

West Virginia Transportation by the Numbers

MEETING THE STATE'S NEED FOR
SAFE, SMOOTH AND EFFICIENT MOBILITY



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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.

WEST VIRGINIA KEY TRANSPORTATION FACTS

THE HIDDEN COSTS OF DEFICIENT ROADS

Driving on West Virginia roads that are deteriorated, congested and that lack some desirable safety features costs West Virginia drivers a total of \$1.6 billion each year. TRIP has calculated the cost to the average motorist in the state’s largest urban areas in the form of additional vehicle operating costs (VOC) as a result of driving on rough roads, the cost of lost time and wasted fuel due to congestion, and the financial cost of traffic crashes. The chart below shows the cost of deficient roads statewide and for the average driver in the state’s largest urban areas.

Location	VOC	Congestion	Safety	TOTAL
Beckley	\$519	\$183	\$597	\$1,299
Charleston	\$544	\$307	\$429	\$1,280
Huntington	\$492	\$383	\$398	\$1,273
Morgantown	\$654	\$238	\$309	\$1,201
Parkersburg	\$484	\$187	\$321	\$992
Weirton-Steubenville	\$551	\$369	\$196	\$1,116
Wheeling	\$509	\$572	\$340	\$1,421
West Virginia Statewide	\$825 Million	\$300 Million	\$478 Million	\$1.6 Billion

WEST VIRGINIA ROADS PROVIDE A ROUGH RIDE

Due to inadequate state and local funding, more than half of major roads and highways in West Virginia are in poor or mediocre condition. Driving on rough roads costs the average West Virginia driver \$726 annually in additional vehicle operating costs – a total of \$825 million statewide. The West Virginia Department of Transportation (WVDOT) maintains 34,420 miles of roads and highways – the sixth largest state-maintained system and 89 percent of all roadway miles in the state – the largest share among all states. The chart below details pavement conditions on major roads in the state’s largest urban areas and statewide.

Location	Poor	Mediocre	Fair	Good
Beckley	19%	24%	15%	42%
Charleston	20%	27%	14%	40%
Huntington	20%	16%	14%	50%
Morgantown	30%	18%	15%	37%
Parkersburg	16%	22%	23%	39%
Weirton-Steubenville	23%	20%	14%	43%
Wheeling	20%	19%	14%	47%
West Virginia Statewide	31%	24%	18%	27%

WEST VIRGINIA BRIDGE CONDITIONS

Twenty-one percent of West Virginia’s bridges are rated in poor/structurally deficient condition, meaning there is significant deterioration of the bridge deck, supports or other major components. This is the second highest share in the U.S. Fifty-three percent of the state’s bridges are rated in fair condition and the remaining 26 percent are in good condition. Most bridges are designed to last 50 years before major overhaul or replacement, although many newer bridges are being designed to last 75 years or longer. In West Virginia, 32 percent of the state’s bridges were built in 1969 or earlier. The chart below details bridge conditions statewide and in the state’s largest urban areas.

	Poor/Structurally Deficient		Fair		Good		Total Bridges
	Number	Share	Number	Share	Number	Share	
Beckley	50	23%	153	70%	15	7%	218
Charleston	75	13%	324	58%	157	28%	556
Huntington	106	17%	414	67%	102	16%	622
Morgantown	40	20%	88	43%	76	37%	204
Parkersburg	51	10%	200	41%	236	48%	478
Weirton-Steubenville	34	11%	161	51%	121	38%	316
Wheeling	93	18%	218	42%	206	40%	517
West Virginia Statewide	1,531	21%	3,899	53%	1,861	26%	7,291

WEST VIRGINIA CONGESTION

In 2019, the state’s transportation system carried 19.1 billion annual vehicle miles of travel (VMT). Due to the Covid-19 pandemic, vehicle travel in West Virginia dropped by as much as 40 percent in April 2020 (as compared to vehicle travel during the same month the previous year), but rebounded to eleven percent below the previous year’s volume in November 2020. Congested roads choke commuting and commerce and cost West Virginia drivers \$300 million each year in the form of lost time and wasted fuel. In the most congested urban areas, drivers lose up to \$572 and spend as many as 26 hours per year sitting in congestion. The chart below shows the annual number of hours lost to congestion per driver and the average cost per driver of lost time and wasted fuel due to congestion in the state’s largest urban areas.

Location	Hours Lost	Congestion Cost
Beckley	8	\$183
Charleston	14	\$307
Huntington	19	\$383
Morgantown	11	\$238
Parkersburg	9	\$187
Weirton-Steubenville	17	\$369
Wheeling	26	\$572

WEST VIRGINIA TRAFFIC SAFETY AND FATALITIES

From 2015 to 2019, 1,394 people were killed in traffic crashes in West Virginia. In 2019, West Virginia had 1.36 traffic fatalities for every 100 million miles traveled, higher than the national average of 1.11 and 13th highest in the U.S. The traffic fatality rate on West Virginia’s rural, non-Interstate roadways in 2018 was nearly twice as high as that on all other roads (2.10 fatalities per 100 million vehicle miles of travel vs. 1.15).

