TRIP's Top 50 Surface Transportation Projects to Support Economic Growth in Virginia

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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.

Executive Summary

Virginia's transportation system has played a significant role in the state's development, providing mobility and access for residents, visitors, businesses, industry and the military. The state's roads, highways, rails and public transit systems remain the backbone of the state's economy. Virginia's transportation system also provides for a high quality of life and makes the state a desirable place to live and visit. The condition and quality of its transportation system will play a critical role in Virginia's ability to continue to rebound from the recession, capitalize on its economic advantages and meet the demands of the 21st Century.

To achieve sustainable economic growth, Virginia must take advantage of its central location on the nation's East Coast by proceeding with numerous projects to improve key roads, highways, bridges, rails and public transit systems. Enhancing critical segments of Virginia's surface transportation system will boost the state's economy in the short-term by creating jobs in construction and related fields. In the long-term these improvements will enhance economic competitiveness and improve the quality of life for the state's residents and visitors by reducing travel delays and transportation costs, improving access and mobility, improving safety, and stimulating sustained job growth.

In this report, TRIP examines recent transportation and economic trends in Virginia and provides information on the surface transportation projects in the state that are most needed to support economic growth. Sources of data include the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), the U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), the U.S. Bureau of Transportation Statistics (BTS), and the U.S. Census Bureau. All data used in the report is the latest available.

TRIP has identified the 50 surface transportation projects that are most needed to support Virginia's economic growth. These projects are located throughout the state.

- The most needed surface transportation improvements in Virginia include 36 projects to build, expand or modernize highways, six projects to improve public transit and eight projects to improve the state's rail system. These improvements would enhance economic development opportunities throughout the state by increasing mobility and freight movement, easing congestion and making Virginia an attractive place to live, visit and do business.

- TRIP ranked each transportation project based on a rating system that considered the following: short-term economic benefits, including job creation; the level of improvement in the condition of the transportation facility, including safety improvements; the degree of improvement in access and mobility; and the long-term improvement provided in regional or state economic performance and competitiveness.

- The Commonwealth of Virginia's long-range multimodal plan, VTran2035, has identified the following as Virginia's top transportation priorities to enhance economic competitiveness in the state over the next 25 years: expanding the Port of Virginia, the third largest port on the East Coast, and access to the port; improving access to and in the vicinity of Dulles International Airport, which serves the nation's fourth largest economic market; connecting high speed and intercity rail with regional transportation systems; improving freight mobility; enhancing rural connectivity; and completing several public-private transportation projects including the expansion of I-95 and I-395 high occupancy/toll (HOT) lanes in Northern Virginia, improvements to highway tunnels in the Hampton Roads area, and the construction of a four-lane highway along the Route 460 corridor from Petersburg to Suffolk.

- Virginia's 10 most needed surface transportation projects to support economic development in the state as determined by TRIP follow. Additional details on these and the other projects that make up the 50 most needed projects in Virginia for economic recovery and growth are included in the report's Appendix.

1. Widening I-95 between Washington D.C. and Richmond. This $2.4 billion project would add two to four lanes in multiple sections of the I-95 Corridor between Washington, D.C and Richmond. The project would add four lanes on the Capital Beltway from the I-495 Ramp to Route 241 in Fairfax, two lanes (in conjunction with Metrorail extension to be studied from Franconia-Springfield to the Potomac Mills Mall) from the Route 123 in Prince William County to the Stafford County Line, two lanes from the Prince William / Stafford County Line to Route 1 in Spotsylvania County, and two lanes from Route 1 in Spotsylvania County to the Henrico County Line. This is the most heavily traveled corridor in the state, sustaining the economic engine of Northern Virginia. Continued economic success in the state is dependent on maintaining a reliable and high functioning I-95.

2. Hampton Roads Bridge Tunnel Expansion. This $2.4 billion project would construct an additional four lanes, including bridge tunnel expansion from I-664 in Hampton to I-564 in Norfolk as part of the Hampton Roads Bridge Tunnel Expansion. The project addresses a perennial regional bottleneck, providing mobility for commuters between the Peninsula and Southside It also is a critical route for tourist traffic from the I-95 Corridor to Virginia Beach.

