TRIP's Top 40 Transportation Projects to Support Economic Growth and Quality of Life in Maryland

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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

Maryland's transportation system has played a significant role in the state's development, providing mobility and access for residents, visitors, businesses and industry. The state's roads, highways, rails, ports and public transit systems remain the backbone of the Old Line State's economy. Maryland'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 Maryland's ability to continue to recover from the recession, capitalize on its economic advantages and meet the demands of the 21st Century.

To achieve sustainable economic growth, Maryland must proceed with numerous projects to improve key roads, bridges, highways and public transit systems. Enhancing critical segments of Maryland's 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 Maryland and provides information on the transportation projects in the state that are most needed to support economic growth. Sources of data include the Maryland Department of Transportation (MDOT), 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 and ranked the 40 transportation projects that are most needed to support Maryland's economic growth. These projects are located throughout the state.

- The most needed transportation improvements in Maryland include projects to build, expand or modernize roads, highways bridges and mass transit facilities These improvements would enhance economic development opportunities throughout the state by increasing mobility and freight movement, easing congestion, and making Maryland 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.

- Maryland's 10 most needed 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 40 most needed projects in Maryland for economic recovery and growth are included in the report's Appendix.

1. **Widening I-95/I-495 in Prince Georges and Montgomery Counties.** This $5.8 billion project extends from the American Legion Bridge to the Woodrow Wilson Bridge and would include widening, the addition of HOV/HOT lanes and bridge rehabilitation and replacements. This project would relieve congestion and improve mobility and movement in the area immediately around Washington, DC. The initial phase of this project would likely be an $800 million project from the American Legion Bridge to I-270, which would include widening, the use of reversible lanes, HOT/HOV lanes and rehabilitation or replacement of the American Legion bridge. Job creation will be spurred in the short term by these projects, while long-term benefits include improved accessibility and greater regional productivity.

2. **Replacing the Governor Nice Bridge in Charles County.** This $885 million project would replace the existing Governor Nice bridge, which does not meet current standards and is reaching capacity during peak travel times. By 2025, traffic on the bridge is projected to increase by 45 percent on weekdays and 33 percent on weekends. This project will create construction jobs in the short term, while reducing travel times and fuel costs and promoting regional economic development in the long-term.

3. **Widening and bridge rehabilitation and replacement on I-695 in Baltimore.** This $1.2 billion project would continue the efforts to widen I-695 and replace or rehabilitate deficient bridges. Completion of this project would alleviate congestion in the Baltimore area on the primary route for moving people and goods through the region and beyond. It would also reduce travel time and gasoline costs for Maryland citizens and visitors. The initial phase of this project would likely be the $85 million rehabilitation or replacement of three bridges.

4. **Construction of the Purple Line from Bethesda to New Carrolton.** This $1.9 billion project includes a two-track light rail line with dedicated running way, 21 stations and two maintenance facilities. The Purple Line is estimated to serve 60,000 riders per day in 2030. It will also provide faster, more reliable transit in congested corridors and connect directly to existing rail and bus service.

5. **Widening and Interchanges on MD 5 in Prince George's County.** This $1.1 billion project would widen and add interchanges to 10.5 miles of MD 5 between US 301 and I-95/I-495. It will relieve congestion and improve operations along the MD 5 corridor while improving east-west movement in Prince George's County. The project will create jobs in the short-term and will accommodate increased traffic volumes stemming from anticipated development along the MD 5 corridor in the long-term.

6. **Widening MD 295 from four lanes to six.** This $220 million project would widen more than three miles of MD 295 from MD 100 to I-195 in Baltimore. It would also provide a new interchange at Hanover Road with widening and relocation of Hanover Road from MD 295 to MD 170. Congestion will be eased and access would be improved to the Baltimore-Washington International Thurgood Marshall Airport, one of the state's economic engines.

7. **Red Line Light Rail Transitway from Woodlawn to Bayview Medical Center.** This $2.2 billion project would add 14 miles of two-track light rail line with dedicated running way, 19 stations and a maintenance facility. The new line is projected to serve 57,000 riders per day in 2030, provide faster, more reliable transit in congested corridors, and connect directly to existing rail and bus services. It will provide key connectivity in this east/west corridor and to existing Metro, light rail and MARC transit services.

