

***LOUISIANA TRANSPORTATION
BY THE NUMBERS:***

Meeting the State's Need for Safe, Smooth and
Efficient Mobility

MARCH 2017



Founded in 1971, TRIP® of Washington, DC, is a nonprofit organization that researches, evaluates and distributes economic and technical data on surface transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway and transit engineering and construction; labor unions; and organizations concerned with efficient and safe surface transportation

Ten Key Transportation Numbers in Louisiana

\$6.5 billion	Driving on deficient roads costs Louisiana motorists a total of \$6.5 billion annually in the form of additional vehicle operating costs (VOC), congestion-related delays and traffic crashes.
Baton Rouge: \$2,466 Lafayette: \$2,024 New Orleans: \$2,171 Shreveport: \$1,894	TRIP has calculated the cost to the average motorist in Louisiana's largest urban areas in the form of additional VOC, congestion-related delays and traffic crashes. The average Baton Rouge area driver loses \$2,466 annually, while each Lafayette area driver loses \$2,024. Each New Orleans area driver loses \$2,171 annually and the average Shreveport area driver loses \$1,894.
3,563 713	On average, 713 people were killed annually in Louisiana traffic crashes from 2011 to 2015, a total of 3,563 fatalities over the five year period.
2X	The fatality rate on Louisiana's non-interstate rural roads is more than double that on all other roads in the state (2.46 fatalities per 100 million vehicle miles of travel vs. 1.16).
26% Statewide 39% Baton Rouge 41% Lafayette 39% New Orleans 38% Shreveport	Statewide, 26 percent of Louisiana's major roads are in poor condition. Thirty-nine percent of major roads in the Baton Rouge urban area are in poor condition and in the Lafayette urban area, 41 percent of major roads are in poor condition. Thirty-nine percent of major roads in the New Orleans urban area are in poor condition and 38 percent of major roads in the Shreveport urban area are in poor condition.
\$734 Billion	Annually, \$734 billion in goods are shipped to and from sites in Louisiana, relying heavily on the state's network of roads and bridges.
13%	Thirteen percent of the state's bridges are structurally deficient, meaning there is significant deterioration to the major components of the bridge.
Baton Rouge: 47 hours Lafayette: 26 hours New Orleans: 45 hours Shreveport: 27 hours	The average driver in the Baton Rouge urban area loses 47 hours to congestion annually, while each driver in the Lafayette urban area loses 26 hours annually. Drivers in the New Orleans area lose 45 hours to congestion each year, while Shreveport area drivers lose 27 hours annually.
21%	Vehicle miles traveled (VMT) in Louisiana increased by 21 percent from 2000 to 2016 –from 40.8 billion VMT in 2000 to 49.5 billion VMT in 2016.
\$1.00 = \$5.20	The Federal Highway Administration estimates that each dollar spent on road, highway and bridge improvements results in an average benefit of \$5.20 in the form of reduced vehicle maintenance costs, reduced delays, reduced fuel consumption, improved safety, reduced road and bridge maintenance costs, and reduced emissions as a result of improved traffic flow.

Executive Summary

Nine years after the nation suffered a significant economic downturn, Louisiana's economy continues to rebound. The rate of economic growth in Louisiana, which is greatly impacted by the reliability and condition of the state's transportation system, has a significant impact on quality of life in the Pelican State.

An efficient, safe and well-maintained transportation system provides economic and social benefits by affording individuals access to employment, housing, healthcare, education, goods and services, recreation, entertainment, family, and social activities. It also provides businesses with access to suppliers, markets and employees, all critical to a business' level of productivity and ability to expand. Reduced accessibility and mobility - as a result of traffic congestion, a lack of adequate capacity, or deteriorated roads, highways, bridges and transit facilities - diminishes a region's quality of life by reducing economic productivity and limiting opportunities for economic, health or social transactions and activities.

With an economy based largely on agriculture, natural resource extraction, manufacturing, and tourism, the quality of Louisiana's transportation system plays a vital role in the state's economic growth and quality of life.

In this report, TRIP looks at the key transportation numbers in Louisiana as the state addresses its need to modernize and maintain its system of roads, highways, bridges and transit systems.

COST TO LOUISIANA MOTORISTS OF DEFICIENT ROADS

An inadequate transportation system costs Louisiana motorists a total of \$6.5 billion every year in the form of additional vehicle operating costs (VOC), congestion-related delays and traffic crashes.

