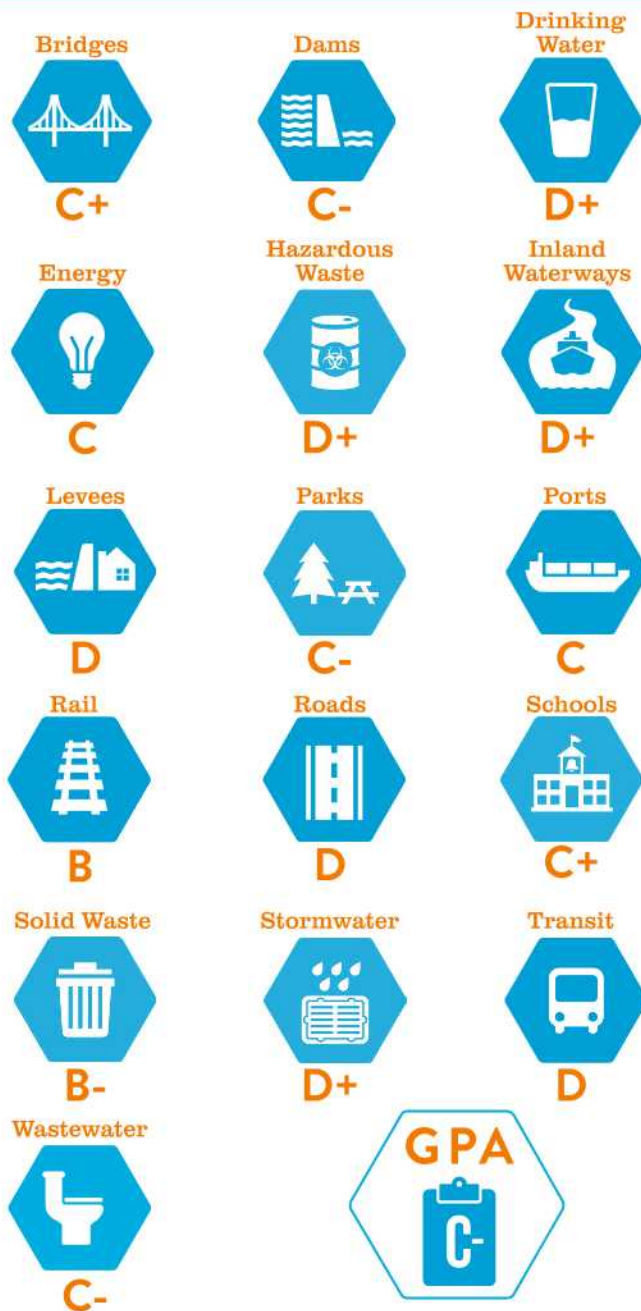


# OHIO GRADES



## 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:



# SOLUTIONS TO RAISE THE GRADE

To raise Ohio's infrastructure grade, ASCE developed the following three recommendations:

### INVESTMENT

- Ohio should consistently dedicate public funding from both the state and local levels to infrastructure investment. The state should also sufficiently assess user-generated fees so that infrastructure trust funds are used only for new infrastructure projects.
- To ensure long-term, sustainable funding for the federal surface transportation program, the user fee on gasoline and diesel fuel must be raised and tied to inflation to restore its purchasing power, fill the funding deficit and ensure reliable funding for the future.
- The state should authorize programs that improve specific categories of deficient infrastructure, and then support that commitment by fully funding them in an expedient, prioritized manner.
- Infrastructure owners and operators must charge, and Ohioans must be willing to pay, rates and fees that reflect the true cost of using, maintaining and improving all infrastructure, including our water, waste, transportation and energy services.

### LEADERSHIP & PLANNING

- Encourage all large projects that receive federal funding use life cycle cost analysis and develop a plan for funding the project, including its maintenance and operation, until the end of its service life.
- Create incentives for state and local governments as well as the private sector to invest in maintenance and to improve the efficiency and performance of existing infrastructure.
- Develop tools to ensure that projects most in need of investment and maintenance are prioritized, to leverage limited funding wisely.
- Streamline the project permitting process across infrastructure sectors. This should include safeguards to protect the natural environment, provide greater clarity to regulatory requirements, bring priority projects to reality more quickly and secure cost savings.
- Identify a pipeline of infrastructure projects attractive to private sector investment and public-private partnership.

