 Regular Legislative Session will enable the state to begin collecting road usage fees from these types of vehicles, and we estimate that these fees will be sufficient to offset the impact of external electric charging vehicles on motor fuel tax collections, but not the impact of more fuel-efficient vehicles** (pp. 19-25)**.** As a result, the state could still lose $322.9 million over calendar years 2023 to 2032 from improved vehicle technologies.

- **Other states have approved alternative funding measures to provide diversified, dedicated, predictable, and sustainable revenues for statewide roads and bridges. Diversifying Louisiana's revenue sources for transportation needs is important because, even accounting for the new road usage fees passed in the 2022 Regular Legislative Session, TTF revenues will still be insufficient to address Louisiana's current and future transportation needs** (pp. 26-28)**.** Other states use a variety of taxes and fees to support roads and bridges including state fuel taxes, vehicle fees, sales taxes, tolls, mode-specific revenues, and an assortment of other sources such as congestion pricing, cigarette taxes, and state lotteries.

TTF funding has not been sufficient because motor fuel taxes, which are the TTF's largest revenue source, have not increased since 1990 and are not indexed for inflation. Twenty-two states have variable-rate gas taxes that automatically adjust with economic measures such as the price of gas or the general inflation rate. In addition, the average fuel efficiency of light duty passenger cars in the United States increased from 18.8 miles per gallon in 1990 to 22.9 miles per gallon in 2020, a 21.8% increase, which decreased the amount of revenue that the state receives per Vehicle Miles Traveled (VMT).

TTF funding for state transportation needs in Louisiana comes from motor fuel taxes (gasoline, diesel, and special fuels), motor vehicle license taxes, aviation fuel taxes, miscellaneous fees and fines, interest earnings, and Highway Trust Fund (HTF)-Federal receipts. Some of these funding sources are statutorily dedicated to the TIMED Account and must be used for specific purposes (see Appendix C and D for more detail). Any new motor fuel tax increases,

special permit fees in excess of $20 million, motor vehicle sales taxes starting in fiscal year 2024, and some non-recurring revenues are dedicated to the Construction Subfund within TTF to also be used for specific purposes (see Appendix C and D for more detail). Exhibit 3 summarizes the sources of revenue to the TTF in fiscal year (FY) 2015 compared to fiscal year 2021. Appendix D summarizes TTF sources of revenue every year from fiscal years 2015 through 2021.

Exhibit 3
TTF Revenue Sources
Fiscal Year 2015 and Fiscal Year 2021

Subfund/ Account	Explanation of Revenue Source	FY2015		FY2021	
		$, Millions	% of Total	$, Millions	% of Total
Highway Trust Fund (HTF) - Federal Receipts*	Federal motor fuel taxes of $0.184 per gallon for gasoline and $0.244 per gallon for diesel fuel are deposited into the federal HTF. The HTF funds are then allocated to states based upon a formula and on a reimbursement basis, provided that the state meets federal requirements, including a state match for capital projects.	$687.4	49.0%	$811.7	37.5%
TTF- Regular	Louisiana's motor fuel taxes of $0.16 per gallon are deposited into TTF. In addition, proceeds from aviation fuel taxes, motor vehicle license taxes, miscellaneous fees and fines, as well as interest earnings are deposited in TTF unless they are dedicated to the Construction Subfund by state law.	595.9	42.4%	609.5	28.2%
Transportation Infrastructure Model for Economic Development (TIMED) Account**	Louisiana's motor fuel taxes of $0.04 per gallon are deposited into the TIMED Account and dedicated to debt service associated with TIMED projects.	121.3	8.6%	122.0	5.6%
Construction Subfund***	Any new tax levied on motor fuel that becomes effective on or after July 1, 2017, must be deposited into this subfund. In addition, a portion of proceeds of the state motor vehicle sales and use tax as well as any revenues collected by DOTD for issuance of special permits in excess of $20 million are dedicated to the Construction Subfund by state law.	-		619.8	28.7%
Total		**$1,404.6**	**100.0%**	**$2,163.0**	**100.0%**

*This funding is only available on a reimbursement basis and upon meeting specific conditions established by the federal government. Unlike Louisiana, Texas and Alabama clearly name this source of funding as "Federal Reimbursements" in their budget documents, which implies the state will have to spend state funds and comply with federal requirements in order to receive federal reimbursements. Louisiana labels it as "TTF-Federal Receipts."
**As explained further in detail in Appendix D, Act 16 of the 1989 Regular Legislative Session authorized the additional 4-cent tax on motor fuel to finance 16 specific projects.
***The majority of fiscal year 2021 revenues in the Construction Subfund came from the non-recurring revenues from the Coronavirus State Fiscal Recovery Fund (Act 410 of 2021 Regular Legislative Session) that are earmarked for specific projects.
Source: Prepared by legislative auditor's staff using information from State's LaGov Enterprise Resource Planning System (LaGov).

The demand on the state's highway system has increased faster than the gasoline tax, which has not been increased since 1990. The inflation-adjusted funding per VMT decreased by 64.4% from 1990 to 2020, or from 2.81 cents per VMT in 1990 to 1.00 cent per VMT in 2020 dollars. Since the gasoline tax makes up the majority of DOTD's funding, it is important to evaluate whether this means of transportation funding is sufficient to address Louisiana's current and future transportation needs. Other states, such as Texas, Florida, and Georgia, have more diverse revenue streams, such as sales and use taxes and toll fees, dedicated to their transportation needs. Throughout the United States, gasoline, diesel, and special fuel taxes (motor fuel taxes) are viewed as a means of charging individual drivers and other users (such as transportation services businesses) for their use of the highway system. The more that someone uses the roadways, the more fuel they will consume, and the more they will be charged for their use of the roadways. In addition, larger vehicles that do more damage to the roads, such as heavy trucks and buses, generally consume more fuel per mile, and thus pay more per mile than light-duty vehicles, such as sedans, pickup trucks, and minivans.

The use of Louisiana's highway system increased from 37.7 billion vehicle-miles traveled (VMT) in 1990 to 48.4 billion in 2020 (a 28.4% increase), while the state's motor fuel tax revenues increased from $452.0 million to $483.2 million (a 6.9% increase). During this time (1990 through 2020), the cost of labor, materials, and other expenses associated with building and maintaining highway infrastructure, as measured by the National Highway Cost Construction Index and Producer Price Index for Highway and Street Construction, increased by 133.8%. In addition, the average fuel efficiency of light duty passenger cars in the United States increased from 18.8 miles per gallon in 1990 to 22.9 miles per gallon in 2020, a 21.8% increase, which decreased the amount of revenue that the state receives per VMT.[9] As a result of inflation and fuel efficiency, the inflation-adjusted funding per VMT decreased by 64.4% from 1990 to 2020, or from 2.81 cents per VMT in 1990 to 1.00 cent per VMT in 2020 dollars.[10]

Vehicle Miles Traveled measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one-year period. VMT is a key metric in transportation planning because it provides a measure of total travel, how travel changes over time, and differences in travel among regions and states.

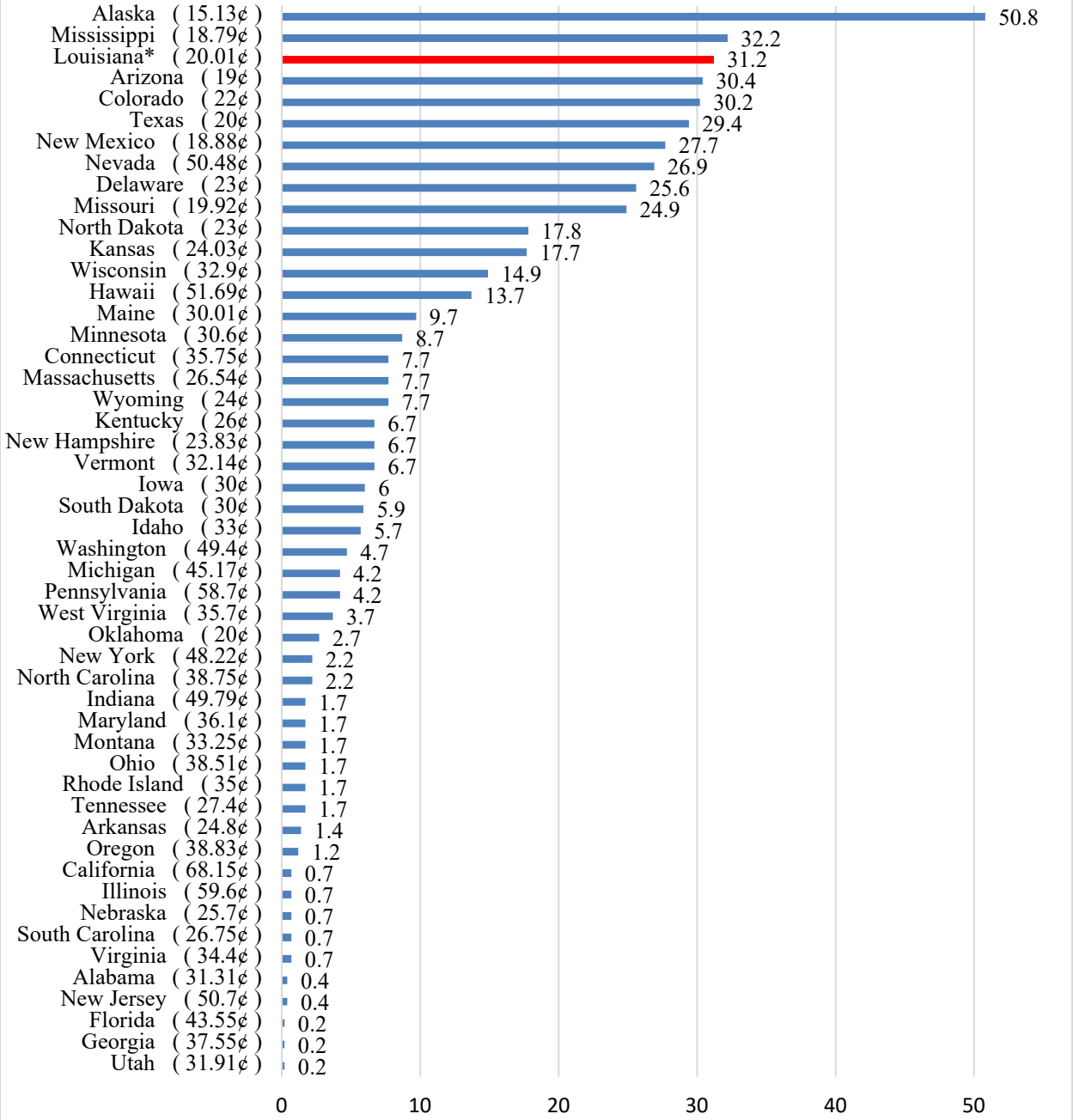
Source:
https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-2016-2.pdf

From 2013 through 2021, 33 states have increased their gas taxes.[11] According to a 2021 report by the LSU Center for Energy Studies,[12] while most states have changed their gas tax rates in the last three to four years, Louisiana has one of the longest-standing gasoline tax rates in the nation, behind only Alaska and Mississippi. Furthermore, Louisiana has the eighth-lowest gas tax rate in the United States as of January 2022.[13] Appendix G provides the

[9] As reported by the Federal Highway Administration, Highway Statistics Summary.
[10] VMT and inflation-adjusted motor fuel tax revenues decreased by 5.8% and 6.6%, respectively, from calendar year 2019 to 2020, when the COVID-19 pandemic led to reduced travel. However, inflation-adjusted motor fuel tax revenue per VMT only decreased by 0.7%.
[11] National Conference of State Legislatures (NCSL). (August 2021) *Recent Legislative Actions Likely to Change Gas Taxes*. https://bit.ly/3RoxZRQ
[12] LSU Center for Energy Studies (April 2021) *Should Louisiana Raise the Gasoline Tax?* https://bit.ly/3K7Q7uh
[13] Alaska, Mississippi, Arizona, Texas, New Mexico, Missouri, and Oklahoma have lower gas tax rates than Louisiana.

motor fuel tax rates by state. Exhibit 4 shows the number of years since the gas tax was last increased by state as of March 2021 and includes each state's current gas tax rate.

Exhibit 4
Years Since Last Gas Tax Increase by State (Including Gas Tax Rates)
As of March 2021



Note: Hawaii, Illinois, Indiana, and Michigan apply their general sales taxes to gasoline and thus see ongoing changes in their overall gas tax rates based on changes in the price of gas. This chart excludes these price-based fluctuations in the sales tax and instead looks only at these states' excise taxes on gasoline.
*Includes a 0.00125 cpg petroleum products fee and a 0.008 cpg motor fuel delivery fee.
Source: Prepared by legislative auditor's staff using data from the Institute on Taxation and Economic Policy (ITEP), March 2021(https://bit.ly/37EfmHp) and from the American Petroleum Institute Report as of January 2022 (https://bit.ly/3EVTlzU).

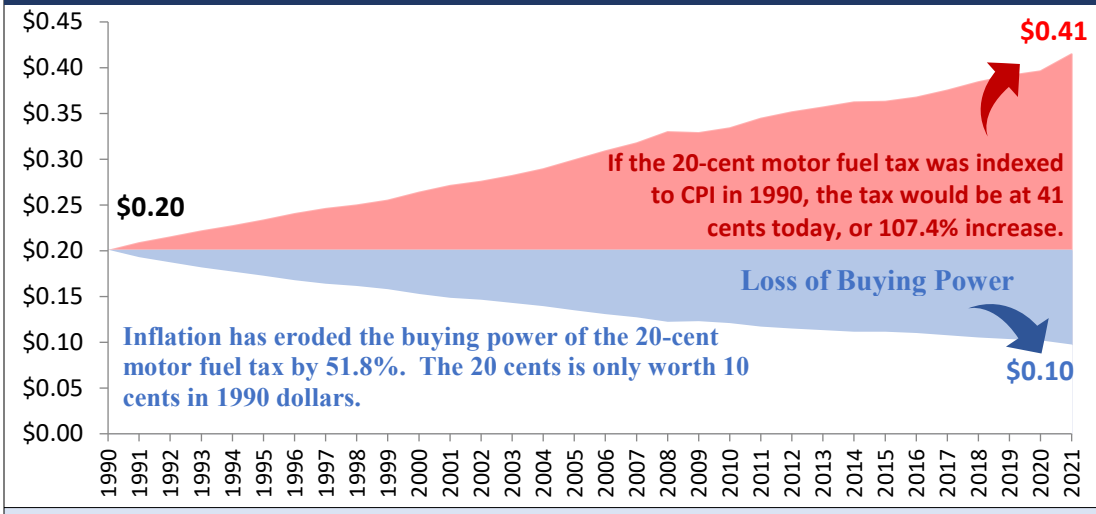
Indexing the motor fuel tax to inflation would enable the state to maintain the same purchasing power of the motor fuel tax per gallon of fuel sold. Twenty-two states have variable-rate gas taxes that automatically adjust with economic measures such as the price of gas or the general inflation rate. Louisiana law fixes the total rate of taxation on gasoline, diesel, and special fuels at 20 cents per gallon, of which 4 cents are dedicated to the TIMED program, and 16 cents are dedicated to TTF-Regular. These rates are specified as a fixed amount per gallon in state law and are not indexed to inflation or other economic factors. There are at least two indexes of inflation that other states use to index their motor fuel taxes to inflation: the CPI and the National Highway Cost Construction Index (NHCCI).[14] Exhibit 5 shows how inflation based on the CPI has affected the 20-cent state motor fuel gas tax since 1990. If the motor fuel tax of 20 cents in 1990 had been indexed to the CPI, the tax would be at 41 cents in 2021. Exhibit 6 also shows the impact of inflation on the purchasing power of motor fuel taxes, but instead of using the CPI, it uses the Producer Price Index (PPI) and the NHCCI.[15] If the motor fuel tax of 20 cents in 1990 had been indexed to the PPI/NHCCI, the tax would be at 49 cents in 2021.

