

FUTURE MOBILITY IN MINNESOTA:

Meeting the State's Need for Safe and Efficient Mobility

September 2009

Prepared by:

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

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

Executive Summary

Minnesota's extensive system of roads, highways, bridges and public transit provides the state's residents, visitors and businesses with a high level of mobility. As the backbone that supports the North Star State's economy, Minnesota's surface transportation system provides for travel to work and school, visits with family and friends, and trips to tourist and recreation attractions while simultaneously providing businesses with reliable access for customers, suppliers and employees. Minnesota must improve its system of roads, highways, bridges and public transit to foster economic growth, keep business in the state, and ensure the safe, reliable mobility needed to improve the quality of life for all Minnesotans.

As Minnesota looks to rebound from the current economic downturn, the state will need to enhance its surface transportation system by improving the physical condition of its transportation network and enhancing the system's ability to provide efficient and reliable mobility for residents, visitors and businesses. With unemployment in Minnesota increasing from 4.5 percent in June 2007 to 8.4 percent in June 2009, making needed improvements to the state's roads, highways, bridges and transit could provide a significant boost to the state's economy by creating jobs and stimulating long-term economic growth as a result of enhanced mobility and access.

The federal government is an essential source of funding for the ongoing modernization of Minnesota's roads, highways, bridges and transit. While construction materials costs have stabilized somewhat during the current recession, a 37 percent materials cost increase over the past five years, coupled with declines in federal transportation revenues, has contributed to the difficulty all states face in maintaining and improving their surface transportation systems.

Approved in February 2009, the American Recovery and Reinvestment Act provides approximately \$502 million in stimulus funding for highway and bridge improvements and \$94 million for public transit improvements in Minnesota. This funding can serve as a down payment on needed road, highway, bridge and transit improvements, but it is not sufficient to allow the state to proceed with numerous projects needed to modernize its surface transportation system. Meeting Minnesota's need to modernize and maintain its system of roads, highways, bridges and transit will require a significant, long-term boost in transportation funding at the federal, state or local levels.

This fall Congress will deliberate over a long-range federal surface transportation program. The current program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), expires on September 30, 2009. The level of funding and the provisions of a future federal surface transportation program will have a significant impact not only on future highway and bridge conditions and safety but also on the level of transit service in Minnesota, which, in turn, will affect the state's ability to improve its residents' quality of life and enhance economic development opportunities.

The federal surface transportation program is an essential source of funding for the construction, maintenance and improvement of Minnesota's system of roads, highways, bridges and public transit.

- Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. The SAFETEA-LU program expires on September 30, 2009.
- From 1998 to 2008, Minnesota has been able to complete numerous highway, bridge and transit projects that have improved safety and enhanced mobility and economic productivity largely due to federal transportation funds. This report contains lists of projects completed with federal funding statewide and in the Twin Cities area.
- From 1998 to 2008, Minnesota received approximately \$5.8 billion in federal funding for road, highway and bridge improvements, and \$1.5 billion for public transit, a total of approximately \$7.3 billion.
- Federal funds provide 26 percent of revenues used annually by the Minnesota Department of Transportation to pay for road, highway and bridge construction, operations, repairs and maintenance. Federal funds provide approximately 50 percent of the State road construction revenues.
- Federal funds provide 17 percent of the revenue used annually to pay for the operation of and capital improvements to the state's public transit systems, which includes the purchase and repair of vehicles and the construction of transit facilities.
- While construction materials costs have stabilized somewhat during the current recession, a 37 percent materials cost increase over the past five years, coupled with declines in federal transportation revenues, will make it more difficult for Congress to authorize new federal surface transportation legislation that adequately funds needed improvements to the nation's roads, highways, bridges and public transit systems.

Without a substantial increase in federal or state highway funding, Minnesota will be unable to complete numerous projects to improve the condition and expand the capacity of roads, highways and public transit, hampering the state's ability to improve mobility and to enhance economic development opportunities in the state.

- Needed surface transportation projects in Minnesota that would require a significant boost in federal or state funding to proceed include the addition of lanes on portions of I-35E, I-494, I-694 and MN 36 in the Twin Cities area, the conversion of a portion of MN 252 in the Twin Cities area to a freeway, the widening of a portion of I-94 in Wright and Stearns Counties from four to six lanes, the conversions of portions of US 169, and US 10 in Sherburne and Benton counties into freeways and the replacement of buses and other fleet vehicles of transit systems in 80 counties. A full list of needed projects is included in the report.

- To ensure that federal funding for highways and bridges in Minnesota and throughout the nation continues beyond the expiration of SAFETEA-LU, Congress needs to approve a new long-term federal surface transportation program by September 30, 2009.
- The American Recovery and Reinvestment Act provides approximately \$502 million in stimulus funding for highway and bridge improvements and \$94 million for public transit improvements in Minnesota.

Despite the current economic downturn, population increases and economic growth in the North Star State over the past two decades have resulted in increased demands on the state's major roads and highways.

- Minnesota's population reached 5.2 million in 2008, an increase of 19 percent since 1990. The state's population is expected to grow to 6.1 million by 2025.
- Vehicle travel in Minnesota increased 42 percent from 1990 to 2008 – jumping from 38.9 billion vehicle miles traveled (VMT) in 1990 to 55.3 billion VMT in 2008.
- By 2025, vehicle travel in Minnesota is projected to increase by another 35 percent.
- From 1990 to 2008, Minnesota's gross domestic product, a measure of the state's economic output, increased by 59 percent, when adjusted for inflation.

Minnesota faces a significant backlog in funding needed roadway improvements and repairs over the next 20 years. The state's residents incur a significant cost as a result of roads and highways being congested, deteriorated and lacking some desirable safety features. A failure to eliminate or reduce the state's transportation funding shortfall will likely increase these costs incurred by Minnesotans.

- Minnesota's Statewide 20-year Highway Investment Plan 2009-2028 found that the state faces a \$50 billion shortfall during this period in funding needed projects to achieve state priorities for safety, mobility and infrastructure preservation. The report found that Minnesota needs to spend \$65 billion maintaining and improving its roadway system from 2009 to 2028, but currently anticipates being able to spend only \$15 billion.
- TRIP estimates that Minnesota's roadways that lack desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions cost the state's drivers approximately \$3.1 billion annually in the form of traffic crashes, additional vehicle operating costs and congestion-related delays.
- TRIP estimates that roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions, cost the average Twin Cities motorist \$1,501 annually.

Traffic congestion levels are rising as a result of population and economic growth.

- In 2007, Minnesota was ranked first in the nation in the share of congested urban Interstates and other highways or freeways, with 76 percent of the state's urban highways carrying a level of traffic that is likely to result in significant delays during peak travel hours.

- The average rush hour trip in the Twin Cities metropolitan area takes approximately 24 percent longer to complete than during non-rush hour.
- According to a report by the Reason Foundation, by 2030, unless additional highway capacity is added, traffic delays in the Twin Cities area will approximately triple, with the average rush hour trip taking 76 percent longer to complete than during non-rush hour. This level of traffic delay is greater than what is currently experienced in Los Angeles.
- The statewide cost of traffic congestion in lost time and wasted fuel is approximately \$1.3 billion annually and \$812 annually for the average driver in the Twin Cities area.

In 2007, 32 percent of major state and locally maintained roads in Minnesota were in poor or mediocre condition, providing motorists with a rough ride.

- In 2007, 10 percent of Minnesota's major state and locally maintained roads were rated in poor condition and 22 percent were rated in mediocre condition. This includes Interstates, highways, connecting urban arterials and key urban streets that are maintained by state, county or municipal governments.
- Roads rated in poor condition 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. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.
- Roads in need of repair cost each Minnesota motorist an average of \$347 annually in extra vehicle operating costs – \$1.1 billion statewide. Costs include accelerated vehicle depreciation, additional repair costs and increased fuel consumption and tire wear.
- In the Twin Cities metropolitan area, where 22 percent of major roads are rated in poor condition and 30 percent of major roads are rated in mediocre condition, driving on roads in need of repair costs motorists \$431 each year in extra vehicle operating costs.
- The functional life of Minnesota's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that structures last as long as possible. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.