### PREPARING FOR THE FUTURE

- Develop active community resilience programs to establish communications systems and recovery plans to reduce impacts on the local economy, quality of life and environment.
- To ensure long-term utility, consider emerging technologies and shifting social and economic trends – such as autonomous vehicles, distributed power generation and storage and larger ships – when building new infrastructure, to assure long-term utility.
- Improve land use planning at the local level to consider the function of existing and new infrastructure, the balance between the built and natural environments and population trends in communities of all sizes, now and into the future.
- Support research and development into innovative materials, technologies and processes to modernize and extend the life of infrastructure, expedite repairs or replacement and promote cost savings.

## About ASCE-OHIO

The Ohio Council of Local Sections of the American Society of Civil Engineers (Ohio Council) was organized in 1969 to focus statewide attention on issues of interest and concern to the approximately, 3,300 ASCE Members in Ohio. There are six Local Sections including Akron-Canton, Central Ohio, Cincinnati, Cleveland, Dayton, and Toledo. The Ohio Council meets twice annually and activities are supported by the Local Sections.

## CONTACT US

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## 2021 REPORT CARD FOR OHIO'S INFRASTRUCTURE



## Infrastructure Is Important

Ohio's infrastructure plays a vital role in the quality of life for the state's residents and visitors while also enabling commerce for local businesses and freight. Ohio roadways and bridges carry the third highest freight volume in the U.S., and accommodate the sixth most vehicle miles travelled, making the state an essential tool in the national economy. While surface transportation, rail, ports and inland waterways are all meeting the needs of Ohioans, continued investment is needed to sustain these volumes, expand the local economy, and ensure no sector is left behind.

Further, supporting Ohio is the transit systems which needs to become an immediate priority. With so many travelers coming to and through the state, local businesses cannot thrive, and the local economy will become stagnant without reliable methods of transportation for all individuals. The report card's findings also underscore Ohio's concerted efforts to modernize and innovate in the state's roads and energy grid. While these successes are notable, decision makers shouldn't become overly consumed with next-generation technologies at the expense of addressing current needs.

Overall, as stewards of our infrastructure, civil engineers, policy makers, and the general public need to advocate for infrastructure that supports the state's economy, while holding public safety and quality of life in utmost importance.

## How You Can Get Involved

- Get the full story behind this Report Card at [www.infrastructurereportcard.org/Ohio](http://www.infrastructurereportcard.org/Ohio).
- Find out the condition of the infrastructure near you on the Save America's Infrastructure app available on iTunes and GooglePlay.
- 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](http://www.infrastructurereportcard.org/take-action).

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# 2021 OHIO'S INFRASTRUCTURE REPORT CARD

The 2021 Report Card for Ohio's Infrastructure gave the state an overall GPA of a C-. Ohio's civil engineers studied 16 categories of infrastructure. Of those 16, two infrastructure categories are in good condition, seven are in mediocre condition, and seven are in poor condition.

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

## BRIDGES

Ohio is home to 44,736 bridges, of which 58% are rated in good condition, 36% are in satisfactory or fair condition and 6% are in poor condition. There are 2,012 (4.5%) bridges that require a reduced load capacity and 200 that are closed altogether. Starting in 2018, the Ohio legislature enabled counties to generate additional revenues for improving their local transportation network by levying a \$5 permissive fee on vehicle registration, though increases have not been uniformly adopted across the state. In 2019, state leaders raised the state's gas tax from \$0.280 cents to \$0.385 cents. Overall, Ohio faces a significant funding shortfall, particularly in addressing the state's future needs. However, an increased emphasis on system preservation has helped to hold off the growing needs of Ohio's bridges.

## DAMS

There are more than 2,500 dams in Ohio of which 1,472 are state-regulated. The Ohio Department of Natural Resources, Division of Water, Dam Safety Section is responsible for inspection of Ohio's dams. Of the Ohio Dam Safety regulated dams, 33% are deficient, and nearly 80% have Emergency Action Plans, slightly less than the national average. Nearly 60% of Ohio dams are privately owned. The 2019 Dam Safety Section budget was over \$1.7 M. Staff work load has increased over the years. It is estimated that the repair cost for Ohio's deficient dams is nearly \$300 M. In calendar year 2019, 23 state-regulated dams were repaired of which seven state-regulated high hazard potential dams were remediated because of hydraulic/structural deficiencies.

## DRINKING WATER

Drinking water infrastructure in Ohio has sufficient source, treatment, and distribution networks and facilities to meet current and expected residential and commercial demands. In the last decade, many large water utilities have improved their treatment systems to meet increasingly stringent regulations, addressed new water quality challenges, and increased infrastructure reliability and resilience. While these investments stretch limited funds, they are made at the expense of Ohio's aging distribution network. Currently, the system experiences greater than 35% water losses and breaks are projected to increase by 36% in some areas over the next 20 years. Most available funding for drinking water systems is in the form of loans.

