

Utah's Most Critical Surface Transportation Projects to Support Economic Growth and Quality of Life

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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

Utah'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 and public transit systems remain the backbone of the Beehive State's economy. Utah's transportation system also provides for a high quality of life and makes the state a desirable place to live, work and visit. The condition and quality of its transportation system will play a critical role in Utah's ability to continue to recover from the recession, capitalize on its economic advantages and meet the mobility demands of the 21st Century.

To achieve sustainable economic growth, Utah must proceed with numerous projects to improve key roads, bridges and public transit systems. Enhancing critical segments of Utah'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 Utah and provides information on the transportation projects in the state that are most needed to support economic growth. Sources of data include the Utah Department of Transportation (UDOT), 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, the Wasatch Front Regional Council, the Utah Transit Authority (UTA), the Mountainland Association of Regional Governments, the Dixie Metropolitan Planning Association, the Cache Metropolitan Planning Organization, and the U.S. Census Bureau. All data used in the report is the latest available.

TRIP has identified the highway and transit projects that are most needed to support Utah's economic growth. These projects are located throughout the state.

- The most needed Utah transportation improvements include projects to build, expand or modernize highways or bridges, as well as improvements and capacity expansion to the state's rail and public transportation systems. These improvements would enhance economic development opportunities throughout the state by increasing mobility and freight movement, easing congestion, and making Utah an attractive place to live, visit and do business.
- TRIP identified and evaluated each transportation project based on a the following criteria: 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 most needed transportation projects, as identified by TRIP, have been broken down geographically and are listed below.

WASATCH FRONT

- **Construction of the SR-85/Mountain View Corridor.** This \$1.3 billion project would provide six to eight lanes of new capacity over approximately 30 miles of roadway, providing for a continuous North-South freeway through the entire Salt Lake Valley and another freeway link into Utah County. The new route will help alleviate the highest volume areas of I-15, which are frequently congested and have limited options for widening.
- **Adding Two General Purpose Lanes on I-15 in Box Elder and Weber Counties.** This \$195 million project would add two general purpose lanes along nearly 13 miles of I-15, from the Box Elder County Line to Brigham City South Interchange, and from 2700 North to the Box Elder County Line. This portion of I-15 experiences heavy truck traffic and is the primary link between the Wasatch Front and the Northwest. Additional capacity will aid the flow of freight, goods and commuters.
- **Widening and Reconstruction of SR-201 in Salt Lake County.** This \$103 million project would widen and reconstruct approximately 18 miles of SR-201 from I-80 to Mountain View. SR-201 is a major freeway through the freight and warehousing district of Salt Lake City. Increasing congestion has slowed the flow of freight, goods and commuters.
- **Bus System Optimization.** Significant new bus improvements are planned. Currently UTA only operates 12 all day high frequency bus corridors. Under the Bus System Optimization Project UTA would provide an expanded high frequency network, 10 additional routes with a total of 128 route miles. As part of the project enhance stops and customer waiting areas would be developed. Buses would run every 15 minutes with the same schedule as the regional rail system at a total cost of \$256 million. Additionally, UTA needs a new alternative fuels bus garage, which would cost \$80 million as well as 3 CNG maintenance facilities at a cost of \$10 million each and to replace existing buses and expand the fleet which could total over 900 buses over 5 years. Total cost for all improvements is estimated at \$366 million.
- **Widening and Reconstruction of I-15 in Davis County.** This \$91 million project would widen and reconstruct 11 miles of I-15 from US-89 to I-215. This portion of I-15 experiences heavy commuter traffic. Due to geographic constraints, the construction of parallel corridors is unlikely. Additional capacity will aid the flow of freight, goods and commuters.