Traffic crashes imposed a total of \$1.4 billion in economic costs in West Virginia in 2019 and traffic crashes in which a lack of adequate roadway safety features were likely a contributing factor imposed \$478 million in economic costs. The chart below shows the number of people killed in traffic crashes in the state’s largest urban areas between 2015 and 2019, and the cost of traffic crashes per driver.

Location	Average Fatalities 2015-2019	Crash Cost per Driver
Beckley	15	\$597
Charleston	26	\$429
Huntington	26	\$398
Morgantown	11	\$309
Parkersburg	16	\$321
Weirton-Steubenville	8	\$196
Wheeling	16	\$340

TRANSPORTATION AND ECONOMIC DEVELOPMENT

The health and future growth of West Virginia’s economy is riding on its transportation system. Each year, \$125 billion in goods are shipped to and from sites in West Virginia, mostly by trucks. Increases in passenger and freight movement will place further burdens on the state’s already deteriorated and congested network of roads and bridges. The value of freight shipped to and from sites in West Virginia, in inflation-adjusted dollars, is expected to increase 85 percent by 2045 and by 82 percent for goods shipped by trucks.

According to a [report by the American Road & Transportation Builders Association](#), the design, construction and maintenance of transportation infrastructure in West Virginia supports approximately 24,000 full-time jobs across all sectors of the state economy. These workers earn \$588 million annually. Approximately 332,000 full-time jobs in West Virginia in key industries like tourism, retail sales, agriculture and manufacturing are completely dependent on the state’s transportation network.

WEST VIRGINIA TRANSPORTATION FUNDING

Investment in West Virginia’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 state’s existing transportation system.

In 2015 a [report](#) by the West Virginia Blue Ribbon Commission on Highways found that West Virginia needed to increase its annual investment in its highway and bridge system by \$750 million annually for needed repairs and an additional \$380 million annually for needed expansion to the system – a total of approximately \$1.1 billion annually.

In 2017 the West Virginia legislature [approved](#) increases in the state’s motor fuel, registration fees, and taxes on new car purchases to support additional highway investment. State voters subsequently [approved](#) a referendum 73 to 27 percent allowing the state to borrow up to \$1.6 billion to fund Governor Jim Justice’s [Roads to Prosperity Initiative](#).

The current federal transportation legislation, [Fixing America’s Surface Transportation Act \(FAST Act\)](#), was set to expire on September 30, 2020. Congress extended it by one year to September 30, 2021. The FAST Act is a major source of funding for road, highway and bridge repairs in West Virginia. Throughout the FAST-Act – fiscal years 2016 to 2021 – the program will provide \$2.8 billion to West Virginia for road repairs and improvements, an average of \$465 million per year. From 2014 to 2018, the federal government provided \$2.05 for road improvements in West Virginia for every \$1.00 state motorists paid in federal highway user fees, including the federal state motor fuel tax.

Sources of information for this report include 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), the American Road & Transportation Builders Association (ARTBA), and the National Highway Traffic Safety Administration (NHTSA). Cover photo credit: Timothy Mainiero.

INTRODUCTION

West Virginia'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 West Virginia's transportation system is critical to quality of life and economic competitiveness in the Mountain State. Inadequate transportation investment, which will result in deteriorated transportation facilities and diminished access, will negatively affect West Virginia's economic competitiveness and quality of life.

To accommodate population and economic growth, maintain its level of economic competitiveness and achieve further economic growth, West Virginia 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 West Virginia'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. The importance of West Virginia's surface transportation system and the reliable movement of goods it provides has been heightened during the COVID-19 pandemic. The steep reduction in vehicle travel – particularly during the onset of the pandemic – has had a significant impact on transportation revenue in the state.

This report examines the condition, use and safety of West Virginia's roads, highways and bridges, and the state's future mobility needs. Sources of information for this report include 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), the American Road & Transportation Builders Association (ARTBA), and the National Highway Traffic Safety Administration (NHTSA).

In addition to statewide data, the TRIP report includes regional data for the Beckley, Charleston, Huntington, Morgantown, Parkersburg, Weirton-Steubenville and Wheeling urban areas. An urban area is defined as a region's municipalities and surrounding suburbs for pavement condition and congestion data; bridge and traffic fatality data include a region's major counties.¹

POPULATION, TRAVEL AND ECONOMIC TRENDS IN WEST VIRGINIA

West Virginia motorists and businesses require a high level of personal and commercial mobility. To foster quality of life and spur continued economic growth, it is critical that the state provide a safe and modern transportation system that can accommodate future growth in population, tourism, business, recreation and vehicle travel.