8. **Widening US 29 Northbound**. This $104 million project would widen the northbound section of US 29 from Seneca Drive to MD 175 from two lanes to three. This project will improve safety and reduce congestion on a major commuting route through Columbia between Washington and Baltimore. The southbound section is currently three lanes.

9. **Interchange construction at MD 97 at MD 28 in Montgomery County.** This $142 million project would construct an interchange at MD 97 and MD 28 in Montgomery County to relieve congestion and provide needed bicycle and pedestrian facilities. The project will support access to and from the Intercounty Connector and regional corridors of I-95 and I-270.

10. **Interchange construction at MD 210 and Kerby Hill Road/Livingston Road**. This $126 million project would convert the intersection of MD 210 and Kerby Hill Road/ Livingston Road into a grade-separtated interchange. Completion of the project would improve safety and operations along the corridor during peak hours and help improve north-to-south movement in southern Prince George's County. The project will create jobs in the short term and will accommodate anticipated growth and development along the MD 210 corridor.

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 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 Maryland's diverse economy has been impacted by the recession, the state's transportation system will need to accommodate projected future growth.

- From 1990 to 2010, Maryland's population increased by 21 percent, from approximately 4.8 million to approximately 5.8 million. Maryland's population is expected to increase to 6.7 million by 2030.

- From 1990 to 2010, annual vehicle-miles-of-travel (VMT) in the state increased by 38 percent, from approximately 40.5 billion VMT to 56.1 billion VMT. Based on travel and population trends, TRIP estimates that vehicle travel in Maryland will increase another 30 percent by 2030, reaching approximately 73 billion VMT.

- Maryland's unemployment rate nearly doubled from 3.3 percent in February 2008 to 6.5 percent in February 2012. The national unemployment rate was 8.5 percent in February 2012.

- In 2012, Maryland is projected to have a 3.6 percent rate of economic growth, measured in real GSP, which is factored for price changes. This rate of growth is higher than the forecast 3.4 percent increase in national real GSP in 2012.

- Maryland has benefited from a diverse economy, which includes significant employment in the following sectors: transportation, government services, food production (including fishing and agriculture), manufacturing and biotechnology.

Maryland's economy is served by an extensive surface transportation system that has some deficiencies and experiences severe congestion in key areas. Roads carry the majority of freight shipped in the state.

- Maryland's system of 31,461 miles of roads and 5,195 bridges, maintained by local, state and federal governments, carry 55.3 billion vehicle miles of travel annually.

- Forty-four percent of Maryland's major roads are deficient, with 26 percent rated in poor condition and an additional 18 percent rated mediocre in 2008. An additional 15 percent of the state's major roads were rated in fair condition and 41 percent were rated in good condition.

- Seven percent of Maryland's bridges were rated structurally deficient in 2011. 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 2011, 18 percent of Maryland'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, approximately $131 billion in goods are shipped annually from sites in Maryland and another $205 billion in goods are shipped annually to sites in Maryland, mostly by truck.

- Eighty-one percent of the goods shipped annually from sites in Maryland 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**.**

Sources of data for this report include the Maryland Department of Transportation (MDOT), 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

Maryland's transportation system serves as the backbone of the Old Line State's economy, providing mobility to the state's residents, visitors and businesses. Maryland's 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 Maryland's 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 the recession and returns to significant and sustained growth, Maryland must improve and expand key highway, port and transit routes, which will ease congestion, improve traffic safety and enhance access throughout the state.

Maryland's economic climate has not been immune to the national economic downturn, and the state 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. Maryland's economy and quality of life could be adversely affected if its transportation system cannot provide for the efficient movement of goods and people. 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 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.