- **Commuter Rail (FrontRunner) Community Connection Projects.** With the addition of the Utah County segment ridership has increased significantly. The following projects are needed to further connect the system: Ogden Streetcar project to connect from the Ogden Intermodal Hub to Weber State University; South Davis - this Bus Rapid Transit project would connect from the Woodscross Commuter Rail Station to North Temple Commuter/Light Rail Transit station and Downtown Salt Lake City; the Salt Lake City Streetcar project, which would provide a streetcar connection between the intermodal center and downtown; the Murray Taylorsville Bus Rapid Transit route from Murray Central Station to the Main Salt Lake Community College Campus; the Sandy South Jordan Circulator Project to connect the South Jordan Commuter Rail station to TRAX Light Rail, as well as significant employment and residential areas in the two cities and the Southwest Salt Lake County project, which would extend the Redline Light Rail line to Draper Commuter Rail Station and the Blue Line in Draper. The total estimated cost for these projects is: \$1.46 billion.
- **Widening and Reconstruction of Portions of State Route 108 in Weber and Davis Counties.** This \$122 million project would widen and reconstruct approximately six miles of State Route 108 from Midland Drive in Weber County to approximately four miles west of the Weber County/Davis County line. The widening of State Route 108, which is a major North/South roadway in the area is needed to aid the flow of freight, goods and commuters in the rapidly growing Western Davis County area.
- **New I-15 Interchanges at 1800N and Shepard Lane.** These projects, totaling \$109 million, would add two new interchanges to address the high traffic volumes on I-15 and provide improved access to Davis County. The new interchanges will alleviate congestion at adjacent interchanges and improve access to I-15 for Falcon Hill and other developments in the area.
- **Widening and Reconstruction of I-15 near Hill Air Force Base.** These projects, totaling \$91 million, would widen and reconstruct two sections of I-15: from I-84 to the Davis County Line, and from the Weber County Line to Hill Field Road. Along with servicing heavy commuter traffic, this portion of I-15 is adjacent to Hill Air Force Base, a site planned for major economic development. The additional capacity will aid the flow of freight, goods and commuters while improving access to Hill Air Force Base.
- **Electrification and Double Tracking of Commuter Rail First Phase.** This \$600 million project would allow for double tracking and electrification on the commuter rail line, enabling UTA to operate the commuter rail line much more reliably and provide the capability to offer more frequent service. The project will also enable UTA to move from diesel to electrical power, thereby reducing direct emissions in the urban area.

CENTRAL UTAH

- **Adding Uphill Passing Lanes to US-40.** This \$108 million project would add uphill passing lanes to more than 96 miles of US-40 in Duchesne, Uinath, and Wasatch Counties. US-40 is a major regional connector to the Wasatch Back and Eastern Utah and serves high percentages of recreational and freight traffic. Passing lanes will help slow-moving trucks to traverse steep grades with less interference to traffic flow.
- **Adding Uphill Passing Lanes to US-191.** This \$58 million project would add 38 miles of passing lanes to US-191 in Duchesne, Uinath and Dagget Counties. These portions of US-191 provide access to important energy and tourism areas in the Uinath Basin. Passing lanes will help slow-moving trucks to traverse steep grades with less interference to traffic flow.
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- **Adding Two General Purpose Lanes to a portion of I-80.** This \$161 million project would add two general purpose lanes to nearly seven miles of I-80 from milepost 99 to 106. This portion of I-80 experiences heavy truck traffic and is the primary link between the Wasatch Front and the Pacific coast. Additional capacity will aid the flow of freight, goods and commuters.
- **Adding Two General Purpose or HOV Lanes to SR-248 in Park City.** This \$11 million project would add two general purpose or HOV lanes to SR-248. This route is the main gateway into Park City and experiences severe congestion on peak ski days. The additional lanes will allow for better access to Park City for tourists and commuters.

PROVO/OREM/MOUNTAINLAND REGION

- **Utah County Bus Improvements.** 32 miles of Bus Rapid Transit and Bus Plus improvement are needed in Utah County to improve regional transit service. The total cost of the needed improvements is estimated at \$127 million.
- **Adding a new HOV interchange at I-15 and 800 S.** This \$93 million project would construct a new HOV interchange at I-15 and 800 S, relieving congestion and allowing for better access to Utah Valley University and the future Orem Intermodal Center.

- **Bus Rapid Transit in Provo.** This \$150 million project would provide new bus rapid transit service that would allow for transit connections from commuter rail to major destinations in the Provo/Orem area, including Brigham Young University.
- **SR-75 Widening and Reconstruction in Springville.** This \$36 million project would widen and reconstruct parts of SR 75 from I-15 to Main Street in in Springville. These routes service a major industrial area in northern Springville. The additional capacity will aid the flow of freight, goods and commuters in the area.
- **Draper to Orem Light Rail Line.** This \$1.5 billion project would extend the existing light rail line from Draper into Utah County.
- **Widening and Reconstruction of Portion of U.S. 89 in Utah County.** This \$7 million project would widen and reconstruct a 2.2 mile portion of U.S. 89 from American Fork Main Street to Lehigh Main. U.S. 89 (State Street) is one of the most congested roads in northern Utah. The widening and reconstruction of this section of U.S. 89 would improve the movement of freight, goods and commuters through this corridor.