Twelve percent of bridges in Minnesota show significant deterioration or do not meet current design standards. This includes all bridges that are 20 feet or more in length and are maintained by state, local and federal agencies.

- Nine percent of Minnesota's bridges were structurally deficient in 2008. 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.

- Three percent of Minnesota's bridges were functionally obsolete in 2008. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.
- The Minnesota Department of Transportation (Mn/DOT) will be replacing 120 structurally deficient and fracture critical bridges, and fully funding bridge preservation. All performance based bridge preservation needs on state-maintained bridges are scheduled to be completed by 2018.

Minnesota's rural traffic fatality rate is significantly greater than the fatality rate on all other roads in the state. Improving safety features on Minnesota's roads and highways would likely result in a decrease in traffic fatalities in the state. Roadway design is a factor in approximately one-third of all fatal and serious traffic accidents.

- Between 2004 and 2008, 2,586 people were killed in traffic accidents in Minnesota, an average of 517 fatalities per year.
- Minnesota's traffic fatality rate was .83 fatalities per 100 million vehicle miles of travel in 2008.
- The traffic fatality rate in 2008 on Minnesota's non-Interstate rural roads was 1.27 traffic fatalities per 100 million vehicle miles of travel, which is nearly two and a half times the traffic fatality rate on all other roads and highways in the state (.53).
- Several factors are associated with vehicle accidents that result in fatalities, including driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is a factor in approximately one-third of fatal traffic accidents.
- Where appropriate, highway improvements can reduce traffic fatalities and accidents while improving traffic flow to help relieve congestion. Such improvements include removing or shielding obstacles; adding or improving medians; adding rumble strips, wider lanes, wider and paved shoulders; upgrading roads from two lanes to four lanes; and better road markings and traffic signals.
- The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.
- The cost of serious traffic crashes in Minnesota in 2008, in which roadway design was a factor, was approximately \$810 million or \$258 per state driver. The costs of serious crashes include lost productivity, lost earnings, medical costs and emergency services.

Two congressionally appointed commissions and a national organization representing state transportation departments have recommended a broad overhaul of the Federal Surface Transportation Program to improve mobility, safety and the physical condition of the nation's surface transportation system by significantly boosting funding, consolidating the program into fewer categories, speeding up project delivery and requiring greater accountability in project selection.

- The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) and the National Surface Transportation Infrastructure Financing Commission (NSTIFC) were created by Congress to examine the current condition and future funding needs of the nation's surface transportation program, develop a plan to insure the nation's surface transportation system meets America's future mobility needs, and to recommend future funding mechanisms to pay for the preservation and improvement of the nation's roads, highways, bridges and public transit systems.
- The NSTPRSC concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.
- The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall over the next 25 years in maintaining and making needed improvements to the nation's surface transportation system.
- The NSTIFC found that the use of motor fuel fees is not sustainable as a primary source of funding for the nation's surface transportation system because of the shift to a variety of fuel sources and more fuel efficient vehicles.

Key recommendations of the Commissions and the American Association of State Highway Transportation Officials (AASHTO) include:

Program format:

- Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking (NSTPRSC).
- Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship, and the development of environmentally-friendly energy sources (NSTPRSC).
- Speed up project development processes to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects (NSTPRSC).
- Develop a future federal surface transportation program that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget (AASHTO).

- Provide a federal surface transportation program that is based on state-driven performance measures and is focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations, and environmental protection (AASHTO).

Funding:

- Shift the collection of federal surface transportation revenues from fuel taxes to mileage-based fees, which would charge motorists a fee based on the number of miles driven, with full deployment of a comprehensive system in place by 2020 (NSTIFC).
- Ensure that once implemented, mileage-based fees were indexed to inflation and that they and any other federal transportation charges were set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieve an integrated national transportation system that is less congested and safer and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes (NSTIFC).
- Failure to address the immediate funding shortfall and provide adequate long-term funding for surface transportation will lead to unimaginable levels of congestion, reduced safety, costlier goods and services, eroded quality of life and diminished economic competitiveness (NSTIFC).
- In the short term, significantly boost the current federal motor fuel tax and index it to inflation to support increased federal surface transportation investment (NSTIFC).
- Expand the ability to use additional surface transportation funding sources including tolling, state investment banks and public-private partnerships as a supplement to primary sources of funding such as motor fuel fees and eventually a mileage-based fee (NSTIFC).

The efficiency of Minnesota’s transportation system, particularly its highways, is critical to the health of the state’s economy. Businesses are increasingly reliant on an efficient and reliable transportation system to move products and services. Expenditures on highway repairs create a significant number of jobs. Increases in the cost of highway construction materials have boosted the cost of road, highway and bridge repairs.

- The twin cities of Minneapolis and St. Paul are the nation’s third largest trucking center.
- Annually, \$166 billion in goods are shipped from sites in Minnesota and another \$161 billion in goods are shipped to sites in Minnesota, mostly by trucks.
- Sixty-nine percent of the goods shipped annually from sites in Minnesota are carried by trucks and another 18 percent are carried by courier services, which use trucks for part of the deliveries. Similarly, 72 percent of the goods shipped to sites in Minnesota are carried by trucks and another 17 percent are carried by courier services.
- Commercial trucking in Minnesota is projected to increase 31 percent by 2020.

- 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.
- Over the five-year period from May 2004 to May 2009, the average cost of materials used for highway construction – including asphalt, concrete, steel, lumber and diesel – increased by 37 percent.

Sources of information for this report include the Minnesota Department of Transportation (MnDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI). All data used in the report is the latest available.

Introduction

Minnesota's roads, highways and bridges form vital transportation links for the state's residents, visitors and businesses, providing daily access to homes, jobs, shopping and recreation, as well as to technology and research centers, manufacturing plants and thriving industrial zones.

Today, with an unemployment rate of 8.4 percent, and with the state's population continuing to grow, the modernization of Minnesota's surface transportation system is crucial to providing safe and efficient mobility while improving the economic livelihood of the state and accommodating future growth.¹

As the nation looks to rebound from the current economic downturn, the improvement of Minnesota's transportation system could play an important role in improving the state's economic well being by providing critically needed jobs in the short term and by improving the productivity and competitiveness of the state's businesses in the long term.

While state and local governments are responsible for maintaining most of Minnesota's roadways, bridges and public transit systems, the federal government plays a significant role in funding the repairs and improvements to many of the state's most heavily used roads, highways, bridges and public transit systems. As Minnesota faces the challenge of preserving and improving its surface transportation system, the future level of federal highway funding will be a critical factor in whether the state's residents, businesses and visitors continue to enjoy access to a safe and efficient transportation network.

This report examines the condition, use and safety of Minnesota's roads, highways, bridges and public transit systems, the role of federal funding in the maintenance and improvement of the state's surface transportation system and the future mobility needs of the state. Included in the report are lists

of highway, bridge and transit projects that have been completed with the help of federal funding, and needed surface transportation projects that will require significant federal funding to proceed.

Sources of information for this report include the Minnesota Department of Transportation (Mn/DOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census The Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI). All data used in the report is the latest available.

