

PAYING THE PRICE FOR INADEQUATE ROADS IN VIRGINIA

THE COST TO MOTORISTS IN REDUCED SAFETY,
LOST TIME AND INCREASED VEHICLE WEAR

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Prepared by:

The Road Information Program (TRIP)
1726 M Street, NW, Suite 401
Washington, D.C. 20036
202-466-6706 (voice)
202-785-4722 (fax)
www.tripnet.org

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

Executive Summary

Virginia's extensive network of roads and bridges allows the state's 7.3 million residents to safely and freely travel while enabling businesses to efficiently serve their customers. However, continued growth in Virginia's population and travel is straining the capacity of the state's transportation system and causing further deterioration.

Making needed improvements to Virginia's roads and bridges is crucial to providing a safer, smoother, more efficient transportation system that will save motorists money and time while improving the economic livelihood of the entire state.

Deteriorated roads and bridges, a lack of desirable roadway safety features and increasing traffic congestion are costing motorists in the form of accident costs, travel delays and vehicle operating costs.

In addition, as Virginia's manufacturing, industrial and retail businesses become less dependent upon stockpiled inventories and more dependent on "just-in-time" delivery of goods and services, the state must provide a reliable, integrated transportation system in order to be competitive in both the North American and global marketplace and to attract job-producing businesses to the state.

This report looks at road and bridge conditions, traffic safety and congestion levels in Virginia, as well as the cost to motorists who drive on inadequate roads.

Sources of information for this study include the U.S. Department of Transportation (DOT), Federal Highway Administration (FHWA), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), the Texas Transportation Institute (TTI) and the Federal Highway Administration's National Bridge Inventory (NBI).

Key findings of the report include:

TRIP estimates that Virginia's roadways that lack desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions cost the state's drivers approximately \$4.4 billion annually in the form of traffic accidents, additional vehicle operating costs and congestion-related delays. TRIP estimates that the annual cost of inadequate roadways is \$2,131 per average driver in the Washington D.C. metro area, \$1,032 in the Richmond area, \$874 in the Roanoke area, \$1,290 in the Hampton Roads area and \$684 per average urban driver living elsewhere in the state.

- Traffic accidents and fatalities in which roadway design was an important factor cost Virginia motorists approximately \$1.7 billion annually, including medical costs, lost economic and household productivity, property damage and travel delays. Annual roadway design-related safety costs are estimated at \$336 per Virginia driver.

- Traffic congestion in Virginia costs licensed drivers \$1.5 billion annually in delays and wasted fuel. Annual traffic congestion costs per average driver are \$1,278 in the Washington D.C. metro area, \$281 in the Richmond area, \$546 in the Hampton Roads area and \$248 in the Roanoke area. The annual congestion cost for urban Virginia drivers not residing in the five major urban areas is \$100.
- Driving on roads in need of repair costs Virginia's motorists \$1.2 billion annually in extra vehicle operating costs, including accelerated vehicle depreciation, additional repair costs and increased fuel consumption and tire wear. Additional annual vehicle operating costs per motorist are estimated to be \$353 in the Washington D.C. metro area, \$415 in the Richmond area, \$408 in the Hampton Roads area and \$290 in the Roanoke area. Drivers in other urban areas of Virginia pay an additional \$248 due to driving on roads in need of repair.
- Costs would likely be lower for motorist who drive infrequently or do not travel during peak weekday morning and evening rush hours.

Pavement conditions on more than one-fourth of Virginia's major roads were rated in poor or mediocre condition. In addition, more than a quarter of the state's bridges are in need of repair or improvement.

- Approximately nine percent of Virginia's major roads were rated in poor condition in 2002, the latest year for which data is available, and are in need of resurfacing or reconstruction. An additional 18 percent of the state's major roads were rated in mediocre condition in 2002.
- Roads rated poor are badly cracked or broken. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed.
- Approximately nine percent of Virginia's bridges – 20 feet or longer – were structurally deficient in 2003, the latest year for which data is available.
- A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient are sometimes posted for lower weight or are closed if they are found to be unsafe.
- Approximately 17 percent of Virginia's bridges – 20 feet or longer – were functionally obsolete in 2003, the latest year for which data is available.
- Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate underclearances or poor alignment.

Steady population growth has resulted in increased vehicle travel on Virginia's transportation system, resulting in growing urban traffic congestion and longer commute times.