## ENERGY

Ohio's electricity consumption continues to increase. This increase is attributed to more energy intensive industries and changes in service demand such as air conditioning, appliances and personal electronic devices. However, much of the existing transmission and distribution infrastructure is approaching its end of life and needs to be replaced and/or upgraded in order to maintain efficient and productive operations. Systemwide infrastructure assessments for capacity and resilience, adequate funding for improvements and operations, continued focus on public safety, and technological innovations are needed to minimize the length and frequency of power interruptions while providing the expected level of service.

## HAZARDOUS WASTE

With 38 sites listed in the National Priorities List, Ohio is ranked 11th in total number of sites listed. It is ranked 4th in total number of generators (1,255 entities) of hazardous waste under the Resource Conservation and Recovery Act program. Ohio has more than 9,000 vacant and contaminated brownfield properties that have the potential to bring in Ms of dollars in additional tax revenue, create jobs, and steward the environment by seizing the opportunity to redevelop them. Capital Projects funding is essentially lacking in Ohio's EPA budget with approximately \$194,000 in FY 2017, \$364,000 in FY 2018, and \$0 in FY 2019. Inadequate funding of the nation's superfund program and lack of capital funding in Ohio's EPA budget is slowing remedial action project completion and negatively impacting addition of sites to the NPL.

## INLAND WATERWAYS

The Ohio River is a fully "impounded" river with a series of 19 navigation dams, carries more commercial tonnage than any other impounded river in the world, and links commercial navigation from the eastern third of the country to the Mississippi River basin and Gulf Coast. Ohio's inland waterway system is comprised of the 451 miles of the Ohio River and 9 navigation locks and dams. Commodities passing through these locks and dams in 2018 were valued at \$5.66 B. There is an estimated need of approximately \$120 M to address critical maintenance over the next 15 years. However, a "Fix as Fail" approach to repairs accompanied by unreliable funding streams are likely to increase the frequency of failures and outage times in the future, which would result in economic losses to Ohio and the nation.

## LEVEES

Levee systems are vitally important to large portions of the State of Ohio, as it faces flood risk from multiple threats, most significantly from the Ohio River Valley and Lake Erie. Ohio's network of levees reduce flood risk for more than 151,000 people and \$27.5 B in property. However, a majority of the state's levees are nearly 50 years old or more, which is beyond their design life. The mechanical and electrical components of these systems are deteriorating, requiring replacements or an increase in costly maintenance. The large majority of levee systems in Ohio have not had risk assessments performed to classify their condition, and there are no consistent standards associated with the maintenance and ongoing inspection of levees in the state.

## PARKS

Ohio's park infrastructure is mostly in fair to good condition, the total area of park land is insufficient for Ohioans, as evidenced by the state's rank of 44th out of the 50 states in acres of park land per resident. Because of funding constraints, the operation and maintenance of several of these lands is inadequate, resulting in deteriorating conditions of roads, bridges, dams, and other structures. As an example, the Ohio Department of Natural Resources, ODNR, allocates approximately \$3.5 M/year for surface maintenance, resulting in a shortfall of \$6.2 M/year. On the upside, our parks are relatively resilient, considerably safe, and remarkably innovative, including the use of various funding sources.

## PORTS

Ohio's ports have 716 miles of navigable waterways, are 8th in the nation for annual tonnage, and annually move goods valued at over \$11 B. Currently, the state's ports are aging with insufficient infrastructure to handle modern cargo in the 21st century. More importantly, ports in Ohio are undercapitalized to address future trends and infrastructure needs. Port structure in Ohio is decentralized and locally chartered, allowing ports to be responsive and adaptable to the needs of local, microeconomic drivers. However, this has led to Ohio lacking a cohesive funding approach that allows strategic investment in ports to achieve highest economic benefits from their capacity and unique attributes. The needs of public ports within Ohio outpace available funding when coupled with the increased cost of maintaining and reinvesting in aging infrastructure.

## RAIL

Ohio has an extensive rail network that is closely integrated with the State's economy. Ohio's 38 freight railroads (3 Class I, 1 Class II and 34 Class III) carry approximately 289M tons for freight annually. Ohio ranks 4th in the nation in the total miles of track with 5,188 miles and total number of highway/rail grade crossings with 5,737 at-grade vehicular public crossing. Ohio ranks 2nd in the nation in the number of intermodal terminal facilities with 12. There are also more than one hundred transload facilities and numerous maritime facilities along Lake Erie and the Ohio River that have rail service.