If the motor fuel tax had been indexed to inflation using the Consumer Price Index when it was last increased in 1990, the average Louisiana household's yearly motor fuel expense in 2021 would have been $2,849 instead of $2,646, a 7.7% increase. Even though Louisiana has not changed its gas tax, the cost of building materials, labor, and other expenses associated with building and maintaining transportation infrastructure increased by 144.8% between 1990 and 2021.

[14] The CPI measures inflation in the price of goods and services purchased for personal consumption (like groceries, housing, personal transportation, health care services, etc.), while the NHCCI measures inflation in the price of goods and services used for highway construction (such as concrete, construction services, asphalt, steel, etc.). We used the CPI for the calculations in the paragraph headings for this section because it provided a more conservative estimate. If the NHCCI were used instead, the average household's motor fuel expense would have increased from $2,646 to $2,920, a 10.4% increase.

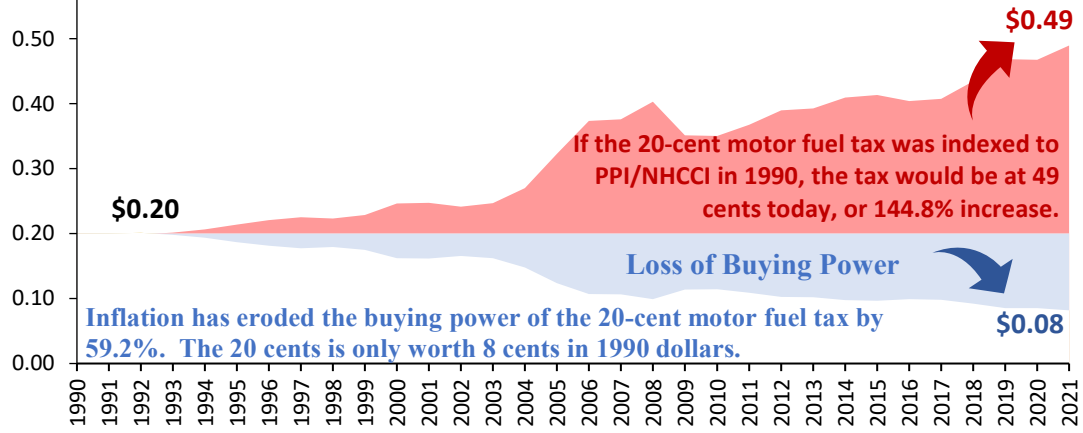
[15] We used the Producer Price Index (PPI) industry group data for material and supply inputs to highway and street construction for calendar years 1990 through 2003 because the National Highway Construction Cost Index (NHCCI) is not available for years prior to 2003.

Exhibit 5
Inflation Impact on the 20-cent Motor Fuel Tax Based on CPI
Calendar Years 1990-2021



Source: Prepared by legislative auditor's staff based on the CPI for All Urban Consumers (CPI-U) data from the U.S. Department of Labor, Bureau of Labor Statistics.

Exhibit 6
Inflation Impact on the 20-cent Motor Fuel Tax Based on Percent Change in PPI and NHCCI
Calendar Years 1990-2021



Source: Prepared by legislative auditor's staff based on the percent change in the Producer Price Index (PPI) and the National Highway Construction Cost Index (NHCCI) from the Federal Highway Administration.

While increasing the fixed cent-per-gallon gas tax results in increasing revenues in the short term, variable-rate gas taxes are considered more sustainable because the tax rate is allowed to rise alongside gas prices, the general inflation rate in the economy, vehicle fuel efficiency, or other relevant factors. Types of variable-rate gas taxes adopted by other states include a percentage tax on the wholesale price of gas, gas taxes indexed to the CPI or the

NHCCI, the state's inflation, population, or appropriation decisions, and applying a general sales tax on gasoline. For example, Florida's gas tax has been adjusted annually based on the CPI since January 1992.[16] Exhibit 7 shows states that use variable rate gas taxes as of July 2021.

Exhibit 7
States with Variable Rate Gas Taxes
As of July 2021

Number	State	Description of Gas Tax Structure
1	Alabama	Beginning October 1, 2023, gas tax will be indexed annually to the NHCCI.
2	Arkansas	Gas tax based on the average wholesale price of gas and diesel, with a floor (prevents the tax from dropping if the 12-month average wholesale price of fuel is less than the previous year) and a ceiling (limits the increase to no more than 0.1 cent per gallon).
3	California	Gas tax varies with inflation.
4	Colorado	Beginning in fiscal year 2032-33 the 8¢ road user fee, which is levied on gasoline, will be indexed to NHCCI.
5	Connecticut	Gas tax varies with gas prices.
6	Florida	A fuel sales tax is adjusted to the percentage change in the average of the CPI.
7	Georgia	Gas tax rates are adjusted annually based on fuel economy standards and CPI. Adjustments based on the CPI will not be used after July 1, 2025.
8	Illinois	Gas tax varies with CPI.
9	Indiana	Gas tax varies with inflation and general sales tax applies to gas.
10	Kentucky	Gas tax varies with gas prices.
11	Maryland	Gas tax varies with gas prices and CPI. The state gas tax is comprised of two parts: an excise gas tax indexed to CPI in order to adjust for inflation; and a state sale and use tax which is applied to the wholesale price of gasoline.
12	Michigan	Gas tax varies with inflation beginning January 1, 2022.
13	Nebraska	Gas tax varies with gas prices and appropriation decisions.
14	New Jersey	Gas tax varies with gas prices and revenue collection.
15	New York	Gas tax varies with gas prices.
16	North Carolina	Gas tax varies with population and CPI.
17	Pennsylvania	Gas tax varies with gas prices.
18	Rhode Island	Gas tax varies with CPI.
19	Utah	Gas tax varies with gas prices and CPI.
20	Vermont	Gas tax varies with gas prices.
21	Virginia	Gas tax varies with CPI.
22	West Virginia	Gas tax varies with gas prices.

Source: Prepared by legislative auditor's staff using information from National Conference of State Legislatures (NCSL), the Transportation Investment Advocacy Center, and Westlaw.

Although Louisiana's legislature considered 12 bills to raise or reform motor fuel taxes between 2015 and 2021, none of these bills passed. These bills proposed increasing the gas tax, removing the present prohibition on the levy of taxes on motor fuel by local governments, imposing a state sales tax on gasoline with an exemption amount depending on the price of oil per barrel, and adjusting the gas tax every four years with the CPI. For example, HB 121 of the 2016 First Extraordinary Legislative Session proposed imposing state sales and use tax on sales of gasoline with the rate of the tax varying based on the price of oil per barrel, while

[16] Florida Statutes § 206.41

HB 632 of the 2017 Regular Legislative Session proposed creating an additional 17-cent tax on motor fuel and would have required the current and additional tax to be adjusted periodically in accordance with the CPI. Appendix E summarizes the bills considered to raise or reform motor fuel taxes from fiscal years 2015 through 2021.

According to the U.S. Department of Transportation, Louisiana could receive approximately $5.9 billion over five years from the Infrastructure Investment and Jobs (IIJA) Act[17] in Federal highway formula funding for highways and bridges, provided that Louisiana would be able to provide state matching funds. According to DOTD, the majority of this amount is a continuation of previous years' funding and is not new funding. The IIJA is going to provide approximately $1 billion in new formula funding for bridges. Louisiana could also compete for the $15.77 billion Bridge Investment Program for economically significant bridges and $15 billion of federal funding dedicated to megaprojects that will deliver substantial economic benefits to communities. Louisiana could also expect to receive approximately $118 million over five years in formula funding to reduce transportation-related emissions, in addition to about $135 million over five years to increase the resilience of its transportation system (i.e., ability to plan for, recover from, and adapt to future growth, climate change, aging infrastructure, adverse events, etc.). Increasing TTF revenues would ensure that Louisiana has the funding necessary to draw down the federal funds that the state could be eligible to receive over the next five years. DOTD is also in the process of developing a grant program to distribute IIJA federal funds to implement new electric vehicle charging station programs.

> **Matter for Legislative Consideration 1:** To account for the decrease in purchasing power, the legislature may wish to consider raising Louisiana's gas tax and/or indexing it to certain economic conditions, such as inflation, changes in population, changes in fuel efficiency standards, etc. This would be similar to how most other southern states are setting gas tax rates.

[17] The IIJA Act will provide $351 billion for highways over five years (FY22-FY26), with $307 billion provided as formula apportionments to states. In addition, the IIJA created a new $27.5 billion formula-based Federal Highway Administration (FHWA) bridge program for highway bridge replacement, rehabilitation, preservation, protection, or construction projects on public roads.

From fiscal years 2015 through 2021, $309.6 million of TTF-Regular revenues were used to supplement the debt service associated with TIMED projects and were used for constitutionally-allowed local transportation needs in excess of what was required, which reduced the amount of revenues for state transportation needs.

The Legislature appropriates TTF-Regular revenues to DOTD for its operations and capital outlay, ports, airports, the PTF, and to the TIMED Debt Service. Exhibit 8 summarizes how TTF revenue was used in fiscal year 2015 and fiscal year 2021.

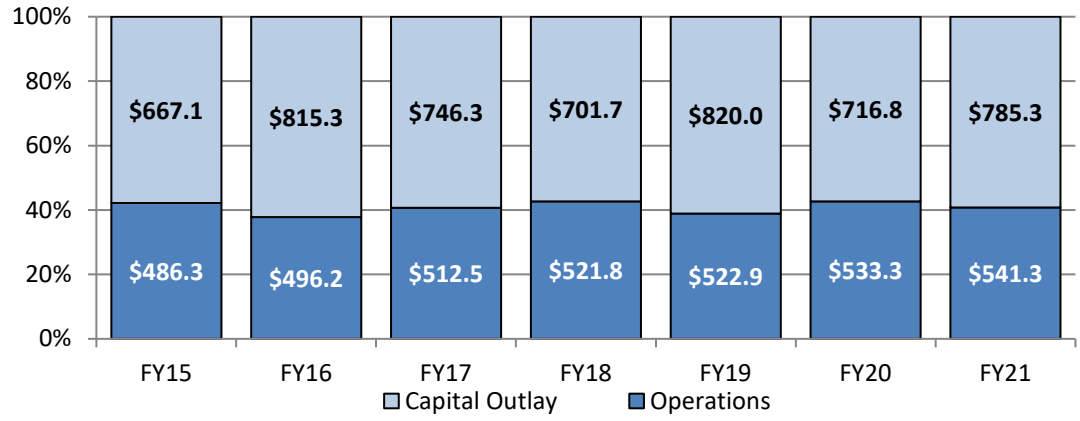
Exhibit 8
TTF Revenue Uses
Fiscal Year 2015 versus Fiscal Year 2021

Revenue Uses	Explanation	FY15		FY21	
		$, Millions	% of Total	$, Millions	% of Total
DOTD Capital Outlay	Provides funding for the construction or renovation of state transportation infrastructure, including funding for the Highway Priority Program; the Facilities Program; the Airport Priority Program; the Flood Control Program; the Ports Priority Program; Non-Federal Aid State Roads and Highways; various large-scale infrastructure projects; and motor vessels and equipment.	$667.1	50.2%	$785.3	55.9%
DOTD Operations	Provides funding for the day-to-day expenses of DOTD to support operations of its seven offices (i.e. Office of the Secretary, Office of Management and Finance, Engineering, Planning, Operations, Aviation, Multimodal Commerce) and programs administered by these offices.	$486.3	36.6%	$541.3	38.5%
Parish Transportation Fund (PTF)	Provides funding to local government entities for road systems maintenance, mass transit, and to serve as local match for off system roads and bridges.	$46.4	3.5%	$43.7	3.1%
TIMED Debt Service	Provides additional monies in excess of the 4-cent motor fuel taxes dedicated for the TIMED projects to pay debt service (i.e. principal, interest, and premiums) associated with bonds used to fund the TIMED projects.	$20.7	1.5%	$34.3	2.5%
Office of State Police*	Provides funding to the Office of State Police for traffic control purposes.	$62.4	4.7%	$0.0	N/A
General Fund	Amounts transferred to the State General Fund as a deficit reduction measure for FY11 and FY15.	$47.2**	3.5%	$0.0	N/A
Total		**$1,330.1**	**100.0%**	**$1,404.6**	**100.0%**

*Act 720 of the 2018 Regular Legislative Session removed authority to appropriate or dedicate TTF-Regular monies to state police for traffic control purposes.
**According to the Department of Treasury's documentation provided by DOTD, this amount includes $24.4 million in deficit reduction measure for FY11 per Executive Order BJ 11-25 and $22.8 million in deficit reduction measures for FY15 (Round 1 & 2).
Source: Prepared by legislative auditor's staff using information from LaGov.

Since DOTD does not receive recurring funding from the State General Fund, proceeds from motor fuel taxes comprise the majority of funding for DOTD operations. DOTD is appropriated TTF-Regular and HTF-Federal Receipts (federal reimbursements) funding through House Bills (HB) 1 and 2 of the Regular Session of the Louisiana Legislature each year. As shown in Exhibit 9, more than 50% of TTF-Regular and HTF-Federal Receipts received by DOTD were used for capital outlay in fiscal years 2015 through 2021.

Exhibit 9
Total TTF-Regular and HTF-Federal Receipts Funding to DOTD ($, Millions)
Fiscal Year 2015 through Fiscal Year 2021



Source: Prepared by legislative audito's staff using unaudited information from LaGov.

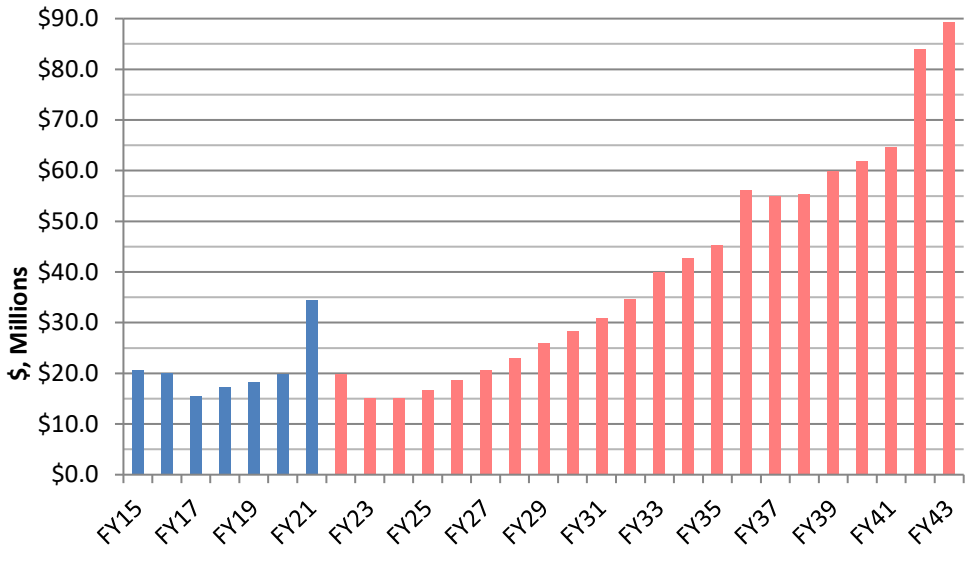
The state has used $309.6 million in TTF-Regular revenues from fiscal year 2015 through fiscal year 2021 to supplement debt service associated with TIMED projects as well as to appropriate funds in excess of constitutionally allowed local transportation needs instead of using all available funds to reduce the state's backlog of projects and current maintenance needs. This $309.6 million includes $145.8 million toward the TIMED debt service, $24.2 million in excess of the 20% cap, $105.8 million in excess of the minimum funding required to the Parish Transportation Fund (PTF), and $33.8 million in excess of the five percent cap to the State General Fund as a deficit reduction measure.