- Virginia's population increased by 18 percent from 1990 to 2002, from 6.2 million residents to 7.3 million residents.
- Vehicle travel in Virginia increased by 29 percent between 1990 and 2002, from 60.2 billion vehicle miles of travel (VMT) to 77.5 billion VMT. Vehicle travel in Virginia is projected to increase by another 40 percent by 2020, to 108 billion vehicle miles of travel.
- Thirty-four percent of Virginia's urban highways were congested in 2002, the latest year for which data is available, carrying traffic volumes that resulted in significant rush hour delays. Urban traffic congestion in Virginia has increased since 1995, when 31 percent of the state's urban highways were considered congested.
- Commute times in Virginia have increased since 1990, primarily as a result of increased traffic congestion. The average daily one-way commute increased from 24 minutes in 1990 to 27 minutes in 2000. As a result, the typical commuter in Virginia now spends on average an additional 25 hours a year in traffic – the equivalent of more than three working days – than in 1990.

Improving safety features on Virginia's roads and highways would result in a decrease in fatal traffic accidents.

- An average of 921 people were killed each year in motor vehicle accidents in Virginia from 1999 through 2003 – an average of approximately one fatality every 10 hours.
- There are three key factors associated with fatal vehicle accidents: driver behavior, vehicle design and roadway design. It is estimated that roadway design is an important factor in one-third of fatal traffic accidents.
- Highway improvements such as adding lanes, removing obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection design, and better road markings and traffic signals can reduce traffic fatalities and vehicle accidents.
- The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.

The quality of a region's transportation system is an important factor in where businesses and industries decide to locate, expand or downsize. A modern transportation system is of critical importance if Virginia is to capitalize on economic development opportunities.

- 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.

- Ninety-four percent of the \$123 billion worth of commodities delivered annually to and from sites in Virginia are transported on the state's highways.
- Commercial trucking in Virginia is projected to increase by 51 percent by 2020.

A significant increase in federal, state and local transportation funding would allow Virginia to accelerate key transportation projects and improve conditions and service statewide. If transportation funding remains at current levels, however, many critical highway and public transit improvements will be delayed and traffic congestion will get worse, hampering Virginia's economic development.

- The current federal surface transportation legislation, the Transportation Equity Act for the 21st Century (TEA-21) expires on May 31, 2005. It is a key source of funding for road and bridge improvement and public transportation in Virginia.
- Transportation funding at the state level is also critical. The Virginia Commonwealth Transportation Board recently adopted a six-year improvement program at a funding level \$1 billion lower than the 6-year plan adopted in the previous year, leaving little or no growth in new highway improvements.
- The Virginia Commonwealth Transportation Board allocated \$6.3 billion to study, design or build transportation projects – including highway construction, rail and public transit – between 2004 and 2009. This marks a 15 percent decrease from the \$7.4 billion approved for 2003 to 2008. As a result, funding will be delayed for many needed projects now in the planning stages, preventing them from moving forward to the construction phase.

Introduction

Virginia's extensive network of roads and bridges allows the state's 7.3 million residents to safely and freely travel, while enabling businesses to efficiently serve their customers.

However, Virginia's roads and bridges are significantly deteriorated, do not include all desirable safety features, and are becoming increasingly congested.

Making needed improvements to Virginia's roads and bridges is critical to providing a safer, more efficient transportation system that will save motorists money and time while improving the economic livelihood of the entire state. Significant road and bridge improvements throughout the state may serve to enhance economic development, ease congestion and foster a better quality of life for Virginia's residents and visitors. An increase in federal, state and local funding would help Virginia undertake many critical road, bridge and public transportation projects.

This report looks at road and bridge conditions, traffic safety and congestion levels in Virginia, as well as the cost to motorists who drive on inadequate roads. Sources of data for this study include the U.S. Department of Transportation (US DOT), the Federal Highway Administration (FHWA), the Texas Transportation Institute (TTI), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), and the Federal Highway Administration's National Bridge Inventory (NBI).

Road Conditions in Virginia

The lifecycle of Virginia's roads is greatly affected by the state's ability to perform timely maintenance to ensure that structures last as long as possible. The pavement condition of the state's major roads are evaluated and classified as being in poor, mediocre, fair or good

condition. Major roads include all arterial roads, which are Interstate highways, freeways, and major routes connecting urban areas and major routes within cities. In 2002, the latest year for which data is available, nine percent of Virginia's major roads were rated in poor condition, while 18 percent of the state's major roads were rated in mediocre condition.¹ Roads rated poor are badly cracked or broken. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed.

