

## ***Michigan's Top 100 Transportation Headaches:***

The Roads, Highways, Bridges and Transit Routes that Provide  
the State's Greatest Challenge in Meeting Michigan's Need for  
Reliable Mobility

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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 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

Michigan's extensive system of roads, highways, bridges and public transit provide the state's residents, visitors and businesses with a high level of mobility. As the backbone of the Great Lakes State's economy, Michigan's surface transportation system continues to play a vital role in the health of the state's economy. The physical condition and efficiency of this network of roads, highways, bridges and public transit systems will be an important factor in the rate and effectiveness of Michigan's economic recovery.

As Michigan looks to rebound from a significant economic downturn, it will need to modernize 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 to the state's residents, visitors and businesses. Making needed improvements to Michigan's roads, highways, bridges and public transit systems would provide a significant boost to the state's economy by stimulating short and long-term economic growth.

Numerous segments of Michigan's surface transportation system have significant deterioration, are congested or crowded, and lack adequate capacity to provide reliable mobility, causing headaches for Michigan's residents, visitors, businesses and state and local governments. This report looks at the condition and use of Michigan's system of roads, highways, bridges and public transit systems and provides information on the state's top 100 surface transportation headaches.

**Deficient roads, highways and bridges and crowded or congested roads, highways and transit routes in Michigan are causing the state's residents, visitors and businesses, as well as state and local governments headaches in the form of lost time, increased vehicle operating costs and the financial burden of making needed transportation improvements.**

- TRIP has ranked Michigan's top 100 surface transportation headaches, which include 24 segments of the state's major roads and highways that have significant levels of traffic congestion, eight heavily-crowded public transit routes, 40 sections of major roads or highways that have significant pavement deterioration and need to be reconstructed and 28 major bridges in the state that have significant deficiencies and need to be rebuilt or reconstructed.
- The top transportation headache in Michigan is a portion of Interstate 94 in Wayne and Macomb Counties that is severely congested during peak periods and needs to be widened to accommodate additional travel. The remaining top five are severely congested portions of Interstate 696 and Interstate 96 in Oakland County, and portions of I-69 in Genesee County and I-75 in Monroe County that have significant deterioration and need to be reconstructed.
- The top bridge headache in the state is a 51-year-old bridge on I-96 in Oakland County that needs to be replaced.

- The top transit headache in the state is the crowded Woodward and Woodward Express bus route in Wayne County, which is Michigan’s most heavily traveled transit route and is a route under considered for the construction of a light rail line.
- The following table lists the top 20 surface transportation headaches in Michigan (each transportation segment is color-coded by type of deficiency).

	Deficient Pavement	County	Route	From	To	Description
	Severe Congestion	County	Route	From	To	Description
	Deficient Bridge	County	Route	Feature Crossed	Year Built	Description
Rank	Transit Deficiency	County/Region	Route	From	To	Description
1	Severe Congestion	Wayne/Macomb	I-94	Addison	M-19	Main connection between Detroit and Port Huron/Sarnia and the International border crossing between the USA and Canada
2	Severe Congestion	Oakland	I-696	I-96	I-94	Primary connection between the suburban communities of Metro Detroit providing access to medical, manufacturing, research and technology.
3	Deficient Pavement	Genesee	I-69	West of I-75	Center Road	Provides Important Freight Linkages especially for international freight
4	Deficient Pavement	Monroe	I-75	State Line	Dixie Hwy	Main entrance to the state from the south
5	Severe Congestion	Oakland	I-96	Kent Lake Rd	I-275	Main connection between Detroit, Lansing and Grand Rapids
6	Deficient Bridge	Oakland	I-96 E&WB	GTW RR (ABN)	1957	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.
7	Deficient Pavement	Livingston	I-96	US-23	Livingston/Oakland County Line	Main connection between Grand Rapids, Lansing and Detroit
8	Deficient Pavement	Genesee	I-475	I-75 S. Junction	End of Barrier Wall (S. of Saginaw Stree)	Provides access to Downtown Flint and University of Michigan - Flint Campus.
9	Transit Deficiency	Wayne	Woodward, and Woodward Express	State Fairgrounds	Detroit CBD	Crowded buses along this route are often slowed by significant traffic congestion. This is the most heavily traveled transit comidor within Michigan.
10	Deficient Bridge	Oakland	I-75 N&SB	PONTIAC RD	1963	Facility carries I-75 traffic north, from the regions population center to The Palace of Auburn Hills, as well as tourist and vacation destinations to northern Michigan.
11	Deficient Pavement	Wayne	I-96	Newburgh Rd.	Middlebelt Rd.	Freeway connecting western Metro Detroit Suburbs to Detroit
12	Deficient Bridge	Wayne	I-75	ROUGE R, DEARBORN ST & RR	1967	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.
13	Deficient Bridge	Jackson	I-94	CONRAIL & GRAND R	1949	Carries high volume of commercial traffic
14	Deficient Pavement	Calhoun	I-94	I-194 Interchange (Exit 98)	East of Wattles Road	Critical International and Regional Commercial Corridor
15	Deficient Bridge	St. Clair	I-94	BLACK RIV, PARKING LOT	1950	Bridge carries all International Trade going over the Blue Water Bridge that is coming from I-94
16	Deficient Bridge	Kalamazoo	I-94 E&WB	NORFOLK SO. & PORTAGE CR	1965	25% commercial-Primary State and International Corridor
17	Severe Congestion	Kent	I-96	M-11	I-196	Main connection between Detroit, Lansing and Grand Rapids
18	Deficient Pavement	Berrien	I-94	Napier Road	East of I-196	Critical International and Regional Commercial Corridor
19	Severe Congestion	Kent	I-196	Chicago Road	Fuller Ave	Main connection between Grand Rapids and Chicago, serving commercial, manufacturing and tourism industries
20	Severe Congestion	Macomb	M-53	I-696	M-59	This corridor provides access to manufacturing facilities serving automobile and national defense industries

- TRIP was able to rank Michigan's top surface transportation headaches by giving each segment or facility an overall score, based on a scale that included points for categories, including: volume of daily travel or ridership; the significance of the problem or deficiency; the importance of the route or facility to regional, interstate or international travel patterns; the importance of the route or facility to the regional economy; the cost to repair the deficiency; whether the facility or route served non-motorists and segments of society that typically have less access to mobility, such as the elderly, the disabled and people with lower incomes; the level of difficulty of using an alternate transportation route or mode; whether the facility provided an intermodal connection; and to what extent the deficiency had an impact on the environment.