The 4-cent gas tax dedicated to TIMED projects is not sufficient to meet debt obligations. As a result, $145.8 million of the 16-cent motor fuel tax collected from fiscal year 2015 to fiscal year 2021 has been used to supplement paying down the TIMED debt service. Act 16 of the 1989 First Extraordinary Session of the Louisiana Legislature[18] established the TIMED Account within the TTF to fund 16 specific projects through a 4-cent motor fuel tax and the proceeds of bonds authorized by Article 7, Section 27(C) of the Louisiana Constitution. However, the 4-cent motor fuel tax has been insufficient to pay debt service payments associated with TIMED projects. As shown in Exhibit 10, we estimate that $902.6 million (or 7.1%) of TTF-Regular funds projected over the next 24 years will be needed to service the TIMED debt. As a result, these funds will not be available to use on transportation

[18] Louisiana Revised Statute (R.S.) 47:820.2

projects or to address the transportation backlog. The total future TIMED Debt Service owed from fiscal year 2022 through fiscal year 2043 is approximately $3.9 billion.

Exhibit 10
TTF-Regular Revenues for TIMED Debt Service
Fiscal Year 2015 through Fiscal Year 2043



Actuals:
FY15= $20,668,973
FY16= $20,052,483
FY17= $15,456,239
FY18= $17,301,087
FY19 = $18,181,778
FY20 = $19,763,012
FY21 = $34,344,910
Total = $145,768,481

Projected Use of TTF funds*:
FY22 - FY43 Total = $902,611,616**
No TTF funds projected to be needed in FY44 and FY45.

*Projected use of TTF-Regular funds for TIMED debt was calculated using current TIMED debt and estimated revenues based on 0.43% growth rate. Estimated revenues for FY22-FY25 were from the 05/18/21 adopted REC forecast.
**According to DOTD, this amount includes savings realized from debt service refinancing due to low interest rate.
Source: Prepared by the legislative auditor's staff using unaudited information from LaGov, REC, and Louisiana Bond Commission.

The Louisiana Constitution[19] caps the use of TTF-Regular revenues for certain allowable purposes at 20%. These purposes include funding for ports, the PTF, the Statewide Flood-Control Program, and to state police for traffic control purposes. However, in fiscal year 2015, TTF-Regular revenues for these purposes exceeded the 20% cap by $24.2 million, resulting in the state not allocating all eligible TTF funding towards the state's transportation backlog. In fiscal year 2015, state-generated revenues were not sufficient to address the overall state budget deficit. As a result, legislators appropriated $62.4 million of TTF-Regular funds to the Office of State Police (OSP), which may have contributed to the 20% cap being exceeded by $24.2 million, as shown in Exhibit 11. Subsequently, Act 380 of the 2015 Regular Legislative Session[20] limited the uses of TTF-Regular revenues for OSP and changed the existing law by applying the 20% cap on all revenues deposited into the TTF, including state generated tax monies, fees, penalties or interest earnings.

[19] Article 7, Section 27(B) of the Louisiana Constitution, effective in 1989.
[20] R.S. 48:78, effective August 1, 2015. Act 380 of the 2015 Regular Legislative Session also limited appropriations to OSP from the TTF to $45M for FY16, $20M for FY17, and $10M in each fiscal year thereafter. Act 720 of the 2018 Regular Legislative Session removed authority to appropriate or dedicate TTF-Regular monies to state police for traffic control purposes.

These changes resulted in more revenues for appropriations for ports, PTF, and the Statewide Flood-Control Program.

Exhibit 11
20% Cap on Uses of TTF-Regular Revenues ($, Millions)
Fiscal Year 2015 through Fiscal Year 2021

	2015	2016	2017	2018	2019	2020	2021
Tax Revenues - Actuals:							
Gas & Special Fuels ($0.16)	$485.1	$497.8	$507.9	$481.5	$508.4	$465.0	$487.9
Motor Vehicles License	50.9	50.7	53.0	51.7	53.6	52.4	62.3
Aviation Fuels*	29.8	29.8	29.8	29.8	29.8	29.8	29.8
TTF Interest and Fees**	-	27.8	27.6	31.8	38.2	36.5	29.4
Total Tax Revenues	**$565.8**	**$606.1**	**$618.3**	**$594.8**	**$630.0**	**$583.7**	**$609.4**
20% Cap	$113.2	$121.2	$123.7	$119.0	$126.0	$116.7	$121.9
HB1 and HB2 Appropriations - Actuals:							
Ports	$19.7	$19.7	$39.4	$39.4	$39.4	$39.4	$35.5
PTF	46.4	46.4	46.4	45.2	46.4	46.0	43.6
Statewide Flood-Control Program	8.9	8.9	9.9	9.9	20.0	20.0	18.0
State Police***	62.4	43.2	-	-	-	-	-
Total Appropriations	**$137.4**	**$118.2**	**$95.7**	**$94.5**	**$105.8**	**$105.4**	**$97.1**
Under/Over 20% Cap	**$24.2**	**($3.0)**	**($28.0)**	**($24.5)**	**($20.2)**	**($11.3)**	**($24.8)**

*According to Article 7, Section 27(B) of the Louisiana Constitution, the annual appropriations for airports must be equal to, but not greater than, the estimated taxes to be collected and received on aviation fuel.
**Act 380 of the 2015 Regular Legislative Session changed the existing law by applying the 20% cap on all revenues deposited into the TTF, including state generated tax monies, fees, penalties or interest earnings. Therefore, we did not include TTF interest and fees amounts for fiscal year 2015.
***Act 720 of the 2018 Regular Legislative Session removed authority to appropriate or dedicate TTF-Regular monies to state police for traffic control purposes.
Source: Prepared by legislative auditor's staff using information from LaGov.

As shown in Exhibit 11, the 20% cap on the TTF-Regular revenue uses does not include appropriations to airports; however, revenue from the aviation fuels tax, which is dedicated solely to airports per the Louisiana Constitution, is included in calculating the 20% cap.

The Louisiana Constitution requires that at least one cent per gallon of the tax on gasoline and special fuels, which is deposited into TTF-Regular, is appropriated to the Parish Transportation Fund (PTF). During fiscal year 2015 through fiscal year 2021, a total of $105.8 million of TTF-Regular funds were transferred to PTF in excess of the required minimum. Act 221 of the 1990 Regular Legislative Session established the PTF as a special fund in the state treasury. The legislature appropriates TTF-Regular revenues to the PTF for parishes to use for the maintenance, construction, and repair of parish or municipal roads since

state law[21] prohibits DOTD to work on the roads that are not in the state highway system. The monies in the PTF are then distributed to the parish governing authorities according to the distribution formula outlined in state law[22] for legislatively provided uses.[23] During fiscal year 2015 through fiscal year 2021, appropriations to the PTF exceeded the minimum requirement of one cent per gallon of the tax on gasoline and special fuels by $105.8 million, as shown in Exhibit 12. These funds could have been used toward addressing state transportation backlog of $14.87 billion.

Exhibit 12
Parish Transportation Fund Funding Requirement
Fiscal Year 2015 through Fiscal Year 2021

Fiscal Year	Motor Fuel Taxes*	Avails of 1 cent	Actually Disbursed to PTF	Excess of Required Appropriation
2015	$485,128,250	$30,320,516	$46,400,000	$16,079,484
2016	497,786,953	31,111,685	46,400,000	15,288,315
2017	507,906,983	31,744,186	46,400,000	14,655,814
2018	481,472,728	30,092,045	45,166,373	15,074,328
2019	508,408,658	31,775,541	46,400,000	14,624,459
2020	464,981,288	29,061,330	46,005,562	16,944,232
2021	487,941,687	30,496,355	43,634,749	13,138,394
Total	**$3,433,626,547**	**$214,601,658**	**$320,406,684**	**$105,805,026**

*Amounts presented exclude TIMED Revenues; therefore, only the $0.16 motor fuel tax is reflected.
Source: Prepared by legislative auditor's staff using data obtained from LaGov.

The Louisiana Constitution restricts the use of TTF revenues for eliminating a projected state budget deficit to a five percent cap on the total appropriations from the fund for the fiscal year. However, the legislature transferred $33.8 million in excess of the five percent cap from the TTF revenues to the State General Fund as a deficit reduction measure for fiscal year 2016. Article 7, Section 10(F) of the Louisiana Constitution requires the legislature to adjust appropriations, including any constitutionally-protected or mandated allocations or appropriations (such as TTF), in order to eliminate a projected deficit. However, such adjustments may not exceed five percent (5%) of the total appropriation or allocation from a fund for the fiscal year. Furthermore, Article 7, Section 10(J) states that HTF-Federal Receipts[24] should *not* be included in the calculation of the five percent. In addition, Article 10(F)(4)(a) prohibits the use of the TIMED revenues for deficit reduction because they are

[21] R.S. 48:757 prohibits DOTD to work on the roads that are not in the state highway system, except for on intersectional improvements on parish roads or municipal streets and to perform work on parish roads or municipal streets for purposes of operational or safety reasons when the parish road or municipal street intersects with a state highway that is programmed for improvement or construction.
[22] R.S. 48:756
[23] R.S. 48:753 and R.S. 48:754
[24] For the purposes of this Article, the state general fund and dedicated funds shall be all money required to be deposited in the state treasury, except that money the origin of which is: (1) The federal government. (2) Self-generated collections by any entity subject to the policy and management authority established by Article VIII, Sections 5 through 7. (3) A transfer from another state agency, board, or commission. (4) The provisions of this Paragraph shall not apply to or affect funds allocated by Article VII, Section 4, Paragraphs (D) and (E).

pledged to TIMED debt service. Exhibit 13 shows the amounts of TTF-Regular funds transferred to the State General Fund in fiscal years 2015 through 2017 as a deficit reduction measure.

Exhibit 13
5% TTF Funding Deficit Reduction
Fiscal Years 2015 through 2017

Disbursements	TTF Disbursements to the State General Fund - Actuals:				Allowed by Constitution	Over/ Under 5% Cap
	2015	2016	2017*	Total		
To General Fund for FY11 Deficit Reduction	$24,418,675			$24,418,675	N/A	N/A
To General Fund for FY15 Deficit Reduction	22,755,498			22,755,498	$29,793,243	**$7,037,745**
To General Fund for FY16 Deficit Reduction		$18,103,138	$45,984,485	64,087,623	30,304,729	**(33,782,894)**
Total:	**$47,174,173**	**$18,103,138**	**$45,984,485***	**$111,261,796**	N/A	N/A

Notes: HTF-Federal and TIMED revenues are excluded from the calculation of 5% deficit reduction measures based on Article 7, Section 10(J)(1) and 10(F)(4)(a) correspondingly.
*According to DOTD, $45.9 million was swept from the TTF in fiscal year 2017 from the $39 million of undesignated fund balance and an increase in Revenue Estimating Conference projections.
Source: Prepared by legislative auditor's staff using information provided by DOTD. DOTD received this information from the Department of Treasury, which obtained these amounts from LaGov.

Matter for Legislative Consideration 2: The legislature may wish to consider identifying other sources of revenue to pay down the TIMED debt service instead of TTF-Regular funds, which are used to fund the state's transportation needs.

Matter for Legislative Consideration 3: The legislature may wish to consider excluding the aviation fuels tax when calculating the 20% of TTF funds allowed for appropriations to ports, the PTF, the Statewide Flood-Control Program.

Matter for Legislative Consideration 4: The legislature may wish to consider limiting appropriations to the PTF to what is minimally required by the Louisiana Constitution and direct these funds to the state transportation system backlog.

We estimate that higher fuel efficiency and external electric charging will result in $563.6 million less in motor fuel tax revenues to the state over calendar years 2023 to 2032 and $107.5 million less in 2032 alone, assuming that hybrid and electric vehicles will account for 30% of new vehicles sold in Louisiana by 2032. However, Act 578 of the 2022 Regular Legislative Session will enable the state to begin collecting road usage fees from these types of vehicles, and we estimate that these fees will be sufficient to offset the impact of external electric charging on motor fuel tax collections, but not the impact of more fuel-efficient vehicles. As a result, the state could still lose $322.9 million over calendar years 2023 to 2032 from improved vehicle technologies.

New advances in automobile manufacturing have led to more fuel-efficient vehicles and increasing use of electric motors to provide some or all of the propulsion in automobiles, resulting in less motor fuel consumed and less motor fuel tax revenue to the state per VMT. Accounting for electric motor technology will be especially important because 13 automakers, accounting for at least 98.6% of the vehicles (or 93.5% of electric and hybrid vehicles) registered in Louisiana as of March 2022, have committed to meet certain goals regarding their electric vehicle offerings by 2040.[25] As a result, automobiles with electric motors will likely comprise an increasing percentage of the vehicles in Louisiana in the future and will continue to displace gasoline- and diesel-powered vehicles.

Vehicles can be classified based on which of three technologies they use, specifically, whether they have an internal combustion engine or electric motor, or both, and whether they can run on external electricity. Each of these characteristics impacts how much motor fuel the vehicle consumes per mile traveled, which in turn impacts the revenue that the state receives from motor fuel taxes.

- **Internal combustion engines** work by igniting gasoline or diesel in a combustion chamber, which directly or indirectly propels the vehicle. Internal combustion engine vehicles (ICEVs), hybrid electric vehicles (HEVs), and plug-in hybrid electric vehicles (PHEVs) use this technology.

- **Electric motors and traction battery packs** can be used to propel the vehicle, supplementing or even completely replacing the internal combustion engine. In addition, the electric motor can function as a generator to capture energy normally lost during braking to charge the battery. HEVs, PHEVs, and battery electric vehicles (BEVs) use this technology.

[25] One automaker, Tesla, is not included in this list because it only manufactures electric vehicles and accounted for 74.5% of BEVs registered in Louisiana and 0.1% of all vehicles registered in Louisiana as of March 2022.

- **External electric charging** can be used in place of gasoline or diesel in vehicles that have a traction battery pack to store the electricity, and an electric motor that can run on electricity. This enables the car to avoid using gasoline or diesel. PHEVs and BEVs use this technology.

Exhibit 14 shows the different types of vehicles, based on which of these technologies they employ, as well as how they are abbreviated in this report.