- Driving on rough roads costs Louisiana motorists a total of \$2 billion annually in extra vehicle operating costs. Costs include accelerated vehicle depreciation, additional repair costs, and increased fuel consumption and tire wear.
- Traffic crashes in which roadway design was likely a contributing factor costs Louisiana motorists a total of \$2.1 billion each year in the form of lost household and workplace productivity, insurance and other financial costs.
- Traffic congestion costs Louisiana motorists a total of \$2.4 billion each year in the form of lost time and wasted fuel.

- TRIP has calculated the average cost to drivers in the state’s largest urban areas as a result of driving on roads that are deteriorated, congested and lack some desirable safety features. The chart below details the costs to drivers in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas.

Location	VOC	Congestion	Safety	TOTAL
Baton Rouge	\$696	\$1,262	\$508	\$2,466
Lafayette	\$706	\$715	\$603	\$2,024
New Orleans	\$672	\$1,161	\$338	\$2,171
Shreveport	\$698	\$713	\$483	\$1,894
Louisiana	\$2 Billion	\$2.4 Billion	\$2.1 Billion	\$6.5 Billion

POPULATION, TRAVEL AND ECONOMIC TRENDS IN LOUISIANA

The rate of population and travel growth in Louisiana have resulted in increased demands on the state’s major roads and highways, leading to increased wear and tear on the state’s transportation system.

- Louisiana’s population reached approximately 4.7 million residents in 2016, a five percent increase since 2000.
- Louisiana had 3.4 million licensed drivers in 2015.
- Vehicle miles traveled (VMT) in Louisiana increased by 21 percent from 2000 to 2016 – from 40.8 billion VMT in 2000 to 49.5 billion VMT in 2015.
- By 2030, vehicle travel in Louisiana is projected to increase by another 20 percent.
- From 2000 to 2015, Louisiana’s gross domestic product, a measure of the state’s economic output, increased by 16 percent, when adjusted for inflation. U.S. GDP increased 27 percent during this time.

LOUISIANA ROAD CONDITIONS

A lack of adequate state and local funding has resulted in nearly a quarter of major roads and highways in Louisiana having pavement surfaces in poor condition, providing a rough ride and costing motorists in the form of additional vehicle operating costs.

- The pavement data in this report, which is for all arterial and collector roads and highways, is provided by the Federal Highway Administration, based on data submitted annually by the Louisiana Department of Transportation and Development (DOTD) on the condition of major state and locally maintained roads and highways in the state.
- Pavement data for Interstate highways and other principal arterials is collected for all system mileage, whereas pavement data for minor arterial and all collector roads and highways is based on sampling portions of roadways as prescribed by FHWA to insure

that the data collected is adequate to provide an accurate assessment of pavement conditions on these roads and highways.

- Statewide, 26 percent of Louisiana’s major locally and state-maintained roads and highways are in poor condition, while 22 percent are in mediocre condition. Fifteen percent of major roads are in fair condition and the remaining 37 percent are in good condition.
- Thirty-nine percent of Louisiana’s major locally and state-maintained urban roads and highways have pavements in poor condition, while 25 percent are in mediocre condition. Fourteen percent of major roads are in fair condition and the remaining 23 percent are in good condition.
- Eighteen percent of Louisiana’s major locally and state-maintained rural roads and highways have pavements in poor condition, while 20 percent are in mediocre condition. Sixteen percent of major roads are in fair condition and the remaining 46 percent are in good condition.
- Roads rated in poor condition may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed.
- The chart below details pavement conditions on major urban roads in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas.

Location	Poor	Mediocre	Fair	Good
Baton Rouge	39%	24%	14%	22%
Lafayette	41%	19%	15%	24%
New Orleans	39%	20%	13%	28%
Shreveport	38%	27%	15%	20%

- Driving on rough roads costs Louisiana motorists a total of \$2 billion annually in extra vehicle operating costs. The average driver in the Baton Rouge urban area loses \$696 annually, while the average Lafayette urban area driver loses \$706 each year as a result of driving on deteriorated roads. Driving on deteriorated roads costs the average New Orleans urban area driver \$672 annually, while the average driver in the Shreveport urban area loses \$698 annually. Costs include accelerated vehicle depreciation, additional repair costs, and increased fuel consumption and tire wear.

LOUISIANA BRIDGE CONDITIONS

Thirteen percent of locally and state-maintained bridges in Louisiana show significant deterioration and are in need of repairs or replacement. This includes all bridges that are 20 feet or more in length.

- Thirteen percent of Louisiana’s bridges are structurally deficient. A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting large vehicles, including commercial trucks and emergency services vehicles.
- The chart below details the number and share of structurally deficient bridges statewide and in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas.