Population, Travel and Economic Trends in Minnesota

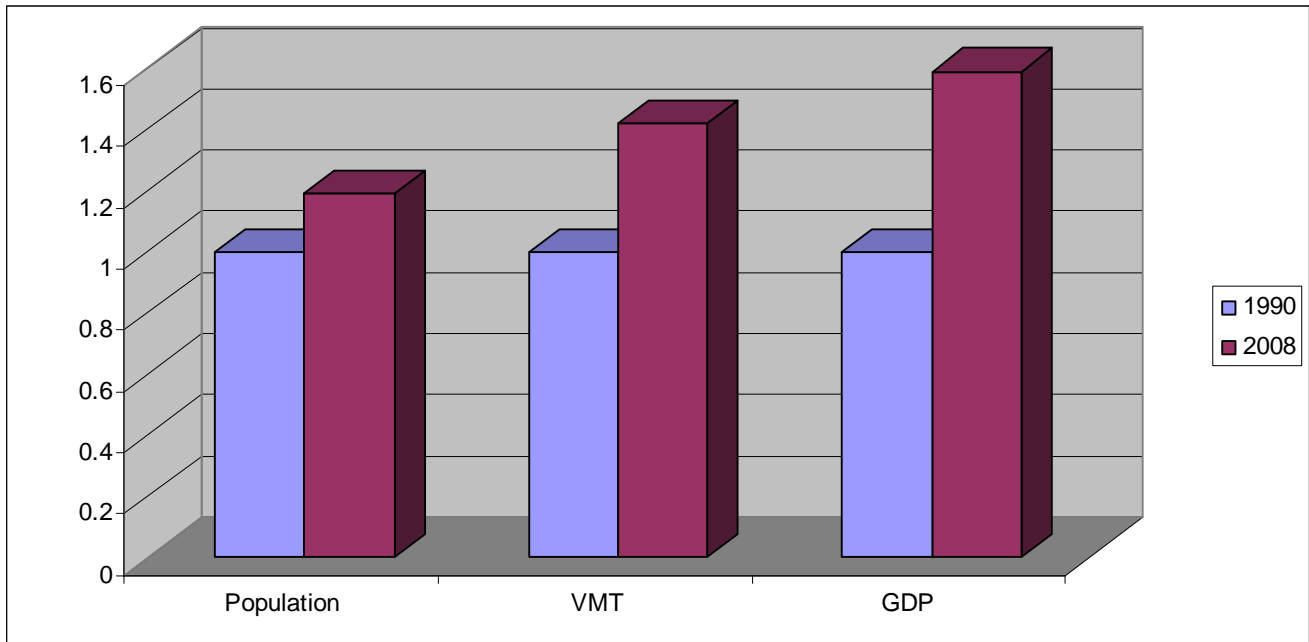
Minnesota residents and businesses require a high level of personal and commercial mobility. Despite the current economic downturn, population increases and economic growth in the North Star State over the past two decades have resulted in a significant increase in the demand for mobility, resulting in an increase in vehicle miles of travel (VMT). To foster a high quality of life in Minnesota, it will be critical that the state provide and preserve a safe and modern transportation system that can accommodate future growth in population, vehicle travel and economic development.

Minnesota's population grew 19 percent between 1990 and 2008, increasing from 4.4 million in 1990 to approximately 5.2 million residents in 2008.² The population of Minnesota is projected to increase to 5.5 million by 2025.³

Minnesota also has experienced significant economic growth since 1990. From 1990 to 2008, Minnesota's gross domestic product (GDP), a measure of the state's economic output, increased by 59 percent, when adjusted for inflation.⁴

Steady population increases and economic growth in Minnesota have resulted in a significant increase in vehicle travel in the state. From 1990 to 2008, annual vehicle miles of travel in Minnesota increased 42 percent, from 38.9 billion miles traveled annually to 55.3 billion miles traveled annually.⁵ Based on population and other lifestyle trends, TRIP estimates that travel on Minnesota's roads and highways will increase 35 percent by 2025, to approximately 74.7 billion miles of travel.⁶

Chart 1: Minnesota's population, GDP and Vehicle Travel increase 1990-2008. 1 = 1990 level



Source: TRIP analysis of federal data

Condition of Minnesota's Roads

The life cycle of Minnesota's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible. The pavement condition of the state's major roads is evaluated and classified as being in poor, mediocre, fair or good condition.

In 2007, 32 percent of Minnesota's major state and locally maintained roads were rated in poor or mediocre condition, providing motorists with a rough ride.⁷ Ten percent of Minnesota's major roads were rated in poor condition and 22 percent were rated in mediocre 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. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

A desirable goal for state and local organizations that are responsible for road maintenance is to keep 75 percent of major roads in good condition.⁹ In Minnesota, 47 percent of the state's major state and locally maintained roads were in good condition in 2007.¹⁰

Chart 2. Pavement conditions in Minnesota.

<i>Pavement Rating</i>	<i>Percentages</i>
Poor	10%
Mediocre	22%
Fair	21%
Good	47%

Source: TRIP analysis of Federal Highway Administration Data.

In the Twin Cities area, 22 percent of the region's major state and locally maintained roads were rated in poor condition and another 30 percent were rated in mediocre condition.¹¹

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.¹²

As Minnesota'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 Costs to Motorists of Roads in Inadequate Condition

TRIP has calculated the additional cost to motorists of driving on roads in poor or unacceptable condition. Roads in poor condition – which may include potholes, rutting or rough surfaces – increase the cost to operate and maintain a vehicle. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repairs, increased fuel consumption and increased tire wear. TRIP estimates that additional vehicle operating costs borne by Minnesota motorists as a result of driving on roads in poor condition is \$1.1 billion annually, or \$347 per motorist, slightly higher than the national average of \$335. Deficient highways and major roadways in the Twin Cities metro area cost motorists an average of \$431 per year.

Additional vehicle operating costs have been calculated in the Highway Development and Management Model (HDM), which is recognized by the U.S. Department of Transportation and more

than 100 other countries as the definitive analysis of the impact of road conditions on vehicle operating costs. The HDM report is based on numerous studies that have measured the impact of various factors, including road conditions, on vehicle operating costs.¹³

The HDM study found that road deterioration increases ownership, repair, fuel and tire costs. The report found that deteriorated roads accelerate the pace of depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Similarly, tire wear and fuel consumption increase as roads deteriorate since there is less efficient transfer of power to the drive train and additional friction between the road and the tires.

TRIP's additional vehicle operating cost estimate is based on taking the average number of miles driven annually by a motorist, calculating current vehicle operating costs based on AAA's 2008 vehicle operating costs and then using the HDM model to estimate the additional vehicle operating costs paid by drivers as a result of substandard roads.¹⁴ Additional research on the impact of road conditions on fuel consumption by the Texas Transportation Institute (TTI) is also factored into TRIP's vehicle operating cost methodology.

Bridge Conditions in Minnesota

Minnesota's bridges form key links in the state's highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, and facilitating commerce and access for emergency vehicles. In 2008, a total of 12 percent of Minnesota's bridges (20 feet or longer) were rated as structurally deficient or functionally obsolete.

Nine percent of Minnesota's bridges (20 feet or longer) were rated as structurally deficient.¹⁵ A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

Three percent of Minnesota's bridges were rated functionally obsolete in 2008.¹⁶ Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment with the approaching roadway.

The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, insuring that a facility has good drainage and replacing deteriorating components. But most bridges will eventually require more costly reconstruction or major rehabilitation to remain operable.

Minnesota's bridges are aging. Many bridges were built in the 1950s and 1960s, and were not designed for modern vehicles and trucks, or for the demands placed on them for access.

In accordance to Minnesota Laws 2008, Chapter 152, the Minnesota Department of Transportation (Mn/DOT) will be replacing 120 structurally deficient and fractured critical bridges, and full funding bridge preservation and all performance based bridge preservation needs will be met by 2018.¹⁷ At \$2.5 billion over 10 years, these bridges include major replacement projects like Interstate 90 over the Mississippi River near Dresbach, the I-35E Cayuga Bridge in St. Paul and the Highway 36 St. Croix River crossing south of Stillwater.¹⁸

Traffic Congestion in Minnesota

Traffic congestion in Minnesota is a growing burden in key urban areas and threatens to impede the state's economic development. Congestion on Minnesota's urban highways is growing as a result of increases in vehicle travel and population.