Exhibit 14
Types of Vehicles

Vehicle Type	Internal Combustion Engine Powered by Petroleum Fuel	Electric Motor and Traction Battery Pack	External Electric Charging
Internal Combustion Engine Vehicle (ICEV)			
Hybrid Electric Vehicle (HEV)			
Plug-in Hybrid Electric Vehicle (PHEV)			
Battery Electric Vehicle (BEV)			

Source: Prepared by legislative auditor's staff using information from Congressional Research Service Report R46231, "Electric Vehicles: A Primer on Technology and Selected Policy Issues," Feb. 14, 2020.

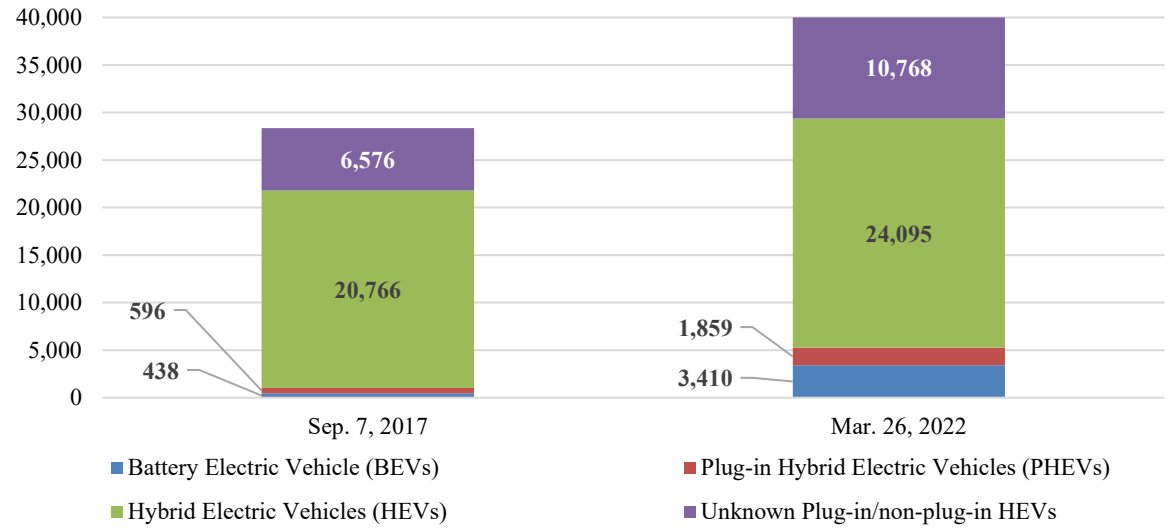
Overall, there are two trends in vehicle technologies that are likely to have a significant impact on motor fuel tax revenues in the future:

- **Higher fuel efficiency**, which enables a vehicle that has an internal combustion engine to travel more miles for each gallon of fuel consumed. This applies to ICEVs, HEVs, and PHEVs.

- **External electric charging**, which enables a vehicle that has an electric motor and battery pack to use grid-sourced electricity from a residential wall outlet or commercial charging station instead of using motor fuel. This applies to PHEVs and BEVs.

Although ICEVs are the dominant technology in Louisiana, HEVs, PHEVs, and BEVs are becoming increasingly prevalent. These trends are important because HEVs, PHEVs, and BEVs use less or no motor fuel per VMT, resulting in less or no motor fuel tax revenue to the state for their usage of the state's roads. Exhibit 15 summarizes how many vehicles in each of these four categories were registered in Louisiana as of September 2017 and March 2022.

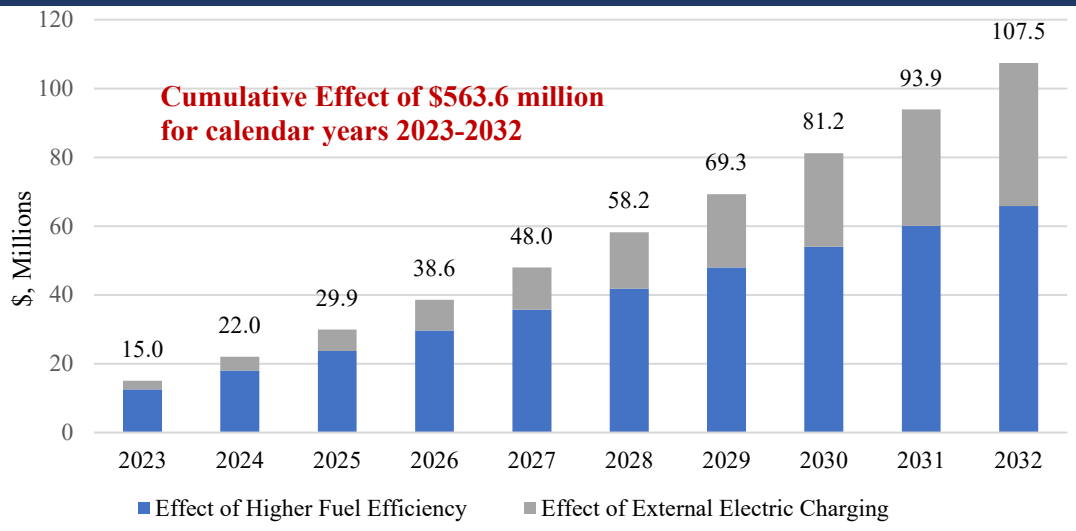
Exhibit 15
Number of Hybrid and Electric Vehicles Registered in Louisiana
As of September 2017 and March 2022



Note: Appendix A explains our methodology for counting the number of electric and hybrid vehicles.
Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. National Highway Traffic Safety Administration, as well as unaudited data from the Office of Motor Vehicles.

If electric vehicles account for 30% of new vehicles sold in Louisiana by 2032, we estimate that higher fuel efficiency and external electric charging will result in $563.6 million less in motor fuel tax revenues to the state over calendar years 2023 to 2032. HEVs, PHEVs, and ICEVs are becoming increasingly fuel efficient to comply with federal Corporate Average Fuel Economy standards. We estimate that the average fuel efficiency of ICEVs in Louisiana increased from 16.5 miles per gallon in 2014 to 17.3 miles per gallon in 2021, a 4.9% increase, which translates to a 4.6% decrease in motor fuel tax revenue per vehicle mile traveled. In addition, PHEVs and BEVs are partly or fully powered by batteries charged using external electricity, which enables them to reduce or eliminate their consumption of taxed motor fuels like gasoline or diesel. We estimate that the cumulative effect of all of these trends will be a $563.6 million reduction in motor fuel tax revenues over calendar years 2023 to 2032, relative to the amount of revenue that the state would receive if vehicles were not becoming more fuel efficient and could not run on external electricity. Exhibit 16 summarizes our analysis of motor fuel tax revenues for calendar years 2023 to 2032.

Exhibit 16
Impact of Higher Fuel Efficiency and External Electric Charging
Calendar Years 2023 to 2032



Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. Bureau of Transportation Statistics, Federal Highway Administration, National Household Transportation Survey, Louisiana Department of Environmental Quality, and Louisiana Office of Motor Vehicles.

We projected out to calendar year 2032 because 13 automakers[26] have pledged to reach various production or sales targets for electric or hybrid vehicles over a period ranging from 2023 to 2040. The year 2032 falls within this range. If we were to project beyond calendar year 2032, the results would become increasingly sensitive to the assumptions used and would be subject to greater uncertainty. However, projecting to calendar year 2032 does cover the five-year time period typically used by the Revenue Estimating Conference and is close to the average age of passenger cars and light trucks in the United States, 11.9 years, allowing for most of the vehicles in the state to be retired and replaced during this time interval.

Act 578 of the 2022 Regular Legislative Session enables the state to begin collecting road usage fees from HEVs, PHEVs, and BEVs. We estimate that these fees will be sufficient[27] to offset the impact of external electric charging on motor fuel tax collections, but not the impact of higher fuel efficiency. As a result, the state could still lose $59.3 million annually by calendar year 2032 from improved vehicle fuel efficiency technologies. Specifically, the Act[28] creates an annual road usage fee of $110 for all electric vehicles (BEVs), and $60 for all hybrid vehicles (HEVs and PHEVs), to be collected by the Louisiana Department of Revenue and deposited into the Transportation Trust Fund and Parish Transportation Fund. Exhibit 17 shows the estimated impact of higher fuel efficiency and external electric charging on annual motor fuel tax revenues in calendar year 2032, as well as the impact of Act 578 road usage fees.

[26] We list the 13 automakers in Appendix A.
[27] Assuming that all Act 578 road usage fees will be collected as required.
[28] Codified as R.S. 32:461.

Exhibit 17
Effects of Higher Fuel Efficiency and External Electric Charging on TTF Revenues ($, Millions)
Calendar Year 2032

Vehicle Type	Effect of Higher Fuel Efficiency	Effect of External Electric Charging	Total Impact on Motor Fuel Taxes	Act 578 Road Usage Fees*	Overall Effect on TTF
Internal Combustion Engine Vehicles (ICEVs)	-$43.9	$0.0	-$43.9	$0.0	-$43.9
Plug-in Hybrid Electric Vehicles (PHEVs)	-$13.2	-$24.8	-$38.0	$23.8	-$14.2
Hybrid Electric Vehicles (HEVs)	-$8.8	$0.0	-$8.8	$8.0	-$0.8
Battery Electric Vehicles (BEVs)	$0.0	-$16.8	-$16.8	$16.4	-$0.4
All Vehicle Types Total	-$65.9	-$41.6	-$107.5	$48.2	-$59.3

Notes: Effects are calculated based on the assumptions described in Exhibit A.1 in the Appendix A, scenario 3.
*We assume that all vehicle owners subject to Act 578 road usage fees will pay as required. Taxpayer noncompliance may result in lower collections that do not fully offset the loss of motor fuel taxes.
Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. Bureau of Transportation Statistics, Federal Highway Administration, National Household Transportation Survey, Louisiana Department of Environmental Quality, and Louisiana Office of Motor Vehicles.

The effect of higher fuel efficiency and external electric charging from Exhibit 17 is based on an analysis of what motor fuel tax revenues and Act 578 fees would be in different scenarios. These scenarios are explained in greater detail in Appendix A. By comparing scenarios 1 and 3, we can illustrate the impact of fuel efficiency and external electric charging on motor fuel tax revenues. Scenario 1 is an implausible future scenario in which new PHEVs, HEVs, and BEVs cease to be sold and in which there are no future improvements in fuel efficiency beyond the 17.3 miles per gallon that ICEVs attained in 2021. This scenario is meant to show the conditions that would need to exist in order for the state to maintain the same level of motor fuel tax revenue per VMT (not accounting for inflation), and how increasing fuel efficiency and external electric charging will prevent the state from maintaining this revenue benchmark. Scenario 3 is a plausible future scenario in which PHEVs, HEVs, and BEVs become increasingly prevalent and fuel efficiency increases for all vehicle types. The $107.5 million total impact on motor fuel taxes in Exhibit 17 is the difference between the amount of motor fuel tax revenues in scenarios 1 and 3.

Even if hybrid and electric cars make up 30% of all vehicles sold by 2032, we project that higher fuel efficiency will still have a larger impact than external electric charging on motor fuel taxes, and that ICEVs will account for 66.7% of the impact of higher fuel efficiency. We estimate PHEVs and BEVs would need to account for 56% of new vehicles sold by 2032 for external electric charging to have a larger impact on motor fuel taxes than higher fuel efficiency.[29] Assuming that all vehicle owners subject to Act 578 road usage fees will pay as required, Act 578's road usage fees are large enough to offset the impact of

[29] Specifically, this 56% breakeven point assumes that PHEVs account for 43.5% of new sales, and BEVs account for 12.5% of new sales, and that HEVs (non-plug-in hybrids) will have been phased out of new sales by calendar year 2032. Our assumption that PHEVs will be more popular than BEVs is based on current data indicating that more hybrids are sold than BEVs.

external electric charging on motor fuel taxes, but they can only offset 44.9% of the total impact of higher fuel efficiency and external electric charging on motor fuel taxes.

The Legislature may wish to further evaluate road usage fees to determine whether the fees should make up for motor fuel tax losses from external electric charging, increased fuel efficiency, or both. We estimate that the fee amounts specified in Act 578 for PHEVs and BEVs are sufficient to offset 96.9% of the impact these vehicles have on motor fuel taxes through external electric charging, assuming perfect compliance by taxpayers. However, HEVs, which do not use external electric charging, are still subject to the Act 578 fee. While HEVs do impact motor fuel tax revenues because they have higher fuel efficiency than ICEVs, ICEVs are becoming more fuel efficient over time, and are generating less motor fuel tax per VMT for the same reason. The Legislature could modify the road usage fees in Act 578 to address specific causes of lower motor fuel taxes per VMT instead of specific types of vehicles. Exhibit 18 shows how much the annual road usage fee would need to be for each type of vehicle, depending on what types of revenue losses are being offset by the road usage fee.

Exhibit 18
Fee Amounts for Different Legislative Alternatives
Calendar Year 2032

Vehicle Type	Amount	Act 578 Road Usage Fees	Alternative 1: Offset Losses from Higher Fuel Efficiency	Alternative 2: Offset Losses from External Electric Charging	Alternative 3: Offset Total Losses (Combines Alternative 1 + Alternative 2)
Internal Combustion Engine Vehicles	Annual Fee Per Vehicle	$0	$10	$0	$10
	Total Revenue Generated	0	43,935,192	0	43,935,192
Plug-in Hybrid Electric Vehicles	Annual Fee Per Vehicle	60	33	63	96
	Total Revenue Generated	23,817,322	13,185,974	24,807,192	37,993,166
Hybrid Electric Vehicles	Annual Fee Per Vehicle	60	66	0	66
	Total Revenue Generated	7,967,643	8,758,998	0	8,758,998
Battery Electric Vehicles	Annual Fee Per Vehicle	110	0	112	112
	Total Revenue Generated	16,446,176	0	16,765,573	16,765,573
All Vehicles Total	**Total Revenue Generated**	**$48,231,141**	**$65,880,164**	**$41,572,765**	**$107,452,929**

Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. Bureau of Transportation Statistics, Federal Highway Administration, National Household Transportation Survey, Louisiana Department of Environmental Quality, and Louisiana Office of Motor Vehicles.

For ICEVs, PHEVs, and HEVs, the Legislature could compensate for the lost revenue due to higher fuel efficiency by increasing the rate of motor fuel tax per gallon of fuel. As noted previously, all vehicles, including ICEVs, have tended to become more fuel efficient over time, which decreases the state motor fuel tax revenue per VMT. By increasing the rate of tax per gallon of gasoline, diesel, or other motor fuels, the state could offset revenue losses caused by increases in fuel efficiency over time without relying on a separate fee that would have to be paid by vehicle owners. The legislature could still levy road usage fees on HEV, PHEV, and BEV owners to make up for the fact that they pay less motor fuel tax per VMT than ICEV owners; however, the fee for HEVs and PHEVs needed to offset revenue losses from higher fuel efficiency would decrease.

Matter for Legislative Consideration 5: The legislature may wish to consider what types of revenue losses are intended to be offset by the Act 578 road usage fee and clarifying which types of vehicles should be required to pay the fee.