## ROADS

Located within a day's drive of 60 percent of the population of the US and Canada, Ohio maintains one of the most extensive and heavily travelled roadway systems in the Nation containing nearly 123,000 miles of roadway consisting of over 262,000 miles of total road lane miles and over 44,000 bridges bridges. This places Ohio's system 2nd in the nation for number of bridges, 3rd largest in freight volume, 4th in the nation for total interstate lane miles, and 6th largest in total vehicle miles travelled. Ohio has about the same percentage of roadways in poor condition as the national average. Even though Ohio's roadway network is extensive, congestion costs Ohio motorists an estimated \$4.7 B each year in lost time and wasted fuel. In 2019, the Ohio General Assembly approved a transportation budget that included a variety of revenue enhancements such as increases to the motor fuel tax and vehicle registration fees which are estimated to generate an additional \$865 M for Ohio's roads and bridges per year. Regardless, more funding is required to eliminate or narrow the gap between funding available and funding required.

## SCHOOLS

Ohio suffers from a lack of recent data on the quality of school infrastructure. The most recent comprehensive study was ordered in 1997, and showed a need for \$10.2 billion for repair and reconstruction of existing schools. However, since then, Ohio has remained near the national average of annual operations and maintenance, spending and total school-construction capital outlay (about 5% and 11% above national average). Meanwhile, capacity is sufficient, as Ohio's student enrollment is projected to decrease by 5-12% between 2012 and 2024. In 2019, the Ohio legislature overhauled the school allocation and sent an additional \$600 million to schools over the first two years of implementation. However, spending on school infrastructure is inadequate to combat impacts of aging facilities, some of which are over 100 years old.

## SOLID WASTE

The diverse programs in Ohio solid waste management provide many options for the recovery, and/or disposal of solid waste. Most landfills are self-funded through waste collection fees. Disposal rates range between \$9 and \$77 per ton, with an average of approximately \$44.50 per ton. A large portion of this revenue goes directly to the operations and maintenance of the individual landfills. In 2018, Ohio received solid waste at 50 disposal facilities, yielding a combined permitted disposal capacity of over 770 M cubic yards, or, over 35 years of expected life. Residential and commercial (R/C) Solid wastes generated within Ohio totaled more than 14 M tons during 2018, equating to 6.85 pounds per person per day, greater than the 2017 national average of 4.51 pounds per person per day. Based on available data, Ohio's solid waste industry is well-performing, especially with respect to capacity, operations, public safety and resilience.

## STORMWATER

To meet the needs of Ohio's nearly 12 M residents, the state has an extensive portfolio of aging, undersized stormwater infrastructure built to protect public health and the environment. Ohio has approximately 109 stormwater utilities that charge an average of \$3.50 monthly, less than the national average of \$5.85. While nearly 75% of the state's stormwater infrastructure funding comes from state and local sources, Ohio's state infrastructure spending ranks 41st in the nation. Ohio currently spends between \$400 to \$600 M annually on its stormwater infrastructure, but Ohio still needs at least \$600 M in annual funding to keep pace with the estimated \$1.2 B required to manage both existing infrastructure and future needs related to predicted climate change impacts.

## TRANSIT

Ohio has 27 urban and 34 rural transit systems serving 83 of Ohio's 88 counties. These systems provided 100.6 M rides in 2018 a 25% decrease in the last 15 years. In 2018, approximately 18% of Ohio's revenue vehicles exceeded their useful lives, a 55% increase over the nearly 12% of vehicles in 2003. This coincides with the dramatic and long-term lack of state funding for transit that has decreased from \$42.3 M in 2000 to \$18.3 M in 2005 to \$15.8 M in 2008 and further reduced to \$7.3 M in 2013. In 2018 the State of Ohio provided only \$6.5 M or \$0.57 per person ranking 42nd in per capita funding while the average was \$58.69 per capita, over 100 times more than Ohio.

## WASTEWATER

Approximately 81% of Ohio's 11.8 M residents rely on municipal wastewater collection systems and treatment plants. Much of this infrastructure is old and in need of repair, upgrade, or replacement. According to survey results published in the 2016 Clean Watersheds Needs Survey (CWNS), Ohio needs \$17.0 B to meet the water quality and human health goals of the Clean Water Act (CWA). An Ohio survey published in 2019 found annual rates have increased for a typical customer by almost 70% in the last 10 years. It is likely that this trend will continue as further emphasis on CSO reductions and elimination of SSO outfalls occur. Unfortunately, due to the limited availability of grant funds and priority given to those communities placed under formal EPA intervention, the response of most communities has been to address the immediate needs to resolve the EPA action or address current problems, rather than maintaining and upgrading assets.

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