**With the state experiencing a significant economic downturn, the modernization of Michigan's transportation system could play an important role in the state's economic recovery 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.**

- With Michigan leading the nation in job losses since 2000 and the state tied for the highest rate of unemployment in the nation, the Great Lakes state faces a tremendous challenge in implementing a long-term economic recovery. Since 2000, Michigan has lost 496,900 jobs and is tied with Rhode Island with the nation's highest unemployment rate of 9.3 percent.
- The efficiency of Michigan'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. A key component in business efficiency and success is the level and ease of access to customers, markets, materials and workers.
- 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.
- Three hundred and eighty-nine billion dollars in goods are shipped annually from sites in Michigan and another \$407 billion in goods are shipped annually to sites in Michigan, mostly by truck.
- Seventy-eight percent of the goods shipped annually from sites in Michigan are carried by trucks and another 12 percent are carried by courier services, which use trucks for part of the deliveries or by truck-rail combinations. Similarly, 83 percent of the goods shipped to sites in Michigan are carried by trucks and another nine percent are carried by courier services, which use trucks for part of their deliveries or by truck-rail combinations.
- Commercial trucking in Michigan is projected to increase 37 percent by 2020.

- Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with a smoother, more efficient transportation system.
- Businesses have responded to improved communications and greater competition by moving from a push-style distribution system, which relies on low-cost movement of bulk commodities and large-scale warehousing, to a pull-style distribution system, which relies on smaller, more strategic and time-sensitive movement of goods.

**While the state's economic downturn has eased some traffic congestion in the state, Michigan continues to experience congested urban streets and highways and crowded transit routes, which will likely worsen as Michigan's economic recovery results in increased levels of travel in the state.**

- Michigan's population reached 10.1 million in 2007, an increase of eight percent since 1990. Michigan's population is projected to increase to approximately 10.7 million residents by 2030, an increase of 6 percent.
- Vehicle travel in Michigan increased by 28 percent from 1990 to 2006 – jumping from 81.1 billion vehicle miles traveled (VMT) in 1990 to 104.2 billion VMT in 2006.
- By 2030, vehicle travel in Michigan is projected to increase another 25 percent, to approximately 130 billion vehicle miles of travel.
- From 1990 to 2007, Michigan's gross domestic product, a measure of the state's economic output, increased by 27 percent, when adjusted for inflation.
- Thirty-nine percent of Michigan's urban Interstates and other highways or freeways are considered congested, because they carry a level of traffic that is likely to result in significant delays during peak travel hours.
- The average rush hour trip in Detroit takes approximately 29 percent longer to complete than during non-rush hour. According to a recent report by the Reason Foundation, by the year 2030, unless additional highway capacity is added, traffic congestion delays in Detroit will almost double, with the average rush hour trip taking 50 percent longer to complete than during non-rush hour. This level of traffic delay is equivalent to those currently experienced in Los Angeles and Chicago.
- Unless capacity is added to the transportation system, travel delays in the Grand Rapids area will nearly triple and travel delays in the Lansing area will double.

**One quarter of Michigan's major roads are in poor condition and in need of significant repairs or reconstruction.**

- In 2007, 25 percent (21,581 of 84,554 miles) of Michigan's major roads and highways were rated as having paved surfaces in poor condition.
- Roads rated in poor condition may show signs of deterioration, including rutting, cracks and potholes. Roads rated in fair condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in fair 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 have 75 percent of major roads in good condition. Twenty-four percent of Michigan's major roads are in good condition.
- TRIP estimates that additional vehicle operating costs borne by Michigan motorists as a result of poor road conditions is \$2.6 billion annually, or \$455 per motorist in the Detroit urban area, \$443 per motorist in the Grand Rapids urban area, \$504 per motorist in the Lansing urban area and an average of \$366 per motorist elsewhere in the state.

**Approximately one quarter – 26 percent - of bridges in Michigan 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.**

- Approximately fifteen (14.5) percent of Michigan's bridges were structurally deficient in 2007 (the latest year for which data is available). A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting large vehicles, including commercial trucks and emergency services vehicles.
- Approximately twelve (11.9) percent of Michigan's bridges were functionally obsolete in 2007. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.

*Sources of information for this study include the Michigan Department of Transportation (MDOT), the Detroit Department of Transportation, the Southeast Michigan Council of Governments (SEMCOG), the Washtenaw Area Transportation Study, the Federal Highway Administration (FHWA), the U.S. Census Bureau, the Reason Foundation and the Texas Transportation Institute (TTI).*

## **Introduction**

Michigan's system of roads, highways, bridges and public transit forms a vital transportation link for the state's residents, visitors and businesses, providing daily access to homes, employment, shopping, recreation and customers. Today, with the state experiencing a significant economic downturn, the modernization of Michigan's transportation system could play an important role in the state's economic recovery 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.

Roads, highways, bridges and transit routes that are deteriorated are a headache for the state's residents, visitors, businesses and governments because they hamper mobility and cause delays, reduce economic productivity and competitiveness, and increase costs of operating vehicles for individuals and businesses because of the increased wear and tear caused by deficient pavements.

This report examines the condition and use of Michigan's roads, highways and bridges and looks at the sections of the state's roads, highways, bridges and transit systems that are the biggest headache because of deterioration, traffic congestion, overcrowding or lack of adequate capacity to meet the demand for reliable mobility in Michigan. Sources of information for this study include the Michigan Department of Transportation (MDOT), The Detroit Department of Transportation, the Southeast Michigan Council of Governments (SEMCOG), the Washtenaw Area Transportation Study, the Federal Highway Administration (FHWA), the U.S. Census Bureau, the Reason Foundation and the Texas Transportation Institute (TTI).

## **Population, Travel and Economic Trends in Michigan**

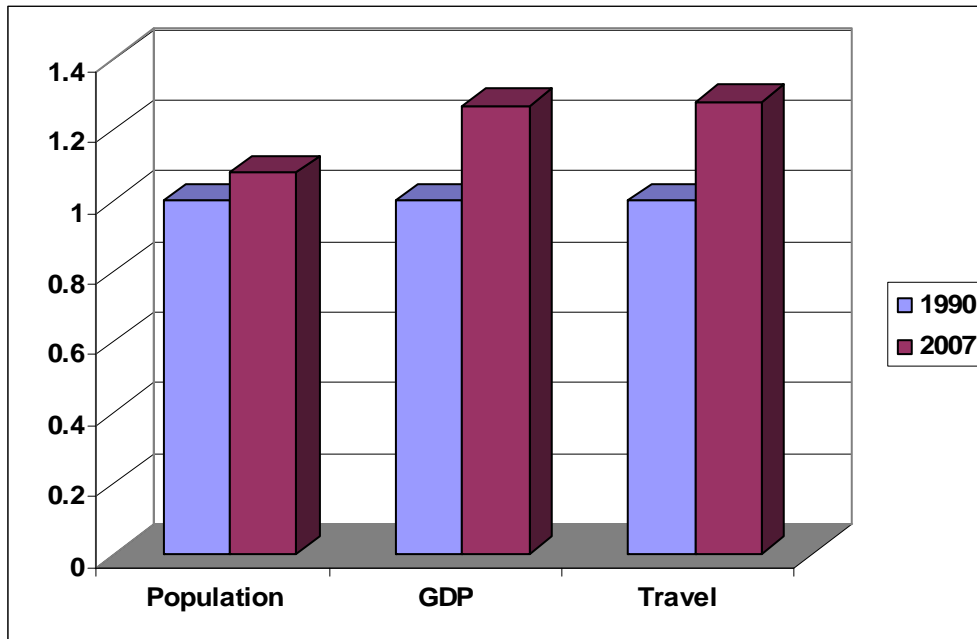
Michigan residents rely on a high level of personal and commercial mobility. Despite an economic downturn that has impacted Michigan for several years, the state has still experienced population and economic growth, which has resulted in an increase in the demand for mobility and has resulted in a large increase in vehicle miles of travel in the Great Lakes State. To maintain and improve the quality of life in Michigan and assist in the state's economic recovery, it will be critical that the state invest in a well-maintained, modern transportation system that can accommodate future growth in population, tourism, vehicle travel and economic development.