Matter for Legislative Consideration 6: The legislature may wish to consider adjusting the state motor fuel tax rate to account for motor fuel tax losses caused by increased fuel efficiency for internal combustion engine vehicles, hybrid electric vehicles, and plug-in hybrid electric vehicles.

Other states have approved alternative funding measures to provide diversified, dedicated, predictable, and sustainable revenues for statewide roads and bridges. Diversifying Louisiana's revenue sources for transportation needs is important because, even accounting for the new road usage fees passed in the 2022 Regular Legislative Session, TTF revenues will still be insufficient to address Louisiana's current and future transportation needs.

According to a 2016 report[30] by the American Association of State Highway and Transportation Officials, states provide nearly half of all funding for highways and public transit, as well as revenues for aviation, rail, and other transportation modes. As states continue to face transportation funding shortfalls, interest has grown in diversifying revenue sources for transportation purposes beyond gas taxes and vehicle-related fees. States use a variety of taxes and fees to support roads and bridges including state fuel taxes, vehicle fees, sales taxes, tolls, mode-specific revenues, and an assortment of other sources such as congestion pricing, cigarette taxes, and state lotteries.

Other states have approved alternative funding measures to provide diversified, dedicated, predictable and sustainable revenue for statewide roads and bridges. For example, the Texas legislature created two non-traditional, temporary funding sources, known as Proposition 1 and Proposition 7, approved by Texas voters in 2014 and 2015, respectively. Proposition 1 deposits a portion of oil and gas production tax revenues into the State Highway Fund for non-tolled projects. As of November 2020 (fiscal year 2021), the State Highway Fund had received approximately $8.22 billion in Proposition 1 revenues. Proposition 1 funds are set to expire after the fiscal year 2035 transfer if the legislature does not extend the statutory expiration date. Proposition 7 dedicates portions of revenues from the state's general sales and use tax as well as motor vehicle sales and rental tax to the State Highway Fund for non-tolled projects. As of August 2020, the comptroller had transferred a total of $7.5 billion in Proposition 7 revenues to the State Highway Fund. Proposition 7 sales & use tax funds are set to expire August 31, 2032, and Proposition 7 motor vehicle sales and rental tax are set to expire August 31, 2029, unless a future legislature votes to extend them.

The 2005 Florida Legislature passed a growth management bill to address needed infrastructure in Florida, which provided $541.75 million annually from documentary stamp tax[31] revenue to fund transportation needs. The 2008 Florida Legislature changed the distribution of documentary stamp tax collections so that the State Transportation Trust Fund (STTF) received 38.2% of collections after other distributions are made, not to exceed $541.75 million

[30] http://www.financingtransportation.org/pdf/50_state_review_nov16.pdf A more recent version of this report has not been released.

[31] Documentary stamp tax is levied on documents, as provided under Ch. 201, F.S. Documents subject to the tax include, but are not limited to: deeds, stocks and bonds, notes and written obligations to pay money, mortgages, liens, and other evidences of indebtedness. (https://fdotewp1.dot.state.fl.us/FMSupportApps/Documents/pra/Primer.pdf)

per year. In fiscal year 2021, $467 million from documentary stamp tax revenues were deposited in Florida's STTF, making up 11% of total STTF revenues.

Georgia's General Assembly approved the Transportation Funding Act of 2015 (HB 170), a funding measure providing dedicated, predictable and sustainable revenue for the repair and maintenance of statewide roads and bridges. This legislation recognized that heavier vehicles create more wear and tear to roadways and imposed a new annual fee for trucks of $50 or $100, based on weight. In addition, the legislation created a $5 per night fee on hotel and motel rooms for short-term stays of less than 30 days. Revenues generated from the truck fees as well as the hotel and motel tax are dedicated to transportation purposes.

Colorado's General Assembly enacted SB21-260 during 2021 Regular Session, which imposes fees on transportation network companies like Uber and Lyft, as well as retail delivery fees on services like DoorDash and UberEats. The fees are predicted to raise $113.2 million in the first fiscal year and larger amounts in the following years, which the state will use not only to fund transportation infrastructure but also other enterprises such as clean vehicle fleets, air pollution mitigation, clean transit, and community access.

Several states and the federal government are studying mileage fee systems as a long-term solution for transportation funding. According to a 2021 report by the National Governors Association, mileage fee systems could reduce reliance on motor fuel taxes and allow for a more efficient and flexible form of revenue. For example, unlike motor fuel taxes, mileage fee systems would be unaffected by greater use of more efficient vehicles and allow variable pricing during congested and low traffic times or depending on vehicle type. In 2015, the federal government established the Surface Transportation System Funding Alternatives (STSFA) program to provide grants to states to explore the feasibility of user-based alternative funding mechanisms, such as mileage fees systems, where drivers pay fees based on their miles driven. Such funding mechanisms seek to more closely link transportation taxes to the actual use of the roadways by a driver, as compared to traditional fuel taxes. Louisiana already collects mileage information during a car's emissions inspection in certain parishes[32] which could be used to implement a mileage fee system pilot program.

Although the states participating in the STSFA study reported challenges such as limited public acceptance due to privacy and equity concerns, a Government Accountability Office (GAO) report[33] found that states also identified ways to address these concerns. Two states, Oregon[34] and Utah,[35] currently operate active mileage fee systems and collect revenue for state-funded transportation projects. In addition, Nevada enacted Assembly Bill 483 in 2019[36] to require the Department of Motor Vehicles to conduct a pilot program to gather data on the annual vehicle miles traveled for certain motor vehicles registered in this State and Virginia established a mileage-based user fee program beginning in July 2022 to allow drivers of electric

[32] Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge parishes per Act 576 of 1999 Regular Legislative Session.
[33] GAO-22-104299. *Highway Trust Fund* (https://bit.ly/3KlaB2V)
[34] Oregon's Road Usage Charge Program (https://www.oregon.gov/odot/Programs/Pages/OReGO.aspx)
[35] Utah's Road Usage Charge Program (https://roadusagecharge.utah.gov/)
[36] Nevada's Assembly Bill No. 483 (https://bit.ly/36ISx4Y)

and fuel-efficient vehicles to pay a fee based on how many miles they drive instead of paying the set highway use fee.

Matter for Legislative Consideration 7: The legislature may wish to consider diversifying state revenue sources for transportation needs beyond gas taxes and vehicle-related fees.

APPENDIX A: SCOPE AND METHODOLOGY

This report provides the results of our performance audit of the Transportation Trust Fund (TTF). We conducted this evaluation under the provisions of Title 24 of the Louisiana Revised Statutes of 1950, as amended. This evaluation covered fiscal year 2015 through fiscal year 2021, although our analysis included historical information going back to 1990 and projections going to 2032. Our objective was:

Objective: To evaluate the sufficiency of the Transportation Trust Fund funding for Louisiana's transportation needs and identify ways to increase transportation funding.

We conducted this performance audit in accordance with generally accepted *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide reasonable basis for our findings and conclusions based on our audit objective. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our objective.

We obtained an understanding of internal control that is significant to the audit objective and assessed the design and implementation of such internal control to the extent necessary to address our audit objective. We also obtained an understanding of legal provisions that are significant within the context of the audit objective, and we assessed the risk that illegal acts, including fraud, and violations of applicable contract, grant agreement, or other legal provisions could occur. Based on that risk assessment, we designed and performed procedures to provide reasonable assurance of detecting instances of noncompliance significant to those provisions.

To answer our objective, we performed the following audit steps:

- Researched and reviewed Louisiana Constitution and Revised Statutes applicable to TTF and projected deficit reduction.
- Researched federal law applicable to the Highway Trust Fund and motor fuel.
- Research studies and reports conducted on or related to TTF.
- Researched legislation considered by Louisiana legislators to raise or reform motor fuel taxes.
- Analyzed unaudited TTF financial data from LaGov – Louisiana state's integrated system that includes Financials, Logistics, Human Resources/Payroll and Business Intelligence. The LaGov ERP system consolidates multiple legacy systems and many agency-specific systems providing improved transparency and standardized processes.

- Obtained and reviewed TTF revenue projections from the Louisiana Revenue Estimating Conference.

- Obtained and reviewed the Louisiana Department of Transportation and Development's (DOTD) 2019 State Highway and Bridge Needs Report.

- Interviewed the Department of Transportation and Development, the Louisiana Bond Commission, Louisiana Economic Development, Louisiana Public Service Commission, and LSU Center for Energy Studies.

- Received documentation from the Office of State Treasurer related to deficit reduction transfers from TTF.

- Reviewed variable rate gas taxes for the following states:

    - Alabama: Rebuild Alabama Act (2019), Alabama Code §40-17-370
    - Arkansas: Ark. Code Ann. § 26-64-101 et. Seq.
    - California: CA Rev & Tax §7360
    - Colorado: CO ST §43-4-217
    - Connecticut: CGS §12-587
    - Florida: Fla. Stat. § 206.41
    - Georgia: Ga. Code Ann., § 48-9-3
    - Illinois: 35 ILCS 505/2
    - Indiana: IN ST 6-2.5-3.5-15
    - Kentucky: KRS §138.220
    - Maryland: MD Code, Tax-Gen § 9-305, 306
    - Michigan: MI ST 207.1008
    - Nebraska: NE Statute §66-4,141 and §66-4,144
    - New Jersey: NJ ST 54:15B-3
    - New York: NY Tax Law §301-A and §523
    - North Carolina: NC ST. § 105-449.80
    - Pennsylvania: PA ST 75 Pa.C.S.A. § 9004, §9502
    - Rhode Island: R.I. ST § 31-36-7
    - Utah: Utah § 59-13-201
    - Vermont: 23 V.S.A. § 3106
    - Virginia: VA ST § 58.1-2217
    - West Virginia: WV ST § 11-14C-5

- Conducted research regarding how other states are adopting additional mechanisms such as special registration fees for plug-in electric vehicles and/or plug-in hybrid vehicles, etc.) to provide revenues for transportation needs.

- Estimated the impact of inflation on the real purchasing power of the state's gasoline tax. For this analysis, we utilized two price indices: the National Highway Construction Cost Index (NHCCI) and the Producer Price Index for Highway and Street Construction (PPI). The NHCCI is available from the start of

calendar year 2003 to the present, while the Highway and Street Construction PPI had been available since 1986 but was discontinued in June 2010. To create a continuous series, we switched from the PPI to the NHCCI in 2004. We also performed the same calculations using the Consumer Price Index.

- Downloaded the National Highway Traffic Safety Administration's (NHTSA) Product Information Catalog Vehicle Listing Standalone database (decoder) and used the databases built-in procedures to create a process to decode Vehicle Identification Numbers (VINs) obtained from Louisiana Office of Motor Vehicles (OMV) and Louisiana Department of Environmental Quality (DEQ).

- Received an export of all current vehicle registrations in Louisiana as of March 26, 2022, from OMV. We based our analysis primarily on unaudited vehicle registration master data snapshots, showing the latest registration information for each vehicle in OMV's database, for two dates: September 7, 2017 and March 26, 2022. We also reviewed historical vehicle registration transaction data, but we were unable to determine whether the historical data would give us a complete count of all vehicles. We determined that the two vehicle registration data snapshots would be sufficient for the purposes of showing the trend in how many electric vehicles were registered in Louisiana and evaluating the impact of these vehicles on Louisiana motor fuel tax revenues. To identify the number of Battery Electric Vehicles (BEVs), Hybrid Electric Vehicles (HEVs) and Plug-in Hybrid Electric Vehicles (PHEVs), we included only those vehicles:

    - that had no more than one registration in each of the datasets received from OMV.
    - for which there were no characters missing from the first 11 digits of the VIN.
    - for which the NHTSA decoder was able to successfully decipher the first 11-digits of their VIN.[37]
    - for which the decoded vehicle types matched "Passenger Car", "Truck" or "Multipurpose Passenger Vehicle".
    - that the decoder identified the vehicle as having either an electric primary or secondary fuel type, an electrification level, a plug-in charger, or an EV Drive Unit.
    - for which the vehicle model year was greater than 1980.
    - for which the vehicle was assigned a license plate, was not identified as salvaged and did not have an expired registration.

[37]All vehicles manufactured since 1981 have been assigned a standardized 17-digit VIN number as defined by 49 CFR 565. The first 11 digits of each VIN identify the vehicle manufacturer's country and region, the vehicle's make, model, and other descriptions, the check digit for the VIN and the vehicle's model year. The last six digits of each VIN represents the number sequentially assigned by the manufacture. Due to this, only the first 11 digits of a VIN are needed to obtain the vehicle data from the NHTSA's decoder.

- for which the vehicle model year in decoded data matched the vehicle model year in OMV's data.

- Received exports of all Motor Vehicle Inspection and Maintenance data for calendar years 2017 through 2021 for five parishes (i.e., Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge) from DEQ. We used this unaudited data to estimate average VMT annually for Internal Combustion Engine Vehicles (ICEVs), HEVs, PHEVs, and BEVs by decoding the VIN data using the NHTSA's decoder.

- The following 13 automakers have pledged to reach various production or sales targets for electric or hybrid vehicles over a period ranging from 2023 to 2040, specifically: General Motors, Honda, Jaguar Land Rover, Mercedes-Benz, BMW, Stellantis, Toyota, Volkswagen Group, Volvo, Ford, Hyundai-Kia, Mazda, and Nissan-Renault-Mitsubishi Alliance.

- **Created a dataset** representing vehicle miles traveled, number of vehicles, and motor fuel usage by year, by type of vehicle, to serve as the basis for a model to estimate the potential impact of higher fuel efficiency and external electric charging on state motor fuel tax revenues and the revenues that could be generated from road usage fees provided for in Act 578 of the 2022 Regular Legislative Session.

  - **Core Transportation System Data:** We obtained data for calendar years 2010 through 2020 on gallons of motor fuels sold for highway use in Louisiana from the Federal Highway Administration's Highway Statistics Series, and data on VMT, and number of registered vehicles for Louisiana from the U.S. Bureau of Transportation Statistics.

  - **Miles traveled by each vehicle, by electrification level:** We obtained odometer readings at specific points in time and estimated the annual rate of VMT for ICEVs, HEVs, PHEVs, and BEVs. The odometer reading data covered a total of 1,388,941 vehicle-years, including 568 vehicle-years for BEVs, 682 vehicle-years for PHEVs, 10,157 vehicle-years for HEVs, and 1,374,034 vehicle-years for ICEVs, spanning calendar year 2010 through March 2022. Odometer readings were taken from OMV vehicle registration transactions and from DEQ emissions tests for the five parishes described previously (Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge).

  - **Breakdown of electric versus fuel miles for PHEVs:** For plug-in hybrid electric vehicles (PHEVs), we estimated the percentage of miles powered by fuel consumed by the internal combustion engine and external electric charging, respectively, based on the 2017 National Household Transportation Survey (NHTS) from the Oak Ridge National Laboratory. We assumed that in a typical case, these vehicles would be able to be charged once in any given 24-hour period, e.g., overnight. We assumed

that each vehicle would have a 30-mile battery capacity, based on news reports that PHEVs typically have a battery capacity of 20 to 40 miles. The NHTS data report all trips taken during a given day by each driver in each participating household, and the data indicate if the vehicle used was a PHEV, HEV, BEV, or ICEV. We assumed that the first 30 miles driven by each PHEV in a 24-hour period would be powered using external electricity, and any remaining miles would be powered by motor fuel in the internal combustion engine. This analysis showed that the average PHEV traveled 45.52 miles per day, of which 21.84 (48.0%) were powered by battery, and 23.68 (52.0%) were powered by motor fuel.

