

**Facilitating Economic Growth:
The Impact of a \$600 Million
Increase in Minnesota's
Annual Highway & Bridge
Capital Outlays**



ABOUT THE AUTHOR

This research was conducted by a team led by Dr. Alison Premo Black, vice president of policy and chief economist for the American Road & Transportation Builders Association in Washington, D.C., with significant contributions by Lital Shair. Dr. Black, who earned her PhD. in Economics at The George Washington University in the Nation's Capital, also holds an M.A. in International Economics and Latin American Studies from the Johns Hopkins School of Advanced International Studies. She graduated magna cum laude from Syracuse University, where she was a member of Phi Beta Kappa and the Golden Key Honors Society, with majors in International Relations, Latin American Studies and Spanish. Since joining ARTBA in 2000, Dr. Black has led teams and authored over 75 studies examining state transportation funding and investment patterns.

MINNESOTA'S TRANSPORTATION CONSTRUCTION INDUSTRY

To put the industry's impact on Minnesota employment in context, it directly provides more Minnesota jobs than direct employment by the state's hotel and motel industry (36,981), real estate and rental and leasing industry (35,786), doctor's offices (35,659) and religious organizations (35,058), among others.

¹Total capital outlays for highway and bridge work in Minnesota are tracked by several sources. MnDOT provides a flow chart of annual state spending on state and local roads each year on their website, and projects future highway and bridge spending in their State Transportation Improvement Program (STIP) each year. Local spending on highways is from FHWA's Highway Statistics series; FHWA collects information from MnDOT and local governments as part of this Series. Finally, the U.S. Census Bureau publishes annual data on state and local government spending for highways and bridges. Although these estimates vary slightly, they are all very close to \$2.53 billion in total. To estimate state spending, we used three-year average spending levels from the MnDOT flow charts on state (\$1.03 billion) and local highway construction (\$236 million) to arrive at \$1.27 billion. To estimate local spending, we used the average of the last two years of data available from FHWA's Highway Statistics for local government capital outlay for highways, to arrive at \$1.27 billion. Together, state and local spending adds up to approximately \$2.53 billion.

The firms and public agencies that design, build, maintain and manage Minnesota's transportation infrastructure network—together with those who manufacture and produce the equipment, materials, supplies and services necessary for their work—comprise the Minnesota transportation construction industry. Its impacts on the state's economy are significant:

- **Annual Output Value**—The annual value of capital outlays by Minnesota state and local governments on highways and bridges is approximately \$2.53 billion.¹ This represents the value of work completed during the year on highway and bridge projects by the state and local governments, as reported by MnDOT and the U.S. Census Bureau. It does not include routine maintenance. This is not a measure of contract awards, but rather the sustained level of ongoing work. This is the value of work on capital outlays during the year, regardless of when a project was awarded or when work began. To put this amount in perspective, this is larger than the annual economic activity of Minnesota's social assistance industry (\$2.52 billion), chemical products manufacturing industry (\$2.44 billion) and air transportation industry (\$2.13 billion).
- **Annual Contribution to State GDP**—As the money invested in highway and bridge construction industry employment and purchases for these capital outlays moves through the state's economy, it generates nearly \$3.2 billion in total annual economic activity for the state and accounts for over one percent of Minnesota's GSP.
- **Creating & Sustaining Minnesota Jobs**—The design, construction and maintenance of all modes of transportation infrastructure in Minnesota, including railroads, transit, ports and waterways and airports, supports the equivalent of 75,547 full-time jobs. This includes 37,635 direct jobs in transportation construction and supply related-activities and 37,912 jobs induced, or sustained, by transportation construction industry employee, firm and agency spending throughout the state's economy.

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- **Contributions to Minnesota Payroll & Taxes**—Transportation construction and maintenance activity in Minnesota from all modes generates \$3.5 billion annually in direct and induced wages. These workers contribute an estimated \$644.3 million each year in state and local income taxes, corporate and unemployment insurance taxes and the federal payroll tax.

But that is only a small part of the picture. Without the infrastructure built, maintained and managed by the Minnesota transportation construction industry, *virtually all of the major industry sectors that comprise the Minnesota economy—and the American jobs they sustain—would not exist or could not function.*

Dependent Employment—The simple fact is that nearly 1.3 million Minnesota jobs in just tourism, manufacturing, transportation and warehousing, agriculture and forestry, mining, retailing and wholesaling alone *are fully dependent on the work done by the state’s transportation construction industry.* These dependent industries provide a total payroll in excess of \$53 billion.