3. Widening I-64 from New Kent to Hampton to six lanes. This $1.9 billion project would widen 53 miles of I-64 from New Kent to Hampton, providing improved access to and from the ports and Hampton Roads military installations and improving access to Virginia Beach, one of, the state's largest tourist destinations. This project provides improved capacity and safety on Virginia's primary access to the Hampton Roads area, which is also a critical hurricane evacuation route.

4. Construction of HOT lanes on I-95/I-395 in Northern Virginia and transit improvements. This $1.4 billion project would construct HOT lanes on I-95 and I-395 in

Alexandria, Arlington, Fairfax, Fredericksburg and Prince William County and provide transit improvements. Adding HOT lanes will increase capacity and improve safety on Virginia's highest volume roadway. Northern Virginia's continued economic success is dependent on a reliable and well-functioning I-95 and I-395.

5. Hampton Roads Third Crossing/ Patriot's Crossing. This $5 billion project involves constructing Phase I of the Third Crossing from existing I-664 across Hampton Roads Harbor past Craney Island to the I-564 Intermodal Connector via a four-lane limited access bridge or tunnel. The project provides a potential alternate crossing to the I-64 Hampton Roads Bridge Tunnel, which is chronically congested. It would also provide critical direct access to port terminals in Norfolk, Portsmouth and future Craney Island expansion. An alternative river crossing will allow for greater mobility between the Peninsula and Southside of Hampton Roads, and will allow for improved truck freight movement from the ports to points west.

6. Widening I-64 in City of Chesapeake and replacing the High Rise Bridge. This $11 billion project would widen I-64 from two lanes in each direction to three general purpose lanes in each direction and would replace the High Rise Bridge. Completion of the project would eliminate congestion and daily delays at the High Rise Bridge and improve travel times and reliability to major employment centers, port facilities, defense installations and tourist destinations while expanding the evacuation route.

7. Widening I-66 in Prince William County, Fairfax and Vienna. This $761 million project would add two lanes to I-66 in multiple locations, largely in conjunction with Metrorail improvements. It would address growing congestion on I-66 and alleviate congestion at the major chokepoint where I-495 and I-66 meet. The project would reduce delays and maintain Northern Virginia's economic competitiveness and ability to attract businesses and employers. See Appendix for specific widening locations.

8. Adding two lanes to multiple sections of I-81. This $1.6 billion multi-part project would add two lanes to several sections of I-81, which is the "Main Street" of the Shenandoah Valley and a critical freight route. The improvements will address some of the high crash locations along the corridor and provide greater mobility for local commuter traffic in Winchester, Harrisonburg and Roanoke. See Appendix for specific widening locations.

9. Extending Metrorail from Fairfax County to Dulles Airport and beyond to Ashburn. This $3.2 billion project would extend Metrorail from Wiehle Avenue to Ashburn to increase mobility and manage congestion between Dulles Airport and Washington, D.C. Completion of the project will provide significant regional mobility and economic development benefits.

10. Widening portions of Route 29 and adding two lanes to the Eastern Bypass in Warrenton. This multi-part, $849 million project would widen several sections of Route 29 in Fairfax, Prince William, Fauquier, Greene and Albemarle Counties and would add

two lanes to the Eastern Bypass around the congested Warrenton area where Routes 15, 17 and 29 converge. Route 29 is a major north-south corridor in the Piedmont region of Virginia, serving a significant amount of freight in addition to passenger traffic. These improvements will also create the potential for economic development by improving access in the area. See Appendix for specific widening locations.

Surface transportation projects that improve the efficiency, condition or safety of a highway or transit route provide significant economic benefits by reducing transportation delays and costs associated with a deficient transportation system. Some benefits of transportation improvements include the following.

- Improved business competitiveness due to reduced production and distribution costs as a result of increased travel speeds and fewer mobility barriers.

- Improvements in household welfare resulting from better access to higher-paying jobs, a wider selection of competitively priced consumer goods, additional housing and healthcare options, and improved mobility for residents without access to private vehicles.

- Gains in local, regional and state economies due to improved regional economic competitiveness, which stimulates population and job growth.

- Increased leisure/tourism and business travel resulting from the enhanced condition and reliability of a region's transportation system.