West Virginia's population was approximately 1.8 million residents in 2020.² West Virginia had approximately 1.1 million licensed drivers in 2019.³ In 2019, the state's transportation system carried 19.1 billion vehicle miles of travel (VMT). Due to the Covid-19 pandemic, vehicle travel in West Virginia dropped by as much as 40 percent in April 2020 (as compared to vehicle travel during the same month the previous year), but rebounded to eleven percent below the previous year's volume in November 2020.⁴ From 2000 to 2019, West Virginia'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 45 percent during the same period.⁶

CONDITION OF WEST VIRGINIA ROADS

The West Virginia Department of Transportation (WVDOT) maintains 34,420 miles of roads and highways – the sixth largest state-maintained system and 89 percent of all roadway miles in the state – the largest share among all states.⁷ The life cycle of West Virginia'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 (FHWA), based on data submitted annually by the West Virginia Department of Transportation (WVDOT) on the condition of major state and locally maintained roads and highways. 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 ensure the data collected is adequate to provide an accurate assessment of pavement conditions on these roads and highways.

Statewide, 55 percent of West Virginia's major roads are in poor or mediocre condition. Thirty-one percent of West Virginia's major locally and state-maintained roads are in poor condition and 24

percent are in mediocre condition.⁸ Eighteen percent of West Virginia’s major roads are in fair condition and the remaining 27 percent are in good condition.⁹

Thirty-five percent of West Virginia’s major locally and state-maintained urban roads and highways have pavements rated in poor condition and 24 percent are in mediocre condition.¹⁰ Fourteen percent of West Virginia’s major urban roads are rated in fair condition and the remaining 27 percent are rated in good condition.¹¹

Thirty percent of West Virginia’s major locally and state-maintained rural roads and highways have pavements rated in poor condition and 24 percent are in mediocre condition.¹² Nineteen percent of West Virginia’s major rural roads are rated in fair condition and the remaining 26 percent are rated in good condition.¹³ The chart below details pavement conditions on major urban roads in the state’s largest urban areas and statewide.¹⁴

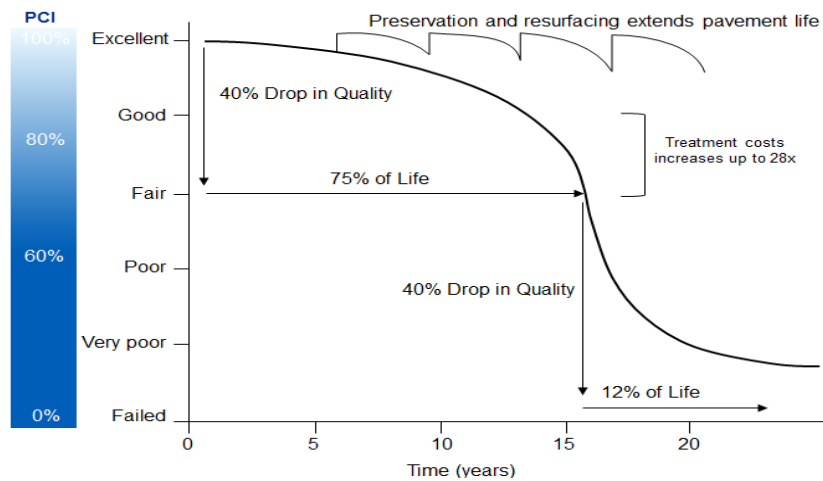
Chart 1. Pavement conditions on major roads in West Virginia’s largest urban areas and statewide.

Location	Poor	Mediocre	Fair	Good
Beckley	19%	24%	15%	42%
Charleston	20%	27%	14%	40%
Huntington	20%	16%	14%	50%
Morgantown	30%	18%	15%	37%
Parkersburg	16%	22%	23%	39%
Weirton-Steubenville	23%	20%	14%	43%
Wheeling	20%	19%	14%	47%
West Virginia Statewide	31%	24%	18%	27%

Source: TRIP analysis of Federal Highway Administration data.

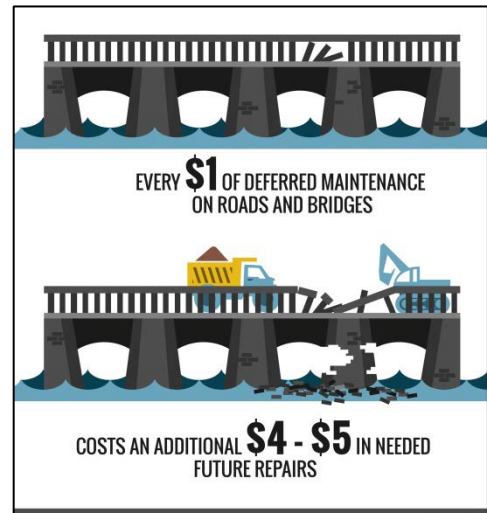
Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road’s foundation. Road surfaces at intersections are more prone to deterioration because the slow-moving or standing loads occurring at these 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.¹⁵ 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.