Despite a significant loss of jobs in the state since 2000, Michigan's population still increased by eight percent between 1990 and 2007, increasing from approximately 9.3 million residents in 1990 to approximately 10.1 million residents in 2007.<sup>1</sup> The population of Michigan is projected to increase by another six percent by 2030, to approximately 10.7 million residents, an increase of approximately 600,000 million people.<sup>2</sup>

Despite a recent economic downturn, Michigan has still experienced significant economic growth since 1990. From 1990 to 2007, Michigan's gross domestic product (GDP), a measure of the state's economic output, increased by 27 percent, when adjusted for inflation.<sup>3</sup>

Population and economic growth in Michigan have resulted in a significant increase in vehicle travel in the state. From 1990 to 2006, annual vehicle miles of travel in Michigan increased by 28 percent, from 81.1 billion miles traveled annually to 104.2 billion miles traveled annually.<sup>4</sup> Based on population and other lifestyle trends, TRIP estimates that travel on Michigan's roads and highways will increase another 25 percent by 2030, to approximately 130 billion miles of travel.<sup>5</sup>

**Chart 1: Population, GDP and Vehicle Travel increase in Michigan, 1990 to 2007 (1 = 1990 level)**



**Source: TRIP analysis of federal data**

## **Condition of Michigan's Roads**

The life cycle of Michigan'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.

Based on data collected by the Michigan Asset Management Council, in 2007, 25 percent of Michigan's major roads (roads and highways eligible for federal funding) were rated in poor condition, providing motorists with a rough ride.<sup>6</sup> Another 51 percent of the state's major roads were found to be in fair condition.<sup>7</sup>

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 fair condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in fair 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.<sup>8</sup> In Michigan, 24 percent of the state's major roads were rated in good condition in 2007.<sup>9</sup>

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.<sup>10</sup>

As roads and highways continue to age, they will reach a point of deterioration where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and instead more 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. When roads are in poor condition, which may include potholes, rutting or rough surfaces, the cost to operate and maintain a vehicle increases. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repair costs, increased fuel consumption and increased tire wear. TRIP estimates that additional vehicle operating costs borne by Michigan motorists as a result of poor road conditions is \$2.6 billion annually, \$455 per motorist in the Detroit urban area, \$443 per motorist in the Grand Rapids urban area, \$504 per motorist in the Lansing urban area and an average of \$366 per motorist elsewhere in the state.

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.<sup>11</sup>

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

TRIP's additional vehicle operating cost estimate is based on taking the average number of miles driven annually by a region's driver, calculating current vehicle operating costs based on AAA's 2007 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.<sup>12</sup> 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 Michigan**

Michigan'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 2007, the latest year for which data are available, 26 percent of Michigan's bridges (20 feet or longer) were rated as structurally deficient or functionally obsolete. Approximately 15 (14.5) percent of Michigan's bridges (20 feet or longer) were rated structurally deficient.<sup>13</sup> 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.

Approximately 12 (11.9) percent of Michigan's bridges were rated functionally obsolete in 2007.<sup>14</sup> Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.

The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, ensuring 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.

## **Traffic Congestion in Michigan**

While the state's economic downturn has eased some traffic congestion in the state, Michigan continues to experience congested urban streets and highways, which will likely worsen as Michigan's economic recovery leads to increased levels of travel in the state.

In 2006, the latest year for which data is available, 39 percent of Michigan's urban highways were congested, carrying traffic volumes that result in significant rush hour delays.<sup>15</sup> Highways that carry high levels of traffic are also more vulnerable to experiencing significant traffic delays as a result of crashes or other incidents.

Traffic congestion in Michigan's largest urban area is likely to worsen significantly unless the state is able to improve its transportation system. The average rush hour trip in the Detroit area takes approximately 29 percent longer to complete than during non-rush hour.<sup>16</sup> According to the Reason Foundation, by the year 2030, unless additional highway capacity is added, traffic congestion delays will nearly double, with the travel time index increasing to 1.50,

meaning the average rush hour trip in the Detroit area will take 50 percent longer to complete than during non-rush hour.<sup>17</sup> This level of traffic delay is equivalent to those currently experienced in Los Angeles and Chicago.

Unless capacity is added to the transportation system, travel delays in the Grand Rapids area will nearly triple by 2030, while delays in the Lansing area will double.<sup>18</sup>

The following chart shows the current travel time index for key urban areas in Michigan, and the projected travel time index in 2030 if additional highway or transit capacity is not added in these regions. (A travel time index of 1.20 indicates that a trip taken during peak hours would take 20 percent longer than a trip taken during non-rush hours.)

**Chart 2. Current and projected travel delays in Michigan urban areas**

Urban Area	Current Travel Time Index	2030 Travel Time Index
Detroit	1.29	1.50
Grand Rapids	1.10	1.28
Lansing	1.05	1.11

**Source: Texas Transportation Institute and the Reason Foundation**

## **Michigan’s Top 100 Transportation Headaches**

Deteriorated roads, deficient bridges, overburdened transit routes, and congested highways cause headaches to residents, visitors, businesses and local and state governments. Deficient or congested transportation routes or facilities result in delays, reduce economic efficiency, limit economic development opportunities and represent an economic liability in the form of the cost of correcting a deficiency.

To, to determine which portions of the state’s surface transportation system were causing the biggest headaches to Michigan’s residents, visitors and state and local governments, TRIP

gathered information from state, regional and local departments of transportation about sections of their roadway and transit systems. Information requested by TRIP for each section of road, highway, bridge or transit system included the severity of the problem, the improvement needed to resolve the problem, the cost to alleviate the problem, the amount of daily vehicle travel or transit riders, and the level of importance of the facility to regional, interstate and international travel patterns.