- A reduction in economic losses from vehicle crashes, traffic congestion and vehicle maintenance costs associated with driving on deficient roads.

- The creation of both short-term and long-term jobs.

- Transportation projects that expand roadway or transit capacity produce significant economic benefits by reducing congestion and improving access, thus speeding the flow of people and goods while reducing fuel consumption.

- Transportation projects that maintain and preserve existing transportation infrastructure also provide significant economic benefits by improving travel speeds, capacity, load-carry abilities and safety, and reducing operating costs for people and businesses. Such projects also extend the service life of a road, bridge or transit vehicle or facility, which saves money by either postponing or eliminating the need for more expensive future repairs.

- Site Selection magazine's 2010 survey of corporate real estate executives found that transportation infrastructure was the third most important selection factor in

deciding in site location decisions, behind only work force skills and state and local taxes.

- A 2007 analysis by the Federal Highway Administration found that every $1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.

- 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.

While the United States entered a significant economic downturn in 2008, including a large increase in unemployment, Virginia, buoyed by its diverse economy, has fared better economically than most of the nation,.

- In November, 2007, Virginia's unemployment rate was 3.2 percent, lower than the national 4.7 percent unemployment rate. By November 2008, Virginia's unemployment rate increased to 4.8 percent, lower than the national 6.8 percent unemployment rate.

- Virginia's unemployment rate peaked at 7.3 percent in March 2010 and by November 2010 had dropped to 6.8 percent. The national unemployment rate was 9.8 percent in November 2010 and dropped to 9.4 percent in December 2010.

- In 2010, Virginia experienced the tenth highest rate of economic growth in the U.S. -- with a 2.6 percent increase in real gross state product (GSP). Total Real GSP in the U.S. increased by 0.9 percent in 2010.

- Virginia has benefited from a diverse economy, which includes significant employment in the following sectors: government, professional and business, real estate, manufacturing, trade, health care and services.

- From 1990 to 2009, Virginia's population increased by 27 percent, from approximately 6.2 million to approximately 7.9 million. Virginia's population is expected to increase to 9.8 million by 2030.

- From 1990 to 2008, annual vehicle-miles-of-travel (VMT) in the state increased by 37 percent, from approximately 60.2 billion VMT to 82.3 billion VMT. Based on travel and population trends, TRIP estimates that vehicle travel in Virginia will increase another 35 percent by 2030, reaching approximately 111 billion VMT.

Virginia's economy is served by an extensive surface transportation system that has significant deficiencies. Roads carry the majority of freight shipped in the state.

- Virginia is served by a system of 73,903 miles of roads and 13,529 bridges, maintained by local, state and federal governments, which carry 82.3 billion vehicle miles of travel annually.

- Nearly a quarter of Virginia's major roads are deficient, with six percent rated in poor condition in 2008. An additional 18 percent of the state's major roads were rated in mediocre condition in 2008.

- Nine percent of Virginia's bridges were rated structurally deficient in 2009. 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, school buses and emergency services vehicles.

- In 2009 17 percent of Virginia's bridges were rated as functionally obsolete. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.

- Every year, $194 billion in goods are shipped annually from sites in Virginia and another $250 billion in goods are shipped annually to sites in Virginia, mostly by truck.

- Eighty percent of the goods shipped annually from sites in Virginia are carried by trucks and another thirteen percent are carried by parcel, U.S. Postal Service or courier services, which use trucks for part of the deliveries**.**

Sources of data for this report include the Virginia Department of Transportation (VDOT), the U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), the U.S. Bureau of Transportation Statistics (BTS),the Bureau of Economic Analysis and the U.S. Census Bureau. All data used in the report is the latest available.

Introduction

Virginia's transportation system serves as the backbone of the Old Dominion's economy, providing mobility to the state's residents, visitors and businesses. Virginia's surface transportation system has allowed the state's residents to travel to work and school and to access recreation, healthcare, social and commercial activities. The system has also allowed the state's businesses to access customers, suppliers and employees.

But Virginia's surface transportation system has significant deficiencies that could prevent the state from reaching its full economic potential. In order to insure that the state's economy recovers from its recent downturn and returns to significant and sustained growth, Virginia must improve and expand key highway, rail and transit routes, which will ease congestion, improve traffic safety and enhance access throughout the state.