WASHINGTON COUNTY / DIXIE METROPOLITAN PLANNING ASSOCIATION/ SOUTHERN UTAH

- **Adding New Capacity to the Western Corridor in Washington County.** This \$92.5 million project would add new capacity to the Western Corridor from Old Highway 91 to Snow Canyon Parkway, and from MP 2 to Old Highway 91. The Western Corridor has been planned to help meet the transportation needs of the rapidly growing St. George area. This corridor will link the Santa Clara area to I-15 and provide service to large developable areas.
- **Widening and reconstructing Segments of I-15 in Washington County.** This \$133 million project would widen and reconstruct four portions of I-15 in Washington County. Southern Utah is one of the fastest growing areas of the state. I-15 is the primary corridor for movement within the area and services freight flow from the Pacific coast. Additional capacity will aid the flow of freight, goods and commuters.
- **Complete the New Southern Parkway in St. George.** This \$49 million project would construct a new four-lane freeway from Warner Valley Road to Washington Dam Road. When all phases are completed, the new freeway will link St. George to Hurricane and provide service to the new airport and developable areas.
- **Adding Uphill Passing Lanes to Three Sections of I-15.** These projects, totaling \$72 million, would add uphill passing lanes to three sections of I-15 in Millard, Beaver and Iron Counties. The steep grades on I-15 in central Utah contribute to slower truck speeds. Passing lanes will help slow-moving trucks to traverse steep grades with less interference to traffic flow.

- **Intersection Improvements on SR-18 in Washington County.** This \$18.5 million project would improve key intersections on SR-18, which provides key access between St. George and rapidly growing areas of Santa Clara and Ivins. These intersection improvements will help eliminate traffic bottlenecks and improve corridor progression on SR-18.

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 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.
- Highway accessibility was ranked the number two site selection factor behind only the availability of skilled labor in a 2013 survey of corporate executives by [Area Development Magazine](#).

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

According to a recent national report, improved access as a result of capacity expansions provides numerous regional economic benefits. Those benefits include higher employment rates, higher land value, additional tax revenue, increased intensity of economic activity, increased land prices and additional construction as a result of the intensified use.

- The 2012 report, [“Interactions Between Transportation Capacity, Economic Systems and Land Use,”](#) prepared by the Strategic Highway Research Program for the Transportation Research Board, reviewed 100 projects, costing a minimum of \$10 million, which expanded transportation capacity either to relieve congestion or enhance access.
- The projects analyzed in the report were completed no later than 2005 and included a wide variety of urban and rural projects, including the expansion or addition of major highways, beltways, connectors, bypasses, bridges, interchanges, industrial access roads, intermodal freight terminals and intermodal passenger terminals.
- The expanded capacity provided by the projects resulted in improved access, which resulted in reduced travel-related costs, faster and more reliable travel, greater travel speeds, improved reliability and increased travel volume.
- The report found that improved transportation access benefits a region by: enhancing the desirability of an area for living, working or recreating, thus increasing its land value; increasing building construction in a region due to increased desirability for homes and businesses; increasing employment as a result of increased private and commercial land use; and increasing tax revenue as a result of increased property taxes, increased employment and increased consumption, which increases sales tax collection.
- The report found that benefits of a transportation capacity expansion unfolded over several years and that the extent of the benefits were impacted by other factors including: the presence of complimentary infrastructure such as water, sewer and telecommunications; local land use policy; the local economic and business climate; and whether the expanded capacity was integrated with other public investment and development efforts.
- For every \$1 million spent on urban highway or intermodal expansion, the report estimated that an average of 7.2 local, long-term jobs were created at nearby locations as a result of improved access. An additional 4.4 jobs were created outside the local

area, including businesses that supplied local businesses or otherwise benefited from the increased regional economic activity.