	Structurally Deficient Number	Structurally Deficient Percentage	Total Bridges
Baton Rouge	124	20%	613
Lafayette	39	9%	436
New Orleans	89	12%	772
Shreveport	123	13%	952
Louisiana	1,739	13%	12,915

HIGHWAY SAFETY AND FATALITY RATES IN LOUISIANA

Improving safety features on Louisiana’s roads and highways would likely result in a decrease in the state’s traffic fatalities and serious crashes. It is estimated that roadway features are likely a contributing factor in approximately one-third of all fatal and serious traffic crashes.

- Between 2011 and 2015 a total of 3,563 people were killed in traffic crashes in Louisiana, an average of 713 fatalities per year.
- Louisiana’s overall traffic fatality rate of 1.51 fatalities per 100 million vehicle miles of travel in 2015 is the seventh highest in the nation and significantly higher than the national average of 1.13.
- The fatality rate on Louisiana’s non-interstate rural roads is more than double that on all other roads in the state (2.46 fatalities per 100 million vehicle miles of travel vs. 1.16).
- The chart below details the average number of fatalities from 2012 to 2014 in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas and the average cost per driver as a result of traffic crashes.

Location	Ave. Fatalities	Safety Cost
Baton Rouge	59	\$508
Lafayette	44	\$603
New Orleans	72	\$338
Shreveport	45	\$483

- Traffic crashes in Louisiana imposed a total of \$6.3 billion in economic costs in 2015. TRIP estimates that traffic crashes in which roadway features were likely a contributing factor imposed \$2.1 billion in economic costs in 2015.
- According to a [2015 National Highway Traffic Safety Administration \(NHTSA\) report](#), the economic costs of traffic crashes includes work and household productivity losses, property damage, medical costs, rehabilitation costs, legal and court costs, congestion costs and emergency services.
- Roadway features that impact safety include the number of lanes, lane widths, lighting, lane markings, rumble strips, shoulders, guard rails, other shielding devices, median barriers and intersection design. The cost of serious crashes includes lost productivity, lost earnings, medical costs and emergency services.
- Several factors are associated with vehicle crashes that result in fatalities, including driver behavior, vehicle characteristics and roadway features. TRIP estimates that roadway features are likely a contributing factor in approximately one-third of fatal traffic crashes.
- Where appropriate, highway improvements can reduce traffic fatalities and crashes while improving traffic flow to help relieve congestion. Such improvements include removing or shielding obstacles; adding or improving medians; improved lighting; adding rumble strips, wider lanes, wider and paved shoulders; upgrading roads from two lanes to four lanes; and better road markings and traffic signals.
- Investments in rural traffic safety have been found to result in significant reductions in serious traffic crashes. A 2012 report by the [Texas Transportation Institute \(TTI\)](#) found that improvements completed recently by the Texas Department of Transportation that widened lanes, improved shoulders and made other safety improvements on 1,159 miles of rural state roadways resulted in 133 fewer fatalities on these roads in the first three years after the improvements were completed (as compared to the three years prior). TTI estimates that the improvements on these roads are likely to save 880 lives over 20 years.

LOUISIANA TRAFFIC CONGESTION

Increasing levels of traffic congestion cause significant delays in Louisiana, particularly in its larger urban areas, choking commuting and commerce. Traffic congestion robs commuters of time and money and imposes increased costs on businesses, shippers and manufacturers, which are often passed along to the consumer.

- Based on [Texas Transportation Institute \(TTI\) estimates](#), the value of lost time and wasted fuel in Louisiana is approximately \$2.4 billion per year.
- The chart below, based on TTI estimates, details the hours lost to congestion annually by the average motorist in each urban area and the cost per driver in lost time and wasted fuel.

Location	Hours Lost	Congestion Cost
Baton Rouge	47 Hours	\$1,262
Lafayette	26 Hours	\$715
New Orleans	45 Hours	\$1,161
Shreveport	27 Hours	\$713

- Increasing levels of congestion add significant costs to consumers, transportation companies, manufacturers, distributors and wholesalers and can reduce the attractiveness of a location to a company when considering expansion or where to locate a new facility. Congestion costs can also increase overall operating costs for trucking and shipping companies, leading to revenue losses, lower pay for drivers and employees, and higher consumer costs.

TRANSPORTATION FUNDING IN LOUISIANA

Investment in Louisiana’s roads, highways and bridges is funded by local, state and federal governments. The current five-year federal surface transportation program includes modest funding increases and provides states with greater funding certainty, but falls far short of providing the level of funding needed to meet the nation’s highway and transit needs. The bill does not include a long-term and sustainable revenue source.