Over the last decade, Virginia has experienced significant economic growth, thanks in large part to a diversified economy that allowed the state to fare better than most states during the recession. But Virginia has not been immune to the national economic downturn, and must make infrastructure investments that will stimulate job growth and support the state's long-term economic goals by improving access for the state's diversified economy. The completion of needed transportation improvements is a key component of any region's ability to induce sustained economic growth.

Because it impacts the time it takes to transport people and goods, as well as the cost of travel, the reliability and physical condition of a region's surface transportation system plays a significant role in long-term economic growth, productivity and

competitiveness. Numerous studies have concluded that investment in expanding the capacity or improving the condition of existing transportation facilities is critical to a region's ability to stimulate short-term and long-term economic growth.

This report identifies the 50 surface transportation projects in Virginia that are most needed to spur economic growth in the state and assist in Virginia's economic growth as identified by TRIP. Information on these projects, such as location, the estimated cost of the project, the current status of the project and an explanation of the importance of the project and how it would improve Virginia's economy can be found in the report with additional details available in the Appendix.

Transportation Projects Impact the Economy

When a state or region's surface transportation system lacks adequate capacity, is deteriorated or lacks some desirable safety features, it impedes economic performance by slowing commerce and commuting, increasing transport costs and burdening an economy with future transportation investment needs.

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. Site Selection magazine's 2010 survey of corporate real estate executives found that transportation infrastructure was the third most important selection factor in deciding in site location decisions, behind only work force skills and state and local taxes.[1]

To prepare this report, TRIP analyzed data provided by the Virginia Department of Transportation (VDOT) and the Virginia Department of Rail and Public Transportation (DRPT) on the surface transportation projects in the state most needed to support economic growth. TRIP also asked the largest regional transportation agencies in the state, including the Northern Virginia Transportation Authority and the Hampton Roads Transportation Planning Organization, to review the list and suggest additional projects. The projects include the reconstruction, expansion, or improvement of existing transportation facilities or the construction of new transportation facilities.

The agencies provided information on projects including route, location, current level of use, the type of improvement needed, the estimated cost of the improvement, a description of the importance of the facility to regional mobility and an explanation of the economic benefits provided by the project.

The 50 Surface Transportation Projects Most Needed to Support Virginia's Economy

TRIP has ranked the 50 surface transportation projects that are most needed to support Virginia's economic recovery and growth. The most needed surface transportation improvements in Virginia are located throughout the state and include 36 projects to build, expand or modernize highways, six projects to improve public transit and eight projects to improve the state's rail system.

The Commonwealth of Virginia's long-range multimodal plan, VTrans2035, has identified the following as Virginia's top transportation priorities to enhance economic

competitiveness in the state over the next 25 years: expanding the Port of Virginia, the third largest port on the East Coast, and access to the port; improving access to and in the vicinity of Dulles International Airport, which serves the nation's fourth largest economic market; connecting high speed and intercity rail with regional transportation systems; improving freight mobility; enhancing rural connectivity; and completing several public-private transportation projects including the expansion of I-95 and I-395 high occupancy/toll (HOT) lanes in Northern Virginia and making improvements to highway tunnels in the Hampton Roads area, which would relieve traffic congestion and enhance emergency evacuations, and the construction of a four-lane highway along the Route 460 corridor from Petersburg to Suffolk.[2]

TRIP ranked the projects by assigning each transportation segment or facility an overall score, based on a scale that provided points for the following categories:

- ✓ Short-term economic benefits, including job creation.
- ✓ Improvement in the condition of transportation facility, including safety improvements.
- ✓ Improved access and mobility.
- ✓ Long-term improvement in regional or state economic performance and competitiveness.

Virginia's 25 most needed surface transportation projects for economic recovery as determined by TRIP follow. A listing of all 50 most needed surface transportation projects to support economic growth, including additional details, such as the status of each project, is included in the report's Appendix.