In this report, TRIP identifies and ranks the 40 transportation projects in Maryland that are most needed to spur and assist in the state's economic growth. The most needed transportation improvements in Maryland include projects to build, expand or modernize highways or bridges. Information on these projects, such as location, the estimated cost of the project and an explanation of the importance of the project and how it would improve Maryland'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 site location decisions, behind only work force skills and state and local taxes.[1]

To prepare this report, TRIP analyzed data provided by the Maryland Department of Transportation (MDOT), which consulted with the state's largest regional transportation agencies, on the transportation projects in the state most needed to support economic growth. 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 40 Transportation Projects

Most Needed to Support Maryland's Economy

TRIP has ranked the 40 transportation projects that are most needed to support Maryland's economic recovery and growth. 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.

Maryland's 20 most needed transportation projects for economic recovery as determined by TRIP follow. A listing of all 40 most needed transportation projects to support economic growth, including additional details, such as the status of each project, is included in the report's Appendix.

1. **The Widening of I-95/I-495 in Prince Georges and Montgomery Counties.** This $5.8 billion project extends from the American Legion Bridge to the Woodrow Wilson Bridge and would include widening, the addition of HOV/HOT lanes and bridge rehabilitation and replacements. This project would relieve congestion and improve mobility and movement in the area immediately around Washington, DC. The initial phase of this project would likely be an $800 million project from the American Legion Bridge to I-270, which would include widening, the use of reversible lanes, HOT/HOV lanes and rehabilitation or replacement of the American Legion bridge. Job creation will be spurred in the short term by these projects, while long-term benefits include improved accessibility and greater regional productivity.

2. **Replacing the Governor Nice Bridge in Charles County.** This $885 million project would replace the existing Governor Nice bridge, which does not meet current standards and is reaching capacity during peak travel times. By 2025, traffic on the bridge is projected to increase by 45 percent on weekdays and 33 percent on weekends. This project will create construction jobs in the short term, while reducing travel times and fuel costs and promoting regional economic development in the long-term.

3. **Widening and bridge rehabilitation and replacement on I-695 in Baltimore**. This $1.2 billion project would continue the efforts to widen I-695 and replace or rehabilitate deficient bridges. Completion of this project would alleviate congestion in the Baltimore area on the primary route for moving people and goods through the region and beyond. It would also reduce travel time and gasoline costs for Maryland citizens and visitors. The initial phase of this project would likely be the $85 million rehabilitation or replacement of three bridges.

4. **Construction of the Purple Line from Bethesda to New Carrolton.** This $1.9 billion project includes a two-track light rail line with dedicated running way, 21 stations and two maintenance facilities. The Purple Line is estimated to serve 60,000 riders per day in 2030. It will also provide faster, more reliable transit in congested corridors and connect directly to existing rail and bus service.

5. **Widening and Interchanges on MD 5 in Prince George's County.** This $1.1 billion project would widen and add interchanges to 10.5 miles of MD 5 between US 301 and I-95/I-495. It will relieve congestion and improve operations along the MD 5 corridor while improving east-west movement in Prince George's County. The project will create jobs in the short-term and will accommodate increased traffic volumes stemming from anticipated development along the MD 5 corridor in the long-term.

6. **Widening MD 295 from four lanes to six.** This $220 million project would widen more than three miles of MD 295 from MD 100 to I-195 in Baltimore. It would also provide a new interchange at Hanover Road with widening and relocation of Hanover Road from MD 295 to MD 170. Congestion will be eased and access would be improved to the Baltimore-Washington International Thurgood Marshall Airport, one of the state's economic engines.

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8. **Widening US 29 Northbound**. This $104 million project would widen the northbound section of US 29 from Seneca Drive to MD 175 from two lanes to three. This project will improve safety and reduce congestion on a major commuting route through Columbia between Washington and Baltimore. The southbound section is currently three lanes.

9. **Interchange construction at MD 97 and MD 28 in Montgomery County.** This $142 million project would construct an interchange at MD 97 and MD 28 in Montgomery County to relieve congestion and provide needed bicycle and pedestrian facilities. The project will support access to and from the Intercounty Connector and regional corridors of I-95 and I-270.

10. **Interchange construction at MD 210 and Kerby Hill Road/Livingston Road** This $126 million project would convert the intersection of MD 210 and Kerby Hill Road/Livingston Road into a grade separated interchange. Completion of the project would improve safety and operations along the corridor during peak hours and help improve north-to-south movement in southern Prince George's County. The project will create jobs in the short term and will accommodate anticipated growth and development along the MD 210 corridor.