TRIP then gave each transportation segment or facility an overall score, based on a scale that provided points for categories, including:

- ✓ volume of daily travel or ridership.
- ✓ the significance of the problem or deficiency.
- ✓ the importance of the route or facility to regional, interstate or international travel patterns.
- ✓ the importance of the route or facility to the regional economy.
- ✓ the cost to repair the deficiency.
- ✓ whether the facility or route served non-motorists and segments of society that typically have less access to mobility, such as the elderly, the disabled and people with lower incomes.
- ✓ the level of difficulty of using an alternate transportation route or mode.
- ✓ whether the facility provided an intermodal connection.
- ✓ to what extent the deficiency had an impact on the environment.

A more detailed description of the methodology can be found in Appendix A. By giving each surface transportation route or facility a numerical grade in each category, TRIP was then able to rank Michigan's top 100 transportation headaches.

TRIP's ranking of Michigan's top 100 surface transportation headaches include 24 segments of the state's major roads and highways that have significant levels of traffic congestion during peak travel periods, eight heavily-crowded public transit routes, 40 sections of major roads or highways that have significant pavement deterioration and need to be reconstructed, and 28 major bridges in the state that have significant deficiencies and need to be rebuilt or reconstructed.

The top transportation headache in Michigan is a portion of Interstate 94 in Wayne and Macomb Counties that is severely congested during peak periods and needs to be widened to accommodate additional travel. The remaining top five are severely congested portions of Interstate 696 and Interstate 96 in Oakland County, and portions of I-69 in Genesee County and I-75 in Monroe County that have significant deterioration and need to be reconstructed. The top bridge headache in the state is a 51-year-old bridge on I-96 in Oakland County that needs to be replaced.

The top transit headache in the state is the crowded Woodward and Woodward Express bus route in Wayne County, which is Michigan's most heavily traveled transit route and is being considered for the construction of a light rail line.

The following chart indicates Michigan's top 100 surface transportation headaches. Additional information for each route can be found in Appendix A. The key for information for each segment is color-coded, depending on whether the headache is as segment of deficient pavement, a deficient bridge, a congested roadway or a transit deficiency.

**Chart 3. Michigan's Top 100 Surface Transportation Headaches**

	Deficient Pavement	County	Route	From	To	Daily Travel
	Severe Congestion	County	Route	From	To	Daily Travel
	Deficient Bridge	County	Route	Feature Crossed	Year Built	Daily Travel
Rank	Transit Deficiency	County/Region	Route	From	To	Daily Ridership
1	Severe Congestion	Wayne/Macomb	I-94	Addison	M-19	117,698
2	Severe Congestion	Oakland	I-696	I-96	I-94	159,482
3	Deficient Pavement	Genesee	I-69	West of I-75	Center Road	88,599
4	Deficient Pavement	Monroe	I-75	State Line	Dixie Hwy	62,116
5	Severe Congestion	Oakland	I-96	Kent Lake Rd	I-275	143,586
6	Deficient Bridge	Oakland	I-96 E&WB	GTW RR (ABN)	1957	102,051
7	Deficient Pavement	Livingston	I-96	US-23	Livingston/Oakland County Line	96,121
8	Deficient Pavement	Genesee	I-475	I-75 S. Junction	End of Barrier Wall (S. of Saginaw Stree)	74,860
9	Transit Deficiency	Wayne	Woodward, and Woodward Express	State Fairgrounds	Detroit CBD	13,216
10	Deficient Bridge	Oakland	I-75 N&SB	PONTIAC RD	1963	206,000
11	Deficient Pavement	Wayne	I-96	Newburgh Rd.	Middlebelt Rd.	165,000
12	Deficient Bridge	Wayne	I-75	ROUGE R, DEARBORN ST & RR	1967	98,362
13	Deficient Bridge	Jackson	I-94	CONRAIL & GRAND R	1949	67,806
14	Deficient Pavement	Calhoun	I-94	I-194 Interchange (Exit 98)	East of Wattles Road	50,428
15	Deficient Bridge	St. Clair	I-94	BLACK RIV, PARKING LOT	1950	35,402
16	Deficient Bridge	Kalamazoo	I-94 E&WB	NORFOLK SO. & PORTAGE CR	1965	74,000
17	Severe Congestion	Kent	I-96	M-11	I-196	64,036
18	Deficient Pavement	Berrien	I-94	Napier Road	East of I-196	56,394
19	Severe Congestion	Kent	I-196	Chicago Road	Fuller Ave	54,388
20	Severe Congestion	Macomb	M-53	I-696	M-59	34,945
21	Deficient Pavement	Lapeer, Genesee	I-69	M-15	M-24	31,470
22	Deficient Pavement	St. Clair	I-69	M-19	Taylor Rd.	14,600
23	Severe Congestion	Wayne	I-96	Farmington Road	Inkster Road	159,912
24	Deficient Bridge	Livingston	I-96 E&WB	US-23 NB	1962	92,250
25	Deficient Bridge	Genesee	I-69	M-54 (DORT HWY)	1971	77,654
26	Deficient Pavement	Kent	I-196	The Grand River	Fuller Avenue	69,784
27	Deficient Bridge	Kalamazoo	I-94	E MICHIGAN AVE (40TH ST)	1952	50,382
28	Deficient Pavement	Kalamazoo	I-94	Climax/Scotts Interchange (Exit 88)	East of Michigan Avenue	48,522
29	Deficient Bridge	St. Clair	I-94 E&WB	LAPEER RD	1964	33,552
30	Deficient Bridge	Oakland	I-696	I-75 & 4 RAMPS	1971	203,568
31	Severe Congestion	Kent	US-131	M-11	I-96	99,468
32	Deficient Bridge	Kalamazoo	I-94 E&WB	S WESTNEDGE AVE	1959	72,000