1. Widening I-95 between Washington D.C. and Richmond. This $2.4 billion project would add two to four lanes in multiple sections of the I-95 Corridor between Washington, D.C and Richmond. The project would add four lanes on the Capital Beltway from the I-495 Ramp to Route 241 in Fairfax, two lanes (in conjunction with Metrorail extension to be studied from Franconia-Springfield to the Potomac Mills Mall) from the Route 123 in Prince William County to the Stafford County Line, two lanes from the Prince William / Stafford County Line to Route 1 in Spotsylvania County, and two lanes from Route 1 in Spotsylvania County to the Henrico County Line. This is the most heavily traveled corridor in the state, sustaining the economic engine of Northern Virginia. Continued economic success in the state is dependent on maintaining a reliable and high functioning I-95.

2. Hampton Roads Bridge Tunnel Expansion. This $2.4 billion project would construct an additional four-lanes, including bridge tunnel expansion from I-664 in Hampton to I-564 in Norfolk as part of the Hampton Roads Bridge Tunnel Expansion. The project addresses a perennial regional bottleneck, providing mobility for commuters between the Peninsula and Southside It also is a critical route for tourist traffic from the I-95 Corridor to Virginia Beach.

3. Widening I-64 from New Kent to Hampton to six lanes. This $1.9 billion project would widen 53 miles of I-64 from New Kent to Hampton, providing improved access to and from the ports and Hampton Roads military installations and improving access to Virginia Beach, one of, the state's largest tourist destination. This project provides

improved capacity and safety on Virginia's primary access to the Hampton Roads area, which is also a critical hurricane evacuation route.

4. Construction of HOT lanes on I-95/I-395 in Northern Virginia and transit improvements. This $1.4 billion project would construct HOT lanes on I-95 and I-395 in Alexandria, Arlington, Fairfax, Fredericksburg and Prince William County and provide transit improvements. Adding HOT lanes will increase capacity and improve safety on Virginia's highest volume roadway. Northern Virginia's continued economic success is dependent on a reliable and well-functioning I-95 and I-395.

5. Hampton Roads Third Crossing/Patriot's Crossing. This $5 billion project involves constructing Phase I of the Third Crossing from existing I-664 across Hampton Roads Harbor past Craney Island to the I-564 Intermodal Connector via a four-lane limited access bridge or tunnel. The project provides a potential alternate crossing to the I-64 Hampton Roads Bridge Tunnel, which is chronically congested. It would also provide critical direct access to port terminals in Norfolk, Portsmouth and future Craney Island expansion. An alternative river crossing will allow for greater mobility between the Peninsula and Southside of Hampton Roads, and will allow for improved truck freight movement from the ports to points west.

6. Widening I-64 in City of Chesapeake and replacing the High Rise Bridge. This $11 billion project would widen I-64 from two lanes in each direction to three general purpose lanes in each direction and would replace the High Rise Bridge. Completion of

the project would eliminate congestion and daily delays at the High Rise Bridge and improve travel times and reliability to major employment centers, port facilities, defense installations and tourist destinations while expanding the evacuation route.

7. Widening I-66 in Prince William County, Fairfax and Vienna. This $761 million project would add two lanes to I-66 in multiple locations, largely in conjunction with Metrorail improvements. It would address growing congestion on I-66 and alleviate congestion at the major chokepoint where I-495 and I-66 meet. The project would reduce delays and maintain Northern Virginia's economic competitiveness and ability to attract businesses and employers. See Appendix for specific widening locations.

8. Adding two lanes to multiple sections of I-81. This multi-part $1.6 billion project would add two lanes to several sections of I-81, which is the "Main Street" of the Shenandoah Valley and a critical freight route. The improvements will address some of the high crash locations along the corridor and provide greater mobility for local commuter traffic in Winchester, Harrisonburg and Roanoke. See Appendix for specific widening locations.

9. Extending Metrorail from Fairfax County to Dulles Airport and beyond to Ashburn. This $3.2 billion project would extend Metrorail from Wiehle Avenue to Ashburn to increase mobility and manage congestion between Dulles Airport and Washington, D.C. Completion of the project will provide significant regional mobility and economic development benefits.