Chart 2. Pavement Condition Cycle Time with Treatment and Cost



Source: North Carolina Department of Transportation (2016). [2016 Maintenance Operations and Performance Analysis Report.](#)

Long-term repair costs increase significantly when road and bridge maintenance is deferred, as road and bridge deterioration accelerates later in the service life of a transportation facility and requires more costly repairs. A [report on maintaining pavements](#) found that every \$1 of deferred maintenance on roads and bridges costs an additional \$4 to \$5 in needed future repairs.¹⁶



THE COST TO MOTORISTS OF ROADS IN INADEQUATE CONDITION

TRIP has calculated the additional cost to motorists of driving on roads in poor, mediocre or fair condition. When roads are in poor, mediocre or fair condition – which may include potholes, rutting or rough surfaces – the cost to operate and maintain a vehicle increases. These additional vehicle operating costs (VOC) include accelerated vehicle depreciation, additional vehicle repair costs, increased fuel consumption and increased tire wear. TRIP estimates that additional VOC borne by West Virginia motorists as a result of deteriorated road conditions is \$825 million annually, an average of \$726 per driver statewide.¹⁷ The chart below shows additional VOC per motorist in the state’s largest urban areas.

Chart 3. Vehicle operating costs per motorist as a result of driving on deteriorated roads.

Location	VOC
Beckley	519
Charleston	\$544
Huntington	\$492
Morgantown	\$654
Parkersburg	\$484
Weirton-Steubenville	\$551
Wheeling	\$509
West Virginia Statewide	\$825 Million

Source: TRIP estimates.

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.¹⁸ 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 VOC estimate is based on taking the average number of miles driven annually by a motorist, calculating current VOC based on [AAA's driving cost estimates](#) and then using the HDM model to estimate the additional VOC paid by drivers as a result of substandard roads.¹⁹ 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 WEST VIRGINIA

West Virginia’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.

Twenty-one percent (1,531 of 7,291) of West Virginia’s bridges are rated in poor/structurally deficient condition – the second highest rate in the U.S.²⁰ This includes all bridges that are 20 feet or more in length. A

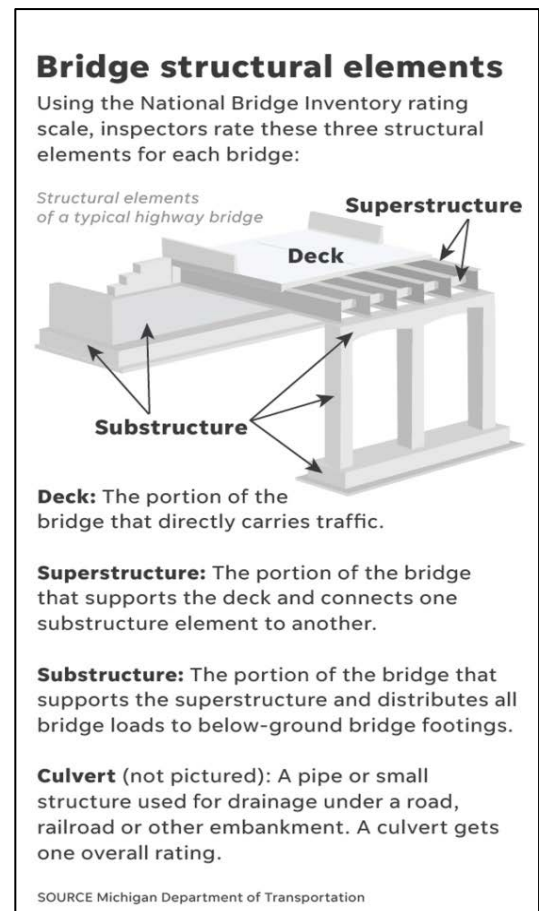


bridge is deemed structurally deficient if there is significant deterioration of the bridge deck, supports or other major components.

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.

Fifty-three percent of West Virginia’s bridges have been rated in fair condition.²¹ A fair rating indicates that a bridge’s structural elements are sound but minor deterioration has occurred to the bridge’s deck, substructure or superstructure. The remaining 26 percent of the state’s bridges are rated in good condition.²² The chart below details the condition of bridges statewide and in West Virginia’s largest urban areas.

Chart 4. Bridge conditions statewide and in West Virginia’s largest urban areas.



