



TRANSPORTATION

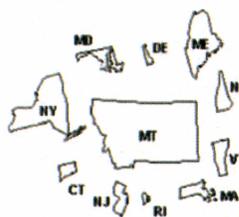
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Summary

Montana has the third highest fatality rate in the nation, with a backlog of transportation projects waiting for available funding. 46% of major roads are in poor to mediocre condition and 40% of gravel roads are in poor or failed condition. These rough roads cost each Montanan approximately \$292 to \$484 per year in extra maintenance costs depending on their area's roads. 59% of the \$60 billion in goods shipped within Montana travel by truck across the state's vast highway infrastructure, further emphasizing the vital role of the Montana transportation network. It is estimated that \$14.8 billion is needed to take care of Montana's roadway system and bridges, but projected funding can only meet 25% of those needs. Despite being under funded, the state's highways are in fair to good condition and 92% of the state highway bridges are in good condition, efficiently moving citizens and goods from place to place. The overall lack of adequate funding cripples the effectiveness and lowers the overall rating to a C.

Montana is larger than the combined area of 10 North-Atlantic states, yet it has only 2% of the combined population of those states.

It is farther by highway from Yaak to Alzada (774 miles) than it is from Washington D.C. to Chicago, Denver to Las Vegas, Seattle to Reno, Atlanta to Chicago, Jacksonville to Washington D.C., or San Francisco to Salt Lake City.



Source: MDT Transportation Fact Book

About Montana's Transportation System

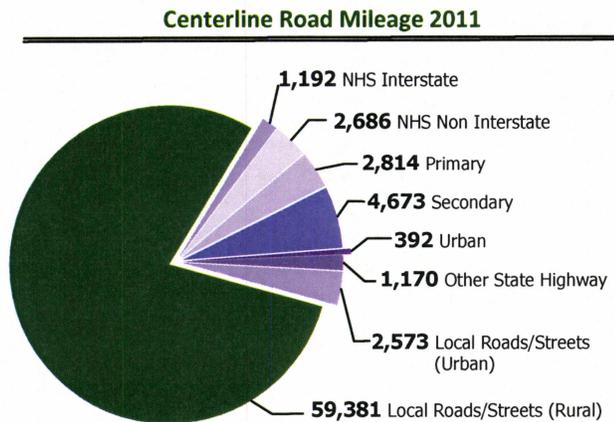
As the lifeline to travel, recreation, and commerce, Montana's highway system plays a critical role in the economic health and freedom of mobility to the state's citizens, tourists, and businesses. The backbone of the state's economy is the ability to move goods, services, and visitors across the extensive network of roads, bridges, and highways. Well-maintained roads enhance the network's ability to provide efficient and reliable mobility for motorists and businesses, thereby sustaining our level of economic competitiveness and propelling our economic growth.

Given the investment already made in developing our road network and its importance to our commerce and lifestyle, Montana must continue to invest in this valuable asset. Past investments in the transportation network

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have increased opportunities for business and travel and as Montana continues to grow in population, vehicle miles traveled by visitors, and the related economic output. One of the burdens of growth is the requirement to adequately maintain and modernize the highway system.

Capacity



Source: MDT Road Inventory & Mapping Section

2010	Centerline Miles	AVMT
On-System	11,758	8.5 billion
Off-System	63,037	2.6 billion
2011	Centerline Miles	AVMT
On-System	11,758	8.6 billion
Off-System	63,123	3.1 billion

AVMT = Annual Vehicle Miles Traveled

Source: MDT Traffic Data Collection Section and MDT Road Inventory & Mapping Section

Montana enjoys some of the least crowded roadways in the world, with a very low ratio of population to number of lane miles in the state. There are few rural routes that are slowed by congestion such as portions of Highway 93 in western Montana, Highway 191 near Bozeman, Highway 16/200 near Sidney and Fairview, Highway 87 in Billings Heights, and US 310 south of Laurel, but the wide open spaces of Montana provide plenty of room for motorists to move quickly along the transportation network. The current capacity of the roadways should serve Montana well into the future. However, a few urban routes and several routes in the Bakken region of eastern Montana, where oil exploration is booming, are in desperate need of capacity upgrades.