- Signed into law in December 2015, the [Fixing America’s Surface Transportation Act \(FAST Act\)](#), provides modest increases in federal highway and transit spending, allows states greater long-term funding certainty and streamlines the federal project approval process. But the FAST Act does not provide adequate funding to meet the nation’s need for highway and transit improvements and does not include a long-term and sustainable funding source.
- The five-year, \$305 billion FAST Act will provide a boost of approximately 15 percent in highway funding and 18 percent in transit funding over the duration of the program, which expires in 2020.

- In addition to federal motor fuel tax revenues, the FAST Act will also be funded by \$70 billion in U.S. general funds, which will rely on offsets from several unrelated federal programs including the Strategic Petroleum Reserve, the Federal Reserve and U.S. Customs.
- According to the 2015 AASHTO Transportation Bottom Line Report, a significant boost in investment in the nation's roads, highways, bridges and public transit systems is needed to improve their condition and to meet the nation's transportation needs.
- AASHTO's report found that based on an annual one percent increase in VMT annual investment in the nation's roads, highways and bridges needs to increase 36 percent, from \$88 billion to \$120 billion, to improve conditions and meet the nation's mobility needs. Investment in the nation's public transit system needs to increase from \$17 billion to \$43 billion.
- The [2015 AASHTO Transportation Bottom Line Report](#) found that if the national rate of vehicle travel increased by 1.4 percent per year, the needed annual investment in the nation's roads, highways and bridges would need to increase by 64 percent to \$144 billion. If vehicle travel grows by 1.6 percent annually the needed annual investment in the nation's roads, highways and bridges would need to increase by 77 percent to \$156 billion.

TRANSPORTATION AND ECONOMIC GROWTH IN LOUISIANA

The efficiency of Louisiana's transportation system, particularly its highways, is critical to the health of the state's economy. Businesses rely on an efficient and dependable transportation system to move products and services. A key component in business efficiency and success is the level and ease of access to customers, markets, materials and workers.

- Annually, \$734 billion in goods are shipped to and from sites in Louisiana, relying heavily on the state's network of roads and bridges.
- Businesses have responded to improved communications and greater competition by moving from a push-style distribution system, which relies on low-cost movement of bulk commodities and large-scale warehousing, to a pull-style distribution system, which relies on smaller, more strategic and time-sensitive movement of goods.
- Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with a smoother, more efficient and more modern transportation system.
- Highway accessibility was ranked the number two site selection factor behind only the availability of skilled labor in a 2015 survey of corporate executives by [Area Development Magazine](#).

- The [Federal Highway Administration](#) estimates that each dollar spent on road, highway and bridge improvements results in an average benefit of \$5.20 in the form of reduced vehicle maintenance costs, reduced delays, reduced fuel consumption, improved safety, reduced road and bridge maintenance costs and reduced emissions as a result of improved traffic flow.

Sources of information for this report include the Louisiana Department of Transportation and Development (DOTD), the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), the Bureau of Transportation Statistics (BTS), the U.S. Census Bureau, the Texas Transportation Institute (TTI) and the National Highway Traffic Safety Administration (NHTSA).

Introduction

Louisiana's roads, highways and bridges form vital transportation links for the state's residents, visitors and businesses, providing daily access to homes, jobs, shopping, natural resources and recreation. Modernizing Louisiana's transportation system is critical to quality of life and economic competitiveness in the Pelican State.

Supporting quality of life and a robust economy in Louisiana requires that the state provide a safe, efficient and well-maintained transportation system. Inadequate transportation investment, which will result in deteriorated transportation facilities and diminished access, will negatively affect economic competitiveness and quality of life in Louisiana.

To accommodate population and economic growth, maintain its level of economic competitiveness and achieve further economic growth, Louisiana will need to maintain and modernize its roads, highways and bridges by improving the physical condition of its transportation network and enhancing the system's ability to provide efficient, reliable and safe mobility for residents, visitors and businesses. Making needed improvements to Louisiana's roads, highways, bridges and transit systems could also provide a significant boost to the state's economy by creating jobs in the short term and stimulating long term economic growth as a result of enhanced mobility and access.

This report examines the condition, use and safety of Louisiana's roads, highways and bridges, funding needs, and the future mobility needs of the state. Sources of information for this report include the Louisiana Department of Transportation and Development (DOTD), the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), the Bureau of Transportation Statistics (BTS), the U.S.