11. **Convert the Intersection of MD 4 and Suitland Parkway to an Interchange.** This $150 million project would convert the intersection of MD 4 and Suitland Parkway in Prince George's County to an interchange in order to improve safety and operations. The new interchange would accommodate increased traffic volumes associated with Andrews Air Force Base expansion as well as the growth surrounding the base and in southern Maryland.

12. **Widening I-81 from the West Virginia State Line to the Pennsylvania State Line.** This $700 million project would include widening 12 miles of I-81, which currently experiences operational problems due to heavy traffic volumes, most of which is truck traffic. Projected residential and commercial development in the Hagerstown area will further contribute to congestion. Widening I-81 will create construction jobs in the short-term and will contribute to economic development opportunities in the long-term.

13. **Construction of the Corridor Cities Transitway.** Spanning from the Shady Grove Metro Station to Clarksburg, this $900 million project includes a dedicated transitway for light rail or bus with 14 stations and a maintenance facility. The project will serve approximately 30,000 riders per day and provide alternatives to car travel within the heavily developing corridor and to and from the Shady Grove Metro Station.

14. **Widening MD 404 from US 50 to MD 404 Business.** This $282 million project would widen and convert nearly 12 miles of MD 404 to a partial access controlled four-land divided highway. MD 404 is a major east-west connection providing access between US 50 and the communities along the Atlantic Ocean. This project will improve safety and reduce traffic congestion caused by high seasonal peaks associated with summer resort traffic.

15. **Converting MD 32 to a dual four-lane controlled access facility from I-70 to MD 26.** This $275 million project involves the multi-lane reconstruction of 7.5 miles of MD 32 from two and three lanes to a dual four-lane roadway with consolidated access points. It will provide additional capacity while improving traffic operations and safety on this key link between Carroll County, Howard County and Anne Arundel County. MD 32 is also a main thoroughfare to Fort Meade, one of the regions largest employers.

16. **Interchange Reconstruction and widening of MD 85 in Frederick County.** This $128 million project would widen MD 85 from Crestwood Boulevard to Spectrum Drive and reconstruct the interchange at I-270. It would relieve congestion associated with the existing development, as well as that anticipated from planned and approved developments, which would exceed the current capacity of the regional road network. The project would also provide needed bicycle and pedestrian facilities.

17. **Upgrading MD 589 and adding new interchange at US 50 in Worcester County.** This $321 million project would dualize MD 589 from US 113 to US 50 and includes a new interchange at US 50. It would address congestion and safety concerns along MD 589 and support economic development in the Ocean Pines and Ocean City areas.

18. **Additional Penn Line track and two new platforms at BWI/MARC/AMTRAK station.** This $612 million project would add an additional track on the Penn Line from south of Halthorpe to North of MD 32 in Odenton. It would also include two new platforms at the BWI/MARC/AMTRAK station. It would alleviate train delays and provide improved access to and from the BWI/MARC/AMTRAK station and surrounding areas.

19. **Upgrading MD 32 to four lanes from MD 108 to I-70.** This $291 million project would upgrade MD 32 from a two-lane roadway to a four-lane dual controlled access roadway to alleviate safety concerns and reduce congestion on this commuter corridor. This route provides a link from residential areas in western Howard County and Carroll County to jobs in eastern Howard County and Anne Arundel County, including around Fort Meade.

20. **Construction of an interchange on I-270 at Watkins Mill Road**. The $220 million construction of a new interchange in Montgomery County would improve access in the developing areas around Gaithersburg and would also improve access to the MARC commuter rail line.

Population, Travel and Economic Trends in Maryland

While Maryland's current unemployment rate is lower than the national average, the state's diverse economic sectors have not been immune to the effects of the recession. Maryland's economy relies on significant employment in the following sectors: transportation, government services, food production (including fishing and agriculture), manufacturing and biotechnology.