In 2007, Minnesota's was ranked first in the nation in the share of congested urban Interstates and other highways or freeways with 76 percent of the state's urban highways carrying traffic volumes that result in significant rush hour delays.¹⁹ Highways that carry high levels of traffic are also more vulnerable to experiencing lengthy traffic delays as a result of traffic accidents or other incidents.

Traffic congestion in Minnesota's largest urban areas is likely to worsen significantly unless the state is able to improve its transportation system. The average rush hour trip in the Twin Cities metro area takes approximately 24 percent longer to complete than during non-rush hour.²⁰ The cost of this congestion, in the form of lost time and wasted fuel, is estimated to be \$812 per peak hour traveler in the Twin Cities area.²¹ TRIP estimates that the total cost statewide of traffic congestion is approximately \$1.1 billion.²²

According to the Reason Foundation, by 2030, unless additional highway capacity is added, traffic congestion delays will triple, with the average rush hour trip in the Twin Cities metro area taking 76 percent longer to complete than during non-rush hour.²³ This level of traffic delay is greater than what drivers currently experience in Los Angeles.

Projects needed to increase the capacity of the state's major roadways to relieve traffic congestion, improve safety and support economic development can not proceed without a significant boost in state or federal funding. The following chart lists needed capacity-enhancing projects located in the Twin Cities urban area cannot proceed without a boost in state or federal funding.

Chart 3. Needed projects to expand roadway capacity in the Twin Cities metro area that cannot proceed without a boost in federal or state funding (see note).

Route Name	County or Closest City	From	To	Length in Miles	Average Daily Traffic	Project description	Estimated project cost (millions)
MN 610	Maple Grove, Osseo, Brooklyn Park	CR 81	I-94	~2.3+	33,145 to 87,183	Extend freeway & construct interchanges	165
I-494	Plymouth, Maple Grove	MN 55	Fish Lake Road	5	80, 588 to 107,111	Add freeway lanes	250
I-694	Arden Hills, Shoreview, Little Canada	I-35W	I-35E	5.7	80,588 to 122,436	Add freeway lanes	250
I-694	Oakdale, Maplewood, White Bear Lake	I-35E	I-94	11	70,105 to 96,103	Add freeway lanes	250
I-494	Bloomington	East Bush Lake Road	34th Avenue	7.2	135,701 to 169,337	Add freeway lanes	1,000
I-35E	Little Canada	I-94	I-694	4.3	159,044 to 124,452	Add freeway lanes	350
MN 36	Little Canada, Roseville	I-35W	I-35E	5.1	83,648 to 88,749	Add freeway lanes	150
MN 252	Brooklyn Park and Brooklyn Center	I-94	MN 610	4.3	53,045 to 71,407	Convert to freeway	150
MN 100	St. Louis Park	36th Street	Cedar Lake Road	1.7	107,111 to 127,282	Add freeway lanes	150

Note: These projects were identified by the 2004 Statewide Transportation Plan

Source: Mn/DOT response to TRIP survey

The following chart lists needed capacity-enhancing projects located outside the Twin Cities urban area cannot proceed without a boost in federal or state funding.

Chart 4. Needed projects to expand roadway capacity outside the Twin Cities metro area that cannot proceed without a boost in federal or state funding (See note).

Route Name	County or Closest City	From	To	Length in Miles	Average Daily Traffic	Project description	Estimated project cost (millions)
MN 15	Stearns and Benton Counties	St. Cloud	Sauk Rapids	5.3	21,953 to 36,764	Various improvements	8.5
MN 371	Crow Wing County	CSAH 18 in Nisswa	CSAH 16 in Jenkins	10.5	10,331 to 12652	Two- to four-lane conversion	30.5
MN 55	Wright County	CR 134 in Buffalo	Rockford	7.7	15,846 to 22,302	Two- to four-lane conversion	43
I-94	Wright and Stearns Counties	MN 101 in Rogers	North of Mn 24	27.8	55,671 to 76,679	Four- to -six-lane conversion	105
MN 24	Sherburn and Wright Counties	I-94 in Clearwater	US 10 in Clear Lake	3.8	18,478	Connect I-94 & U.S. 10 & new river crossing	178
MN 371	Cass and Crown Wing Counties	CSAH 16 in Jenkins	CSAH 42 in Pine River	3.0	8,597 to 8,965	Two- to four-lane conversion	5.5

US 169	Sherburne County	MN 10 in Elk River	Zimmerman	11.8	32,037 to 54,621	Freeway conversion	550
US 10	Sherburne County	US 169	Upland Avenue in Elk River	6.1	30,462 to 40,260	Freeway conversion	185
US 10	Benton and Sherburne Counties	MN 301	Benton Drive in St. Cloud	3.3	23,157 to 29,411	Freeway conversion	120
US 14	Dodge and Steele Counties	Owatonna	MN 56 near Dodge Center	15.5	7,773 to 8,155	Two- to four-lane conversion	189
MN 19	Rice County	I-35	Northfield	5.2	9,374	Two- to four-lane conversion	35.7
US 14	Nicollet County	North Mankato	CSAH 17	3	9,741	Two- to four-lane conversion & new interchange	39
<i>Note: These projects were identified as performance based need in the Minnesota Statewide 20-year Highway Investment Plan 2009-2028.</i>							

Source: Mn/DOT response to TRIP survey

Minnesota offers a wide range of public transit options for residents and visitors, all of which help the state address traffic congestion. Mn/DOT has identified the following needed transit projects in the state that would require an increase in anticipated federal or state surface transportation funds to proceed.

Chart 5. Needed improvements that would require significant federal funding to be completed by 2018 that are located in Minnesota outside the Twin Cities area.

County or Closest City	Type of Project	Route	Project Description	Estimated project cost (millions)	Type improvement	Benefit
80 counties	Transit	Entire system	Additional fleet & fleet replacement	38 (by year 2020)	New service	Increase accessibility and mobility
80 counties	Transit	Entire system	Additional operating cost	318 (by year 2020)	New service	Increase accessibility and mobility
Mankato	Transit Garage & Operating Facility		Renovate existing structure	6	Improve Existing facility	Economic Development, Efficiency
Gilbert	AEOA ITS - Phase II Regional Dispatch & Man. System		Computer aided Dispatch & Data Management System	0.5	Regional ITS Development	Efficiency
Stewartville	Park & Ride Lot Construction		Construct Park & Ride Lot	0.3	New	Congestion, Efficiency, Safety
Saint Cloud	CNG Fuel Station Construction		Construct CNG Fueling Station	1.5	New	Efficiency
Saint Cloud	Operations Center Improvements		Remodel Operation Center	1	Improve Existing Facility	Economic Development, Efficiency

Saint Cloud	Park & Ride Lot Construction		Construct Park & Ride Lot	1	New	Congestion, Efficiency
Saint Cloud	Purchase ITS Equipment		Purchase ITS Equipment	0.1	Update ITS System	Safety, Congestion
Rochester	Phase IV Transit Garage Construction		Construct Transit Garage	17	New	Economic Development, Efficiency
Duluth	Multi-Modal Transit Terminal		Construct Multi-Modal Transit Terminal	64	New	Economic Development, Efficiency

Source: Mn/DOT response to TRIP survey

Traffic Safety in Minnesota

A total of 2,586 people were killed in motor vehicle accidents in Minnesota from 2004 through 2008, an average of 517 fatalities per year.²⁴

Minnesota's traffic fatality rate was .83 fatalities per 100 million vehicle miles of travel in 2008. The national average of fatalities per 100 million vehicle miles of travel is 1.33.²⁵

Chart 6. Traffic fatalities in Minnesota from 2003 – 2008.