Census Bureau, the Texas Transportation Institute (TTI), and the National Highway Traffic Safety Administration (NHTSA).

Population, Travel and Economic Trends in Louisiana

Louisiana residents and businesses require a high level of personal and commercial mobility. Population increases and economic growth in the state have resulted in an increase in the demand for mobility as well as an increase in vehicle miles of travel (VMT). To foster quality of life and spur continued economic growth in Louisiana, it will be critical that the state provide a safe and modern transportation system that can accommodate future growth in population, tourism, business, recreation and vehicle travel.

Louisiana's population grew to approximately 4.7 million residents in 2016, a five percent increase since 2000.¹ Louisiana had 3.3 million licensed drivers in 2015.²

From 2000 to 2016, annual VMT in Louisiana increased by 21 percent, from 40.8 billion miles traveled annually to 49.5 billion miles traveled annually.³ Based on population and other lifestyle trends, TRIP estimates that travel on Louisiana's roads and highways will increase by another 20 percent by 2030.⁴

From 2000 to 2015 Louisiana's gross domestic product (GDP), a measure of the state's economic output, increased by 16 percent, when adjusted for inflation.⁵ U.S. GDP increased 27 percent during this time.⁶

Condition of Louisiana's Roads

The life cycle of Louisiana's roads is greatly affected by the state and local governments' ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible.

The pavement data in this report, which is for all arterial and collector roads and highways, is provided by the Federal Highway Administration, based on data submitted annually by the Louisiana Department of Transportation and Development (DOTD) on the condition of major state and locally maintained roads and highways in the state.

Pavement data for Interstate highways and other principal arterials is collected for all system mileage, whereas pavement data for minor arterial and all collector roads and highways is based on sampling portions of roadways as prescribed by FHWA to insure that the data collected is adequate to provide an accurate assessment of pavement conditions on these roads and highways.

Statewide, 26 percent of Louisiana's major locally and state-maintained roads are in poor condition, while 22 percent are in mediocre condition.⁷ Fifteen percent of major roads in Louisiana are in fair condition and the remaining 37 percent are in good condition.⁸

Thirty-nine percent of Louisiana's major locally and state-maintained urban roads and highways have pavements in poor condition, while 25 percent are in mediocre condition.⁹ Fourteen percent of major roads are in fair condition and the remaining 23 percent are in good condition.¹⁰

Eighteen percent of Louisiana’s major locally and state-maintained rural roads and highways have pavements in poor condition, while 20 percent are in mediocre condition.¹¹ Sixteen percent of major roads are in fair condition and the remaining 46 percent are in good condition.¹²

The chart below details pavement conditions on major urban roads in the state’s largest urban areas.

Chart 1. Pavement conditions on major roads in the state’s largest urban areas.

Location	Poor	Mediocre	Fair	Good
Baton Rouge	39%	24%	14%	22%
Lafayette	41%	19%	15%	24%
New Orleans	39%	20%	13%	28%
Shreveport	38%	27%	15%	20%

Source: TRIP analysis of Federal Highway Administration data.

Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road’s foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.¹³ As roads and highways continue to age, they will reach a point of deterioration where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and costly reconstruction of the roadway and its underlying surfaces will become necessary.

The Costs to Motorists of Roads in Inadequate Condition

TRIP has calculated the additional cost to motorists of driving on roads in poor or unacceptable condition. When roads are in poor condition – which may include potholes, rutting or rough surfaces – the cost to operate and maintain a vehicle increases. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repair costs, increased fuel consumption and increased tire wear. TRIP estimates that additional vehicle operating costs (VOC) borne by Louisiana motorists as a result of poor road conditions is \$2 billion annually.¹⁴

The chart below details per-driver vehicle operating costs in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas as well as the total statewide cost.

Chart 2. Annual per-driver vehicle operating costs in the state’s largest urban areas due to rough roads, and statewide total cost.

Location	VOC
Baton Rouge	\$696
Lafayette	\$706
New Orleans	\$672
Shreveport	\$698
Louisiana	\$2 Billion

Source: TRIP estimate.

Additional vehicle operating costs have been calculated in the Highway Development and Management Model (HDM), which is recognized by the U.S. Department of Transportation and more than 100 other countries as the definitive analysis of the impact of road conditions on vehicle operating costs. The HDM report is based on numerous studies that have measured the impact of various factors, including road conditions, on vehicle operating costs.¹⁵

The HDM study found that road deterioration increases ownership, repair, fuel and tire costs. The report found that deteriorated roads accelerate the pace of depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Similarly, tire wear and fuel consumption increase as roads deteriorate since there is less efficient transfer of power to the drive train and additional friction between the road and the tires.