33	Deficient Pavement	Clinton	I-96	Saginaw Hwy	I-96/I-69 Interchange (exit 90)	55,200
34	Severe Congestion	Oakland	US-24	M-102	US-24 BR	39,537
35	Severe Congestion	Oakland	US-24	US-24 BR	M-102	39,508
36	Deficient Pavement	Berrien	I-94	West of Coloma	M-140 Interchange (Exit 41)	36,458
37	Deficient Pavement	St. Clair	I-94	Water Street	international boundary	32,270
38	Deficient Bridge	Delta	US-2, US-41	ESCANABA RIVER	1929	22,863
39	Deficient Bridge	Delta	US-2, US-41	ESCANABA RIVER	1929	22,863
40	Deficient Pavement	Allegan	I-196	North of Glenn	M-89 Interchange (Exit 34)	19,949
41	Deficient Pavement	Wayne	I-96	Middlebelt Rd.	Telegraph Rd. (US-24)	158,200
42	Deficient Pavement	Kalamazoo	US-131	I-94 Interchange	M-43 Interchange	52,242
43	Severe Congestion	Oakland	Southfield Rd./Lincoln Dr.	Saxton	Greenfield Rd.	34,027
44	Deficient Pavement	Van Buren	I-94	Berrien/Van Buren County Line	Hartford Interchange (Exit 46)	30,552
45	Deficient Pavement	Clinton	I-69	I-96/I-69 Interchange (exit 81)	Airport Road	30,468
46	Deficient Pavement	Grand	US-131	Cannonsville Road	M-46	25,000
47	Severe Congestion	Kent	M-37	M-11	3 Mile Road	23,576
48	Deficient Bridge	Kent	I-96 WB	C & M RR	1961	22,668
49	Deficient Pavement	Allegan	US-31	I-196 Interchange	Holland City Limits	18,526
50	Deficient Pavement	Crowford	I-75	South of the Ausable River Bridge	North of Co Road 612	13,991
51	Transit Deficiency	Wayne	Grand River and Grand River Express	Seven Mile/Telegraph Rd	Detroit CBD	9,637
52	Transit Deficiency	Wayne	Gratiot, and Gratiot Express	Eastland Mall	Detroit CBD	7,743
53	Deficient Bridge	Wayne	I-94 E&WB	I-275	1972	110,300
54	Deficient Bridge	Genesee	I-75 US-23	FLINT RIVER	1958	81,674
55	Deficient Pavement	Washtenaw	M-14	East of M-153	Gotfredson	62,226
56	Deficient Pavement	Washtenaw	I-94	Freer	Lima Center	58,033
57	Deficient Bridge	Oakland	I-75 SE	CLARKSTON RD	1962	45,250
58	Deficient Pavement	Wayne	M-85	Sibley	Goddard	40,353
59	Severe Congestion	Oakland	Telegraph Rd.	M 10	Square Lake Rd.	38,679
60	Severe Congestion	Kent	M-11	I-96	M-37	37,234
61	Deficient Bridge	Bay	I-75 S&NB	SQUACONNING CREEK	1960	29,196
62	Deficient Bridge	Saginaw	I-75 S&NB	KOCHVILLE DRAIN	1960	29,196
63	Deficient Pavement	Emmet	US-31	North of Camp Daggett Rd	North of Winter Park Lane	26,858
64	Deficient Pavement	St. Clair	I-69	I-69 @ I-94	interchange	19,050
65	Deficient Pavement	Iosco	US-23	Court Street	Tawas River	15,037
66	Deficient Bridge	Wayne	I-275 S&NB	MIDDLE ROUGE RIV	1972	140,009

67	Deficient Pavement	Oakland	US-24	Denso Drive	12 Mile Rd	84,461
68	Severe Congestion	Washtenaw	US-23	M-14	N. County Line	80,000
69	Deficient Bridge	Jackson	I-94	CONRAIL & GRAND R	1949	67,806
70	Deficient Pavement	Oakland	M-59	JCT NB I-75 BL	Crooks Rd	63,532
71	Deficient Pavement	Washtenaw	US-23	East of Pontiac Trail	M-14/US-23 (exit 42)	63,085
72	Deficient Pavement	Eaton	I-69	Lansing Road	I-96/I-69 Interchange (exit 72)	30,584
73	Deficient Pavement	Allegan	US-131	South of Martin	M-179 Interchange	28,650
74	Deficient Bridge	Berrien	I-94 EB	ST JOSEPH RIVER	1960	28,447
75	Severe Congestion	Oakland	Washington St. to Rochester Rd.*	M 1 / I-696	Maple Rd.	10,674
76	Transit Deficiency	Wayne	Crosstown	St Johns Hospital	Pierson loop	7,039
77	Transit Deficiency	Southern Michigan	Wolverine Service	Detroit	Chicago	1,230
78	Deficient Bridge	Wayne	SECOND BLVD	I-94	1954	146,000
79	Deficient Pavement	Washtenaw	M-14	M-14/US-23 (exit 42)	West of M-153	63,598
80	Severe Congestion	Eaton / Ingham	I-496	Lansing Road	I-96	59,114
81	Deficient Pavement	Monroe	US-23	State Line	North of Samaria Rd	36,770
82	Severe Congestion	Oakland	Union Lake Rd./Cooley Lake Rd.	Richardson Rd.	Williams Lake Rd.	31,187
83	Severe Congestion	Oakland	Highland Rd./Huron St./M 59	Ladue St.	I-75	24,699
84	Deficient Pavement	Lapeer	M-24	Oakland/Genesee COL	Pratt Road	19,602
85	Severe Congestion	Kent	M-11	Church	Wilson	19,579
86	Deficient Pavement	St. Joseph	US-131	South Junction M-60/Three Rivers	Adams Street/Three Rivers	18,496
87	Severe Congestion	Clinton	I-96 BR	Lansing City Limits	I-96	11,128
88	Transit Deficiency	Ingham County	Route 1	Downtown Lansing	Meridian Twp/Meijer/Meridian Mall	6,390
89	Deficient Bridge	Wayne	SCHOOLCRAFT AVE	M-39	1961	104,227
90	Deficient Pavement	Wayne	M-102	JCT M-5	JCT M-39	69,631
91	Deficient Bridge	Wayne	I-94 EB	M-39	1984	47,000
92	Deficient Bridge	Wayne	M-3 (GRATIOT)	I-94	1958	33,540
93	Deficient Pavement	Macomb	M-53	34 Mile Rd	N. Macomb County Limit	21,823
94	Deficient Bridge	Wexford	US-131	CLAM R	1935	19,344
95	Transit Deficiency	Wayne	Eight Mile	7 Mile Rd	Eastland Mall	5,798
96	Severe Congestion	Ingham	US-127	I-496	Lake Lansing Road	59,378
97	Severe Congestion	Washtenaw	State	Michigan Ave	Huron	40,000
98	Deficient Pavement	Washtenaw	M-14	West of Wagner	West of Main	33,472
99	Severe Congestion	Kent	M-45	Winter	ECL Walker	27,271
100	Transit Deficiency	Ingham County/Eaton County	Route 3	Downtown Lansing	Lansing Mall (on Oakland Ave)	1,410

## **Importance of Transportation to Economic Recovery and Growth**

With Michigan leading the nation in job losses since 2000 and the state tied with Rhode Island for the highest rate of unemployment in the nation, the Great Lakes State faces a tremendous challenge in implementing a long-term economic recovery. Since 2000, Michigan has lost 496,900 jobs and in October 2008, had an unemployment rate of 9.3 percent, which is tied with Rhode Island as the nation's highest unemployment rate<sup>19</sup>.

The condition and efficiency of a region's transportation system can be a critical factor in the extent and rate of a region's economic growth. The level of mobility provided by a region's network of roads, bridges, highways and public transit systems has a significant impact on the productivity of a region's businesses. The physical condition of a region's transportation infrastructure also has a significant impact on the cost of transportation to individuals and businesses and provides an important signal to potential employers of a region's commitment to maintaining its local transportation system

Investment in transportation can also provide a significant stimulus to a region's economy by supporting numerous jobs both in construction and related industries as well as in other sectors of a local economy.