10. Widening portions of Route 29 and adding two lanes to the Eastern Bypass in Warrenton. This multi-part, $849 million project would widen several sections of Route 29 in Fairfax, Prince William, Fauquier, Greene and Albemarle Counties and would add two lanes to the Eastern Bypass around the congested Warrenton area where Routes 15, 17 and 29 converge. Route 29 is a major north-south corridor in the Piedmont region of Virginia, serving a significant amount of freight in addition to passenger traffic. These improvements will also create the potential for economic development by improving access in the area. See Appendix for specific widening locations.

11. Improving Route 58 to a four-lane divided highway from Hillsville to Stuart. This $326 million project will upgrade Route 58 to a four-lane divided highway from Hillsville to Stuart to reduce truck congestion and increase safety. It will also improve access to the historically economically depressed Southside of Virginia, potentially spurring development.

12. Constructing a new four-lane expressway adjacent to existing US 460. This $2.1 billion project would construct a new four-lane limited access expressway adjacent to the existing US 460 in Prince George, Sussex, Southampton, Isle of Wight and Suffolk Counties. It would provide an alternative to the congested I-64 commuter corridor for trucks from the Port of Virginia to reach I-95 and markets west, and also provide an alternate emergency evacuation route for Hampton Roads. The project will address safety issues with the current Route 460 and has the potential to spawn freight and shipping development along the new roadway.

13. Adding new two-lane tube to Midtown Tunnel at Portsmouth/Norfolk and extending MLK Freeway. This $2.2 billion project would add an additional two-lane tube to the Midtown Tunnel, connecting Portsmouth and Norfolk. The project would also extend the MLK Freeway from London Street to I-264 to take commuter traffic off local streets. Improving the water crossings in Hampton Roads is critical to ensuring mobility and economic competitiveness in the area.

14. Construct I-73 in Henry, Franklin and Roanoke Counties. This $4 billion project would provide access from Myrtle Beach, South Carolina to northern Michigan and alleviate traffic on Route 220. The completion of I-73 has the potential to be a major economic generator for Virginia and the entire eastern United States. It will also provide access to an economically depressed area of Virginia, making development viable.

15. Adding two lanes to Leesburg Pike in Fairfax County. This $330 million project would add two lanes to Leesburg Pike from the Fairfax County Parkway to I-495. This project would ease congestion in this high-volume area and maintain the area's economic competitiveness.

16. Construction of HOV facilities on the Fairfax County Parkway. This project would add high occupancy vehicle (HOV) facilities on the Fairfax County Parkway from Route 7 to Route 636 to reduce congestion. Because this facility serves the state's economic engine of Northern Virginia and Dulles Airport, improvements are vital to maintaining the state's economic competitiveness.

17. Phase II of the Crescent Corridor project from Manassas/Front Royal to Bristol/Danville. This $476 million project would expand rail capacity to divert freight shipments from highway to rail along I-20, I-40, I-75, I-85, I-81 and Route 29. It would also include the expansion of Amtrak service to Roanoke and Bristol.

18. Rail crossing at Hampton Boulevard in Norfolk. This $35 million project would provide a grade separated rail crossing at Hampton Boulevard and eliminate conflicts between port rail traffic, Hampton Boulevard and Terminal Boulevard. The project would add significant congestion and mobility benefits in this highly congested area and eliminate the high potential for automobile/rail accidents.

19. Completion of the Dulles Loop Road in Loudon and Fairfax Counties. This project, estimated to cost between $40 to $57 million, would improve Routes 50 and 28 and widen Route 606 to four lanes to complete the loop around Dulles Airport. Traffic on secondary roads near the airport will soon exceed capacity. Widening Route 606 would serve commuter traffic as an alternate route around Dulles and improve congestion on Routes 50 and 28.

20. New eight-lane expressway in Hampton Roads to connect Chesapeake to Virginia Beach. This $1.7 billion project would construct a new eight-lane expressway in Hampton Roads to connect Chesapeake to Virginia Beach. The new expressway would provide another east-west artery in south Hampton Roads, reducing traffic on

congested I-64/I-264 and serve as a major commuter route in the congested Hampton Roads area. Improved access for employees is critical to retaining employers in this area.

21. Constructing the Tri-County Parkway in Prince William and Loudon Counties. This $475 million project would construct a new four-lane roadway from the Route 234 Bypass to Route 50 and improve the Route 659 Corridor. The project would serve northern Virginia and directly service Dulles Airport. Improvements in this area are vital to maintaining the state's economic competitiveness.