TRIP's additional vehicle operating cost estimate is based on taking the average number of miles driven annually by a motorist, calculating current vehicle operating costs based on AAA's 2016 vehicle operating costs and then using the HDM model to estimate the additional vehicle operating costs paid by drivers as a result of substandard roads.¹⁶ Additional research on the impact of road conditions on fuel consumption by the Texas Transportation Institute (TTI) is also factored into TRIP's vehicle operating cost methodology.

Bridge Conditions in Louisiana

Louisiana's bridges form key links in the state's highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, and facilitating commerce and access for emergency vehicles.

Thirteen percent of Louisiana's locally and state maintained bridges (20 feet or longer) are rated as structurally deficient.¹⁷ A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks,

school buses and farm equipment – to use alternate routes to avoid posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

The chart below details the number and percentage of bridges statewide, and in the Baton Rouge, Lafayette, New Orleans and Shreveport urban areas that are rated structurally deficient.

Chart 3. Bridge Conditions in Louisiana’s Largest Urban Areas and Statewide.

	Structurally Deficient Number	Structurally Deficient Percentage	Total Bridges
Baton Rouge	124	20%	613
Lafayette	39	9%	436
New Orleans	89	12%	772
Shreveport	123	13%	952
Louisiana	1,739	13%	12,915

Source: National Bridge Inventory, Federal Highway Administration. 2015.

The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, insuring that a facility has good drainage and replacing deteriorating components. But, most bridges will eventually require more costly reconstruction or major rehabilitation to remain operable.

Traffic Safety in Louisiana

A total of 3,563 people were killed in motor vehicle crashes in Louisiana from 2011 through 2015, an average of 713 fatalities per year.¹⁸

Chart 4. Traffic Fatalities in Louisiana from 2011 – 2015.

<i>Year</i>	<i>Fatalities</i>
2011	675
2012	722
2013	703
2014	737
2015	726
Total	3,563

Source: National Highway Traffic Safety Administration.

Three major factors are associated with fatal vehicle crashes: driver behavior, vehicle characteristics and roadway features. It is estimated that roadway features are likely a contributing factor in approximately one-third of fatal traffic crashes. Roadway features that impact safety include the number of lanes, lane widths, lighting, lane markings, rumble strips, shoulders, guard rails, other shielding devices, median barriers and intersection design.

Louisiana's overall traffic fatality rate of 1.51 fatalities per 100 million vehicle miles of travel in 2015 is the seventh highest in the nation and significantly higher than the national average of 1.13.¹⁹ The traffic fatality rate on the state's rural roads is disproportionately high. The fatality rate on Louisiana's non-interstate rural roads is more than double that on all other roads in the state (2.46 fatalities per 100 million vehicle miles of travel vs. 1.16).²⁰

Traffic crashes in Louisiana imposed a total of \$6.3 billion in economic costs in 2015.²¹ TRIP estimates that traffic crashes in which roadway features were likely a contributing factor imposed approximately \$2.1 billion in economic costs in 2015.²²

According to a [2015 National Highway Traffic Safety Administration \(NHTSA\) report](#), the economic costs of traffic crashes includes work and household productivity losses, property damage, medical costs, rehabilitation costs, legal and court costs, congestion costs and emergency services.²³

Improving safety on Louisiana's roadways can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and, a variety of improvements in roadway safety features.

The severity of serious traffic crashes could be reduced through roadway improvements, where appropriate, such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, and providing better road markings and upgrading or installing traffic signals. Roads with poor geometry, with insufficient clear distances, without turn lanes, having inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

Investments in rural traffic safety have been found to result in significant reductions in serious traffic crashes. A [2012 report by TTI](#) found that improvements completed recently by TxDOT that widened lanes, improved shoulders and made other safety improvements on 1,159 miles of rural state roadways resulted in 133 fewer fatalities on these roads in the first three years after the improvements were completed (as compared to the three years prior).²⁴ TTI estimates that the improvements on these roads are likely to save 880 lives over 20 years.²⁵

Traffic Congestion in Louisiana

Increasing levels of traffic congestion cause significant delays in Louisiana, particularly in its larger urban areas, choking commuting and commerce. Traffic congestion robs commuters of time and money and imposes increased costs on businesses, shippers and manufacturers, which are often passed along to the consumer.

According to [TTI estimates](#), the value of lost time and wasted fuel in Louisiana is approximately \$2.4 billion per year. The chart below details the annual cost of congestion in the form of lost time and wasted fuel, and the number of hours lost to congestion by the average commuter in the state's largest urban areas.