<i>Year</i>	<i>Fatalities</i>
2004	567
2005	559
2006	494
2007	510
2008	456
Total	2,586

Source: National Highway Traffic Safety Administration

Minnesota's rural, non-Interstate roads have a fatality rate significantly higher than other roads in the state. The traffic fatality rate in 2008 on Minnesota's non-Interstate rural roads was 1.27 traffic fatalities per 100 million vehicle miles of travel, which is nearly two and a half times greater than the .53 traffic fatalities per 100 million vehicle miles of travel on all other roads and highways in the state.²⁶

Three major factors are associated with fatal vehicle accidents: driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is a factor in one-third of all fatal and serious traffic accidents. Improving safety on Minnesota’s roadways can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and a variety of improvements in roadway safety features.

The severity of serious traffic crashes could be reduced through roadway improvements such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, and providing better road markings and upgrading or installing traffic signals where appropriate.

Roads with poor geometry, with insufficient clear distances, without turn lanes, inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

The following chart shows the correlation between specific needed road improvements and the reduction of fatal accident rates nationally.²⁷

Chart 7. Reduction in fatal accident rates after roadway improvements.

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

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

Traffic accidents take a tremendous economic toll on a community, in addition to the suffering and grief that they cause to those injured or killed and their loved ones. A 2002 report by the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) has found that motor vehicle crashes carry a cost to individuals that includes medical costs, lost economic and household productivity, property damage and travel delays.²⁸

Using crash cost models developed by NHTSA, TRIP has estimated the costs of traffic crashes in Minnesota, in which roadway design was a factor. TRIP estimates that the cost of traffic crashes that resulted in either a fatality or an injury, in which roadway design was a factor, was \$810 million in 2008 or \$258 per driver.²⁹

Importance of Transportation to Economic Growth

Many industries have contributed to boosting the North Star State's gross domestic product by 59 percent since 1990 (when adjusted for inflation).³⁰ Minnesota, rich in natural resources, also is a top manufacturer of goods ranging from non-electric machinery to scientific instruments.

Minneapolis is the trade center of the Midwest and St. Paul publishes the most calendars and law books in the nation. Together, these twin cities are the nation's third-largest trucking center, while Duluth boasts the nation's largest inland harbor, averaging about 45 million net tons of cargo annually.³¹

Tourism also is a major revenue producer in Minnesota. With arts, fishing, hunting, water sports and winter sports bringing in millions of visitors each year, tourism in Minnesota is an \$11 billion industry and the leisure and hospitality industry employs more than 248,000 Minnesotans.³²

All of the state's businesses are dependent on an efficient, safe, and modern transportation system that will foster continued business diversification and opportunity throughout the North Star State. The new culture of business demands that an area have well-maintained and efficient roads, highways and bridges if it is to remain 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.

Highways are vitally important to continued economic development in Minnesota. 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, \$166 billion in goods are shipped from sites in Minnesota and another \$161 billion in goods are shipped to sites in Minnesota, mostly by trucks.³³ Sixty-nine percent of the goods shipped annually from sites in Minnesota are carried by trucks and another 18 percent are carried by courier services, which use trucks for part of their deliveries. Similarly, 72 percent of the goods shipped to sites in Minnesota are carried by trucks and another 17 percent are carried by courier service³⁴

Trucking is a crucial part of Minnesota's economy. In 2001, trucks moved 373 million tons of freight valued at \$445 billion to, from *and through* the state of Minnesota. Trucks are expected to move freight valued at \$957 billion by 2020.³⁵ Based on federal projections, TRIP estimates that commercial trucking in Minnesota will increase by 31 percent between 2009 and 2020.³⁶

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.³⁷

The Funding of Minnesota's Surface Transportation System

The construction, repair and upkeep of Minnesota's roads, bridges, highways and public transit systems are paid for by local, state and federal governments. Roads and highways are maintained largely by state and local governments, and transit systems are operated largely by local transit agencies.

Minnesota faces a significant shortfall over the next 20 years in funding needed repairs and improvements of its roads, highways and bridges. Minnesota's 2009-2028 Minnesota Statewide Transportation Policy Plan found that the state faces a \$50 billion shortfall during the period in needed projects to achieve state priorities for safety, mobility and infrastructure preservation.³⁸ The report found that Minnesota needs to spend \$65 billion maintaining and improving its roadway system from 2009 to 2028, but currently only anticipates being able to spend \$15 billion.³⁹

Significant federal funding for highways and transit is provided to both state and local governments. Federal funding for Minnesota's highways and bridges comes from the Federal

Highway Trust Fund, under funding levels and formulas determined by Congress. Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. The SAFETEA-LU program expires on September 30, 2009.

From 1998 to 2008, Minnesota received approximately \$5.8 billion in federal funding for road, highway and bridge improvements, and \$1.5 billion in funding for public transit – a total of approximately \$7.3 billion in federal surface transportation funding during the 10-year period.⁴⁰

This federal funding is a critical source of revenue for Minnesota's roadways and bridges. Federal funds provide 26 percent of all revenues used by Mn/DOT to pay for road, highway and bridge construction, operations, repairs and maintenance.⁴¹ Federal funds provide approximately 50 percent of the State road construction revenues.⁴²

Federal funds also provide 17 percent of the revenue used annually to pay for the operation of and capital improvements to the state's public transit systems, which includes the purchase and repair of vehicles and the construction of transit facilities.⁴³

As a result of this level of federal support, since 1998 Minnesota has been able to complete numerous projects on the state's highway system, rehabilitate deteriorated roadways and bridges, and expand transit systems and access to improve traffic safety, relieve traffic congestion and enhance economic development opportunities.

The following chart shows major highway rehabilitation projects completed in Minnesota since 1998 for which the federal government was a significant source of funding. These system preservation projects include a variety of reconstruction and modernization elements as well as resurfacing to enhance safety and extend the life span of the roadway.

Chart 8. Minnesota highway rehabilitation/preservation projects completed since 1998, largely due to federal surface transportation funds. These projects are located in Minnesota outside the Twin Cities metropolitan areas.

Route Name	County or Closest City	From	To	Length Miles	Year Completed	Average Daily Traffic	Improvement Made	Project cost (millions)	Benefit of project
US 14	Brown County	7th Street North	Highland Avenue	2	2004	11,380 to 15,520	Reconstruction	6.6	safety & mobility
MN 61	Lake and Cook Counties	Two Harbors	Grand Marais	Several segments along 82 mile stretch	1999-2000	3,111 to 9,997	Reconstruct to full design standards	13	safety
MN 61	Lake and Cook Counties	Two Harbors	Grand Marais	Several segments along 82 mile stretch	2002 & 2005	3,111 to 9,997	Reconstruct to full design standards	11	safety
MN 27	Douglas County	Alexandria	Osakis	11.3	2001	4,700 to 8,600	Reconstruct, grade & surface	14	preservation
MN 7	McLeod County	Hutchinson	Silver Lake	7.7	1999	7,000	Regrade, resurface & passing lanes	7	safety & preservation
MN 7	Hutchinson McLeod County	East City Limits	West City Limits	2.5	2006	6,600 to 11,500	Reconstruct to 5-lane section	11	safety & mobility
MN 169	Itasca County	Atkin/Itasca County Line	CR 67	5.7	1999	2,900	Grading & Surfacing	6	preservation (demo project)
US 10	Detroit Lakes, Becker County	US 59	East Shore Drive	5.7	2008	11,700	Reconstruction & Access Management	41	mobility & congestion
MN 63	Rochester, Olmsted County	Intersection at 48th St. SW		N/A	2005	29,000 on US 52, 2,000 on 48th St SW	Grade, surface bridge	18	safety & mobility
MN 64	Hubbard County	MN 87	CR 33	6	2006	1,550 to 1,700	Reconstruction	5.4	safety & preservation
MN 34	Park Rapids, Hubbard County	Western Avenue	CR 4	3	2007	5,600 to 21,000	Reconstruction and Access Management	10	safety & mobility
MN 336	Dilworth, Clay County	Junction US 10		N/A	2001	9,500 on US 10, 9,100 on MN 336	Construct Interchange	9	safety

Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)

Source: Mn/DOT response to TRIP survey

Several major rehabilitation and preservation projects were undertaken in the Twin Cities area as well, as the examples in Chart 9 show.