- For every \$1 million spent on rural highway or intermodal expansion, the report estimated that an average of 2.9 local, long-term jobs were created at nearby locations as a result of improved access. An additional 1.6 jobs were created outside the local area, including businesses that supplied local businesses or otherwise benefited from the increased regional economic activity.
- The report found that highway and intermodal capacity projects in urban areas created a greater number of long-term jobs than in rural areas, largely due to the more robust economic environment and greater density in urban communities.

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

- From 1990 to 2013, Utah’s population increased by 68 percent, from approximately 1.8 million to approximately 2.9 million. Utah’s population is expected to increase to 4.4 million by 2030.
- From 1990 to 2013, annual vehicle-miles-of-travel (VMT) in the state increased by 84 percent, from approximately 14.6 billion VMT to 27 billion VMT. This was the second highest increase in the nation during this timeframe. Based on travel and population trends, TRIP estimates that vehicle travel in Utah will increase another 40 percent by 2030.
- Utah has benefited from a diverse economy, which includes significant employment in the following sectors: mining, agriculture, tourism, manufacturing, information technology, finance and petroleum production.
- Every year, approximately \$107 billion in goods are shipped annually from sites in Utah and another \$102 billion in goods are shipped annually to sites in Utah, mostly by truck.
- Sixty percent of the goods shipped annually from sites in Utah are carried by trucks and another 14 percent are carried by parcel, U.S. Postal Service or courier services, which use trucks for part of the deliveries.

Utah’s economy is served by an extensive surface transportation system that has some deficiencies that will need to be addressed in the coming years. However, over the next 30 years, the state will face a transportation funding shortfall of nearly \$27 billion in funds needed for roadway and transit operations, maintenance, expansion and preservation.

- Utah's system of 45,124 miles of roads and 2,946 bridges, maintained by local, state and federal governments, carry 27 billion vehicle miles of travel annually.
- Eight percent of Utah's major urban state and locally maintained roads and highways have pavements in poor condition. Fifty-one percent of the state's urban roads are rated as either mediocre or fair and the remaining 41 percent are rated in good condition.
- Nine percent of Utah's major rural state and locally maintained roads and highways have pavements in poor condition. Fifty-four percent of the state's rural roads are rated as either mediocre or fair and the remaining 37 percent are rated in good condition.
- As Utah's roads and highways continue to age, they will reach a point where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and costly reconstruction of the roadway and its underlying surfaces will become necessary.
- Investing in lower-cost, routine roadway repairs and preservation can extend the life of Utah's roadways and prevent or postpone more costly repairs and reconstruction. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.
- Three percent of Utah's bridges were rated structurally deficient in 2014. 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 2014, 11 percent of Utah'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.
- It is estimated that UTA will spend up to \$10.5 billion to operate transit service over the next 30 years.
- UTA has identified \$2.9 billion in future state of good repairs over the next 30 years. State of good repair projects include replacement of light rail and commuter rail rolling stock and track and facilities replacement and upgrades.
- According to Utah's Unified Transportation Plan, the state will need a total of \$70.1 billion over the next 30 years to fund needed highway and transit maintenance, operations, preservation and capacity expansions. However, during that time, only \$43.4 billion will be available from current revenue sources, leaving a funding gap which includes \$11.3 billion in prioritized transportation improvements that remain unfunded over the next 30 years.

State and local transportation agencies are increasingly taking an approach to road, highway, transit infrastructure and bridge preservation that emphasizes enhanced maintenance techniques that keep infrastructure in good condition as long as possible, delaying the need for costly reconstruction or replacement.

- Under pressure from fiscal constraints, aging roads, highways and bridges, and increased wear due to growing travel volume, particularly by large trucks, transportation agencies are adopting cost-effective strategies focused on maintaining roads, highways and bridges in good condition as long as possible. While this strategy requires increased initial investment, it saves money over the long run by extending the lifespan of transportation facilities.
- UTA has developed a sophisticated assets management system to better understand maintenance needs. With a comprehensive inventory of all assets and conditions UTA can provide better maintenance to ensure the longest possible life of assets and provide the best service to customers.
- It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.
- A [2010 Federal Highway Administration report](#) found that an over-reliance on short-term pavement repairs will fail to provide the long-term structural integrity needed in a roadway surface to guarantee the future performance of a paved road or highway.
- The Federal Highway Administration report also warned that transportation agencies that focus only on current pavement surface conditions will eventually face a highway network with an overwhelming backlog of pavement rehabilitation and replacement needs.
- Preventive pavement maintenance treatments include sealing a road surface to prevent moisture from entering cracks in the pavement, applying thin pavement overlays, correcting small surface irregularities and improving surface drainage and friction.
- A preventive maintenance approach to keeping pavements in good condition has been found to reduce overall pavement life cycle costs by approximately one-third over a 25-year period.
- At a 2011 national bridge preservation conference called “Beyond the Short Term,” hosted by the Federal Highway Administration, the 350 attendees from transportation agencies and private firms voted that the most important lesson they had learned at the meetings was that bridges should be actively managed so that they remain in sound condition for as long as possible.
- Improvements in bridge inspections, materials and construction techniques are allowing transportation agencies to move increasingly from a worst-first approach to bridge preservation to a more systematic, proactive strategy of preventive maintenance and preservation.