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.²

A desirable goal for state and local organizations that are responsible for road maintenance is to keep 75 percent of major roads in good condition.³ In Virginia, 43 percent of the state's major roads and highways are in good condition.⁴

Bridge Conditions in Virginia

Virginia's bridges form key links in the state's highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, as well as facilitating commerce and access for emergency vehicles. In 2003, the latest year for which data is available, nine percent of Virginia's bridges – 20 feet or longer – were rated structurally deficient. In addition, 17 percent of the state's bridges – 20 feet or longer – were rated functionally obsolete.⁵

A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient are sometimes restricted to carrying lower weight vehicles or are closed if they are found to be unsafe. 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 these posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate underclearances or poor alignment.

Traffic Safety in Virginia

There are three key factors associated with fatal vehicle accidents: driver behavior, vehicle design and roadway design. It is estimated that roadway design is an important factor in approximately one-third of fatal traffic accidents. In Virginia, an average of 921 people were killed annually in motor vehicle accidents from 1999 through 2003 – approximately one fatality every 10 hours.⁶

Improving safety on Virginia's roads and highway system 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. Roadway improvements such as adding lanes, removing obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection design, and upgrading road markings and traffic signals can reduce traffic fatalities and vehicle accidents. The Federal Highway

Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.⁷

The following chart shows the correlation between specific road improvements and the reduction of fatal accident rates nationally.

Chart 2. Reduction in fatal accident rates after needed roadway improvements⁸

Type of Improvement	Reduction in Fatal Accident Rates after Improvements
New Traffic Signals	53%
Turning Lanes and Traffic Signalization	47%
Widen or Modify Bridge	49%
Construct Median for Traffic Separation	73%
Realign Roadway	66%
Remove Roadside Obstacles	66%
Widen or Improve Shoulder	22%

Source: TRIP analysis of U.S. Department of Transportation data

The development and maintenance of Virginia’s Interstate system is a key component in improving traffic safety and reducing fatalities throughout the state. Many of the safety features that are included on most Interstates include access limited to interchanges, the separation of traffic from oncoming vehicles, gentler curves, paved shoulders and rumble strips. By applying some of the safety features of Interstate roads to non-interstate roads, when practical, Virginia could see a reduction in the number of its accidents and fatalities.

Population Growth, Travel Trends and Traffic Congestion

Virginia residents enjoy modern lifestyles that rely on a high level of personal and commercial mobility. Rapid population growth has resulted in increased traffic on the state’s

roads and bridges. Virginia's population reached 7.3 million in 2002, up from 6.2 million in 1990 – an increase of approximately 18 percent.

In addition to population growth, vehicle travel in Virginia increased by 29 percent from 1990 to 2002, from 60.2 billion vehicle miles of travel (VMT) to 77.5 billion vehicle miles of travel.⁹ Based on population and other lifestyle trends, TRIP estimates that travel on Virginia's roads and highways will increase by another 40 percent by 2020, to 108 billion vehicle miles of travel.

Traffic congestion is a growing burden in Virginia's key urban areas and threatens to impede the state's economic development. Congestion on Virginia's urban highways is growing as a result of steady increases in vehicle travel. In 2002, the latest year for which data is available, 34 percent of Virginia's urban highways (Interstates and other freeways) were congested, carrying traffic volumes that result in significant rush hour delays.¹⁰ These routes are considered congested because the levels of traffic they carry are likely to cause delays during peak travel hours. Highways that carry high levels of traffic are also more vulnerable to experiencing significant traffic delays as a result of traffic accidents or other incidents. Urban traffic congestion in Virginia has increased over the past several years. In 1995, 31 percent of Virginia's urban highways were considered congested.¹¹

Growing urban traffic congestion is also contributing to longer commute times in Virginia. According to the U.S. Census Bureau, the average daily one-way commute in Virginia increased from 24 minutes in 1990 to 27 minutes in 2000. As a result, the typical commuter in Virginia now spends on average an additional 25 hours a year in traffic – the equivalent of more than three working days – than in 1990.¹²

Economic Impact of Virginia's Transportation System

The efficiency of Virginia's transportation system, particularly its highways, is critical to the health of the state's economy. The advent of modern national and global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement, and consequently, the quality of a region's transportation system has become a key component in a business' ability to compete locally, nationally and internationally.