	Poor/Structurally Deficient		Fair		Good		Total Bridges
	Number	Share	Number	Share	Number	Share	
Beckley	50	23%	153	70%	15	7%	218
Charleston	75	13%	324	58%	157	28%	556
Huntington	106	17%	414	67%	102	16%	622
Morgantown	40	20%	88	43%	76	37%	204
Parkersburg	51	10%	200	41%	236	48%	478
Weirton-Steubenville	34	11%	161	51%	121	38%	316
Wheeling	93	18%	218	42%	206	40%	517
West Virginia Statewide	1,531	21%	3,899	53%	1,861	26%	7,291

Source: TRIP analysis of Federal Highway Administration National Bridge Inventory (2019).

Most bridges are designed to last 50 years before major overhaul or replacement, although many newer bridges are being designed to last 75 years or longer. In West Virginia, 32 percent of the state’s bridges were built in 1969 or earlier.²³

The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, ensuring 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 WEST VIRGINIA

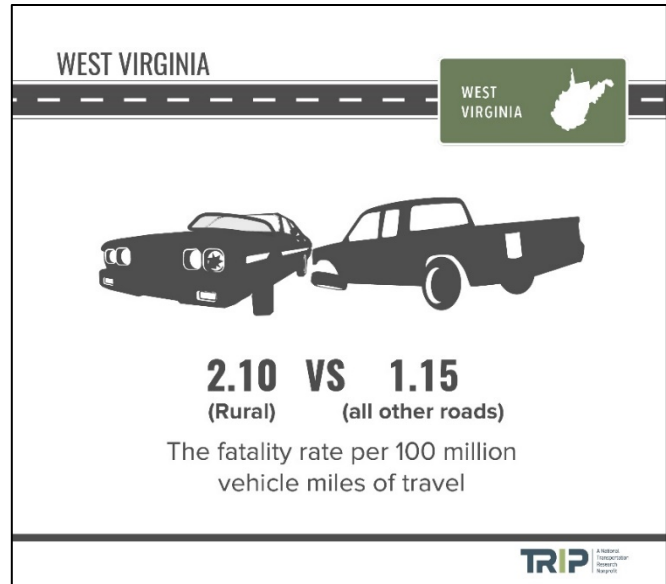
A total of 1,394 people were killed in West Virginia traffic crashes from 2015 to 2019, an average of 279 fatalities per year.²⁴

Chart 5. Traffic Fatalities in West Virginia 2015-2019.

Year	Fatalities
2015	268
2016	269
2017	303
2018	294
2019	260
TOTAL	1,394
AVERAGE	279

Source: National Highway Traffic Safety Administration.

West Virginia’s overall traffic fatality rate of 1.36 fatalities per 100 million vehicle miles of travel in 2019 is higher than the national average of 1.11.²⁵ The traffic fatality rate on the state’s rural roads is disproportionately high. The fatality rate on West Virginia’s non-interstate rural roads in 2018 was nearly two times higher than on all other roads in the state (2.10 fatalities per 100 million vehicle miles of travel vs. 1.15).²⁶



The chart below shows the average number of people killed in traffic crashes in the state’s largest urban areas between 2015 and 2019, and the cost of traffic crashes per driver.

Chart 6. Average fatalities between 2015 and 2019 and the annual cost of crashes per driver.

Location	Average Fatalities 2015-2019	Crash Cost per Driver
Beckley	15	\$597
Charleston	26	\$429
Huntington	26	\$398
Morgantown	11	\$309
Parkersburg	16	\$321
Weirton-Steubenville	8	\$196
Wheeling	16	\$340

Source: TRIP analysis of NHTSA data.

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.

Traffic crashes in West Virginia imposed a total of \$1.4 billion in economic costs in 2019.²⁷ TRIP estimates that roadway features were likely a contributing factor in approximately one-third of all fatal traffic crashes, resulting in \$478 million in economic costs in West Virginia in 2019.²⁸ 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.²⁹

Improving safety on West Virginia'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 converting intersections to roundabouts; removing or shielding roadside objects; the addition of left-turn lanes at intersections; the signalization of intersections; adding or improving median barriers; improved lighting; adding centerline or shoulder rumble strips; providing appropriate pedestrian and bicycle facilities, including sidewalks and bicycle lanes; providing wider lanes, wider and paved shoulders; upgrading roads from two lanes to four lanes; providing better road and lane markings; and updating rail crossings.

The U.S. has a \$146 billion backlog in needed roadway safety improvements, according to a 2017 [report](#) from the AAA Foundation for Traffic Safety. The report found implementing these cost-effective and needed roadway safety improvements on U.S. roadways would save approximately 63,700 lives and reduce the number of serious injuries as a result of traffic crashes by approximately 350,000 over 20 years.

TRAFFIC CONGESTION IN WEST VIRGINIA

Traffic congestion causes delays in West Virginia, 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. Increased levels of congestion can also reduce the attractiveness of a location to a business when considering expansion or where to locate a new facility.