Chart 5. Cost of congestion and hours lost annually.

Location	Hours Lost	Congestion Cost
Baton Rouge	47 Hours	\$1,262
Lafayette	26 Hours	\$715
New Orleans	45 Hours	\$1,161
Shreveport	27 Hours	\$713

Source: Texas Transportation Institute Urban Mobility Report, 2015.

Increasing levels of congestion add significant costs to consumers, transportation companies, manufacturers, distributors and wholesalers. Increased levels of congestion can reduce the attractiveness of a location to a company when considering expansion or where to locate a new facility. Congestion costs can also increase overall operating costs for trucking and shipping companies, leading to revenue losses, lower pay for employees, and higher consumer costs.

Transportation Funding

Investment in Louisiana's roads, highways and bridges is funded by local, state and federal governments. A lack of sufficient funding at all levels will make it difficult to adequately maintain and improve the existing transportation system.

The federal government is a critical source of funding for Louisiana's roads, highways, bridges and transit systems and provides a significant return to Louisiana in road and bridge funding based on the revenue generated in the state by the federal motor fuel tax.

Most federal funds for highway and transit improvements in Louisiana are provided by federal highway user fees, largely an 18.4 cents-per-gallon tax on gasoline and a 24.4 cents-per-gallon tax on diesel fuel. Since 2008 revenue into the federal Highway Trust Fund has been inadequate to support legislatively set funding levels so Congress has transferred approximately \$53 billion in general funds and an additional \$2 billion from a related trust fund into the federal Highway Trust Fund.²⁶

Signed into law in December 2015, the [Fixing America's Surface Transportation Act \(FAST Act\)](#), provides modest increases in federal highway and transit spending. The five-year bill also provides states with greater funding certainty and streamlines the federal project approval process. But, the FAST Act does not provide adequate funding to meet the nation's need for highway and transit improvements and does not include a long-term and sustainable funding source.

The five-year, \$305 billion FAST Act will provide a boost of approximately 15 percent in highway funding and 18 percent in transit funding over the duration of the program, which expires in 2020.²⁷ In addition to federal motor fuel tax revenues, the FAST Act will also be funded by \$70 billion in U.S. general funds, which will rely on offsets from several unrelated federal programs including the Strategic Petroleum Reserve, the Federal Reserve and U.S. Customs.

According to the [2015 AASHTO Transportation Bottom Line Report](#), a significant boost in investment in the nation's roads, highways, bridges and public transit systems is needed to

improve their condition and to meet the nation's transportation needs. The AASHTO report found that based on an annual one percent increase in VMT that annual investment in the nation's roads, highways and bridges needs to increase by 36 percent, from \$88 billion to \$120 billion to improve conditions and meet the nation's mobility needs.²⁸ Investment in the nation's public transit system needs to increase from \$17 billion to \$43 billion.²⁹

The [2015 AASHTO Transportation Bottom Line Report](#) found that if the rate of vehicle travel increased by 1.4 percent per year, the needed annual investment in the nation's roads, highways and bridges would need to increase by 64 percent, to \$144 billion. If vehicle travel grows by 1.6 percent annually the needed annual investment in the nation's roads, highways and bridges would need to increase by 77 percent, to \$156 billion.³⁰

Importance of Transportation to Economic Growth

Today's culture of business demands that an area have well-maintained and efficient roads, highways and bridges if it is to remain economically competitive. Global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement, making the quality of a region's transportation system a key component in a business's ability to compete locally, nationally and internationally.

Businesses have responded to improved communications and the need to cut costs with a variety of innovations including just-in-time delivery, increased small package delivery, demand-side inventory management and e-commerce. The result of these changes has been a significant improvement in logistics efficiency as firms move from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on

smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

Highways are vitally important to continued economic development in Louisiana, particularly to the state's manufacturing, mineral extraction and tourism industries. As the economy expands, creating more jobs and increasing consumer confidence, the demand for consumer and business products grows. In turn, manufacturers ship greater quantities of goods to market to meet this demand, a process that adds to truck traffic on the state's highways and major arterial roads.