The tremendous increase in freight delivery is being fueled by improved communications and the need for greater competitiveness. Improved communications provided by the Internet are integrating producers, wholesalers, retailers and consumers. Businesses have responded to improved communications and the greater necessity to cut costs with a variety of innovations including just-in-time delivery, an increased small package delivery, demand-side inventory management and by accepting customer orders through the Internet.

The result of these changes has been a significant improvement in logistics efficiency as firms move away 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. While the nation's economy had depended on low-cost movement of bulk commodities, it increasingly requires the movement of high cost goods with a high level of reliability, and fast movement of smaller, more specialized goods.¹³ The recent improvements in the nation's logistics systems have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

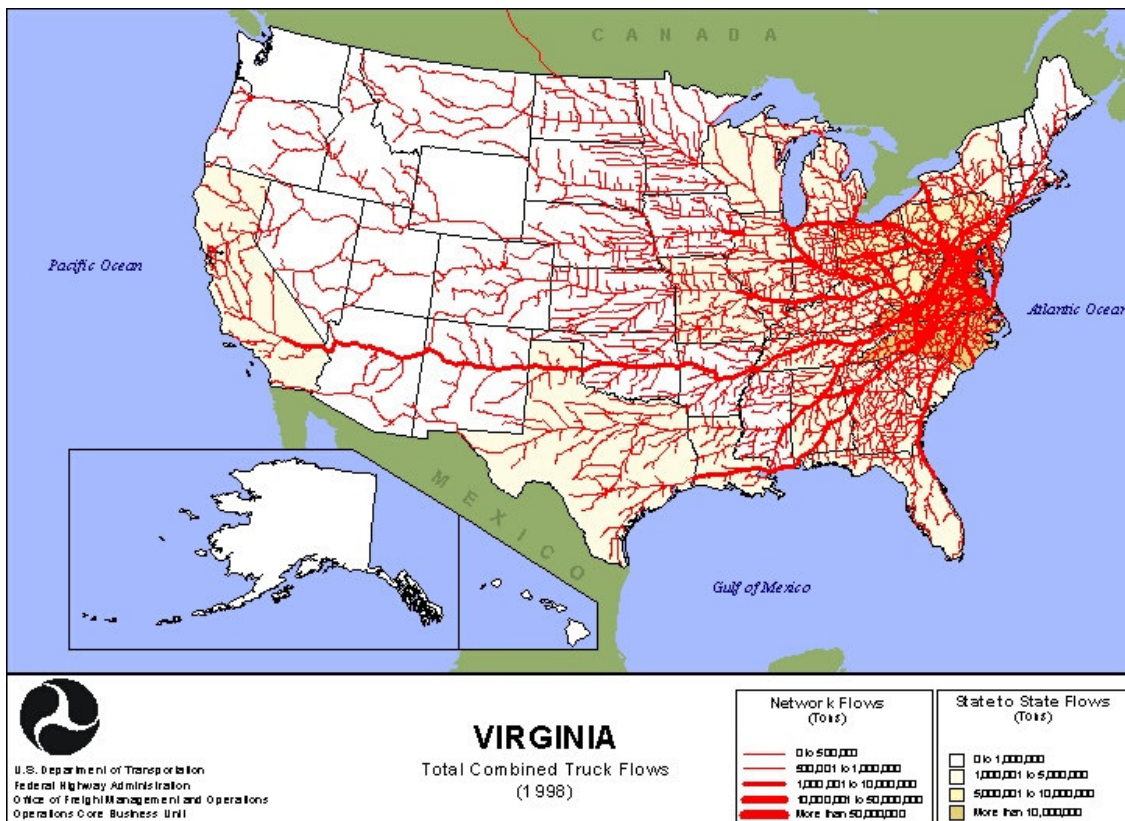
Trucking is a crucial part of Virginia's economy, as commercial trucks move goods from sites across the state to markets inside and outside the state. Because of this, commercial truck

travel in Virginia will continue to increase. In fact, the Federal Highway Administration estimates that commercial trucking will increase by 51 percent in Virginia by the year 2020.¹⁴

An analysis of commodity transport by the U.S. Bureau of Transportation Statistics (BTS) underscored the economic importance of Virginia’s road system. The BTS report found that in Virginia, 94 percent of the \$123 billion in products shipped annually to and from sites in the state is transported on highways.¹⁵

The following map illustrates the truck freight traffic flows for products traveling to and from sites in Virginia, showing the volume levels along specific highways (indicated by the width of the route). The chart includes truck freight traffic flows for international and domestic freight movement, both imports and exports.