The efficiency of Montana's transportation system, particularly its highways and bridges, 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. Annually, \$21.6 billion in goods are shipped from sites in Montana and another \$37.9 billion in goods are shipped to sites in Montana, mostly by truck. 59% of the goods shipped annually from sites in Montana are carried by trucks.

Condition

While the Montana Department of Transportation (MDT) uses asset management systems and the most cost-effective pavement preservation methods, a lack of adequate state and local funding has resulted in 46% of major urban roads and highways in Montana to have pavement surfaces in poor or mediocre condition. This includes both local- and state-maintained roads and highways; the rough conditions provide a rough ride.

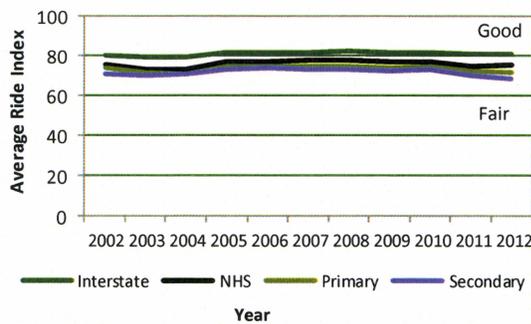
At the local level, a 2008 comprehensive evaluation by 85% of the counties in Montana reported 40% of the

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nearly 40,000 miles of gravel roads within their jurisdiction were in poor or failed condition. The roads were evaluated using the Pavement Surface Evaluation and Rating (PASER) system to ensure uniformity of evaluation techniques. It also found that 25% of the asphalt/chip sealed roads were reported to be in poor or failed condition. In 2013, after completing a review of 10% of the counties in Montana, evaluations indicated little change to these percentages.

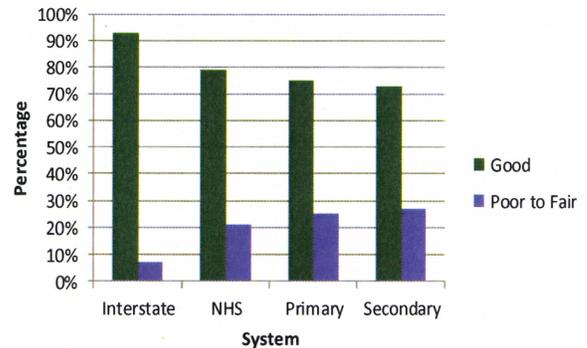
28% of Montana's major urban roads and highways have pavements in poor condition, while an additional 18% of the state's major urban roads are rated in mediocre condition. 22% are rated in fair condition and the remaining 32% are rated in good condition.

MDT Ride Condition Summary



Source: MDT Transportation Fact Book

2012 State Highway Overall Pavement Condition Summary

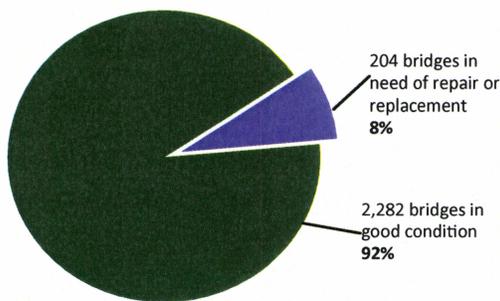


Source: MDT Pavement Analysis Section

Driving on rough roads costs each urban Montana motorist \$484 annually in extra vehicle operating costs. In addition, rough road conditions cost all Montana motorists a total of \$170 million annually in extra vehicle operating costs. Costs include accelerated vehicle depreciation, additional repair costs, increased fuel consumption and tire wear.