Characteristics of the Minnesota Transportation Construction Network

According to the Federal Highway Administration (FHWA), Minnesota has 138,767 miles of roadway. Of the state’s 33,117 miles of roadway eligible for federal aid, 6.6 percent are rated “not acceptable” and need major repairs or replacement.

Minnesota has 12,961 bridges. FHWA reports 9 percent of the state’s bridges are either “structurally deficient” (830 bridges) or “functionally obsolete” (363 bridges).

Road Safety—The National Highway Traffic Safety Administration reports there were 357 fatal motor vehicle crashes, resulting in 387 fatalities in Minnesota during 2013. Of these, 66 percent of fatalities occurred on rural roads and 32 percent occurred on the National Highway System. Motor vehicle crashes are the number one cause of death and also permanently disabling injuries for young Americans under age 21.

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Transportation Network Profile

Highways, Roads & Bridges

Total Road Mileage	138,767
Rural Mileage	116,560
Urban Mileage	22,208
Number of Bridges	12,961

Airports

Number of Airports	327
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Transit & Rail

Bus Route Miles	5,101
Transit Rail Route Miles	103
Number of Transit Agencies	8

Freight Railroad

Railroad Miles	4,449
Number of Railroads	18

Ports & Waterways

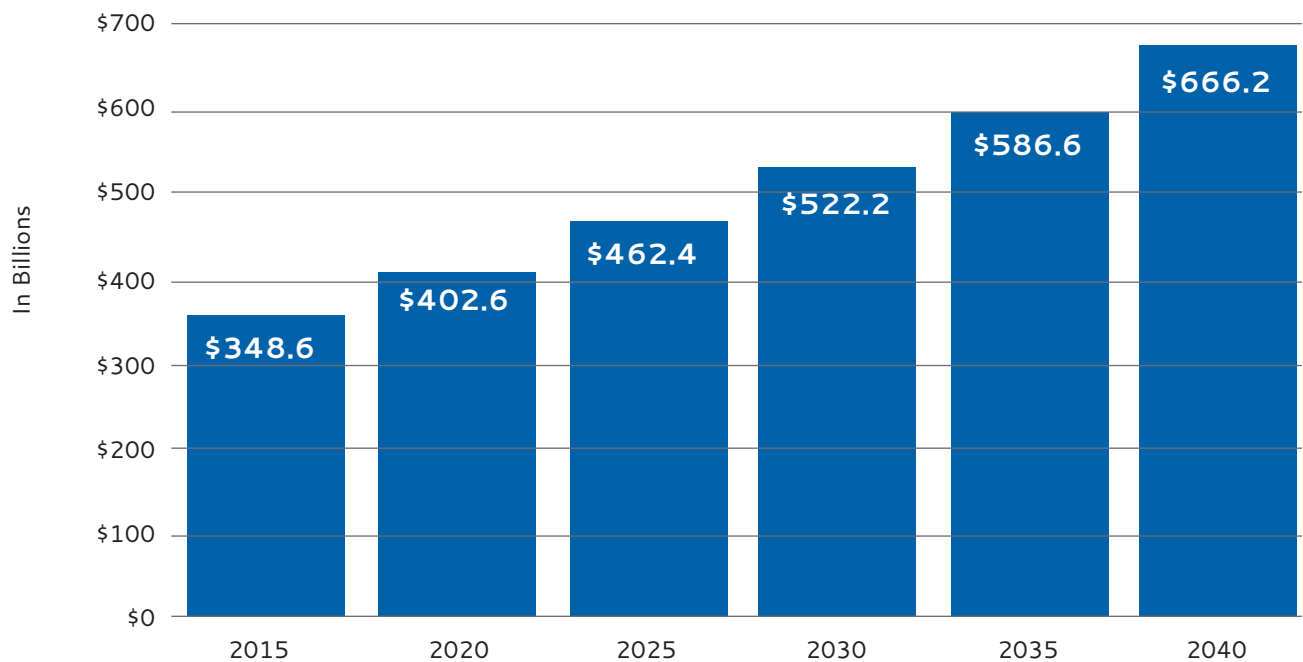
Miles of inland waterways	260
Total Shipments (1,000 tons)	42,872
Domestic Shipments	37,856
Foreign Shipments	3,813
Intrastate Shipments	1,204
Number of waterway facilities	283

Commuting Patterns—According to the U.S. Census Bureau, the average weighted commute oneway to work for Minnesota residents is 22 minutes. Getting there, 87 percent of commuters get to work by driving, 3.4 percent take transit, 4.4 percent walk, bike or use other modes and 5.1 percent work from home.