Chart 1. Truck freight flow to and from Virginia.



Source: Office of Freight Management and Operations, Federal Highway Administration

Because of the importance of transportation to the efficiency and success of many businesses, the level of access and the quality of a region's transportation system is critical to where businesses choose to locate and expand. Numerous firms cite reliable access to the Interstate highway system and other major routes as a major criterion in deciding where to locate and expand their operations.

A comprehensive 2002 Transportation Research Board report on the adequacy of U.S. freight movement capabilities found that a region's ability or failure to provide a transportation system that minimizes traffic congestion and provides reliable freight movement has a significant impact on whether jobs are created locally or are shifted elsewhere. The report found that "workplaces and residences will move away from congestion within metropolitan areas and from more congested to less congested regions within the United States. Some production will move from the United States to other countries if congestion costs cause the United States to lose comparative advantage in some industries."¹⁶

Expanding the current transportation system and improving roads and bridges also impacts the state's economy by providing jobs and helping to stimulate the local economy. The Federal Highway Administration estimates that every \$100 million spent on highway construction creates approximately 4,200 jobs. This includes both construction jobs and jobs in the related engineering, design, heavy equipment and mining fields as well as general jobs in the local economy as a result of the spending generated by the increase in local wages.¹⁷ In addition, the Federal Highway Administration has found that every dollar spent on street and highway improvements results in \$5.40 in benefits in the form of reduced vehicle operating costs, reduced delays as a result of congestion and improved traffic safety.¹⁸

Transportation Funding in Virginia

Highways, roads and bridges in Virginia are built and maintained largely by state and local governments, with the state responsible for the most important roadways in the state, including the Interstate system. An increase in federal, state and local transportation funding would allow Virginia to make needed improvements that would ease congestion, bolster safety and improve road and bridge conditions statewide.

In 1998, Congress approved the Transportation Equity Act for the 21st Century (TEA-21), the federal surface transportation legislation that provided federal funding for Virginia's transportation program over the six-year life of the bill. TEA-21 expires on May 31, 2005. The Senate has approved a six-year, \$318 billion reauthorization of the federal surface transportation program, and the House of Representatives has approved a \$275 billion reauthorization over the same period. The Bush Administration has proposed spending \$256 billion over six years. The House and Senate are currently in conference to resolve differences in their two bills.

A significant increase in federal highway funding under TEA-21 reauthorization would help the Virginia Department of Transportation undertake numerous significant highway and public transportation projects throughout the state that are needed to improve mobility and traffic safety, reduce traffic congestion and boost economic development.

Transportation funding at the state level is also critical. The Transportation Board recently adopted a six-year improvement program at a funding level \$1.1 billion lower than the six-year plan adopted in the previous year, leaving little or no growth in new highway improvements. The Virginia Commonwealth Transportation Board allocated \$6.3 billion to study, design or build transportation projects – including highway construction, rail and public transit – between 2004 and 2009. This marks a 15 percent decrease from the \$7.4 billion

approved for 2003 to 2008. As a result, funding will be delayed for many needed projects now in the planning stages, preventing them from moving forward to the construction phase.

THE COST OF VIRGINIA'S INADEQUATE ROADS

Many of Virginia's roads lack critical safety features, are in substandard condition and lack adequate capacity to handle travel demand. As motorists drive on substandard roads and highways, they incur increased costs in the form of reduced safety, increased vehicle wear and required vehicle maintenance, as well as wasted time and fuel.

The Cost to Motorists of Roads Lacking Optimum Safety Features

Traffic accidents take a tremendous economic toll on a community, in addition to the suffering and grief that they cause to those injured or killed and their loved ones. A 2002 report by the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) has found that motor vehicle crashes carry a cost to individuals that includes medical costs, lost economic and household productivity, property damage and travel delays.¹⁹

TRIP estimates that roadway design is an important factor in one-third of traffic fatalities, based on an analysis of federal highway safety data. Based on this data, TRIP estimates that the safety cost of roads that lack desirable safety features in Virginia is approximately \$1.7 billion per year, or \$336 per average motorist.

The Cost 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, increased vehicle repair costs, additional fuel consumption and more rapid tire wear.

TRIP estimates that driving on substandard roads costs Virginia motorists a total of \$1.2 billion statewide. In the Washington D.C. metro area, motorists pay an additional \$353 per year in extra vehicle operating costs because of deficient roads. Richmond drivers pay an additional \$415 per year, while drivers in the Roanoke area pay \$290 per year. In the Hampton Roads area, motorists pay \$408 per year in extra vehicle operating costs. Drivers in other areas of the state pay an additional \$248 per year in extra vehicle operating costs.