2011 State Highway Bridges in Need of Repair or Replacement

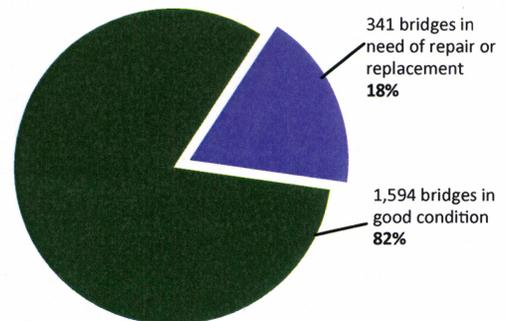
Total State Highway Bridges: 2,486



Source: MDT Bridge Bureau

2011 Non-State Highway Bridges in Need of Repair or Replacement

Total Non-State Highway Bridges: 1,935



Source: MDT Bridge Bureau

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The dedicated staff and good management systems of state and local agencies have the bridges in Montana in good condition with 2,282 highway bridges or 92% rated in good condition and only 8% or 204 highway bridges in need of repair or replacement. Non-state highway bridges rate 82% (1,594) in good condition and 18% (341) in need of repairs or replacements.

Funding

Given the economic and safety impacts of Montana's road network, adequate funding for maintenance and expansion is of vital importance. The federal government remains a critical source of funding for Montana's transportation system and provides a significant return to Montana in funding based on the revenue generated in the state by the federal motor fuel tax. From 2008 to 2012, the federal government provided \$3.07 for every \$1 the state paid in federal motor fuel fees for road improvements in Montana. As the U.S. Congress debates the future of the almost insolvent Highway Trust Fund (HTF), the HTF balance declines, further delaying needed infrastructure replacements and improvements at the state and local levels. This delay stops progress on needed safety and infrastructure projects that only increases the deterioration of the transportation system.



US Highway 93 Hamilton to Victor, Ravalli County

Source: WGM Group, Inc.

The Fiscal Year 2014 estimate of the Federal Highway Administration (FHWA) spending in Montana is \$396 million. That figure comprises the majority of MDT's transportation budget.

Future Needs and Operation & Maintenance

Montana has made significant investments in roadway infrastructure and must be cognizant of projecting that investment through ongoing maintenance of roads. In 2012, MDT conducted a Transportation Needs Study to determine the funding needed over the next decade to meet the construction, operation, and maintenance of the roadway network. The study revealed that \$14.8 billion is needed to take care of Montana's roadway system and bridges, while projected funding can only meet 25% of those needs.

The study reveals that the life cycle of Montana's roads is greatly affected by the state and local government's ability to fund and perform timely maintenance and upgrades. Poor roads can be resurfaced, but waiting too long for available funding often means the road becomes too deteriorated and must be reconstructed at a greater cost.

Funding available to Montana counties from all sources for road and bridge maintenance may be characterized as adequate to maintain the status quo, but is clearly insufficient to improve current conditions over time. Unfortunately, over time, roadway maintenance costs can only be expected to increase, hindering the counties' abilities to make any gains or even maintain status quo.

Public Safety

In addition to economic growth, transportation improvements are needed to ensure safe, reliable mobility and quality of life for all Montanans. Montana's traffic fatality rate is the third highest in the nation. Improving safety features on Montana's roads and highways would likely result in a decrease in the state's traffic fatalities and serious crashes. Where appropriate, highway improvements can reduce traffic fatalities and crashes while improving traffic flow to help relieve congestion. Such improvements include removing or shielding obstacles, adding or improving medians, improving lighting, adding rumble strips, wider lanes, and wider and paved shoulders, upgrading roads from two lanes to four lanes, and employing better road markings and traffic signals. Investments in rural traffic safety have been found to result in significant reductions in serious traffic crashes.

Montana's traffic fatality rate of 1.72 fatalities per 100 million vehicle miles of travel is the third highest in the nation. On average, 211 people were killed annually in Montana traffic crashes from 2008 to 2012, a total of 1,053 fatalities over the five year period. The fatality rate on Montana's non-interstate rural roads is nearly double that on all other roads in the state (2.25 fatalities per 100 million vehicle miles of travel vs. 1.26). Major factors contributing to the high fatality rates are the distances to medical help and miles of highways that need upgrades to modern standards.