Based on TTI methodology, TRIP estimates the value of lost time and wasted fuel in West Virginia is approximately \$300 million a year. The chart below shows the number of hours lost annually for each driver in the state's largest urban areas, and the per-driver cost of lost time and wasted fuel due to congestion.

Chart 7. Annual hours lost to congestion and congestion costs per driver.

Location	Hours Lost	Congestion Cost
Beckley	8	\$183
Charleston	14	\$307
Huntington	19	\$383
Morgantown	11	\$238
Parkersburg	9	\$187
Weirton-Steubenville	17	\$369
Wheeling	26	\$572

Source: TTI Urban Mobility Report.

TRANSPORTATION AND 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.

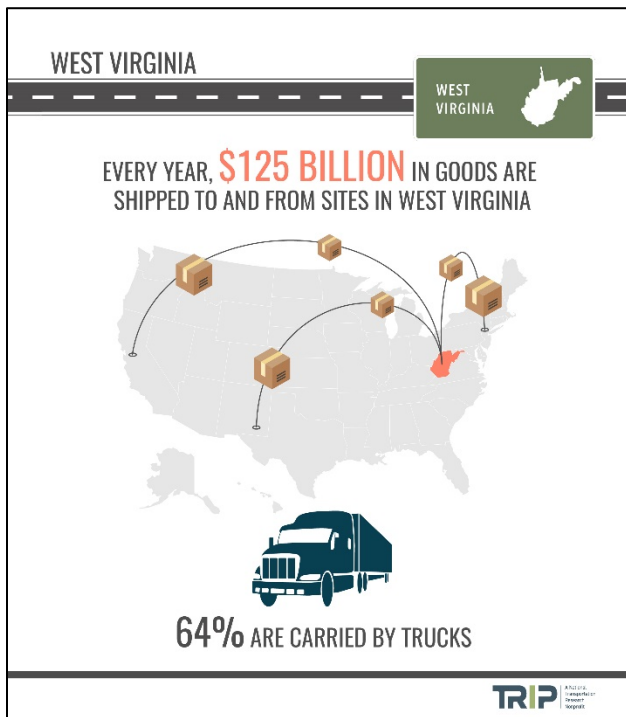
Highways are vitally important to continued economic development in West Virginia. As the economy expands, creating more jobs and increasing consumer confidence, the demand for consumer and business products grows. In turn, manufacturers ship greater quantities of goods to market to meet this demand,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

The ability of the nation's freight transportation system to efficiently and safely accommodate the growing demand for freight movement could be hampered by inadequate transportation capacity, a lack of adequate safety features on some transportation facilities, institutional barriers to enhancing

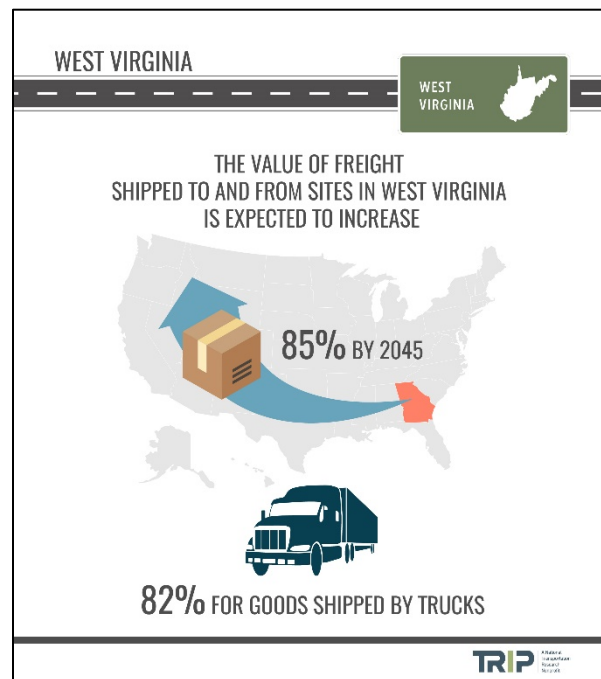
the nation's freight facilities, a lack of adequate funding for needed improvements to the freight network and a shortage of drivers.

The need to improve the U.S. freight network is occurring at a time when the nation's freight delivery system is being transformed by advances in vehicle autonomy, manufacturing, warehousing and supply chain automation, increasing e-commerce, and the growing logistic networks being developed by Amazon and other retail organizations in response to the demand for a faster and more responsive delivery and logistics cycle.