The state's unemployment rate rose from 3.3 percent in February 2008 to 6.5 percent in February 2012.[2] Maryland's current unemployment rate is lower than the national average of 8.3 percent in February 2012.[3]

In 2012, Maryland is projected to have a 3.6 percent rate of economic growth, measured in real GSP, which is factored for price changes. This rate of growth is slightly higher than the forecast 3.4 percent increase in national real GSP in 2012. [4]

From 1990 to 2010, Maryland's population increased by 21 percent, from approximately 4.8 million to approximately 5.8 million.[5] Maryland's population is expected to increase to approximately 6.7 million by 2030. [6]

The continued increase in population has resulted in significant increases in vehicle travel in Maryland. From 1990 to 2010, annual vehicle-miles-of-travel (VMT) in the state increased by 38 percent, from approximately 40.5 billion VMT to 56.1 billion VMT.[7] Based on travel and population trends, TRIP estimates that vehicle travel in Maryland will increase another 30 percent by 2030, reaching approximately 73 billion VMT.

Maryland's Surface Transportation System

Maryland is served by a system of 31,461 miles of roads and 5,195 bridges. This system is maintained by local, state and federal governments and carries 55.3 billion vehicle miles of travel each year.[8]

Maryland's roads, highways and bridges have some deficiencies. Forty-four percent of the state's major roads are deficient, with 26 percent rated in poor condition in 2008 and another 18 percent rated in mediocre condition.[9] In 2011, seven percent of Maryland's bridges were rated structurally deficient because they are in need of repair or

replacement, and another 18 percent of the state's bridges were rated as functionally obsolete because they do not meet modern design standards.[10]

The Importance of Transportation to Maryland's Economy

Supporting Maryland'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, ports and public transit are vitally important to fostering economic development in Maryland. 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, $131 billion in goods are shipped from sites in Maryland and another $205 billion in goods are shipped to sites in Maryland, mostly by trucks.[11] Eighty-one percent of the goods shipped annually from sites in Maryland 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.[12]

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.

Maryland'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.[13] 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.[14]

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.[15]

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.[16]

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.[17]

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.[18]

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.[19]

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.[20] 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.[21]

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.[22]

Conclusion

Maryland's transportation system continues to play a critical role as the backbone of the state's economy by providing mobility to residents, visitors and businesses. As Maryland looks to recover from the recent economic downturn, the improvement of its system of highways, rail and public transit will allow the state to support further economic growth. Needed transportation improvements will provide Maryland's residents with a high quality of life and afford its businesses and industries a high level of economic competitiveness.

In order to realize Maryland'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 Maryland's surface transportation system will support future economic growth and competitiveness and help ensure that Maryland remain an attractive place to live, visit, work and do business.

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Endnotes

[1] One Piece at a Time (November 2010). Site Selection magazine.
[2] Bureau of Labor Statistics, United States Department of Labor (2011). Local Area Unemployment Statistics.
[3] Ibid.
[4] USgovernmentspending.com. Comparison of State and Local Government Spending and Debt in the United States Fiscal Year 2012.
[5] TRIP analysis based on U.S. Census Bureau, Population Division, Interim State Population Projections, 2005 to 2030.
[6] Maryland State Data Center, 2010.
[7] TRIP analysis of Federal Highway Administration statistics.
[8] Federal Highway Administration (2010). Highway Statistics 2008.
[9] TRIP analysis of Federal Highway Administration data (2008). Highway Statistics 2008, HM-63, HM-64.
[10] National Bridge Inventory (2011), Federal Highway Administration.
[11] Bureau of Transportation Statistics (2010), U.S. Department of Transportation. 2007 Commodity Flow Survey, State Summaries. http://www.bts.gov/publications/commodity_flow_survey/2007/states/
[12] Ibid.
[13] National Cooperative Highway Research Program. Economic Benefits of Transportation Investment (2002). p. 4.
[14] The Transportation Challenge: Moving the U.S. Economy (2008). National Chamber Foundation. p. 10.
[15] Ibid.
[16] Ibid.
[17] Ibid.
[18] Federal Highway Administration, 2008. Employment Impacts of Highway Infrastructure Investment.
[19] The Transportation Challenge: Moving the U.S. Economy (2008). National Chamber Foundation. p. 5.
[20] Ibid.
[21] Ibid.
[22] 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.