Every year, \$734 billion in goods are shipped to and from sites in Louisiana, relying heavily on the state's network of roads and bridges.³¹

The cost of road and bridge improvements are more than offset by the reduction of user costs associated with driving on rough roads, the improvement in business productivity, the reduction in delays and the improvement in traffic safety. The [Federal Highway Administration estimates](#) that each dollar spent on road, highway and bridge improvements results in an average benefit of \$5.20 in the form of reduced vehicle maintenance costs, reduced delays, reduced fuel consumption, improved safety, reduced road and bridge maintenance costs and reduced emissions as a result of improved traffic flow.³²

Local, regional and state economic performance is improved when a region's surface transportation system is expanded or repaired. This improvement comes as a result of the initial job creation and increased employment created over the long-term because of improved access, reduced transport costs and improved safety.

Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads

may see businesses relocate to areas with a smoother, more efficient and more modern transportation system. Highway accessibility was ranked the number two site selection factor behind only the availability of skilled labor in a 2015 survey of corporate executives by [Area Development Magazine](#).³³

Conclusion

As Louisiana works to build and enhance a thriving, growing and dynamic state, it will be critical that it is able to address the state's most significant transportation issues by providing a 21st century network of roads, highways, bridges and transit that can accommodate the mobility demands of a modern society.

Louisiana will need to modernize its surface transportation system by improving the physical condition of its transportation network and enhancing the system's ability to provide efficient and reliable mobility for residents, visitors and businesses. Making needed improvements to the state's roads, highways, bridges and transit systems could provide a significant boost to the economy by creating jobs in the short term and stimulating long-term economic growth as a result of enhanced mobility and access.

While the modest funding increase provided by the FAST Act will be helpful, numerous projects to improve the condition and expand the capacity of Louisiana's roads, highways, bridges and transit systems will not be able to proceed without a substantial boost in state or local transportation funding. If Louisiana is unable to complete needed transportation projects it will hamper the state's ability to improve the condition and efficiency of its transportation system or enhance economic development opportunities and quality of life.

Endnotes

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- ¹ U.S. Census Bureau (2017).
- ² Highway Statistics (2015). Federal Highway Administration. DL-1C
- ³ U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2000 and TRIP analysis of Federal Highway Administration monthly Traffic Volume Trends.
- ⁴ TRIP calculation based on U.S. Census and Federal Highway Administration data.
- ⁵ TRIP analysis of Bureau of Economic Analysis data.
- ⁶ Ibid.
- ⁷ Federal Highway Administration (2016). Pavement condition data is for 2015.
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.
- ¹⁴ TRIP calculation.
- ¹⁵ Highway Development and Management: Volume Seven. Modeling Road User and Environmental Effects in HDM-4. Bennett, C. and Greenwood, I. 2000.
- ¹⁶ Your Driving Costs. American Automobile Association. 2016.
- ¹⁷ Federal Highway Administration National Bridge Inventory, 2016.
- ¹⁸ National Highway Traffic Safety Administration data.
- ¹⁹ TRIP analysis of National Highway Traffic Safety Administration and Federal Highway Administration data (2016).
- ²⁰ Ibid.
- ²¹ TRIP estimate based on NHTSA report “The Economic and Societal Impact Of Motor Vehicle Crashes, 2010 (Revised), 2015. P. 146.
- ²² Ibid.
- ²³ The Economic and Societal Impact Of Motor Vehicle Crashes, 2010 (Revised) (2015). National Highway Traffic Safety Administration. P. 1. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013>
- ²⁴ Adding Highway Shoulders, Width, Reduce Crash Numbers and Save Lives (August 9, 2012). Texas Transportation Institute.
- ²⁵ Ibid.
- ²⁶ “Surface Transportation Reauthorization and the Solvency of the Highway Trust Fund,” presentation by Jim Tyson, American Association of State Highway and Transportation Officials (2014).
- ²⁷ 2015 “Fixing America’s Surface Transportation Act.” (2015) American Road and Transportation Builders Association. <http://www.artba.org/newsline/wp-content/uploads/2015/12/ANALYSIS-FINAL.pdf>
- ²⁸ 2015 AASHTO Bottom Line Report (2014) AASHTO. P. 2.
- ²⁹ Ibid.
- ³⁰ Ibid.
- ³¹ TRIP analysis of Bureau of Transportation Statistics, U.S. Department of Transportation. 2012 Commodity Flow Survey, State Summaries.
- ³² FHWA estimate based on its analysis of 2006 data. For more information on FHWA’s cost-benefit analysis of highway investment, see the 2008 Status of the Nation’s Highways, Bridges, and Transit: Conditions and Performance.
- ³³ Area Development Magazine (2016). 30th Annual Survey of Corporate Executives: Availability of Skilled Labor New Top Priority. <http://www.areadevelopment.com/Corporate-Consultants-Survey-Results/Q1-2016/corporate-executive-site-selection-facility-plans-441729.shtml>