22. Enhanced commuter rail service between Manassas and Haymarket/Gainesville. This $250 million project would increase on-time performance of passenger trains and provide alternatives to the congested I-66 corridor. It would provide an automatic train control system to reduce potential accidents through advance warning and collision avoidance technology. Transit oriented development would be encouraged, easing traffic congestion and saving fuel and CO2 emissions.

23. Construction of the Coalfields Expressway in Wise and Dickenson Counties. This $4.2 billion project would provide a new four-lane roadway to serve the coal fields of western Virginia and West Virginia, running near Route 561 from the Route 23 Bypass to the Buchanan County Line. It will greatly improve access to the coal fields, allowing for increased operations.

24. Construction of a new limited access facility east of Winchester from Route 37 W to Route 642 in Frederick. This $546 million project would relieve congestion and remove heavy trucks on I-81 and Routes 7 and 522. It would improve travel times on the I-81 Corridor in the Winchester area and increase safety by removing heavy trucks. The arterials would also serve proposed development in the area.

25. Widening ramps at I-64 / I-264 Interchange in Virginia Beach/Norfolk. This $375 million project would widen the I-264 eastbound ramp from I-64 westbound to eliminate major delays and backups at this major interchange. It will improve traffic flow for commuters, tourists and other travelers destined to and from Virginia Beach.

Population, Travel and Economic Trends in Virginia

While the United States entered a significant economic downturn in 2008, including a large increase in unemployment, Virginia has fared better than most of the nation, buoyed in particular by a diverse economy, which includes significant employment in the following sectors: government, professional and business, real estate, manufacturing, trade, health care and services.

In November, 2007, Virginia's unemployment rate was 3.2 percent, lower than the national 4.7 percent unemployment rate.[3] By November 2008, Virginia's unemployment rate increased to 4.8 percent, lower than the national 6.8 percent unemployment rate. Virginia's unemployment rate peaked at 7.3 percent in March 2010

and by November 2010 had dropped to 6.8 percent. The national unemployment rate was 9.8 percent in November 2010 and dropped to 9.4 percent in December 2010.[4]

In 2010, Virginia experienced the tenth highest rate of economic growth in the U.S. -- with a 2.6 percent increase in real gross state product (GSP). [5] Total Real GSP in the U.S. increased by 0.9 percent in 2010. [6]

From 1990 to 2009, Virginia's population increased by 27 percent, from approximately 6.2 million to approximately 7.9 million.[7] Virginia's population is expected to increase to approximately 9.8 million by 2030. [8]

The continued increase in population has resulted in significant increases in vehicle travel in Virginia. From 1990 to 2008, annual vehicle-miles-of-travel (VMT) in the state increased by 37 percent, from approximately 60.2 billion VMT to 82.3 billion VMT.[9] Based on travel and population trends, TRIP estimates that vehicle travel in Virginia will increase another 35 percent by 2030, reaching approximately 111 billion VMT.

Virginia's Surface Transportation System

Virginia is served by a system of 73,903 miles of roads and 13,529 bridges. This system is maintained by local, state and federal governments and carries 82.3 billion vehicle miles of travel each year.[10]

Virginia's roads, highways and bridges have some deficiencies. Nearly a quarter of the state's major roads are deficient, with six percent rated in poor condition in 2008 and another 18 percent rated in mediocre condition.[11] In 2009, nine percent of Virginia's bridges were rated structurally deficient because they are in need of repair or replacement, and another 17 percent of the state's bridges were rated as functionally obsolete because they do not meet modern design standards.[12]

The Importance of Transportation to Virginia's Economy

Supporting Virginia's economic growth will require that the state build and maintain a transportation system that provides reliable and safe mobility to enhance business competitiveness.

Highways, rail and public transit are vitally important to fostering economic development in 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.

Every year, $194 billion in goods are shipped from sites in Virginia and another $250 billion in goods are shipped to sites in Virginia, mostly by trucks.[13] Eighty percent of the goods shipped annually from sites in Virginia are carried by trucks and another 13 percent are carried by parcel, U.S. Postal Service or courier services, which use trucks for part of the deliveries.[14]

How Transportation Improvements Support Economic Growth

Because it impacts the time it takes to transport people and goods, as well as the cost of travel, the level of mobility provided by a transportation system and its physical condition play a significant role in determining a region's economic effectiveness.