Chart 9. Twin Cities metro area highway rehabilitation/preservation projects completed since 1998, largely due to federal surface transportation funds.

Route Name	County or Closest City	From	To	Length (miles)	Year Work Completed	Average Daily Traffic	Improvements Made	Project Cost (millions)	Benefit
I-35E/I-694	Ramsey County	MN 36	CR E and I-694	4	2008	117,273 to 124,452	Interchange and bridge reconstruction	120	congestion mitigation
US 12	Hennepin County	CR 6	Wayzata Blvd.	5	2008	24,494 to 25,196	Relocate reconstruct road and interchanges	67	congestion mitigation
MN 55/MN 62	Hennepin County	45th Street	MN 5	1	2004	68,000 on MN 62, 20,000 on MN 55	Construct interchange, bridges	25.5	congestion mitigation
I-35W	Minneapolis Hennepin	I-494	66th Street	0.3	2000	100,990 to 102,010	Reconstruct bridges, construct HOV lane	8.5	congestion & preservation
MN 100	Hennepin County	29th Ave. North	50th Ave. North	4	2005	66,511 to 82,982	Convert to freeway, bridges, grading	65	congestion mitigation

Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)

Source: Mn/DOT response to TRIP survey

Similarly, numerous major bridges have been rehabilitated due largely to federal transportation funding since 1998. The projects in Chart 10 show the range of this work, from expansion to decking to replacement.

Chart 10. Major bridge projects completed in Minnesota since 1998 in which federal funds were a significant source of revenue. These projects are located in Minnesota outside the Twin Cities metropolitan area.

Route Carried	County or Closest City	Route or feature intersected	Average Daily Traffic	Existing or New Bridge	Describe Improvements Made	Project Cost	Benefit	Year Completed
US 53	Duluth, St. Louis County	Miller Creek (BR 69122)	14,800	Existing	Part of highway reconstruction	1	preservation	2003
MN 197	Bemidji, Beltrami County	Mississippi River (BR 4022 & 4024)	11,200	Existing		1	preservation	2002
MN 371	Brainerd, Crow Wing County	Mississippi River (BR 4022 & 4024)	8,900	New Bridge	Part of new bypass	4	preservation	1998
US 10	Moorhead, Clay County	Red River of the North (Br 3009)	23,400	Existing	Replacement	9	preservation	2003
US 52	Rochester, Olmsted County	US 14 (Br 55049 & 55050)	32,500	Existing	Replacement	4	preservation	2004
US 169	St. Peter, Nicollet County	Minnesota River (Br 72013)	13,400	Existing	Replacement	11	preservation	2005
MN 15		South Fork Crow River (Br 43016)	13,100	Existing	Replacement	2	preservation	2006

MN 22		Minnesota River (BR 40002)	9,200	Existing	Replacement	3	preservation	1998
MN 23	St. Cloud, Stearns County	Mississippi River (BR 73014)	7,500	Existing	Replacement	19	preservation	2008
MN 2		St Louis River (BR 69121)	4,300	Existing	Replacement	4	preservation	2002

Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)

Source: Mn/DOT response to TRIP survey

Bridge rehabilitation and replacement in the Twin Cities area completed largely due to federal transportation funding since 1998 includes the projects listed in chart 11. These projects focused on preservation.

Chart 11. Major bridge projects completed in the Twin Cities metro area since 1998 in which federal funds were a significant source of revenue.

Route Carried	County or Closest City	Route or feature intersected	Average Daily Traffic	Type of project	Improvements Made	Project Cost	Benefit	Year Completed
I-35W	Minneapolis, Hennepin County	Minnehaha Parkway & Creek (BR 27405 & 27406)	86,500	Replacement	Part of Major Freeway expansion	12	preservation	2008
I-494	Bloomington, Hennepin County	Mississippi River (BR 82855)	44,500	Redeck		57	preservation	2003
MN 610	Champlin, Hennepin County	Mississippi River (BR 27252)	42,000	Replacement		6	preservation	1999
I-35E	Little Canada, Ramsey County	I-35E & I-694 (BR 62902)	23,000	Replacement	Part of Major Freeway expansion	14	preservation	2006
MN 101		Mississippi River (BR 86006)	23,000	Replacement	Conversion to Freeway	3	preservation	2001
MN 41	Chaska, Carver County	Minnesota River (BR 10012)	15,800	Widening		41	preservation	2007
MN 25		Minnesota River (BR 72012)	6,800	Replacement		6	preservation	2005
I-35W	Minneapolis, Hennepin County	Mississippi River (BR 27409 & 27410)	154,000	Replacement	Replace collapsed bridge	234	preservation	2008
I-494	St. Paul, Ramsey County	Mississippi River (BR 82856)	89,000	New Bridge		33+	preservation	2003
I-35E	St. Paul, Ramsey County	Mississippi River (BR 62912)	75,000	Widening		24	preservation	2001

Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)

Source: Mn/DOT response to TRIP survey

Accommodating population growth and providing opportunities for economic development require transportation enhancements. The following charts shows major projects undertaken to provide additional capacity on Minnesota’s roadway system that were completed since 1998 and for which federal funds were a significant source of funding.

Chart 12. Minnesota highway capacity projects completed since 1998, largely due to federal surface transportation funds. These projects are located in Minnesota outside the Twin Cities area.

Route Name	County or Closest City	From	To	Length (miles)	Average Daily Traffic	Improvements Made	Year Completed	Project Cost (millions)	Benefit
US 14/ US 52	Rochester, Olmsted County	85th St. Northwest	MN 83 (Broadway Ave)	11.8	38,000 to 74,000	4- to 6-lane conversion, bridges, interchanges	2006	\$232	mobility & preservation
MN 371	Brainerd, Clay County	Barrows	Baxter	6.4	9,600 to 11,800	Construct 4-lane bypass	2000	9.9	mobility
MN 25	Monticello, Hennepin County	Junction I-94	n/a	0.4	28,000	2- to 4- lane expansion, channelization	2000	5.8	mobility & safety
MN 23	Kandiyohi County	New London	Spicer	11	8,400 to 11,200	2- to 4- lane expansion, access management	2005	34.5	mobility & safety
MN 23/ US 71	Kandiyohi County	Willmar Bypass	n/a	6.5	3,600 to 6,500	2- to 4- lane expansion	2002	8	mobility
MN 101	Hennepin County	I-94	US 10	5	44,000 to 50,000	Freeway conversion, four new interchanges	2008	55	congestion & mobility
US 14	Dodge Center, Dodge County	West Limits Old US 14	West Limits Kasson	9.2	7,800 to 11,400	Construct 4-lane bypass	2001	21	mobility
US 53	Duluth, St. Louis County	Piedmont Avenue (Miller Hill area)	MN 194	2.4	13,000 to 28,590	2- to 4-lane expansion, shoulders, turn lanes	2008	14.6	congestion & mobility
US. 53	St. Louis County	CR 307	Past MN 1	10.5	5,200	2- to 4- lane conversion, bridge work	2007	16.6	mobility & preservation
MN 23	Stearns County	West Junction CR 140 in Rockville	I-94	6.4	15,980	2- to 4- lane expansion, access management	2002	12	mobility & safety
MN 197	Bemidji	3rd Street	23rd Street	1.4	16,830 to 22,240	Reconstruction	2008	4.5	congestion & safety

US 14	Blue Earth and Waseca Counties	MN 60 in Eagle Lake	Janesville	4.8	7,000 to 16,220	2- to 4-lane freeway expansion	2004	18	mobility
US 14	Waseca County	Janesville	CSAH 2	9.8	5,200 to 7,000	2- to 4-lane freeway expansion	2006	53	mobility
US 169	Coleraine, Itasca County	Coleraine	Itasca CSAH 15	2	8,000 to 11,000	2- to 4-lane and bridges	2005	10	mobility & preservation
<i>Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)</i>									

Source: Mn/DOT response to TRIP survey

Five capacity-enhancing projects completed in the Twin Cities area since 1998 where federal funds were a significant source of funding are listed in Chart 13. Capacity-enhancing projects in the Twin Cities area included new roadways as well as roadway widening and new interchanges, for safety, congestion relief and mobility.