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 away from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

The condition and level of congestion and delays on Michigan's major highways and transit routes will be an important factor in the speed and scope of the state's economic recovery. When an economy expands, it creates jobs and increases consumer confidence, and as a result 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, \$389 billion in goods are shipped from sites in Michigan and another \$407 billion in goods are shipped to sites in Michigan, mostly by trucks.<sup>20</sup> Seventy-nine percent of the goods shipped annually from sites in Michigan are carried by trucks and another 12 percent are carried by courier services, which use trucks for part of their deliveries, or by a combination of truck and rail. Similarly, 83 percent of the goods shipped to sites in Michigan are carried by trucks and another nine percent are carried by courier services, which use trucks for part of their deliveries or by truck and rail.<sup>21</sup>

Trucking is a crucial part of Michigan's economy, as commercial trucks move goods from sites across the state to markets inside and outside the state. Commercial truck travel in

Michigan is expected to increase significantly over the next two decades. Based on federal projections, TRIP estimates that commercial trucking will increase by 37 percent in Michigan by the year 2020.<sup>22</sup>

Expenditures on highway construction and similar transportation construction jobs have also been found to have a significant positive impact on employment. 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.<sup>23</sup>

## **Conclusion**

Michigan's residents, visitors and businesses are afflicted with numerous transportation headaches as they travel to work, school, shopping, or make deliveries. Eliminating these headaches by improving the condition of roads, highways and bridges and improving many of the state's major roads, highways and public transit routes will be an effective step in solving many of Michigan's current economic woes.

As Michigan looks to rebound from a significant economic downturn in the state, it will need to modernize its surface transportation system by improving the physical condition of its transportation network and also by improving the system's ability to provide efficient and reliable mobility to the state's residents, visitors and businesses. Making needed improvements

to Michigan's roads, highways, bridges and public transit systems would provide a significant boost to the state's economy by stimulating short and long-term economic growth.

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

###

## Appendix A. Michigan's Top 100 Surface Transportation Headaches

	Deficient Pavement	Route	Description	Improvement Needed	Cost to Improve
	Severe Congestion	Route	Description	Improvement Needed	Cost to Improve
	Deficient Bridge	Route	Description	Improvement Needed	Cost to Improve
Rank	Transit Deficiency	Route	Description	Improvement Needed	Cost to Improve
1	Severe Congestion	I-94	Main connection between Detroit and Port Huron/Sarnia and the International border crossing between the USA and Canada	Improve operations and add lanes	\$ 3,908,000,000
2	Severe Congestion	I-696	Primary connection between the suburban communities of Metro Detroit providing access to medical, manufacturing, research and technology.	Improve operations and add lanes	\$ 1,410,000,000
3	Deficient Pavement	I-69	Provides Important Freight Linkages especially for international freight	Reconstruction	\$ 70,000,000
4	Deficient Pavement	I-75	Main entrance to the state from the south	Reconstruction	\$ 150,000,000
5	Severe Congestion	I-96	Main connection between Detroit, Lansing and Grand Rapids	Improve operations and add lanes	\$ 588,000,000
6	Deficient Bridge	I-96 E&WB	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.	Remove bridge, replace with new structure	\$ 3,298,426
7	Deficient Pavement	I-96	Main connection between Grand Rapids, Lansing and Detroit	Reconstruction	\$ 40,000,000
8	Deficient Pavement	I-475	Provides access to Downtown Flint and University of Michigan - Flint Campus.	Reconstruction	\$ 112,000,000
9	Transit Deficiency	Woodward, and Woodward Express	Crowded buses along this route are often slowed by significant traffic congestion. This is the most heavily traveled transit corridor within Michigan.	Proposed light rail line on this corridor would improve transit service and promote development along this corridor.	360,000,000
10	Deficient Bridge	I-75 N&SB	Facility carries I-75 traffic north, from the regions population center to The Palace of Auburn Hills, as well as tourist and vacation destinations to northern Michigan.	Bridge Replacement	\$ 6,041,000
11	Deficient Pavement	I-96	Freeway connecting western Metro Detroit Suburbs to Detroit	Reconstruction	\$ 60,000,000
12	Deficient Bridge	I-75	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.	Deck Replacement	\$ 90,000,000
13	Deficient Bridge	I-94	Carries high volume of commercial traffic	Bridge Replacement	\$ 8,000,000
14	Deficient Pavement	I-94	Critical International and Regional Commercial Corridor	Rehabilitation	\$ 15,400,000
15	Deficient Bridge	I-94	Bridge carries all International Trade going over the Blue Water Bridge that is coming from I-94	Bridge Replacement and widening	\$ 12,100,000
16	Deficient Bridge	I-94 E&WB	25% commercial-Primary State and International Corridor	Superstructure Replacement	\$ 8,600,000
17	Severe Congestion	I-96	Main connection between Detroit, Lansing and Grand Rapids	Improve operations and add lanes	\$ 430,000,000
18	Deficient Pavement	I-94	Critical International and Regional Commercial Corridor	Reconstruction	\$ 18,900,000
19	Severe Congestion	I-196	Main connection between Grand Rapids and Chicago, serving commercial, manufacturing and tourism industries	Improve operations and add lanes	\$ 392,000,000
20	Severe Congestion	M-53	This corridor provides access to manufacturing facilities serving automobile and national defense industries	Improve operations and add lanes	\$ 303,000,000
21	Deficient Pavement	I-69	Provides Important Freight Linkages especially for international freight.	Reconstruction	\$ 35,000,000
22	Deficient Pavement	I-69	Regionally connects Flint and Port Huron; Major route for international commerce connecting Canada to Mexico	Reconstruct	\$58,000,000
23	Severe Congestion	I-96	Main connection between Detroit, Lansing and Grand Rapids	Improve operations and add lanes	\$ 120,000,000
24	Deficient Bridge	I-96 E&WB	High commuter traffic	Bridge Replacement	\$ 5,000,000
25	Deficient Bridge	I-69	Provides Important Freight Linkages especially for international freight and trade between Canada, Michigan and states to the south and west.	Deep Overlay, Full Depth Patch, PCI & Sub Str Rpr, Beam end repair	\$ 650,000
26	Deficient Pavement	I-196	I-196 is the primary east/west freeway into downtown Grand Rapids	Reconstruction	\$ 20,000,000
27	Deficient Bridge	I-94	Key State and International Freight Corridor	Superstructure Replacement	\$ 4,700,000
28	Deficient Pavement	I-94	Critical International and Regional Commercial Corridor	Reconstruction	\$7,200,000
29	Deficient Bridge	I-94 E&WB	Bridge is within the I-94 / I-69 Interchange at the Blue Water Bridge. Improving the bridge is vital to maintaining international trade with Canada	Bridge replacement	\$ 1,334,000
30	Deficient Bridge	I-696	N/A	N/A	N/A
31	Severe Congestion	US-131	Primary corridor serving commerce in the Metro Grand Rapids area	Improve operations and add lanes	\$ 316,000,000
32	Deficient Bridge	I-94 E&WB	Key State and International Freight Corridor	Bridge Replacement	\$ 8,600,000