Every year, \$125 billion in goods are shipped to and from sites in West Virginia.³⁰ Sixty-four percent of the goods shipped annually to and from sites in West Virginia are carried by truck and



another ten percent are carried by courier services or multiple-mode deliveries, which include trucking.³¹ The value of freight shipped to and from sites in West Virginia, in inflation-adjusted dollars, is expected to increase 85 percent by 2045 and by 82 percent for goods shipped by trucks.³²



Investments in transportation improvements in West Virginia play a critical role in the state's economy. A [report](#) by the American Road & Transportation Builders Association found that the design, construction and maintenance of transportation infrastructure supports the equivalent of approximately 24,000 full-time jobs across all sectors of the state economy, earning these workers approximately \$588 million annually.³³ These jobs include approximately 12,000 full-time jobs directly involved in transportation infrastructure construction and related activities. Spending by employees and companies in the transportation design and construction industry supports an additional 12,000 full-time jobs in West Virginia.³⁴

Transportation construction in West Virginia contributes an estimated \$107.2 million annually in state and local income, corporate and unemployment insurance taxes and the federal payroll tax.³⁵

Approximately 332,000 full-time jobs in West Virginia in key industries like tourism, retail sales, agriculture and manufacturing are dependent on the quality, safety and reliability of the state's transportation infrastructure network. These workers earn \$12.4 billion in wages and contribute an estimated \$2.3 billion in state and local income, corporate and unemployment insurance taxes and the federal payroll tax.³⁶

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 access has a significant impact on the competitiveness of a region's economy. Not surprisingly, highway accessibility was ranked the number one site selection factor in a 2020 [survey](#) of corporate executives by Area Development Magazine.³⁷

TRANSPORTATION FUNDING IN WEST VIRGINIA

Investment in West Virginia'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 state's existing transportation system.

In 2015 a [report](#) by the West Virginia Blue Ribbon Commission on Highways found that West Virginia needed to increase its annual investment in its highway and bridge system by \$750 million annually for needed repairs and an additional \$380 million annually for needed expansion to the system – a total of approximately \$1.1 billion annually.

In 2017 the West Virginia legislature [approved](#) increases in the state's motor fuel, registration fees and taxes on new car purchases to support additional highway investment. State voters subsequently [approved](#) a referendum 73 to 27 percent allowing the state to borrow up to \$1.6 billion to fund Governor Jim Justice's [Roads to Prosperity Initiative](#).

In addition to state funds, the federal government is a critical source of funding for West Virginia's roads, highways, bridges and transit systems and provides a significant return 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 West Virginia 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.³⁸

Signed into law in December 2015, the five-year [Fixing America's Surface Transportation Act \(FAST Act\)](#) was scheduled to expire on September 30, 2020. Congress extended the legislation for one year to September 30, 2021. The FAST Act provides modest increases in federal highway and transit spending. The 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 FAST-Act is a major source of funding for road, highway and bridge repairs in West Virginia. Throughout the FAST-Act – fiscal years 2016 to 2021 – the program will provide \$2.8 billion to West Virginia for road repairs and improvements, an average of \$465 million per year.³⁹ From 2014 to 2018, the federal government provided \$2.05 for road improvements in West Virginia for every \$1.00 state motorists paid in federal highway user fees, including the federal state motor fuel tax.⁴⁰

Federal funds are a critical source of highway investment in West Virginia and represent a significant share of funds used by the state for major road, highway and bridge repairs and improvements. From 2014 to 2018, federal funds provided for highway improvements were the equivalent of 43 percent of the amount of West Virginia state capital outlays on road, highway and bridge projects, including construction, engineering and right-of-way acquisition.⁴¹

West Virginia federal-aid eligible roads, bridges and highways include the most critical routes in the state, including the Interstate Highway System, major highways and important rural and urban routes. Federal-aid eligible roadways in West Virginia account for 29 percent of state lane-miles and carry 90 percent of all vehicle miles of travel in the state.⁴² Forty-eight percent of West Virginia's bridges by count, and 84 percent of bridges measured by deck area are eligible for Federal aid.⁴³

According to the [Status of the Nation's Highways, Bridges, and Transit, 23rd Edition](#), submitted to Congress by the United States Department of Transportation (USDOT) in 2019, the nation faces a

\$786 billion backlog in needed repairs and improvements to the nation’s roads, highways and bridges.⁴⁴ This backlog includes \$435 billion for highway rehabilitation; \$125 billion for bridge rehabilitation; \$120 billion for system expansion and \$106 billion for system enhancement.⁴⁵ The USDOT report found that the nation’s current \$105 billion investment in roads, highways and bridges by all levels of government should be increased by 29 percent to \$136 billion annually to improve the conditions of roads, highways and bridges, relieve traffic congestion and improve traffic safety.

CONCLUSION

As West Virginia works to enhance its thriving, growing and dynamic state, it will be critical that it is able to address the 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.

West Virginia 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, safe and reliable mobility for residents, visitors and businesses. Making needed improvements to the state’s roads, highways, bridges and transit systems would 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.