Chart 13: Twin Cities area highway capacity projects completed since 1998, largely due to federal surface transportation funds.

Route Name	County or Closest City	From	To	Length Miles	ADT	Improvements Made	Year Completed	Project Cost (millions)	Benefit
US 212	Carver and Hennepin Counties	CR 147 in Chaska	CSAH 4 in Eden Prairie	12	16,390 to 19,539	Construct new 4-lane freeway and bridges	2008	238	improve safety and capacity
I-494	Hennepin County	MN 5	I-394	8	65,286 to 103,030	Additional lanes, new bridges and interchanges	2006	137.5	congestion mitigation
I-494	Hennepin County	MN 5	Minnesota 100	4	81,869 to 142,918	Additional lanes, new bridges and interchanges	2005	78	congestion mitigation
I-494	Dakota County	Concord Street	Lake Road	3.5	60,186 to 91,066	Additional lanes, new bridge	2008 (except eastbound river bridge)	300 (shared with below)	mobility & preservation
US 61	Dakota and Ramsey Counties	St. Paul Park Road	Carver Avenue	1	33,633 to 62,782	Additional lanes, access management	2008 (all but minor work)	300 (shared with above)	congestion & mobility

Note: These projects were identified in various Minnesota State Transportation Improvement Programs (1998-2012)

Source: Mn/DOT response to TRIP survey

Federal funding provided for public transit in Minnesota since 1998 was put to use on new or expanded transit facilities. These projects were undertaken to improve efficiency and foster economic

development. The following chart shows projects completed since 1998 for which federal funds were a significant source of funding.

Chart 14. Transit Improvements with regional or statewide significance since 1998 for which federal funds were a significant source of funding.

County or Closest City	Type of Project	Project Description	Project Cost (millions)	Type of Facility	Year Completed	Benefit
Two Harbors	AEOA Transit Garage	Construct Transit Facility	0.15	New	2002	Economic Development, Efficiency
Gilbert	AEOA Transit Garage	Transit Facility Improvements	0.26	Improve Existing Facility	2003	Economic Development, Efficiency
Austin	Mower County Garage	Construct Transit Facility	0.62	Improve Existing Facility	2004	Economic Development, Efficiency
International Falls	AEOA Transit Garage	Transit Facility Improvements	0.35	Improve Existing Facility	2005	Economic Development, Efficiency
Cambridge	Chicago/Isanti County Transit Facility	Transit Facility Improvements	0.61	Improve Existing Facility	2005	Economic Development, Efficiency
Detroit Lakes	Becker County Transit Garage	Construct Transit Facility	0.25	New	2006	Economic Development, Efficiency
Red Lake Reservation	Red Lake Transit Garage	Transit Facility Improvements	0.24	Improve Existing Facility	2008	Economic Development, Efficiency
Luverne	Rock County Transit Garage	Construct Transit Facility	0.62	New	2009	Economic Development, Efficiency
Northfield	Northfield Transit Hub	Environmental Activities for Transit Facility	0.35	New	Underway	Economic Development, Efficiency
Albert Lea	Cedar Valley Transit Garage	Construct Transit Facility	0.25	New	No Activity	Economic Development, Efficiency

Source: Mn/DOT response to TRIP survey

Future Federal Surface Transportation Program

To ensure that federal funding for highways and public transit in Minnesota and throughout the nation continues beyond the expiration of the current federal surface transportation program (SAFETEA-LU), Congress will need to approve new long-term federal surface transportation legislation by September 30, 2009.

The American Recovery and Reinvestment Act provides approximately \$502 million in stimulus funding for highway and bridge improvements and \$94 million for public transit improvements in Minnesota, a total of \$596 million. This funding can serve as a down payment on needed road, highway, bridge and transit improvements, but it is still not sufficient to allow the state to proceed with numerous projects needed to improve and enhance its surface transportation system.

The crafting of a new federal highway and transit program will occur during a time when the nation's surface transportation program faces numerous challenges, including significant levels of deterioration, increasing traffic congestion, a high number of traffic deaths, increasing construction costs and a decline in revenues going into the Federal Highway Trust Fund.

In addition to declines in federal surface transportation revenues, significant increases in the cost of transportation construction materials will likely make it more difficult for Congress to authorize a new federal surface transportation program that adequately funds needed improvements to the nation's roads, highways, bridges and public transit systems.

While construction materials costs have stabilized somewhat during the current recession, over the five-year period from May 2004 to May 2009, the average cost of materials used for highway construction – including asphalt, concrete, steel, lumber and diesel – increased by 37 percent.

Recommendations for the Nation's Surface Transportation System

When Congress approved SAFETEA-LU in 2005, it recognized the tremendous challenge the nation would continue to face in maintaining and improving its highway and transit systems in order to meet the country's future mobility needs. The 2005 legislation stipulated that two national commissions be created to examine the condition of the nation's surface transportation system and its

future needs, and to make recommendations about the future of the nation's surface transportation program.

The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) was created by Congress to examine the current condition and future funding needs of America's surface transportation program, develop a plan to ensure the nation's surface transportation system meets the nation's future mobility needs and examine funding alternatives for adequately funding the nation's future highway and transit needs.

Comprised of transportation officials, business leaders and members of academia, the Commission held numerous field hearings, was advised by a panel of transportation experts, commissioned numerous reports and held 12 executive sessions in preparing its report.

In January, 2008 the NSTPRSC released its findings. The Commission found that at the current level of investment in surface transportation in the U.S., the nation's highways and bridges would further deteriorate, traffic casualties would increase and traffic congestion would increase, jeopardizing the nation's economic leadership due to an erosion of transportation reliability.⁴⁴ The Commission concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.⁴⁵

The Commission recommended a broad overhaul of the Federal Surface Transportation Program that would significantly boost funding, consolidate the program into fewer funding categories, speed up the project delivery process, require greater accountability in project selection and expand the use of alternate funding sources.

Key recommendations by the Commission include:

- ✓ Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking.
- ✓ Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship and the development of environmentally-friendly energy sources.
- ✓ Speed up the project development process to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects.
- ✓ Significantly boost federal funding for surface transportation. Options for increasing federal surface transportation revenues include reduced evasion of federal motor fuel taxes, moving costs of exemptions from motor fuel fees to the general fund, indexing the motor fuel tax, increasing the motor fuel tax, additional tolling, congestion pricing, increased use of public-private partnerships and freight fees.

Similarly, the National Surface Transportation Infrastructure Financing Commission (NSTIFC) was created by Congress to re-envision the way the federal government funds and finances the nation's surface transportation infrastructure. Comprised of individuals from diverse backgrounds, including economics, finance, government, industry, law and public policy, the NSTIFC sought out the best ideas, the latest data and the strongest research before deliberating over a variety of potential financing options.