Resilience

The resilience of the transportation network in Montana is important because alternate routes for closed highways can involve several hundred miles of detour. Natural disasters in transportation corridors not only have the potential to seclude portions of the state, but also create costly detours for major trade routes such as the Can-Mex route along I-15, east-west along I-90, and the hi-line of US-2. Being a large state with varying terrain and weather patterns results in exigency actions being needed somewhere in the state each year. Due to these frequent small practice runs, MDT has some response funds built into its budget and staff experienced in dealing with these difficult situations. To supplement this funding, FHWA, at times, has funding available through a fast track process for emergency transportation needs. In addition, MDT, FHWA, the U.S. Forest Service, U.S. Army Corps of Engineers, Montana Department of Environmental Quality, and Montana Fish, Wildlife and Parks have an agreement in place to expedite permitting and project responses during emergencies. These agencies have participated in disaster response drills with the National Guard and local governments. This working relationship greatly enhances cooperation and responses to keep the transportation system open.

With transportation professionals and cooperating regulatory agencies in Montana thoroughly recognizing the importance of the transportation network and possessing a demonstrated ability to work together, transportation emergencies are met head-on and resolved as quickly as possible.

Innovation

Given the difficulty of obtaining funding for roadway construction and maintenance, providing innovative solutions to the challenges facing Montana's roads is an important aspect of providing a top-notch transportation system. It is important for Montana to embrace new ideas and programs that will stretch the transportation funding dollars. A couple of programs provide examples of good ideas being implemented on the road.

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MDT utilizes an asset management strategy called the Performance Programming Process which links goals and expenditures for road and bridge conditions, safety, and traffic congestion, by prioritizing investment on the state's roads, highways, and bridges, that are cost-effective, safe, and environmentally efficient.

Traffic signal operations have been addressed within MDT over the past couple of years as well. In 2012, MDT had FHWA perform an in-depth "current practice report" to determine any deficiencies. MDT has incorporated the FHWA report on deficiencies in the traffic signal operations. Further, the Traffic Signal Management Plan has \$2 million set aside per year from 2014-2018 (with 2016 getting \$4 million) for controller and communication upgrades to address report findings.



North Higgins Avenue, Urban Complete Street, Missoula

Source: WGM Group, Inc.

Sources

Montana Department of Transportation Fact Book – December 2012

Pavement Surface Evaluation & Rating (PASER) Presentation, MACRS Conference, MT LTAP, Spring 2014.

MONTANA TRANSPORTATION BY THE NUMBERS: Meeting the State's Need for Safe and Efficient Mobility, TRIP A National Transportation Research Group, February 2014.

Recommendations

Despite being under funded, the state's highways are in fair to good condition and 92% of bridges are in good condition, a system that efficiently moves its citizens and goods from place to place. This speaks well of MDT's and local counties' efforts in managing the project mix and innovations for maximizing the benefits with a tight budget. Yet, even as the state's highways perform efficiently and safely, the aging infrastructure and transportation assets that make up the network inevitably will require ongoing maintenance. The following recommendations have all either been rolled out in other states or are being investigated. The ideal combination is one involving several recommendations to fairly balance impacts to all road users.

Montana should capitalize on new technologies to advance the overall design, construction, and O&M of its transportation network. This includes embracing the use of building information modeling (BIM)-inspired CAD software, and using remote sensing technologies and automated systems to accurately and efficiently obtain data for all aspects of transportation network operation.

Montana should encourage agencies responsible for roads to use alternative project delivery methods when a given project is a good candidate for design/build or other unconventional methods of delivery. Utilizing innovative project financing for roadway construction could include public/private partnerships. New financing methods allow for the private sector to be more assimilated into a traditional construction project.

Montana should consider implementing a state infrastructure bank to help increase the funding available for all infrastructure projects, including roadways. An infrastructure bank would be backed by the State of Montana and provide an avenue for lending money to agencies responsible for funding construction. The FHWA estimated that state banks could leverage almost \$4 of private investment for every \$1 in taxpayer investment.

As has been discussed on a national level, Montana should consider indexing state gas tax to inflation. Inflation continually increases construction costs, causing existing taxes to gradually lose their value over time. Automatically indexing existing taxes to inflation would cause taxes to retain their intended value without any political interference.

Montana should continue analyzing the roadway network to determine critical connections, areas where unusable roads will cause the most economic damage. Those routes should be evaluated for likelihood of natural disasters and analyzed for ways to improve their resilience. Highway routes that are especially susceptible to closure should have viable detour routes in good condition.