- **Aggregate vehicle-miles traveled (VMT):** We estimated aggregate VMT for ICEVs, PHEVs, HEVs, and BEVs based on an allocation of total VMT for the entire state for each year. VMTs per vehicle for each of the four categories would have the same proportions as reported in the mileage data that we estimated using DEQ and OMV odometer readings. Statewide VMT are based on actuals through calendar year 2020 and based on a 1.3% growth rate for 2022 and beyond. VMT for 2021 were assumed to recover to the pre-COVID trend.

- **Fuel efficiency**: We estimated fuel efficiency separately for ICEVs, HEVs, PHEVs, and BEVs. Specifically, we estimated vehicle-miles traveled (VMT) and divided this by gallons of motor fuel used for each category of vehicles.

    - First, we estimated fuel efficiency for each class of vehicles using FuelEconomy.gov data included in the NHTS survey. The NHTS data provide information on the vehicle type (e.g., sedan, SUV, or pickup truck), electrification level (e.g., ICEV, HEV, PHEV, or BEV), and model year. NHTS data were aggregated for each of these categories and merged with the OMV and DEQ odometer reading data to estimate the average miles per gallon for ICEVs, HEVs, PHEVs, and BEVs.

    - Second, we normalized the miles per gallon estimated from the vehicle-level analysis using the NHTS data so that VMT times gallons per mile would equal the motor fuels usage reported in the aggregate VMT and motor fuels usage statistics.

- **Number of ICEVs, HEVs, PHEVs, and BEVs:** We estimated the number of HEVs, PHEVs, and BEVs registered in Louisiana based on OMV vehicle registration master data as of September 2017 and March 2022, based on the VIN decoding procedure described previously in this appendix.

- **Created a model** to forecast the impact on TTF revenues from motor fuel taxes and Act 578 road usage fees for different scenarios with regard to future

advancements in fuel efficiency and HEV, PHEV, and BEV market shares among new vehicles sold in Louisiana.

- **Advances in fuel efficiency**: We forecast future fuel efficiency based on prior trends in fuel efficiency, calculated as the ratio of VMT to gallons of gasoline, diesel, and other motor fuels sold in Louisiana. We estimated that fuel efficiency for ICEVs increased from 16.5 miles per gallon in 2014 to 17.3 miles per gallon in 2021, a 4.9% increase over a seven-year period, or a 0.7% increase per year. We projected that fuel efficiency would continue to increase 0.7% annually through 2032.

- **EV Market Share:** The number of ICEVs, HEVs, PHEVs, and BEVs on the road each year equals the number of vehicles that continued in use from the previous year, plus new vehicles bought during the year.

    - The number of vehicles that continued in use from the previous year is based on an average lifespan of 11.9 years for light-duty vehicles as of 2020, as reported by the U.S. Bureau of Transportation Statistics. This is consistent with a constant vehicle retirement rate of 8.4% per year, which is equal to 1 divided by 11.9.

    - The market share of ICEVs, HEVs, PHEVs, and BEVs among all vehicles sold in Louisiana is based on an assumption that HEVs, PHEVs, and BEVs will account for 30% of all vehicles sold by calendar year 2032. This 30% market share was then allocated to HEVs, PHEVs, and BEVs as follows:

        - BEVs comprise 22.3% of the market share for HEVs, PHEVs, and BEVs in each year. This percentage is equal to the estimated market share of BEVs as a percentage of HEVs, PHEVs, and BEVs sold from 2017 to 2021.

        - PHEVs comprise 8.4% of the market share for HEVs, PHEVs, and BEVs in 2021, but gradually absorb the market share for HEVs. As a result, PHEVs account for 77.7% of the market share for HEVs, PHEVs, and BEVs by 2032.

        - HEVs comprise 69.3% of the market share for HEVs, PHEVs, and BEVs in 2021, but gradually cede market share to PHEVs. As a result, HEVs account for 0% of the market share for HEVs, PHEVs, and BEVs by 2032.

- As a result, we determined that showing three scenarios would help state decision makers and the public to better understand the impact of electric vehicles on state

revenues from motor fuel taxes and Act 578 road usage fees. We defined each scenario as follows:

- **Scenario 1 (Baseline/Counterfactual).** In this scenario, the fuel efficiency of all vehicles (ICEVs, HEVs, PHEVs, and BEVs) is set to 17.3 miles per gallon, which we estimated was the average for all ICEVs in the state as of 2021. No new improvements in fuel efficiency occur after this point. The purpose of this scenario is to show the conditions under which the state would receive constant revenue per VMT over time from motor fuel taxes. We can also use this scenario as a baseline for comparison purposes when we want to see the impact of higher fuel efficiency and more widespread use of vehicles that can be powered by external electric charging.

- **Scenario 2 (Fuel Efficiency Improvements, No New Hybrids and Electrics).** In this scenario, HEVs and PHEVs have the higher fuel efficiency and BEVs require no motor fuel, consistent with actual data. Fuel efficiency increases 0.7% per year. No new HEVs, PHEVs, or BEVs are sold. The small existing stock gradually declines as vehicles increase in age and are retired. This scenario is intended to help illustrate the impact of new vehicle types, like HEVs, PHEVs, and BEVs, by showing a baseline scenario in which they make up a small percentage of the overall vehicle population.

- **Scenario 3 (Fuel Efficiency Improvements, Hybrids and Electrics are 30% of new vehicles sold by 2032).** This scenario is identical to Scenario 2, except the market share of HEVs, PHEVs, and BEVs as a percentage of new vehicles sold is assumed to increase linearly to 30% by 2032. Specifically, PHEVs account for 23.3% of new sales, and BEVs account for 6.7% of new sales in 2032. HEVs rise to a peak of 5.7% of sales in 2026, and then decrease to 0 by 2032.

- To estimate the impact of higher fuel efficiency on motor fuel tax revenues, we estimated the amount of motor fuel used by ICEVs, HEVs, PHEVs, and BEVs in each year, based on the fuel efficiency assumptions in each scenario. Next, we estimated how much fuel each type of vehicle would have used in each year for their fuel powered (i.e., not electric powered) miles if their fuel economy had remained constant at 17.3 miles per gallon, the average fuel consumption for ICEVs in 2021. The difference between these two amounts of fuel was the impact of higher fuel efficiency on motor fuel usage, and the impact on taxes was this gallon amount times 20 cents.

- To estimate the impact of external electric charging on motor fuel tax revenue, we estimated how much motor fuel PHEVs and BEVs would have used for their electric powered (i.e., not fuel powered) miles based on a fuel efficiency of 17.3 miles per gallon, the average fuel consumption for ICEVs in 2021. This gallon

amount was then multiplied by 20 cents to estimate the impact on motor fuel tax revenues.

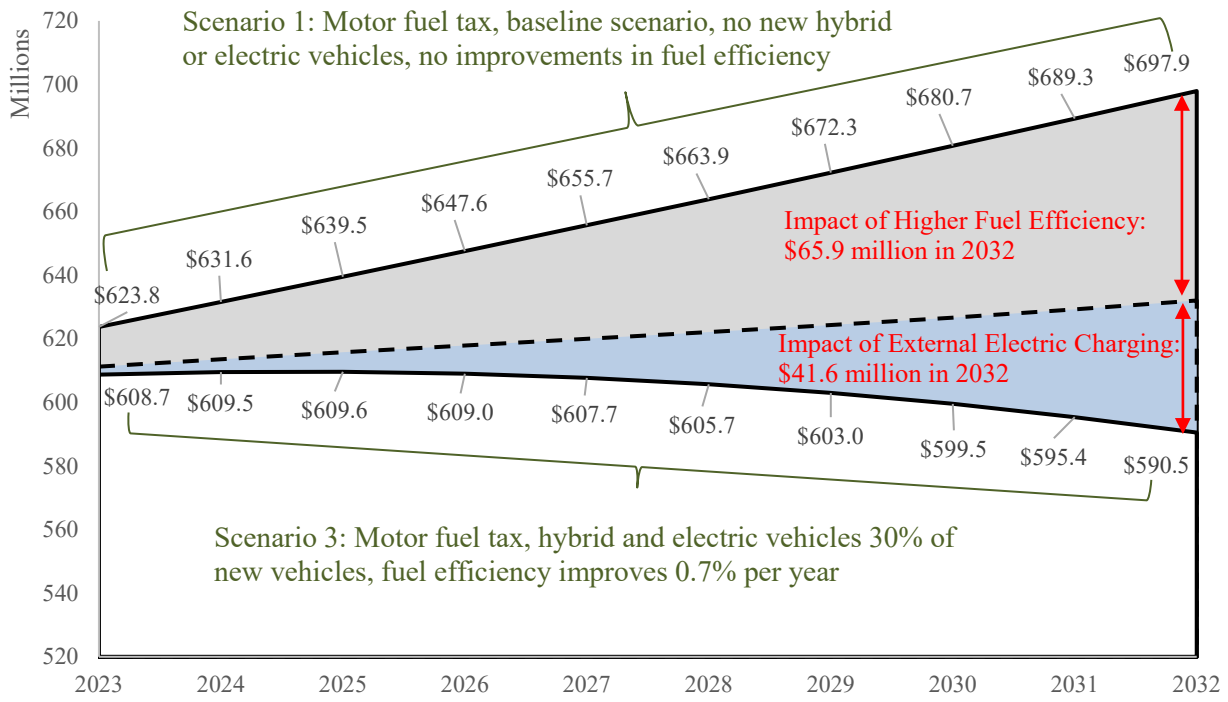
- The effect of higher fuel efficiency and external electric charging from Exhibit 16 is based on an analysis of what motor fuel tax revenues and Act 578 fees would be in three different scenarios. Exhibit A.1 shows what assumptions are made in each scenario. Scenario 1 is intended to show how motor fuel tax revenues would progress if there were no improvements in fuel efficiency over time, if HEVs, PHEVs, and BEVs used as much motor fuel per mile traveled as ICEVs, and if HEVs, PHEVs, and BEVs were gradually phased out. Scenario 2 allows for improvements in fuel efficiency, but still assumes that HEVs, PHEVs, and BEVs are gradually phased out. Scenario 3 allows for improvements in fuel efficiency, but assumes that PHEVs and BEVs will account for 30% of all new vehicles sold by calendar year 2032. These scenarios were developed to isolate and quantify the effect of higher fuel efficiency and external electric charging on motor fuel tax revenues. The results shown in the body of the report are based on Scenario 1 and Scenario 3.

Exhibit A.1
Impact of Fuel Efficiency and Electric Grid Charging on TTF Revenues
Calendar Year 2032
Dollar Amounts in Millions

Scenario	Scenario 1: No New HEVs, PHEVs, BEVs; All cars get same fuel efficiency as ICEVs	Scenario 2: No New HEVs, PHEVs, BEVs; All vehicles have higher fuel efficiency	Scenario 3: BEVs and PHEVs 30% of New Vehicles Sold; HEVs gradually phased out; All vehicles have higher fuel efficiency
Average ICEV Gas Mileage	17.3	18.7	18.7
Average HEV & PHEV Gas Mileage	17.3	31.9	33.1
EV's as % of All Registered Vehicles	0.3%	0.3%	13.9%
Motor Fuel Tax Revenue	$697.9	$646.9	$590.5
Effect of Higher Fuel Efficiency	$0.0	-$50.9	-$65.9
Effect of Grid-Sourced Electricity	$0.0	-$0.1	-$41.6
Total Effect on Motor Fuel Taxes ($)	$0.0	-$51.0	-$107.5
Act 578 Road Usage Fee Revenue	$0.8	$0.8	$48.2
Overall Effect on TTF Revenue ($)	$0.8	-$50.2	-$59.3

Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. Bureau of Transportation Statistics, Federal Highway Administration, National Household Transportation Survey, Louisiana Department of Environmental Quality, and Louisiana Office of Motor Vehicles.

Exhibit A.2
Motor Fuel Tax Revenues Comparison
Scenario 1 (Baseline) vs. Scenario 3 (30% Hybrid/Electric Scenario)
Calendar Years 2023 through 2032



Source: Prepared by legislative auditor's staff based on an analysis of data from the U.S. Bureau of Transportation Statistics, Federal Highway Administration, National Household Transportation Survey, Louisiana Department of Environmental Quality, and Louisiana Office of Motor Vehicles.

- Corresponded with economists at the Legislative Fiscal Office and Division of Administration to understand their current process for forecasting motor fuel tax revenues.
- Met with economists from the LSU Center for Energy Studies to discuss their research on electric vehicles and their potential impact on state tax revenues, as well as the impact of not indexing motor fuel taxes for inflation.
- Estimated the average cost per household of raising the gasoline and motor fuel taxes to restore the purchasing power that they had in 1991. To do this, we estimated household gasoline consumption using the Oak Ridge National Laboratory's National Household Transportation Survey using data for gasoline used by Louisiana households during 2017, the most recent year for which data are available. This analysis does not include the impact of increasing the gas tax on business.
- Developed a map with gasoline tax rates and electric/hybrid vehicle fees by state.
- Sent the results of our analyses and the report to DOTD for review and feedback.

APPENDIX B: LOUISIANA TRANSPORTATION BACKLOG FOR THE PERIOD OF 2015 THROUGH 2019

- **Highway Needs** are determined by comparing data on each section of roadway to established thresholds. Roadway sections which fall below the thresholds are considered needs.

    - Roadways having needs in more than one area are shown in the higher-level improvement type. For instance, the Resurfacing (Only) category includes roadways where the only need is resurfacing. This does not mean that there is no other mileage requiring resurfacing. These other miles may require resurfacing and another improvement. This mileage would be shown in the higher-level improvement, such as capacity or geometric improvement. The exception is sections in which a Transportation System Management (TSM) capacity improvement (such as turn lanes, other minor traffic flow, and safety items) and a resurfacing are required. In such cases TSM and resurfacing cost are added together and listed only under TSM.

- **Bridge Needs** are comprised of the bridges that are structurally deficient and a select number of those that are functionally obsolete when such obsolescence is considered to be significant.

    - DOTD administers federal receipts for off-system bridges and off-system railroad crossings, but these needs are not included in the Exhibit C.1 below.

Exhibit B.1
State Highway and Bridge Needs ($, Millions)
2015 through 2019

Needs	2015		2016		2017		2018		2019	
	Miles	Cost	Miles	Cost	Miles	Cost	Miles	Cost	Miles	Cost
Highway Needs										
Capacity & Transportation System Management	863	$5,957	942	$6,290	949	$6,717	958	$6,739	979	$6,829
Geometrics "Safety" Lane Width Alignment, Shoulders	1,623	790	1,576	772	1,293	738	1,404	784	1,370	818
Operations/ Motorist Services		193		179		153		179		176
Resurfacing (Only)	9,825	3,134	11,565	3,311	9,963	3,034	11,115	3,593	9,693	3,720
Total Highway Needs	**12,311**	**10,074**	**14,083**	**10,552**	**12,205**	**10,642**	**13,477**	**11,295**	**12,042**	**11,543**
Bridge Needs										
Structurally Deficient	594	$2,715	637	$3,139	651	$3,206	643	$3,003	610	$3,005
Functionally Obsolete	38	209	33	182	27	187	26	211	23	216
Moveable Bridges		7		7		7		7		7
Painting		95		95		95		95		95
Total bridge needs	**632**	**3,026**	**670**	**3,423**	**678**	**3,495**	**669**	**3,316**	**633**	**3,323**
Total Highway and Bridge Needs		**$13,100**		**$13,975**		**$14,137**		**$14,611**		**$14,866**

Note: DOTD did not produce a State Highway and Bridge Needs report for 2020 as it was updating its analysis techniques. The report for calendar year 2021 will be available Fall 2022.
Source: Prepared by the legislative auditor's staff using information from the DOTD's report on State Highway and Bridge Needs for the Year 2019.