In February, 2009, the NSTIFC released its findings. The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall through 2035 in maintaining and making needed improvements to the nation's surface transportation system.⁴⁶ The Commission found that failure to address the immediate funding shortfall and provide adequate long-term funding for the nation's surface transportation system will lead to unimaginable levels of congestion, reduced safety, costlier goods and services, and eroded quality of life and diminished economic competitiveness.⁴⁷

The Commission found that the current federal surface transportation funding structure, which relies primarily on taxes imposed on petroleum-derived vehicle use, is not sustainable. Instead, the Commission recommended that the nation's future surface transportation investment be funded largely by a charge on motorists based on the number of miles driven. The NSTIFC recommended that a full deployment of a mileage-based federal transportation fee be completed by 2020 and that the federal motor fuel tax eventually be phased out as revenue from a federal motor fuel fee was replaced by a mileage fee.⁴⁸ Once implemented, the NSTIFC recommended that mileage charges be set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieve an integrated national transportation system that is less congested and safer and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes.⁴⁹ The NSTIFC also recommended that in the short term, the nation's federal motor fuel tax be boosted significantly and indexed to inflation to allow the federal surface transportation program to be funded at an adequate level until the transition to a mileage-based federal transportation fee.

Another organization that has presented a vision for the nation's future surface transportation program is the American Association of State Highway and Transportation Officials (AASHTO), which represents the nation's state transportation departments.

AASHTO has recommended that a future federal surface transportation program be developed that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget. AASHTO has also called for a federal surface transportation program that is based on state-driven performance measures and focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations and environmental protection.

Conclusion

Roads and bridges are the backbone of the North Star State's transportation system. Today, Minnesota's surface transportation system is under multiple pressures from aging roads and bridges and increasing traffic congestion.

As it looks to enhance and build a thriving, growing and dynamic state, it will be essential that Minnesota is able to provide a 21st century network of roads, highways, bridges and public transit that can accommodate the mobility demands of a modern society.

Without the federal surface transportation program, Minnesota would not have been able to fund key projects on major components of the state's surface transportation network. These projects have supported the state's economic development and created new opportunities for its residents. This progress may slow without a strong transportation program to take the place of SAFETEA-LU when it expires September 30, 2009.

The state has an immediate need to move forward with numerous rehabilitation, expansion and transit projects, but without a substantial level of federal funding, Minnesota will be unable to fund dozens of vital projects.

Enhanced federal transportation funding would permit Minnesota to upgrade important sections of its Interstate highways, improve traffic safety and expand transit services statewide. Preservation work, such as rehabilitation and maintenance, performed on Minnesota's surface transportation network will pay off in future years by protecting the state's past investment in transportation and extending the life of its aging infrastructure.

A modernized highway system in Minnesota will help the state accommodate continuing population growth and offer congestion relief. Completing critical, unfunded projects would increase mobility, better support commerce and tourism, enhance economic development and improve traffic safety statewide, boosting the quality of life for residents and visitors alike.

As the nation looks to rebound from the current economic downturn, the U.S. will need to modernize its surface transportation system, improve the physical condition of its transportation network and enhance the system's ability to provide efficient and reliable mobility for motorists and businesses. Making needed improvements to Minnesota's surface transportation network could provide a significant boost to the state's economy by creating jobs in the short term and stimulating long-term economic growth as a result of enhanced mobility and access.

The federal stimulus package has provided a helpful down payment on an improved transportation system. However, without a substantial boost in federal or state surface transportation funding, numerous needed projects to expand capacity and upgrade the condition of Minnesota's surface transportation system will not move forward, hampering the state's ability to enhance not only mobility, but also economic development statewide. The future provisions and funding levels of the next federal surface transportation program will be a critical factor in whether Minnesota is able to reap the benefits of a modern surface transportation system.

###

Endnotes

-
- ¹ United States Department of Labor. Regional and State Employment and Unemployment Summary. <http://www.bls.gov/news.release/laus.nr0.htm>
- ² U.S. Census Bureau annual population estimate.
- ³ U.S. Census Bureau population projections.
- ⁴ TRIP analysis of Bureau of Economic Analysis data
- ⁵ U.S. Department of Transportation - Federal Highway Administration: www.fhwa.dot.gov.
- ⁶ TRIP calculation based on U.S. Census and Federal Highway Administration data.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Why We Must Preserve our Pavements, D. Jackson, J. Mahoney, G. Hicks, 1996 International Symposium on Asphalt Emulsion Technology.
- ¹⁰ U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2007. www.fhwa.dot.gov.
- ¹¹ TRIP analysis of Federal Highway Administration data.
- ¹² Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.
- ¹³ Highway Development and Management: Volume Seven. Modeling Road User and Environmental Effects in H DM-4. Bennett, C. and Greenwood, I. 2000.
- ¹⁴ Your Driving Costs. American Automobile Association. 2008.
- ¹⁵ U.S. Department of Transportation - Federal Highway Administration: National Bridge Inventory 2008.
- ¹⁶ Ibid.
- ¹⁷ Mn/DOT response to TRIP survey.
- ¹⁸ Mn/DOT Bridge Replacement and Repair Plan: <http://www.dot.state.mn.us/financing/bridges/index.html>
- ¹⁹ TRIP analysis of Federal Highway Administration data. Highway Statistics 2007, Table HM-61. Interstate and Other Freeways and Expressways will a volume-service flow ratio above .70, which is the standard for mild congestion, are considered congested.
- ²⁰ Texas Transportation Institute. 2009 Urban Mobility Report.
- ²¹ Ibid.
- ²² TRIP analysis based on TTI and FHWA data.
- ²³ *Building Roads to Reduce Traffic Congestion in America's Cities: How Much and at What Cost?* Detailed State-by-State Analysis of Future Congestion and Capacity Needs. The Reason Foundation, 2006.
- ²⁴ U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2004-2008 www.fhwa.dot.gov and www-fars.nhtsa.dot.gov.
- ²⁵ TRIP analysis of 2008 NHTSA and FHWA data.
- ²⁶ Ibid.
- ²⁷ Highway Safety Evaluation System; 1996 Annual Report on Highway Safety Improvement Programs; U.S. Department of Transportation
- ²⁸ U.S. Department of Transportation: National Highway Traffic Safety Administration. The Economic Impact of Motor Vehicle Crashes, 2000. www.nhtsa.dot.gov
- ²⁹ TRIP analysis of NHTSA data.
- ³⁰ Source: TRIP analysis of Bureau of Economic Analysis data
- ³¹ Duluth Seaway Port Authority: <http://www.duluthport.com/seawayoverview.html>
- ³² Minnesota Tourism Bureau: <http://industry.exploreminnesota.com/>
- ³³ Bureau of Transportation Statistics, U.S. Department of Transportation. 2002 Commodity Flow Survey, State Summaries
- ³⁴ Bureau of Transportation Statistics, U.S. Department of Transportation. 2002 Commodity Flow Survey, State Summaries.
- ³⁵ Minnesota Trucking Association: <http://www.mntruck.org/stats.htm>
- ³⁶ Bureau of Transportation Statistics, U.S. Department of Transportation. 2002 Commodity Flow Survey, State Summaries.
- ³⁷ Federal Highway Administration, 2008. Employment Impacts of Highway Infrastructure Investment.
- ³⁸ 2009-2028 Minnesota Statwide Transportation Policy Plan, 2009. Minnesota Department of Transportation. P17.
- ³⁹ Ibid.

⁴⁰ TRIP analysis based on data obtained from the Federal Highway Administration and the Federal Transit Administration.

⁴¹ Ibid.

⁴² Minnesota Statewide Transportation Policy Plan: 2009-2028, Figure 5.9, August 2009

⁴³ TRIP analysis of Highway Statistics 2006, Table SF-1. Federal Highway Administration.

⁴⁴ National Surface Transportation Policy and Revenue Study Commission. Transportation for Tomorrow, December 2007. P. 3.

⁴⁵ Ibid., p. 7.

⁴⁶ Paying Our Way. February, 2009. The National Transportation Infrastructure Financing Commission. p. 3. Summary Findings.

⁴⁷ Ibid., p. 12.

⁴⁸ Paying Our Way. February, 2009. The National Transportation Infrastructure Financing Commission.

⁴⁹ Ibid., p. 12.