MINNESOTA GRADES

Aviation	Bridges	Dams
B	C	C

Drinking Water	Energy	Ports
C-	C	C+

Roads	Transit	Wastewater
D+	C-	C

GPA

C

About the Grades

Infrastructure is graded based on eight criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. ASCE grades on the following scale and defines these grades as:

A	B	C	D	F
Exceptional, Fit for the Future	Good, Adequate for Now	Mediocre, Requires Attention	Poor, At Risk	Failing/Critical, Unfit for Purpose

SOLUTIONS TO RAISE THE GRADE

If Minnesota is ready to improve our infrastructure, ASCE-MN has some suggestions to start raising the grade:

1. **Recognize that there has been a multi-decade, profound shift from federal funding to state and local funding for systems like highways, water treatment, and wastewater treatment.** What worked for funding in the 1980s and 1990s is not likely to work well in the 2020s. The shortfalls tabulated in this report should spur legislative efforts to forge a consensus about how maintenance of each of these systems can be funded under today's reality of limited federal assistance—or under what situations service levels are reduced.

2. **End the stop-and-go transportation funding by providing sustainable, long-term revenue and encourage dedicated local option transportation taxes.** To modernize and maintain Minnesota's roads, bridges, and transit we need more predictable and robust funding. Without sustainable revenue, we will continue to be hamstrung by an inability to make strategic decisions and plan long term, and Minnesotans will pay the price in traffic congestion and poor roadway conditions.

3. **Citizens must be able to monitor levels of deferred maintenance. Infrastructure, like our Social Security system, needs to be regularly funded to meet future obligations.** Local governments should communicate status of systems to citizens who can then ask elected officials about their plan to improve and maintain our infrastructure.

4. **Implement robust asset management programs so that entities may better prioritize limited available funding and make smart decisions.** The state should aid in the establishment of an office(s) dedicated to dispersing asset management assistance to local governments. Knowledge is power when it comes to identifying deficiencies in our infrastructure and finding ways to address those deficiencies. Collecting and tracking data is the first step toward making the most of limited funding dollars.

5. **Balance the infrastructure needs of diverse communities.** Communities in Minnesota have varying infrastructure challenges, each as unique as the community itself. Cities with older neighborhoods, often with lower-income residents, tend to have the oldest infrastructure. What works in a rural city may not be useful for a newer suburb. Flexible funding solutions will ensure that the needs of each community are met fairly and effectively.

About ASCE-MINNESOTA

The American Society of Civil Engineers' 1,700 Minnesota members work in all levels of government, academia, and the private sector to design, construct, and maintain Minnesota's infrastructure. We uphold the vision of civil engineers as active community members and stewards of our infrastructure. We bring value to our members by providing technical and informative meetings that promote professional development. In addition to scholarships, mentorship, and K-12 education, our outreach programs offer networking opportunities for students and professionals throughout the state.

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REPORT CARD FOR MINNESOTA'S INFRASTRUCTURE

2018

AMERICAN SOCIETY OF CIVIL ENGINEERS • MINNESOTA • 1914 ASCE

Infrastructure Matters

Infrastructure includes fundamental facilities and systems necessary for Minnesota's economy to function. Roads, bridges, transit systems, airports, water and sewer systems, dams, ports, and energy systems are categories of infrastructure that directly affect our ability to live, work, and play. Infrastructure is the backbone of our state's economy and integral to preserving our high quality of life here in the Gopher State.

Our transportation system gets people to work every day or to the lake on the weekends. Water systems deliver clean drinking water to our homes, communities, and businesses. Wastewater treatment systems protect our lakes, rivers, and drinking water sources from contamination.

Much of Minnesota's infrastructure is aging and reaching the end of its expected lifespan. The majority of our systems were built in the late 20th century, before much of today's modern technology was developed. New materials, expanded environmental awareness, and increased regulation require improvements to wastewater and drinking water treatment plants.

The energy grid, transportation systems, sewers, and drinking water systems of decades ago need upgrading to better prepare for larger storm events, increased use of renewable fuels, and a changing population.

Broader adoption of asset management systems can help inform systematic operations, maintenance, and upgrades. Comprehensively tracking the age, repairs, and maintenance status of the infrastructure we have will help control and reduce disruptive emergency work.