APPENDIX C: EXAMPLES OF TTF REVENUE SOURCES WITH THEIR STATUTORY AUTHORITY

Revenue Source	Revised Statute	Description
HTF-Federal Receipts		
Highway Trust Fund	26 U.S.C.A. § 9503	The federal government receives certain taxes and penalties, which are deposited into the Highway Trust Fund and are then distributed to the states based upon a formula. For example: • 26 U.S. Code § 4041 relating to taxes on diesel fuels and special motor fuel (18.3 cents per gallon of gasoline; 24.3 cents per gallon of liquified natural gas, liquid fuel derived from coal, and liquid hydrocarbons derived from biomass) • 26 U.S. Code § 4081 relating to tax on gasoline, diesel fuel, and kerosene (18.3 cents per gallon of gasoline; 19.3 cents per gallon of aviation gasoline; 24.3 cents per gallon of diesel fuel) • Penalties related to motor vehicle safety (49 U.S. Code Chapter 301).
TTF-Regular		
Motor Fuel Taxes	Const Article 7, §27 R.S.47:711 R.S. 47:802 R.S.47:818.12 R.S. 47:802.3 R.S. 47:818.111	Gasoline, diesel and special fuels, other than compressed natural gas (CNG), liquefied natural gas (LNG) and liquefied petroleum gas (LPG) are taxed at a rate of $.16 per gallon.
Motor Vehicle License Tax	R.S. 47:451 et seq. R.S. 48:197	R.S. 47:461: There shall be paid to the commissioner, for the registration and licensing by the State of Louisiana of all vehicles and motor vehicles, an annual registration license fee or tax according to the classifications and rates hereinafter set forth. R.S. 47:481: Except as provided in R.S. 47:480, all fees and taxes provided for in this Chapter, including the permit fees, shall be paid to the state treasurer on or before the tenth day of each month following their collection and shall be credited to the account of the Transportation Trust Fund, the State Highway Improvement Fund, State Highway Fund No. 2, the New Orleans Ferry Fund, and the Regional Maintenance and Improvement Fund, as provided by law. R.S. 48:197: Beginning July 1, 2019, and each fiscal year thereafter, after compliance with legal

		requirements, the treasurer shall deposit into the TTF 50% of the remaining monies derived from the collection of registration and license fees and taxes collected by the state pursuant to R.S. 47:462, and as provided in R.S. 47:481, in the parishes of Jefferson, St. Charles, St. John the Baptist, Tangipahoa, and St. Tammany.
Aviation Fuel Tax	R.S. 47:716.1 R.S. 47:305	Aviation gasoline commonly used for propelling aircraft shall be exempt from the tax levied by this Part. For the purpose of this Section, "aviation gasoline" shall mean any gasoline which is intended for or primarily used for propelling aircraft, which is invoiced as aviation gasoline or is received, sold, stored, or withdrawn from storage by any person for the purpose of propelling aircraft. Motor fuel intended for and primarily used for propelling motor vehicles is not aviation gasoline. Gasoline with NO motor fuel excise tax paid is subject to sales taxes at 4.45%.
Miscellaneous Fees and Fines	R.S. 32:387	No vehicle or combination of vehicles that does not meet the requirements of R.S. 32:380 through 386 shall use the public highways of this state without first obtaining a special permit from the department in addition to any other special permit which may be required from any other agency or department of the state or a political subdivision, and the special permit herein provided for shall be issued at the discretion of the secretary of DOTD.
	R.S. 32:387.20	The secretary shall issue annual special permits authorizing the operation of ready-mixed concrete trucks on state-maintained highways and frontage roads adjacent to a federal interstate highway. The permit shall not authorize the operation of ready-mixed concrete trucks on interstate highways.
	R.S. 32:388	Whoever owns or drives any vehicle or combination of vehicles in violation of any rule, regulation, directive, or requirement of the secretary adopted pursuant to R.S. 32:380 through 385 or in violation of R.S. 32:380 through 385 shall be assessed a penalty of one hundred dollars for each violation.
	R.S. 47:516	In addition to any overweight penalties due as provided by R.S. 32:388, if the weight of the vehicle exceeds the manufacturer's gross vehicle weight rating or the manufacturer's gross combined vehicle weight rating, a fine of one hundred dollars shall be paid, in addition to the $75 penalty, in lieu of registering the

		vehicle at the higher weight. Payments for penalties shall be remitted to the Transportation Trust Fund.
Interest Earning	LA Const Article 7, §27	Unencumbered and unexpended balances at the end of each fiscal year shall remain in the trust fund. The earnings realized in each fiscal year on the investment of monies in the trust fund shall be deposited and credited to the trust fund.
TIMED		
Motor Fuel Taxes	R.S. 47:820.1-820.2	4-cents per gallon on all gasoline, diesel fuels, and special fuels. The tax imposed herein shall be in addition to any other tax imposed on gasoline, diesel fuels, and special fuels.
Interest Earning	R.S. 47:820.2	Monies in the account shall be invested as provided by law. Unencumbered or unexpended balances at the end of each fiscal year shall remain to the credit of the account. Any amounts earned through investment of the monies in the account shall remain to the credit of the account and shall not revert to the state general fund.
Construction Subfund		
Motor Fuel Taxes	LA Const Article 7, §27	The avails of any new taxes that become effective and are levied on gasoline, motor fuel, or special fuels on or after July 1, 2017 must be deposited in the Construction Subfund.
Motor Vehicle Sales Tax	R.S. 48:77	A. The avails of the taxes imposed by Chapters 2, 2-A, and 2-B of Subtitle II of Title 47 1 of the Louisiana Revised Statutes of 1950 from the sale, use, or lease of motor vehicles that are taxable pursuant to Chapters 2, 2-A, and 2-B of Subtitle II of Title 47 of the Louisiana Revised Statutes of 1950, after satisfying the requirements of Article VII, Section 9(B) of the Constitution of Louisiana relative to the Bond Security and Redemption Fund, shall be deposited into the Construction Subfund of the Transportation Trust Fund provided for in Article VII, Section 27(B)(2) of the Constitution of Louisiana, referred to in this Section as the "subfund", as follows: (1) For Fiscal Year 2023-2024, thirty percent of the avails shall be deposited into the subfund. (2) For Fiscal Year 2024-2025 and each fiscal year thereafter, sixty percent of the avails shall be deposited into the subfund.
Special Permits Fees	R.S.32:387	(H)(2)(d) Any revenues collected by the secretary for issuance of permits in excess of twenty million dollars in a fiscal year shall be paid into the state treasury for

		deposit into the Construction Subfund of the Transportation Trust Fund pursuant to the requirements of Article VII, Section 27(B)(2) of the Constitution of Louisiana. (J)(2)(b) Two hundred fifty dollars of the fee collected by the secretary for the issuance of permits pursuant to this Paragraph shall be paid into the state treasury for deposit into the Construction Subfund of the Transportation Trust Fund pursuant to the requirements of Article VII, Section 27(B)(2) of the Constitution of Louisiana.

APPENDIX D: ACTUAL TTF SOURCES OF REVENUES FOR THE PERIOD OF FISCAL YEAR 2015 THROUGH FISCAL YEAR 2021

The TTF fund consists of the proceeds of taxes and other revenues (i.e., motor fuel taxes, federal reimbursements, aviation fuel taxes, motor vehicle license taxes, miscellaneous fees and fines, as well as interest earnings) that are legally dedicated to the TTF, as shown in Exhibit D.1. Some of these funding sources are statutorily dedicated to the TIMED Account or the Construction Subfund within TTF and are limited for specific purposes, as discussed in detail below.

Exhibit D.1
TTF Revenues by Source ($, Million)
Fiscal Years 2015 through 2021

Revenue Source	FY15	FY16	FY17	FY18	FY19	FY20	FY21	Tota1 FY15 - FY21 ($)	Total FY15-FY21 (%)
HTF- Federal Receipts	$687.4	$836.9	$737.8	$705.2	$810.9	$734.7	$811.7	$5,324.6	48.2%
TTF- Regular	595.9	606.1	618.3	594.8	637.8	583.7	609.5	4,246.1	38.4%
TIMED Account	121.3	124.5	127.1	120.5	127.4	116.4	122.0	859.2	7.8%
Construction Subfund						3.0	619.8	622.8	5.6%
Total	**$1,404.6**	**$1,567.5**	**$1,483.2**	**$1,420.5**	**$1,576.1**	**$1,437.8**	**$2,163.0**	**$11,052.7**	**100.0%**

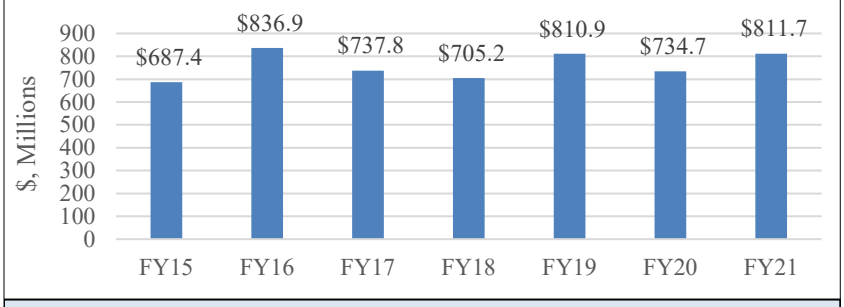
Source: Prepared by legislative auditor's staff using information from LaGov.

HTF-Federal Receipts:

The federal government receives a portion of each gallon sold ($0.184 for gasoline and $0.244 for diesel fuel), which is deposited in the HTF. The federal government does not construct or maintain transportation systems, but instead allocates revenue to states by formula, provided states can meet federal requirements for construction and maintenance of a transportation system in the United States, including that of state match. Exhibit D.2 shows federal HTF receipts for the period of fiscal year 2016 through fiscal year 2021. Article 7, Section 27(A) of the 1974 Louisiana Constitution requires that all monies appropriated by the

Federal Highway Administration and the Federal Aviation Administration, either reimbursed or paid directly, be paid directly or deposited in and credited to TTF. In addition, the HTF-Federal amounts in House Bill (HB) 1 and HB 2 are presented as "TTF-Federal" means of financing, but the HTF is actually federal reimbursement dollars to the state based on a formula and meeting all federal requirements. In comparison, Texas and Alabama clearly names this source of funding as "Federal Reimbursements." Labeling HTF-Federal receipts as TTF-Federal reimbursements will provide clarity that this funding only available based on Louisiana meeting certain conditions established by Federal Highway Administration (FHWA) and Federal Aviation Administration (FAA).

Exhibit D.2
HTF Receipts ($, Millions)
Fiscal Year 2015 through Fiscal Year 2021



Source: Prepared by legislative auditor's staff using information from the Annual Comprehensive Financial Reports (ACFR).

TTF-Regular Revenues:

Each state in the nation levies taxes on motor fuel (e.g. gasoline, diesel, special fuels, etc.). Currently, Louisiana's taxes are 20 cents per gallon: 16 cents are deposited into TTF, and the remaining four cents are dedicated for the TIMED debt service. The State utilizes TTF revenues for funding of DOTD operations and construction projects as well as to meet federal requirements for matching HTF federal receipts, and for paying toward debt services for TIMED projects. Exhibit D.3 shows TTF revenues by source for the period of fiscal year 2016 through fiscal year 2021.

Exhibit D.3
TTF-Regular Revenues by Source ($, Millions)
Fiscal Year 2015 though Fiscal Year 2021

Revenue Source	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Motor Fuel Taxes*	$485.1	$497.8	$507.9	$481.5	$508.4	$465.0	$487.9
Motor Vehicle License Tax	51.0	50.7	53.0	51.7	53.6	52.4	62.3
Aviation Fuel Taxes	29.8	29.8	29.8	29.8	29.8	29.8	29.8
Miscellaneous Fees and Fines	29.7	27.1	25.9	27.6	30.3	31.4	29.4
Interest Earning	0.3	0.7	1.7	4.2	7.9	5.1	0.1
Litigation Settlement**					7.8		
Total	**$595.9**	**$606.1**	**$618.3**	**$594.8**	**$637.8**	**$583.7**	**$609.5**

*Amounts presented excluded TIMED revenues; therefore, only the 16-cents motor fuel tax is reflected.
**The London Interbank Offered Rate (LIBOR) Settlement monies from Deutsche Bank as it relates to some of the State's state gas and fuel tax revenue bonds that had interest payments/swap agreements tied to the LIBOR interest rate manipulation.
Source: Prepared by the legislative auditor's staff using information from LaGov.

TIMED Revenues:

In 1990, the legislature authorized the additional 4-cent tax on motor fuel to finance 16 specific projects listed in Act 16 of the 1989 Regular Legislative Session, as show in Exhibit D.4.

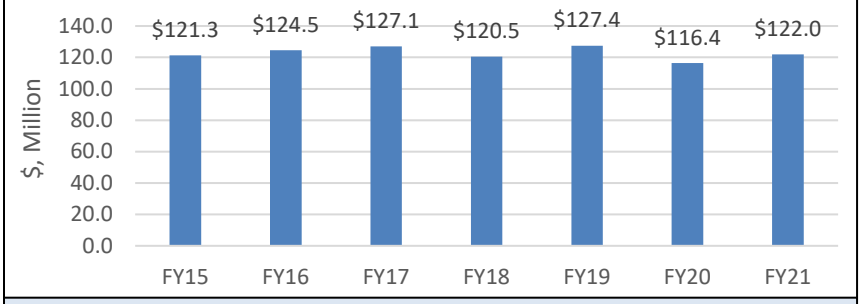
Exhibit D.4 TIMED Projects	
Highway Projects	
1	US 171 - Lake Charles to Shreveport
2	US 165 - I-10 to Alexandria to Monroe to Bastrop and thence on US Highway 425 from Bastrop to the Arkansas Line
3	US 90 - Morgan City to Houma
4	US 167 - Alexandria/Ruston to Arkansas Line
5	LA 3241 - I-12 to Bush (Bogalusa)*
6	Jefferson Parish West Bank Expressway (Avenue D to Ames Blvd)
7	New Orleans Tchoupitoulas Street Corridor
8	Earhart Blvd. (Orleans Parish Line to Loyola Avenue)
9	West Napoleon (Jefferson Parish/City of Kenner)
	Baton Rouge to Monroe:
10	LA 15 - Natchez, Mississippi to Chase
11	US 61 - Thompson Creek to Mississippi Line
Bridge Projects	
12	New Mississippi River Bridge at St. Francisville (Connection to US 61)
13	Huey P. Long Bridge (widen to six lanes)
14	New Florida Avenue Bridge over Industrial Canal*
Port Project	
15	Port of New Orleans
Aviation Project	
16	New Orleans International Airport
*The two projects still left to be completed are LA 3241 and the Florida Avenue Bridge. DOTD has arranged funding for the LA3241, while there is a lack of consensus regarding the need for and scope of the New Florida Avenue Bridge over Industrial Canal project. **Source**: Prepared by the legislative auditor's staff using information from Louisiana Revised Statute 47:820.2.	