Numerous projects to improve the condition and expand the capacity of West Virginia’s roads, highways, bridges and transit systems will not proceed without a substantial boost in state or local transportation funding. If West Virginia 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.

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ENDNOTES

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- ¹ Bridge condition data and safety data for each urban area includes the counties noted: Beckley – Raleigh County; Charleston- Kanawha County; Huntington – Cabell, Wayne and Lawrence (OH) Counties; Morgantown- Monongalia County; Parkersburg Wood and Washington Counties; Weirton-Steubenville: Brooke, Hancock and Jefferson (OH) Counties; Wheeling – Ohio, Marshall and Belmont (OH) Counties.
- ² U.S. Census Bureau (2019).
- ³ Highway Statistics (2019). Federal Highway Administration. DL-1C.
- ⁴ [Federal Highway Administration – Traffic Volume Trends.](https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm)
https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm
- ⁵ TRIP analysis of Bureau of Economic Analysis data (2019).
<https://apps.bea.gov/itable/itable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1>
- ⁶ Ibid.
- ⁷ Federal Highway Administration (2020). Highway Statistics 2019. Table HM-10.
<https://www.fhwa.dot.gov/policyinformation/statistics/2019/>
- ⁸ Federal Highway Administration, Highway Statistics 2019 (2020). Pavement condition data is for 2019.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Ibid.
- ¹⁵ Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.
- ¹⁶ Pavement Maintenance, by David P. Orr, PE Senior Engineer, Cornell Local Roads Program, March 2006.
- ¹⁷ TRIP calculation.
- ¹⁸ Highway Development and Management: Volume Seven. Modeling Road User and Environmental Effects in HDM-4. Bennett, C. and Greenwood, I. 2000.
- ¹⁹ Your Driving Costs. American Automobile Association. 20120.
- ²⁰ Federal Highway Administration National Bridge Inventory. 2019.
- ²¹ Ibid.
- ²² Ibid.
- ²³ TRIP analysis of Federal Highway Administration National Bridge Inventory data (2019).
- ²⁴ Federal Highway Administration National Highway Traffic Safety Administration, 2015-2019.
- ²⁵ TRIP analysis of National Highway Traffic Safety Administration and Federal Highway Administration data (2021). Data is for 2019.
- ²⁶ TRIP analysis of National Highway Traffic Safety Administration and Federal Highway Administration data (2018).
- ²⁷ TRIP estimate based on NHTSA report “The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised), 2016. P. 146.
- ²⁸ Ibid.
- ²⁹ 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>
- ³⁰ TRIP analysis of Bureau of Transportation Statistics, U.S. Department of Transportation. 2016 Commodity Flow Survey, State Summaries.
- ³¹ Ibid.
- ³² Ibid.
- ³³ American Road & Transportation Builders Association (2015). The 2015 U.S. Transportation Construction Industry Profile. https://www.transportationcreatesjobs.org/pdf/Economic_Profile.pdf
- ³⁴ Ibid.
- ³⁵ Ibid.

³⁶ Ibid.

³⁷ Area Development Magazine (2020). 34th Annual Survey of Corporate Executives: Availability of Skilled Labor New Top Priority. <https://www.areadevelopment.com/Corporate-Consultants-Survey-Results/Q1-2020/34th-annual-corporate-survey-16th-annual-consultants-survey.shtml>

³⁸ “Surface Transportation Reauthorization and the Solvency of the Highway Trust Fund,” presentation by Jim Tymon, American Association of State Highway and Transportation Officials (2014).

³⁹ U.S. Department of Transportation (2020). Estimated FY 2016-2020 Apportionments Under the Fixing America’s Surface Transportation Act. <https://www.fhwa.dot.gov/fastact/funding.cfm>

⁴⁰ TRIP analysis of Federal Highway Administration data (2020). Chart FE 221B in Highway Statistics 2018. <https://www.fhwa.dot.gov/policyinformation/statistics/2018/>

⁴¹ TRIP analysis of Federal Highway Administration data (2020). Charts SF-1, SF-2 in Highway Statistics 2018. <https://www.fhwa.dot.gov/policyinformation/statistics/2018/>

⁴² TRIP analysis of Federal Highway Administration data (2020). Charts VM-2, VM-3, HM-48, HM-60 in Highway Statistics 2018. <https://www.fhwa.dot.gov/policyinformation/statistics/2018/>

⁴³ TRIP analysis of Federal Highway Administration National Bridge Inventory data (2020). <https://www.fhwa.dot.gov/bridge/fc.cfm> All bridges excluding bridges classified as local or rural collector are eligible for federal aid.

⁴⁴ Status of the Nation’s Highways, Bridges, and Transit, 23rd Edition (2019). United States Department of Transportation. <https://www.fhwa.dot.gov/policy/23cpr/>

⁴⁵ Ibid.