Minnesota must support innovative policies leading to cleaner water, more drivable roads, and a safe environment that will attract business and improve our quality of life.

The 2018 ASCE Minnesota Report Card is a simple tool used to help residents, businesses, and policymakers understand the state of Minnesota's infrastructure. This information helps start the conversation about how to improve the future of our infrastructure.

How You Can Get Involved

1. **Get the full story behind this Report Card at www.infrastructurereportcard.org/Minnesota.**
2. **Find out the condition of the infrastructure near you on the Save America's Infrastructure app available on iTunes and GooglePlay.**
3. **Ask your elected leaders what they're doing to make sure your infrastructure is reliable for the future. Use your zip code to find your list of elected officials at www.infrastructurereportcard.org/take-action.**

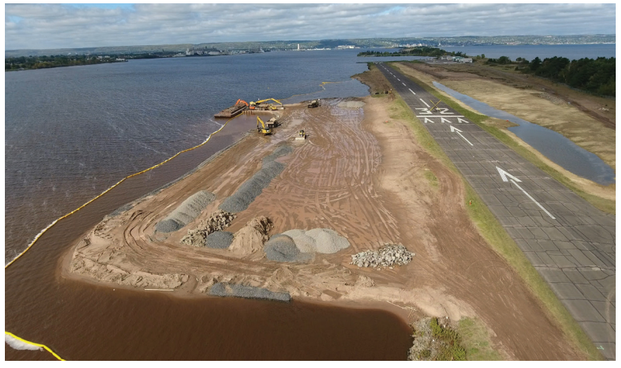
2018 MINNESOTA'S INFRASTRUCTURE REPORT CARD

The 2018 Report Card on Minnesota's Infrastructure gave the state an overall GPA of C. Minnesota's civil engineers studied nine infrastructure categories. Of those nine, one infrastructure category is in good condition, seven are in mediocre condition, and one is in poor condition.

The good news is there are solutions to all these challenges, and we can raise Minnesota's infrastructure grades. By learning more today about the conditions of the infrastructure you use every day, you too can help raise the grade.

AVIATION — B

The Minnesota aviation system services 2.3 million aircraft operations (takeoffs and landings) annually, and includes 135 airports, 97 of which are a part of the National Plan of Integrated Airport Systems. Nine airports provide commercial airline service, including Minneapolis-St. Paul (MSP), which accommodated a record 18.4 million enplanements in 2017. MSP and the reliever airports have undergone considerable upgrades over the past five years, including $455 million in improvements in 2017 alone. From 2018–2022, MSP and its reliever airports forecast needs of $170 million per year while airports in Greater Minnesota (outside the Twin Cities Metropolitan Area) forecast needs of approximately $96 million per year. The condition of Minnesota's airports is reasonably good, and minimal capacity issues are foreseen in the near future. Safety records are solid, and sustainability is proactively integrated within infrastructure and operational decisions.



BRIDGES — C

One result of the I-35W bridge collapse was a decadelong effort to address long-deferred bridgework. But there is more work to be done. Much is known of the condition of the 19,776 bridges in Minnesota. Thousands of Minnesota bridges are nearing the end of their design service life. Statewide, 5.4% of bridges are structurally deficient, and state and local agencies struggle to obtain funding for necessary projects. Due to congestion, there are several large interchanges in the Twin Cities with sizable bridge structures that will soon need to be upgraded. Additionally, there are over 500 bridges posted with signs stating they have a reduced or substandard load capacity, and over 400 bridges that do not meet geometric standards. Bridges in the state need $5.4 billion in funding over the next 20 years. Only $3.22 billion in funding has been identified, leaving a shortfall of $2.18 billion, or $108.8 million each year.

DAMS — C

The majority of Minnesota's dams are at least 50 years old and 50 years is the typical dam design life, according to the Minnesota Department of Natural Resources (DNR). Dams provide flood control, fish and wildlife protection, recreational areas, and hydroelectric power, among other social and economic benefits. A dam is classified based on the probable losses to the public if the dam were to fail. Minnesota has 199 high- or significant-hazard dams and 83 of these have an emergency action plan. Both the state and federal government have programs to help fund repairs or removals of dams when the dam becomes a threat to the public. The lack of funds to perform needed maintenance and the fact that many dams were not designed to handle the larger rain events we are now experiencing are major challenges for Minnesota. An estimated $114 million is needed over the next 20 years to assure public state-regulated dams remain in a safe and stable condition.