Virginia's businesses are dependent on an efficient, safe, and modern transportation system. Today's business culture demands that an area have a well-maintained and efficient system of roads, highways, bridges and public transportation if it is to be economically competitive. 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. Consequently, the quality of a region's transportation system has become 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 by accepting customer orders through the Internet. 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.

The economic benefits of a well-maintained, efficient and safe transportation system can be divided into several categories, including the following.

Improved competitiveness of industry. An improved transportation system reduces production and distribution costs by lowering barriers to mobility and increasing travel speeds. Improved mobility provides the manufacturing, retail and service sectors improved and more reliable access to increased and often lower-cost sources of labor, inventory, materials and customers.[15] An increase in travel speeds of 10 percent has been found to increase labor markets by 15 to 18 percent. A 10 percent increase in the size of labor markets has been found to increase productivity by an average of 2.9 percent.[16]

Improved household welfare. An improved transportation system gives households better access to higher-paying jobs, a wider selection of competitively priced consumer goods, and additional housing and healthcare options. A good regional transportation system can also provide mobility for people without access to private vehicles, including the elderly, disabled and people with lower incomes.[17]

Improved local, regional and state economies. By boosting regional economic competitiveness, which stimulates population and job growth, and by lowering transport costs for businesses and individuals, transportation improvements can bolster local, regional and state economies. Improved transportation also stimulates urban and regional redevelopment and reduces the isolation of rural areas.[18]

Increased leisure/tourism and business travel. The condition and reliability of a region's transportation system impacts the accessibility of activities and destinations such as conferences, trade shows, sporting and entertainment events, parks, resort areas, social events and everyday business meetings. An improved transportation system increases the accessibility of leisure/tourism and business travel destinations, which stimulates economic activity.[19]

Reduced economic losses associated with vehicle crashes, traffic congestion and driving on deficient roads. When a region's transportation system lacks some desirable safety features, is congested or is deteriorated, it increases costs to the public and businesses in the form of traffic delays, increased costs associated with traffic crashes, increased fuel consumption and increased vehicle operating costs. Transportation investments that improve roadway safety, reduce congestion and improve roadway conditions benefit businesses and households by saving time, lives and money.

Transportation investment creates and supports both short-term and long-term jobs. A 2007 analysis by the Federal Highway Administration found that every $1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.[20]

Needed transportation projects that expand capacity and preserve the existing transportation system generate significant economic benefits. Transportation projects that provide additional roadway lanes, expand the efficiency of a current roadway (through improved signalization, driver information or other Intelligent Transportation

Systems), or provide additional transit capacity, produce significant economic benefits by reducing congestion and improving access, thus speeding the flow of people and goods.[21]

Similarly, transportation projects that maintain and preserve existing transportation infrastructure also provide significant economic benefits. The preservation of transportation facilities improves travel speed, capacity, load-carry abilities and safety, while reducing operating costs for people and businesses.[22] Projects that preserve existing transportation infrastructure also extend the service life of a road, bridge or transit vehicle and save money by postponing or eliminating the need for more expensive future repairs.[23]

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.[24]

Conclusion

Virginia's surface transportation system continues to play a critical role as the backbone of the state's economy by providing mobility to residents, visitors, businesses and the military. As Virginia looks to rebound from a recent economic lull, the improvement of its system of highways, rail and public transit will allow the state to support further economic growth. Needed surface transportation improvements will

provide Virginia's residents with a high quality of life and afford its businesses and industries a high level of economic competitiveness.

In order to realize Virginia's potential for economic growth, the state will need to improve the condition and increase the capacity of its highways, rails and public transit systems.

Making needed improvements to Virginia's surface transportation system will support future economic growth and competitiveness and help ensure that Virginia remain an attractive place to live, visit, work and do business.

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Endnotes

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[21]The Transportation Challenge: Moving the U.S. Economy (2008). National Chamber Foundation. p. 5.
[22] Ibid.
[23] Ibid.
[24] 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.