The 4-cents tax was bonded out to finance the 16 TIMED projects. In 2001, LLA issued a staff study on the feasibility of Bond Financing for the Remaining TIMED projects,[38] concluding that DOTD probably would not be able to complete all of the remaining TIMED projects for the estimated $2.3 billion. Because the revenue generated by bonds was not sufficient to cover the cost of all 16 projects, two projects remained unfunded and the four cents are dedicated to debt payments through 2045. According to DOTD, DOTD has arranged funding for one of the two unfunded projects. Exhibit D.5 shows TIMED revenues for the period of

[38] https://bit.ly/3Kl1I9z

fiscal year 2015 through fiscal year 2021. As discussed previously in this report, the 4-cents tax is not sufficient to cover all debt payments associated with TIMED projects, and DOTD has to use TTF-Regular funds toward TIMED debt payments.

Exhibit D.5
TIMED Revenue ($, Million)
Fiscal Year 2015 through Fiscal Year 2021



Source: Prepared by legislative auditor's staff using information from LaGov.

Construction Subfund Revenues:

Act 429 of the 2017 Regular Legislative Session established the "Construction Subfund" as a special subfund within the TTF and required any increase in the motor fuel tax to be deposited into the Construction Subfund to be used on direct costs associated with actual project delivery, construction, and maintenance of transportation and capital transit infrastructure projects of the state and local government. This Act also prohibits to use any monies in the subfund for the payment of DOTD employee wages, related benefits, or employee retirement benefits. Since the establishment of the Construction Subfund, various legislation has authorized revenue streams, such as dedicating a portion of the state motor vehicle sales and use tax; as well as any revenues collected by DOTD for issuance of special permits in excess of $20 million, to this subfund. Exhibit D.6 shows Construction Subfund revenues for the period of fiscal year 2020 through fiscal year 2021.

Exhibit D.6
TTF Construction Subfund Revenues by Source ($, Million)
Fiscal Year 2020 though Fiscal Year 2021

Revenue Source	Authorizing Legislation	FY20	FY21
Recurring Revenues			
Miscellaneous Permits and Fees	Act 301 of 2019 Regular Legislative Session	$0.0	$3.5
BP Settlement Agreement*	Act 443 of 2019 Regular Legislative Session	0.0	53.3
Non-Recurring Revenues			
State General Fund	Act 10 of 2020 First Extraordinary Legislative Session	3.0	
Coronavirus State Fiscal Recovery Fund	Act 410 of 2021 Regular Legislative Session		563.0
Total		**$3.0**	**$619.8**

*For a period of fiscal year 2021 through and including fiscal year 2034.
Source: Prepared by the legislative auditor's staff using information from LaGov and Westlaw.

APPENDIX E: LEGISLATION CONSIDERED BY THE LOUISIANA LEGISLATURE TO RAISE OR REFORM MOTOR FUEL TAXES DURING THE PERIOD OF 2015 THROUGH 2021.

Session	Bill	Description
2015 Regular Legislative Session	HB 621	Proposed constitutional amendment authorized a parish governing authority to levy a sales tax on motor fuel with the avails of the tax to be used to supplement state and federal funding for state highway and bridge construction and maintenance in the parish collected, subject to voter approval.
2016 1st Extraordinary Legislative Session	HB 82	Proposed constitutional amendment removed the restriction on sales and use taxes, and by providing that any sales and use tax on gasoline, motor fuel, and special fuels would be limited in that the maximum price per gallon that would be subject to tax would be $2, subject to voter approval.
2016 1st Extraordinary Legislative Session	HB 84	Proposed constitutional amendment remove the prohibition on the state from levying a sales tax on the sale of gasoline and specifically exempt diesel fuel and special fuel from state sales and use taxes, subject to voter approval.
2016 1st Extraordinary Legislative Session	HB 121	Proposed law imposed the state sales and use taxes on the sale of gasoline, with the rate of the tax varying based on the price of oil per barrel. Proposed law required the Secretary of the Dept. of Revenue to annually set the base rate of the price of oil per barrel using the average New York Mercantile Exchange for the three months preceding Jan. 1st for purposes of determining the rate of state sales tax that applies to the sale of gasoline for the calendar year. Proposed law required the avails the tax collected to be deposited in the Transportation Trust Fund.
2016 Regular Legislative Session	HB 578	Proposed constitutional amendment authorized a parish governing authority to levy and collect a sales tax on motor fuel, subject to voter approval.
2017 Regular Legislative Session	HB 553	Proposed constitutional amendment imposed on the sale of gasoline, diesel fuel, and special fuels, a 1/2¢ sales tax, and adds an additional 7¢ per net gallon tax on gasoline, diesel fuel, and special fuels. The bill required that proceeds from the additional 7¢ per net gallon tax on gasoline, diesel fuel, and special fuels be deposited in the 21st Century Transportation and Infrastructure Fund.

2017 Regular Legislative Session	HB 578	Proposed law levied an additional tax of 7¢ per net gallon on gasoline and diesel fuel to be deposited into the 21st Century Transportation and Infrastructure Fund for use on state and local government transportation and capital infrastructure projects. Proposed law required that no less than the avails of 1¢ of the taxes levied on gasoline and diesel pursuant to proposed law but no more than the avails of 2¢ of such taxes shall be allocated to local government projects.
2017 Regular Legislative Session	HB 632	Proposed law created an additional tax on gasoline, diesel fuels, and special fuels and requires the current and additional tax to be adjusted every four years by the average change in the previous four years in the Consumer Price Index for All Urban Consumers (CPI-U). Proposed law provided for an additional 17¢ tax on gasoline, diesel fuel, and special fuels and required DOTD to use the proceeds as directed in the bill. The bill prohibited the avails of the tax to be used for the payment of employee wages and related benefits or employee retirement benefits.
2018 Regular Legislative Session	HB 178	Proposed a constitutional amendment removed the prohibition on the levy of taxes on motor fuel by local governments, subject to voter approval.
2018 Regular Legislative Session	HB 179	Proposed constitutional amendment authorized the legislature to authorize local governments in the following parishes to levy a tax on motor fuel: Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge, subject to voter approval.
2019 Regular Legislative Session	HB 542	Proposed law reduced the gasoline and special fuels tax of $0.16 per gallon to $0.13 per gallon, gradually reduced it further to $0.08 per gallon by FY26, and provided additional restrictions on its use within the Transportation Trust Fund. Proposed law authorized an additional gasoline and special fuels tax of $0.09 per gallon beginning August 1, 2019, and gradually increases it to $0.26 per gallon by fiscal year 2032. Proposed law authorized an additional tax on diesel of $0.07 per gallon beginning August 1, 2019, and gradually increasing it to $0.24 per gallon by fiscal year 2032.
2021 Regular Legislative Session	SB 40	Proposed constitutional amendment authorized a parish governing authority to levy a sales tax on motor fuel. The avails of this tax would not be required to be deposited in the TTF and would be used solely to supplement state and federal funding for the construction and maintenance of highways and bridges located in the parish in which the tax was collected, as may be further provided by law.
Source: Prepared by legislative auditor's staff using information from the Louisiana State Legislature's website.		

APPENDIX F: FEES/TAXES ON ELECTRIC AND HYBRID VEHICLES IN OTHER STATES

State	Legislative Session	Description
Alabama	2019	• $200 additional registration fee for battery electric vehicles. • $100 additional registration fee for plug-in hybrid electric vehicles. In addition, starting in 2023, the fee will increase by $3 every four years.
Arkansas	2019	• $200 additional annual fee for electric vehicles. • $100 additional annual fee for hybrid vehicles.
California	2017	$100 additional annual fee for zero-emission vehicles model year 2020 or later. Effective January 2021 and every year after, the fee will increase in accordance with the Consumer Price Index.
Colorado	2013	$50 additional annual fee for plug-in electric motor vehicles. Beginning fiscal year 2023, annual fee is adjusted for inflation only if the rate of inflation is positive and the adjustment must be the lesser of the actual rate of inflation or five percent.
Georgia	2015	The current additional annual fees reflect a statutory base fee that is automatically adjusted according to a statutory formula (effective July 2016). Effective July 1, 2021, annual non-commercial alternative fuel vehicle fee is $213.70 ($200 base fee).
Hawaii	2019	$50 annual surcharge for electric vehicles.
Idaho	2015/2017	• $140 additional annual fee for all-electric vehicles. • $75 additional annual fee for plug-in hybrid vehicles.
Illinois	2019	$100 additional annual fee for electric vehicles.
Indiana	2017	• $150 annual fee for electric vehicles. • $50 annual fee for plug-in hybrid electric vehicles and hybrid electric vehicles. The fee is indexed to the same inflation mechanism as their state's motor fuel tax.
Iowa	2019	On or after January 1, 2022: • $130 for battery electric vehicles. • $65 for plug-in hybrid electric motor vehicles.
Kansas	2019	• $100 total annual registration fee for all-electric vehicles. • $50 total annual registration fee for electric hybrid and plug-in electric hybrid vehicles.
Michigan	2015	• $135 additional annual fee for "electric vehicles," or battery electric vehicles, up to 8,000 pounds. • $235 additional annual fee for "electric vehicles" over 8,000 pounds. • $47.50 additional annual fee for certain plug-in hybrid electric vehicles up to 8,000 pounds. • $117.50 additional annual fee for certain plug-in hybrid electric vehicles over 8,000 pounds. Michigan indexes its electric vehicles fees based on the motor vehicle fuel tax.

State	Legislative Session	Description
Minnesota	2017	$75 additional annual fee for nonhybrid, “all-electric” vehicles.
Mississippi	2018	• $150 additional annual fee for electric vehicles. • $75 additional annual fee for hybrid vehicles. Beginning July 1, 2021, fees are be indexed to inflation.
Missouri	1998	Effective January 1, 2022, additional annual fee for electric, propane (LP), and natural gas: • $90 for passenger motor vehicles up to 18,000 lbs. • $120 for 18,001 lbs-36,000lbs with "F" tab on plate. • $180 for 18,001 lbs-36,000lbs without "F" tab on plate. • $275 for 36,001 lbs or more with "F" tab on plate. • $1,100 for 36,001 lbs or more without "F" tab on plate. • $90 for school bus. • $180 for local bus, commercial bus, and transit bus. Beginning January 1, 2022, the fees are increased by 20% of the fee in effect on August 28, 2021, per year for a period of five years. • Effective January 1, 2022, additional annual fee for plug-in electric vehicle: • $45 for passenger motor vehicles up to 18,000 lbs. • $60 for 18,001 lbs-36,000lbs with "F" tab on plate. • $90 for 18,001 lbs-36,000lbs without "F" tab on plate. • $137.50 for 36,001 lbs or more with "F" tab on plate. • $550 for 36,001 lbs or more without "F" tab on plate. • $45 for school bus. • $90 for local bus, commercial bus, and transit bus. • Beginning January 1, 2022, the fees are increased by 10% of the fee in effect on August 28, 2021 for motor vehicles with a licensed gross vehicle weight in excess of 36,000lbs for a period of five years.
Nebraska	2011	$75 additional annual fee for alternative fuel vehicles.
North Carolina	2013/2015	$140.25 additional annual fee for plug-in electric vehicles.
North Dakota	2019	• $120 additional annual road use fee for electric vehicles. • $50 additional annual road use fee for plug-in hybrid vehicles. • $20 for each electric motorcycle registered.
Ohio	2019	• $200 additional annual fee for plug-in electric motor vehicles. • $100 additional annual fee for hybrid motor vehicles.
Oklahoma	2021	Annual license fee for all electric vehicles (except plug-in hybrid electric vehicles), in addition to other registration fees, depending on vehicle weight: • $110 for Under 6000 lbs. (Class 1) • $158 for 6,000-10,000 lbs. (Class 2) • $363 for 10,000-26,000 lbs. (Class 3-6) • $2,250 for Over 26,000 lbs. (Class 7-8) There is a similar but reduced fee schedule for plug-in hybrids: • $82 for Under 6000 lbs. (Class 1) • $118 for 6,000-10,000 lbs. (Class 2) • $272 for 10,000-26,000 lbs. (Class 3-6) • $1,687 for Over 26,000 lbs. (Class 7-8)

State	Legislative Session	Description
Oregon	2017	As of January 1, 2022, additional fees are assigned by miles per gallon (mpg) as follows: • $20 for vehicles with 0-19 mpg. • $25 for vehicles with 23-29 mpg. • $35 for vehicles with 40 mpg or greater. • $115 additional annual fee for electric vehicles. An electric vehicle or vehicle with a rating of 40 miles per gallon or greater can enroll in the road usage charge program and not be subject to the additional registration fees.
South Carolina	2017	• $120 additional biennial fee for electric vehicles. • $60 additional biennial fee for hybrid vehicles.
South Dakota	2021	EV owners must pay an additional $50 annual fee at the time of registration. This does not apply to hybrid vehicles.
Tennessee	2017	$100 additional annual fee for electric vehicles.
Utah	2018	Beginning January 1, 2021: • $120 additional annual fee for electric motor vehicles. • $120 additional annual fee for vehicles fueled by a source other than motor fuel, diesel fuel, natural gas or propane. • $52 additional annual fee for plug-in hybrid electric motor vehicles. • $20 additional annual fee for hybrid electric motor vehicles. H.B.186 of 2022 General Session, effective January 2023, reduces the registration fees and levies the road usage charge cap on electric, hybrid and alternative fuel vehicles
Virginia	2020	Effective July 1, 2020, electric vehicles are required to pay a fixed highway use fee, which is currently $109.00 (will be updated on a yearly basis), to reflect the amount in fuels taxes electric vehicles will not pay during a single year due to not purchasing motor fuel. Effective July 1, 2022, owners of vehicles subject to the highway use fee may choose to pay a mileage-based fee in lieu of the highway use fee.
Washington	2019	$150 additional annual registration fee for electric vehicles (except for electric motorcycles). $75 additional Hybrid Vehicle Transportation Electrification fee to fund electric vehicle charging stations. Senate Bill 5085 of 2022 Legislative Session, effective November 1, 2022, increases the annual registration fee by $30.
West Virginia	2017	• $200 additional annual fee on electric vehicles. • $100 additional annual fee on vehicles operating on a combination of electricity and petrochemical fuels. • $200 additional annual fee for a vehicle fueled with hydrogen or natural gas.
Wisconsin	2017/2019	• $100 additional annual fee on nonhybrid electric vehicles at a gross weight of not more than 8,000 pounds. • $75 additional annual fee on hybrid electric vehicles at a gross weight of not more than 8,000 pounds.
Wyoming	2015/2019	$200 total annual fee for plug-in electric vehicles.

Source: Prepared by legislative auditor's staff using information from NCSL (https://bit.ly/3w9hBvN) and other state legislatures' websites.

APPENDIX G: GASOLINE TAX RATES AND ELECTRIC/HYBRID VEHICLE FEES BY STATE