- Road, highway and bridge preservation projects provide significant economic benefits by improving travel speeds, capacity, load-carrying abilities and safety, and reducing operating costs for people and businesses. Road, highway and bridge repairs also extend the service life of a road, highway or bridge, which saves money by either postponing or eliminating the need for more expensive future repairs.

Sources of data include the Utah Department of Transportation (UDOT), the Utah Transit Authority (UTA), 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, the Wasatch Front Regional Council, the Mountainland Association of Regional Governments, the Dixie Metropolitan Planning Association, the Cache Metropolitan Planning Organization, and the U.S. Census Bureau. All data used in the report is the latest available.

Introduction

Utah's transportation system serves as the backbone of the Beehive State's economy, providing mobility to the state's residents, visitors and businesses. Utah'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 while providing access for tourism and recreation.

But Utah'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 is able to provide significant and sustained growth, Utah must improve and expand key highway and transit routes, which will ease congestion, improve traffic safety and enhance access throughout the state.

Utah's economic climate has not been immune to the nation's economic downturn and slow recovery, 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 its diversified economy. Utah'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 the transportation projects in Utah that are most needed to support the state's economic growth. These include projects to build, expand or modernize highways or bridges, as well as projects to improve rail or public transportation.

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 the increased employment created over the long-term because of improved access, reduced transport costs and improved safety.

To prepare this report, TRIP analyzed information provided by the Utah Department of Transportation (UDOT), the Utah Transit Authority (UTA) and the state's largest regional governments 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 transportation 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 Transportation Projects Most Needed to Support Utah's Economy

TRIP has identified the transportation projects that are most needed to support Utah's economic recovery and growth. TRIP identified and evaluated each project based on the following criteria:

- ✓ 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.

The most needed transportation projects, as identified by TRIP, have been broken down geographically.

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- **Construction of the SR-85/Mountain View Corridor.** This \$1.3 billion project would provide six to eight lanes of new capacity over approximately 30 miles of roadway, providing for a continuous North-South freeway through the entire Salt Lake Valley and another freeway link into Utah County. The new route will help alleviate the highest volume areas of I-15, which are frequently congested and have limited options for widening.
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- **Bus Rapid Transit in Provo.** This \$150 million project would provide new bus rapid transit service that would allow for transit connections from commuter rail to major destinations in the Provo/Orem area, including Brigham Young University.
- **Adding a new HOV interchange at I-15 and 800 S.** This \$93 million project would construct a new HOV interchange at I-15 and 800 S, relieving congestion and allowing for better access to Utah Valley University and the future Orem Intermodal Center.
- **SR-75 Widening and Reconstruction in Springville.** This \$36 million project would widen and reconstruct parts of SR 75 from I-15 to Main Street in in Springville. These routes service a major industrial area in northern Springville. The additional capacity will aid the flow of freight, goods and commuters in the area.

- **Draper to Orem Light Rail Line.** This \$1.5 billion project would extend the existing light rail line for 16 miles from Draper into Utah County.
- **Widening and Reconstruction of Portion of U.S. 89 in Utah County.** This \$7 million project would widen and reconstruct a 2.2 mile portion of U.S. 89 from American Fork Main Street to Lehigh Main. U.S. 89 (State Street) is one of the most congested roads in northern Utah. The widening and reconstruction of this section of U.S. 89 would improve the movement of freight, goods and commuters through this corridor.