33	Deficient Pavement	I-96	Main connection between Grand Rapids, Lansing and Detroit	Reconstruction	\$ 31,580,000
34	Severe Congestion	US-24	Primary corridor serving commerce in the Metro Detroit area	Improve operations and add lanes	\$ 113,000,000
35	Severe Congestion	US-24	Primary corridor serving commerce in the Metro Detroit area	Improve operations and add lanes	\$ 284,000,000
36	Deficient Pavement	I-94	Critical International and Regional Commercial Corridor	Reconstruction	\$9,800,000
37	Deficient Pavement	I-94	International Border Crossing	Resurface	\$8,000,000
38	Deficient Bridge	US-2, US-41	Facility carries 3 major region highways over the Escanaba River and is the only trunkline crossing within 60 miles	Bridge Replacement	\$ 16,000,000
39	Deficient Bridge	US-2, US-41	Facility carries 3 major region highways over the Escanaba River and is the only trunkline crossing within 60 miles	Bridge Replacement	\$16,000,000
40	Deficient Pavement	I-196	Priority Commercial and Tourism Corridor for West Michigan Region	Rehabilitation	\$ 25,900,000
41	Deficient Pavement	I-96	Freeway connecting western Metro Detroit Suburbs to Detroit	Reconstruction	\$ 44,000,000
42	Deficient Pavement	US-131	Priority commercial route for West Michigan Region	Rehabilitation	\$ 15,800,000
43	Severe Congestion	Southfield Rd /Lincoln Dr.			
44	Deficient Pavement	I-94	Critical International and Regional Commercial Corridor	Reconstruction	\$8,900,000
45	Deficient Pavement	I-69	Access to Capital City Anprort, Connector from Lansing to I-75	Reconstruction	\$ 30,000,000
46	Deficient Pavement	US-131	The US-131 freeway provides primary access from Grand Rapids and southwestern Michigan to the tourist areas of northern Michigan and Ferris State University. It is also an important commuting route into the Grand Rapids metro area.	Reconstruction	\$20,000,000
47	Severe Congestion	M-37	Priority commercial route for the metro Grand Rapids area	Improve operations and add lanes	\$ 210,000,000
48	Deficient Bridge	I-96 WB	I-96 in this area connects Grand Rapids and Muskegon urbanized areas.	Superstructure Replacement & Substructure Repairs	\$ 2,479,000
49	Deficient Pavement	US-31	Priority tourism and commercial route for West Michigan Region	Reconstruction	\$ 18,350,000
50	Deficient Pavement	I-75	Statewide I-75 is a corridor of national significance. On a practical basis, I-75 is the primary route for accessing the northern lower peninsula from the north or south.	Crush and shape and HMA resurface, culvert upgrades.	\$11,310,000
51	Transit Deficiency	Grand River and Grand River Express	Dexter is a crowded commuter coridor connecting the northwest side of Detroit to the CBD. Currently overcrowding is experienced during the peak and off peak hours.	Proposed light rail line or dedicated bus lane on this corridor would improve transit service and promote development along this corridor.	400,000,000
52	Transit Deficiency	Gratiot, and Gratiot Express	Gratiot is a crowded commuter coridor connecting the east side of Detroit to the CBD. Currently overcrowding is experienced during the peak hours.	Proposed light rail line or dedicated bus lane on this corridor would improve transit service and promote development along this corridor.	300,000,000
53	Deficient Bridge	I-94 E&WB	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers. Provides Important Freight Linkages especially for international freight and trade between Canada, Michigan and states to the south and west.	Deck Patch, Epoxy Overlay, Substructure Repair, Joints	\$ 478,518
54	Deficient Bridge	I-75 US-23		Deep Overlay, Steel Repairs, Zone Paint, Substructure Repairs	\$2,300,000
55	Deficient Pavement	M-14	Main connection between Ann Arbor and the nothern Detroit Metro area	Rehabilitation	\$ 16,500,000
56	Deficient Pavement	I-94	Main connection between Detroit and Chicago	Rehabilitation	\$ 18,000,000
57	Deficient Bridge	I-75 SB	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers. An I-75 alternate, this high density business corridor supports industry as well as commuter traffic.	Deck Replacement	\$ 252,325
58	Deficient Pavement	M-35		reconstruct	\$ 46,430,000
59	Severe Congestion	Telegraph Rd.			
60	Severe Congestion	M-11	Primary commercial route for the metro Grand Rapid area	Improve operations and add lanes	\$ 63,000,000
61	Deficient Bridge	I-75 S&NB	Provides Important Freight Linkages especially for international freight and trade between Canada, Michigan and states to the north and south.	Deep overlay, widening, and substructure repair	\$1,400,000
62	Deficient Bridge	I-75 S&NB	Provides Important Freight Linkages especially for international freight and trade between Canada, Michigan and states to the north and south.	Deck replacement w/widening (add lane),Paint	\$920,000
63	Deficient Pavement	US-31	US-31 in the Petoskey area is primary road serving the city.	Rehabilitation	\$ 16,500,000
64	Deficient Pavement	I-69	Fwy to Fwy interchange at US/Canada Border	Reconstruction	\$ 23,630,000
65	Deficient Pavement	US-23	US-23 is a corridor of statewide significance. Because of its location US-23 is the primary access to the northeastern part of the lower peninsula.	Resurfacing, curb and gutter replacement, drainage improvements, sidewalks.	\$1,600,000
66	Deficient Bridge	I-275 S&NB	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.	Deep overlay, paint, beam repair, sustr repair	\$ 688,408