DRINKING WATER — C-

Approximately 79% of Minnesotans are served by community water systems while 21% of the population relies on private wells for drinking water. In total, about 75% of drinking water is sourced from groundwater and the remaining portion from surface water. The U.S. Environmental Protection Agency estimates the 20-year drinking water infrastructure need for Minnesota is over $7.5 billion—and unless funding is increased, most of this will be raised through local utility fees, which are climbing to meet costs of pumping, treating, storing, and distributing water. Aging infrastructure and increasingly high demands for funding lower the grade. Although large communities' drinking water systems have consistently met federal standards, far less is known about the private wells many people in rural Minnesota rely on.

ENERGY — C

The state's energy portfolio has changed significantly over the past decade to successfully meet greenhouse gas emissions reduction goals by bringing on more renewable energy, wind, and solar, and reducing the use of coal. The energy industry is working hard to meet these goals. But challenges remain. The industry must prepare for growing consumption, especially during the summer months. The region's summer demand is projected to grow 0.85% per year for the next seven years. Ensuring reliable and dependent access to energy is critical; without it, Minnesota's economy grinds to a halt.

PORTS — C+

Of Minnesota's port capacity, 80% is contained in ports along Lake Superior (Saint Lawrence Seaway), with the remaining 20% of capacity contained in ports along the Mississippi River. Ports are major economic drivers linking cities to world markets. While capacity in Minnesota's ports is sufficient, the ability of each facility to secure funding to improve the condition of its infrastructure varies. The condition of the ports require attention in the future as the structures typically have a 50-year design and a fair portion are at or near the end of their design service life. Other challenges that facilities are grappling with include corrosion of steel structures, dredging backlogs, dock wall construction, creation of new storage facilities, building/road rehabilitation, improving land access to the ports, gentrification, and upgrades to meet safety codes.

ROADS — D+

Minnesota has the fifth-highest number of public roadway miles in the U.S. Even as our economy remains strong, Minnesota is facing a growing transportation funding shortfall with no clear remedy. The Minnesota State Highway Investment Plan (MnSHIP), published in 2017, estimates that state roads are underfunded by $17.7 billion over the next 20 years, an annual funding gap of $885 million. Without significant public investment, our roads and bridges will continue to fall into disrepair. The primary sources of state funding are fuel, registration, and vehicle sales taxes. Relatively small adjustments to any or each of these could help bridge known funding gaps. Condition of roads is not the only concern, either. Congestion is a major problem in the Twin Cities: the average driver spends 41 peak hours in congestion each year, averaging a cost of $1,332 per driver. And the problem is only going to get worse. The metro area gained 43,000 new people in 2017 and 250,000 since 2010, according to the U.S. Census Bureau.

TRANSIT — C-

Public transportation provides 111 million rides each year in Minnesota. Although the Twin Cities has the lion's share of transit infrastructure, Greater Minnesota has more than 50 public transit systems and has seen a dramatic increase in ridership over the last decade. A $450 million investment over the next five years is needed to keep our existing transit infrastructure in working order. That figure grows to $5 billion for the next 20 years. Despite this need, current funding levels are not enough to take care of what we have and meet the demand of continually increasing ridership. Efficiency and quality of service can be improved, but innovative thinking cannot replace an appropriate level of infrastructure funding. Funding for public transit is complex, but state and local leaders can adopt measures that would ensure a long-term, dedicated, and sustainable revenue stream for public transit similar to how the gas tax funds roads and bridges. A strong investment in public transit infrastructure ensures that the buses, vans, and trains will continue to take Minnesota's growing population to the places they need to be.

WASTEWATER — C

About 84% of Minnesota residents receive wastewater treatment from a centralized collection and treatment system, while the remaining 16% rely on an on-site collection and treatment system such as a septic system. Although capacity is adequate at most facilities throughout the state, funding for upgrading and replacing treatment and collection systems at the end of their planned service life is lacking. There is an estimated annual need of $236 million, of which local communities will provide about one-third, for current wastewater needs. Ratepayers were charged an average annual rate of $268 in 2016 in the metro area for operation and maintenance and capital investments. In Greater Minnesota, user fees are much higher and will continue to rise as decreasing populations shoulder more of the burden of increasing rates.

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