WASHINGTON COUNTY / DIXIE METROPOLITAN PLANNING ASSOCIATION / SOUTHERN UTAH

- **Adding New Capacity to the Western Corridor in Washington County.** This \$92.5 million project would add new capacity to the Western Corridor from Old Highway 91 to Snow Canyon Parkway, and from MP 2 to Old Highway 91. The Western Corridor has been planned to help meet the transportation needs of the rapidly growing St. George area. This corridor will link the Santa Clara area to I-15 and provide service to large developable areas.
- **Widening and reconstructing Segments of I-15 in Washington County.** This \$133 million project would widen and reconstruct four portions of I-15 in Washington County. Southern Utah is one of the fastest growing areas of the state. I-15 is the primary corridor for movement within the area and services freight flow from the Pacific coast. Additional capacity will aid the flow of freight, goods and commuters.
- **Complete the New Southern Parkway in St. George.** This \$49 million project would construct a new four-lane freeway from Warner Valley Road to Washington Dam Road. When all phases are completed, the new freeway will link St. George to Hurricane and provide service to the new airport and developable area.
- **Adding Uphill Passing Lanes to Three Sections of I-15.** These projects, totaling \$72 million, would add uphill passing lanes to three sections of I-15 in Millard, Beaver and Iron Counties. The steep grades on I-15 in central Utah contribute to slower truck speeds. Passing lanes will help slow-moving trucks to traverse steep grades with less interference to traffic flow.
- **Intersection Improvements on SR-18 in Washington County.** This \$18.5 million project would improve key intersections on SR-18, which provides key access between St. George and rapidly growing areas of Santa Clara and Ivins. These intersection improvements will help eliminate traffic bottlenecks and improve corridor progression on SR-18.

Population, Travel and Economic Trends in Utah

Utah's diverse economy relies on significant employment in mining, agriculture, tourism, manufacturing, information technology, finance and petroleum production.

From 1990 to 2013, Utah's population increased by 68 percent, from approximately 1.8 million to approximately 2.9 million.¹ Utah's population is expected to increase to approximately 4.4 million by 2030.²

The continued increase in population has resulted in significant increases in vehicle travel in Utah. From 1990 to 2013, annual vehicle-miles-of-travel (VMT) in the state increased by 84 percent, from approximately 14.6 billion VMT to 27 billion VMT.³ This was the second highest increase in the nation during this timeframe. Based on travel and population trends, TRIP estimates that vehicle travel in Utah will increase another 40 percent by 2030.

Condition and Funding Needs of Utah's Surface Transportation System

Utah is served by a system of 45,124 miles of roads and 2,946 bridges. This system is maintained by local, state and federal governments and carries 27 billion vehicle miles of travel each year.⁴

Utah's roads, highways and bridges have some deficiencies. Eight percent of Utah's major urban state and locally maintained roads and highways have pavements in poor condition.⁵ Fifty-one percent of the state's urban roads are rated as either mediocre or fair and the remaining 41 percent are rated in good condition.⁶ Nine percent of Utah's

major rural state and locally maintained roads and highways have pavements in poor condition.⁷ Fifty-four percent of the state's rural roads are rated as either mediocre or fair and the remaining 37 percent are rated in good condition.⁸ Roads rated poor may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced but often are too deteriorated and must be reconstructed. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

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.⁹

As Utah's roads and highways continue to age, they will reach a point where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and costly reconstruction of the roadway and its underlying surfaces will become necessary.

The increase in vehicle travel and additional freight movement has placed additional stress on the state's roads, making timely roadway improvements and preservation even more critical. Investing in lower-cost, routine roadway repairs and preservation can extend the life of Utah's roadways and prevent or postpone more costly repairs and reconstruction.

In 2014, three percent of Utah's bridges were rated structurally deficient because they are in need of repair or replacement.¹⁰ Another eleven percent of the state's bridges were rated as functionally obsolete in 2014 because they do not meet modern design standards.¹¹

According to Utah's Unified Transportation Plan, the state will need a total of \$70.1 billion over the next 30 years to fund needed highway and transit maintenance, operations, preservation and capacity expansions.¹² However, during that time, only \$43.4 billion will be available from current revenue sources, leaving a funding gap which includes \$11.3 billion in prioritized transportation improvements that remain unfunded over the next 30 years.¹³

Asset Management Approach to Road, Highway & Bridge Preservation

State and local transportation agencies are increasingly taking an asset management approach to road, highway and bridge preservation that emphasizes enhanced maintenance techniques that keep infrastructure in good condition as long as possible, which delays the need for costly reconstruction or replacement.