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.²⁰

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 region's driver, calculating current vehicle operating costs based on the Automobile Association of America's (AAA) 2003 vehicle operating costs and then using

the HDM model to estimate the additional vehicle operating costs being paid by drivers as a result of substandard roads.²¹ Additional research on the impact of road conditions on fuel consumption by the Texas Transportation Institute (TTI) is also factored into the TRIP vehicle operating cost methodology.

The Cost to Motorists of Congested Roadways

Congested roadways increase trip length and fuel consumption. Slower traffic, particularly during the morning and evening weekday rush hours, results in workers taking longer to reach work or get home and slows the movement of products and services. Virginia's urban congestion cost estimates are based on data from the Texas Transportation Institute's 2004 Urban Mobility report, which estimated congestion costs for the nation's largest 85 urban areas. In order to estimate congestion costs, TRIP obtained FHWA traffic count data per lane mile and estimated traffic congestion based on TTI findings correlating traffic counts per lane mile with congestion costs to motorists. TRIP estimates the total urban congestion cost for Virginia motorists to be \$1.5 billion.

TRIP divided the total regional traffic congestion cost by the number of licensed drivers in each region to determine congestion costs per licensed driver. TRIP estimates that congestion costs each Washington D.C. area motorist an average of \$1,278 each year, while each driver in Richmond pays an additional \$281. In the Roanoke area, motorists pay \$248 per year, and in Hampton Roads, motorists pay \$546 per year.²² The average cost of traffic congestion in lost time and wasted fuel for urban Virginia drivers not in the four major urban areas is estimated at \$100 per driver.²³ The traffic congestion cost to drivers in other urban areas of the state was determined by comparing urban freeway traffic levels in the state's largest urban areas with

urban areas outside these regions. Congestion costs would be lower for drivers who do not regularly travel during peak morning and evening weekday rush hours.

Total Cost of Virginia’s Inadequate Roads

Inadequate highways and roads cost Virginia’s motorists approximately \$4.4 billion every year because of additional traffic accidents, lost time and increased wear and tear on their vehicles. The following is a breakdown of the annual total costs associated with driving on a roadway system that lacks optimal safety features and adequate capacity, and is in substandard condition.

Chart 3. Total Annual Costs Due to Driving on Virginia’s Inadequate Roads

Safety	\$1.7 billion
Congestion	\$1.5 billion
Vehicle Operating Cost	\$1.2 billion
TOTAL	\$4.4 billion

Source: TRIP analysis of Federal Highway Administration data, National Highway Traffic Safety Administration data and Texas Transportation Institute data

The following is a breakdown of the annual costs per average driver associated with driving on a roadway system that lacks optimal safety features and adequate capacity, and is in substandard condition. These costs would likely be lower for motorist who drive infrequently or do not travel during peak weekday morning and evening rush hours.

Chart 4. Annual Costs per Average Driver Due to Driving on Virginia’s Inadequate Roads

Costs per driver	Washington D.C. Metro	Richmond	Roanoke	Hampton Roads	Other Virginia Urban Areas
Safety	\$500	\$336	\$336	\$336	\$336
Congestion	\$1,278	\$281	\$248	\$546	\$100
VOC	\$353	\$415	\$290	\$408	\$248
Total	\$2,131	\$1,032	\$874	\$1,290	\$684

Source: TRIP analysis of Federal Highway Administration data, National Highway Traffic Safety Administration data and Texas Transportation Institute data.

Conclusion

Inadequate roads and bridges cost Virginia motorists billions of dollars every year in wasted time and fuel, injuries and fatalities caused by traffic accidents, and wear and tear on their vehicles. Making needed improvements to Virginia’s roads and bridges is key to providing a safer, more efficient transportation system that will save motorists money and time, while improving the economic livelihood of the entire state and its residents.

A significant increase in federal funding authorized under new federal surface transportation legislation would help Virginia undertake numerous critical road, bridge and public transportation projects to relieve traffic congestion and reduce traffic fatalities. Adequate transportation at the state level is also critical in allowing Virginia to repair deficiencies and build a 21st century transportation system.

A comprehensive plan for a safer, more efficient transportation system in Virginia must adequately fund projects that will increase safety, relieve congestion and improve road and bridge conditions.

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