Freight Traffic—Interstate truck shipments along Minnesota’s highway and bridge network are vital to the economic growth of the state.

- The value of total truck freight shipments to and from businesses in Minnesota is expected to reach \$666.2 billion in 2040, an increase of 91 percent from \$348.6 billion in 2015.
- Over \$237 billion (70 percent) of domestic shipments by Minnesota businesses in 2015 were made via truck. Over \$141 billion of those truck shipments (60 percent) stayed within the state—the remaining shipments were made to neighboring states (14 percent) and non-neighboring states (26 percent).

The Value of Total Truck Shipments To and From Minnesota Businesses



Source: U.S. Department of Transportation Freight Analysis Framework

STATEWIDE IMPACTS OF INCREASING MINNESOTA'S ANNUAL HIGHWAY & BRIDGE CAPITAL INVESTMENT

An annual \$600 million increase in highway and bridge construction investment in Minnesota would have an immediate impact on all sectors of the state economy.

How does this ripple effect work? Highway and bridge contractors purchase inputs from Minnesota businesses, in addition to other firms outside of the state as they complete work on projects. These workers spend their earnings by purchasing clothing, food and other goods and services, thereby creating demand in other sectors of the state economy. As jobs are created or sustained, employees receive additional income and spend more, and businesses increase sales. Subsequently, taxes grow due to larger payroll and sales volumes, providing the state and local municipalities with additional revenues to reinvest in Minnesota.

An annual \$600 million increase in Minnesota highway and bridge construction investment would generate the following economic benefits each year:

- \$1.45 billion in economic output as businesses throughout the economy sell more goods and services to both other businesses and consumers
- \$742.9 million in value added, which contributes to Minnesota's GSP
- 12,238 jobs created or supported across all sectors of the economy
- These workers would earn nearly \$455 million in wages
- \$86.8 million in additional federal and state revenues, including:
 - \$5.5 million in state payroll taxes
 - \$34.8 million in federal payroll taxes
 - \$33.1 million in state income taxes
 - \$12.9 million in state sales taxes
 - Over half a million dollars in local sales taxes

Output by the Minnesota manufacturing industry would increase by over \$204 million as a result of an additional \$600 million highway and bridge construction and capital investment. Other major industries that would increase output include real estate (\$90.8 million), finance and insurance (\$81.0 million), retail trade (\$76.3 million), health care (\$63.0 million) and professional, scientific, and technical services (\$59.4 million). An estimated 12,238 jobs would be created or supported throughout the Minnesota economy, including approximately 1,220 jobs in retail trade and 774 jobs in health care and social assistance.

Economic Impact of \$600 Million in Highway and Bridge Construction Investment in Minnesota

Industry	Impact on Industry Output (in millions)	Jobs Supported/ Created
Agriculture, forestry, fishing and hunting	\$8.9	75
Mining	\$4.6	20
Utilities	\$19.5	34
Construction	\$604.2	5,566
Manufacturing	\$204.8	746
Wholesale trade	\$56.0	280
Retail trade	\$76.3	1,220
Transportation and warehousing	\$37.7	289
Information	\$28.1	135
Finance and insurance	\$81.0	356
Real estate and rental and leasing	\$90.8	237
Professional, scientific, and technical services	\$59.4	515
Management of companies and enterprises	\$20.5	108
Administrative and waste management services	\$22.5	402
Educational services	\$9.0	185
Health care and social assistance	\$63.0	774
Arts, entertainment, and recreation	\$7.7	197
Accommodation and food services	\$25.0	667
Other services	\$26.8	375
Total industry impact*	\$1,445.6	12,238

*Does not include impact on government output.