Under pressure from fiscal constraints, aging roads, highways and bridges, and increased wear due to growing travel volume, particularly by large trucks, transportation agencies are adopting cost-effective strategies focused on maintaining roads, highways and bridges in good condition as long as possible. While this strategy requires increased initial investment, it saves money over the long run by extending the lifespan of transportation facilities.

The timing of the maintenance and rehabilitation of road surfaces is critical, impacting the cost-effectiveness of the repairs and ultimately the overall quality of a regional road network. It is estimated that a preventive maintenance program can reduce the life cycle costs of a pavement surface by about one-third over a 25-year period.¹⁴ The preventive maintenance approach may require several applications of minor sealing or resurfacing to a pavement surface over its lifetime, but reduces costs by delaying the need for more costly reconstruction.

A 2005 [report from the National Center for Pavement Preservation \(NCPPE\)](#) recommended that transportation agencies adopt a pavement preservation strategy for the maintenance of the nation's roads and highways.¹⁵ Instead of a reactive approach to roadway pavement maintenance that provides repairs to the road surfaces in the worst condition, the report recommends using a proactive approach that provides initial maintenance to pavements still in good condition, to significantly delay the need for costly reconstruction.

The NCPPE report noted that preventive maintenance can only be performed on road surfaces that are structurally sound. All other road and highway surfaces first need to be reconstructed before a preventive maintenance approach will be effective. The report recommends that transportation agencies implement a preventive maintenance program for roads and highways that are structurally sound and in good condition. The report suggests that transportation agencies should continue to make surface repairs to roads and highways that are not structurally sound to maintain them in reasonable condition until there is adequate funding for the reconstruction of these roads, at which

point transportation agencies can then implement a preventive maintenance program for these improved roads.¹⁶

A recent FHWA report found that an over-reliance on short-term pavement repairs will fail to provide the long-term structural integrity needed in a roadway surface to guarantee the future performance of a paved road or highway. The 2010 report, *“Beyond the Short Term: Transportation Asset Management for Long-Term Sustainability, Accountability and Performance,”* warned that transportation agencies that focus only on current pavement surface conditions will eventually face a highway network with an overwhelming backlog of pavement rehabilitation and replacement needs.¹⁷

The preservation of roads and highways improves travel speed, capacity, load-carry abilities and safety, while reducing operating costs for people and businesses.¹⁸ Projects that preserve existing transportation infrastructure also extend the service life of a road, highway or bridge and save money by postponing or eliminating the need for more expensive future repairs.¹⁹

Improvements in bridge inspections, materials and construction techniques are allowing transportation agencies to move increasingly from a worst-first approach to bridge preservation to a more systematic, proactive strategy of preventive maintenance and preservation.²⁰

At a 2011 national bridge preservation conference hosted by the Federal Highway Administration called “Beyond the Short Term”, the 350 attendees from transportation agencies and private firms voted that the most important lesson they had learned at the

meetings was that bridges should be actively managed so that they remain in sound condition for as long as possible.²¹

The Importance of Transportation to Utah's Economy

Supporting Utah'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 Utah. 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, approximately \$107 billion in goods are shipped from sites in Utah and another \$102 billion in goods are shipped to sites in Utah, mostly by trucks.²² Sixty percent of the goods shipped annually from sites in Utah are carried by trucks and another 14 percent are carried by parcel, U.S. Postal Service or courier services, which use trucks for part of the deliveries.²³

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.

Utah'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. In fact, highway accessibility was ranked the number two site selection factor behind only the availability of skilled labor in a 2013 survey of corporate executives by [Area Development Magazine](#).²⁴

Businesses have responded to improved communications and the need to cut costs with a variety of innovations including just-in-time delivery, increased small package delivery, demand-side inventory management and e-commerce. The result of these changes has been a significant improvement in logistics efficiency as firms move from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

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.²⁵ 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.²⁶

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.²⁷

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.²⁸

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.²⁹

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.