67	Deficient Pavement	US-24	Major north-south commuter route and also a high density business/light industrial corridor	Patch and Overlay	\$ 16,000,000
68	Severe Congestion	US-23	Primary north-south route connecting Ann Arbor Urbanized Area and points East, West and South to Livingston County	Reduce existing headways on fixed route bus. Rehabilitate pavement, intersection improvements	\$ 30,400,000
69	Deficient Bridge	I-94	Provides important freight linkages.	Bridge Replacement	\$8,000,000
70	Deficient Pavement	M-59	Heavily traveled east-west commuter/commercial route, supporting high-tech businesses, auto-related businesses, universities, and the Silverdome.	Patch and Overlay	\$ 28,120,000
71	Deficient Pavement	US-23	Main connection between Ann Arbor and the northern Detroit Metro area	Rehabilitation	\$ 10,000,000
72	Deficient Pavement	I-69	Connection to Indiana and other points south and west	Reconstruction	\$ 30,000,000
73	Deficient Pavement	US-131	Priority commercial route for West Michigan Region	Rehabilitation	\$ 31,400,000
74	Deficient Bridge	I-94 EB	Critical International and regional commercial corridor	Concrete Overlay, Beam Repair, Railing Replacement	\$2,200,000
75	Severe Congestion	Washington St. to Rochester Rd.*			
76	Transit Deficiency	Crosstown	This is one of the strongest eastside/westside connectors in the city of Detroit, providing access to Wayne State University and the CBD from both the eastside and westside.	Proposed light rail line or dedicated bus lane on this corridor would improve transit service and promote development along this corridor.	400,000,000
77	Transit Deficiency	Wolverine Service	Provide Passenger Rail Service and alternative to highway and air travel	Infrastructure improvements, added capacity, increased speeds.	\$75 million
78	Deficient Bridge	SECOND BLVD	N/A	N/A	\$ 33,790,000
79	Deficient Pavement	M-14	Main connection between Ann Arbor and the northern Detroit Metro area	Rehabilitation	\$ 9,350,000
80	Severe Congestion	I-496	Primary corridor serving the metro Lansing area providing access to the State Capitol and state government	Improve operations and add lanes	\$ 296,000,000
81	Deficient Pavement	US-23	Major North/South route, entry route from Ohio	Rehabilitation	\$ 20,000,000
82	Severe Congestion	Union Lake Rd./Cooley Lake Rd.			
83	Severe Congestion	Highland Rd./Huron St./M 59			
84	Deficient Pavement	M-24	Primary Commuter Route between Lapeer and Northern Lapeer County to Southeastern Michigan	Reconstruct one mile and 4 miles of Boulevard Construction	\$ 43,000,000
85	Severe Congestion	M-11	Primary commercial route for the metro Grand Rapids area	Improve operations and add lanes	\$ 111,000,000
86	Deficient Pavement	US-131	Priority commercial route for West Michigan Region	Rehabilitation	\$9,800,000
87	Severe Congestion	I-96 BR	Primary corridor serving the metro Lansing area and the Capitol City Airport	Improve operations and add lanes	\$ 31,000,000
88	Transit Deficiency	Route 1	This crowded route moves more than 1,000,000 persons per year and is a regional economic generator, carrying people to the Lansing Downtown.	Additional Buses, light rail transit study	\$2.5 million
89	Deficient Bridge	SCHOOLCRAFT AVE	N/A	N/A	N/A
90	Deficient Pavement	M-102	Commuter Route; high density business corridor	Mill and Resurface	\$ 18,000,000
91	Deficient Bridge	I-94 EB	The bridge supports the transportation of goods and services within the auto industry, medical, manufacturing, research and technology, educational and other sectors by providing access to resources and customers.	Deck Patch, substr repr	\$ 1,000,000
92	Deficient Bridge	M-3 (GRATIOT)	N/A	N/A	\$ 37,630,000
93	Deficient Pavement	M-53	Only N-S trunkline connecting Macomb County to I-69; major commuter route	Reconstruct & Minor Widening	\$ 19,800,000
94	Deficient Bridge	US-131	This facility is important to the region because it is one of the most traveled business routes in the North Region.	Deck Replacement, Complete Paint, Steel Beam End Repairs, Concrete Patching, Approach Slabs	\$ 688,224
95	Transit Deficiency	Eight Mile	A strong east/west connector providing access to Northland Mall, Eastland Mall, and popular routes like the 16 Dexter and 53 Woodward.	Proposed light rail line or dedicated bus lane on this corridor would improve transit service and promote development along this corridor.	400,000,000
96	Severe Congestion	US-127	Primary north-south route connection Jackson and Lansing urban areas and also providing recreational access to northern Michigan	Improve operations and add lanes	\$ 109,000,000
97	Severe Congestion	State	Provides direct access between southern portion of Urbanized area and Downtown Ann Arbor	Reduce existing headways on fixed route bus. Rehabilitate pavement, Include center turn lane where appropriate. Intersection improvements	\$ 26,600,000
98	Deficient Pavement	M-14	Main connection between Ann Arbor and the northern Detroit Metro area	Rehabilitation	\$ 14,000,000
99	Severe Congestion	M-45	Priority commercial route for the metro Grand Rapids area	Improve operations and add lanes	\$ 40,000,000
100	Transit Deficiency	Route 3	This route, which is standing-room only during peak hours, connects the Lansing Mall, which is often used as a park-n-ride, and Lansing's Downtown.	Additional Buses, light rail transit study	Each bus costs \$500,000

## Endnotes

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<sup>1</sup> U.S. Census Bureau. [www.census.gov](http://www.census.gov).

<sup>2</sup> U.S. Census Bureau, Population Division. Interim State Population Projections, 2005.

<sup>3</sup> TRIP analysis of Bureau of Economic Analysis data.

<sup>4</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2006, 1990. [www.fhwa.dot.gov](http://www.fhwa.dot.gov).

<sup>5</sup> TRIP calculation based on U.S. Census and Federal Highway Administration data.

<sup>6</sup> Transportation Funding Task Force, "Michigan's Roads in Crisis," 2008. P. 18.

<sup>7</sup> Ibid.

<sup>8</sup> Why We Must Preserve our Pavements, D. Jackson, J. Mahoney, G. Hicks, 1996 International Symposium on Asphalt Emulsion Technology.

<sup>9</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2005. [www.fhwa.dot.gov](http://www.fhwa.dot.gov).

<sup>10</sup> Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.

<sup>11</sup> Highway Development and Management: Volume Seven. Modeling Road User and Environmental Effects in HDM-4. Bennett, C. and Greenwood, I. 2000.

<sup>12</sup> Your Driving Costs. American Automobile Association. 2006.

<sup>13</sup> U.S. Department of Transportation - Federal Highway Administration: National Bridge Inventory 2007.

<sup>14</sup> Ibid.

<sup>15</sup> TRIP analysis of Federal Highway Administration data. Highway Statistics 2006, Table HM-61. Interstate and Other Freeways and Expressways with a volume-service flow ratio above .70, which is the standard for mild congestion, are considered congested.

<sup>16</sup> Texas Transportation Institute. 2007 Urban Mobility Report.

<sup>17</sup> *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.

<sup>18</sup> TRIP analysis of Texas Transportation Institute and Reason Foundation data.

<sup>19</sup> Ohio Job Losses Second Only to Michigan since 2000, The Plain Dealer, October 22, 2008. Monthly Job Losses Cut Across 41 States, CNN Money.Com, October 21, 2008. Monthly Job Losses Cut Across 41 states, CNN Money.Com. October 21, 2008.

<sup>20</sup> Bureau of Transportation Statistics, U.S. Department of Transportation. 2002 Commodity Flow Survey, State Summaries.

<sup>21</sup> Ibid.

<sup>22</sup> U.S. Department of Transportation: Office of Freight Management and Operations. [www.fhwa.dot.gov](http://www.fhwa.dot.gov).

<sup>23</sup> Federal Highway Administration, 2008. Employment Impacts of Highway Infrastructure Investment.