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.³⁰

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.³¹ 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.³²

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.³³

Study on Impact of U.S. Highway Capacity Additions

A national report that studied the economic results of 100 recent highway capacity expansion projects has provided significant new insights into how enhancing regional mobility provides long-term economic benefits. The 2012 report, [“Interactions Between Transportation Capacity, Economic Systems and Land Use.”](#) was prepared by the Strategic Highway Research Program for the Transportation Research Board, which is a program of the National Academy of Sciences. The report reviewed 100 projects, costing a minimum of \$10 million, which expanded transportation capacity either to relieve congestion or enhance access.

The projects were carefully selected to ensure a wide range of project types and land use settings. The projects, completed no later than 2005, included a wide variety of urban and rural projects, including the provision or expansion of intercity highways, local access roads, interchanges, bridges, bypasses and intermodal facilities. The projects expanded or added major highways, beltways, connectors, bypasses, bridges, interchanges, industrial access roads, intermodal freight terminals and intermodal passenger terminals. The expanded capacity provided by the projects resulted in improved access, which resulted in reduced travel-related costs, faster and more reliable travel, greater travel speeds, improved reliability and increased travel volume.

The report found that the improved access as a result of capacity expansions provided numerous regional economic benefits, including increased employment, increased land value, increased tax revenue, increased intensity of economic activity, increased land prices and additional construction as a result of the intensified use.³⁴

The report further noted that improved transportation access benefits a region by: enhancing the desirability of an area for living, working or recreating, thus increasing its land value; increasing building construction in a region due to increased desirability for homes and businesses; increasing employment as a result of increased private and commercial land use; and increasing tax revenue as a result of increased property taxes, increased employment and increased consumption, which increases sales tax collection.³⁵

According to the report, “transportation projects lead to multifaceted forms of economic development impact, which may include effects on employment, income, land use, property values or business construction.”³⁶

The report found that benefits of a transportation capacity expansion unfolded over several years and that the extent of the benefits were impacted by other factors including: the presence of complimentary infrastructure such as water, sewer and telecommunications; local land use policy; the local economic and business climate; and whether the expanded capacity was integrated with other public investment and development efforts. “In some cases, an area with a higher growth trend may tend to be better positioned to take advantage of new highway connections or capacity,” the report found.³⁷

The report provided estimates on the average number of long-term jobs created as a result of increased transportation capacity, both within the local area and also outside of the immediate area of the improved access. For every \$1 million spent on increased transportation capacity, the report estimated that an average of seven local, long-term jobs were created at nearby locations as a result of improved access. An additional 4.2

jobs outside the local area were created, including businesses that supplied local businesses or otherwise benefited from the increased regional economic activity.³⁸

Highway and other intermodal capacity projects in urban areas created a greater number of long-term jobs than in rural areas, largely due to the more robust economic environment and greater density in urban communities.³⁹ Every \$1 million spent on urban highway or intermodal expansion projects was found to result in an additional 7.2 local long-term jobs and an additional 4.4 non-local, long-term jobs, while every \$1 million spent on rural highway or intermodal expansion projects was found to result in an additional 2.9 local, long-term jobs and an additional 1.6 non-local, long-term jobs.⁴⁰

Conclusion

Utah'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 Utah looks to support the state's quality of life, the quality of its system of highways, rail and public transit will have a significant impact on its ability to attract and support continued economic growth. Needed transportation improvements will provide Utah's residents with a high quality of life and afford its businesses and industries a high level of economic competitiveness.

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

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Endnotes

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- ⁸ Ibid.
- ⁹ Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop, Transportation Research Board. 1999. Figure 1.
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- ²⁶ The Transportation Challenge: Moving the U.S. Economy (2008). National Chamber Foundation. p. 10.
- ²⁷ Ibid.
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- ²⁹ Ibid.
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- ³¹ Ibid.
- ³² Ibid.
- ³³ 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.

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³⁵ Ibid. P. 17.

³⁶ Strategic Highway Research Program (2012). Transportation Research Board. “Interactions Between Transportation Capacity, Economic Systems and Land Use.” P. 1.

³⁷ Strategic Highway Research Program (2012). Transportation Research Board. “Interactions Between Transportation Capacity, Economic Systems and Land Use.” P. 11.

³⁸ Strategic Highway Research Program (2012). Transportation Research Board. “Interactions Between Transportation Capacity, Economic Systems and Land Use.” P. 22. Additional employment estimates were provided in response to a TRIP request.

³⁹ Strategic Highway Research Program (2012). Transportation Research Board. “Interactions Between Transportation Capacity, Economic Systems and Land Use.” P. 8.

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