

Kentucky Grades



Aviation
C+



Bridges
C



Dams
D+



Drinking Water
C+



Energy
B-



Hazardous Waste
D



Levees
D+



Roads
C-



Solid Waste
B-



Stormwater
D-



Wastewater
D+



**OVERALL
GPA**

About the Grades

The 2026 Report Card for Kentucky's Infrastructure was written by a committee of more than 20 civil engineers across Kentucky who volunteered their time to collect and analyze data, prepare and review their findings, and present their conclusions. The committee worked with staff from ASCE National and ASCE's Committee on America's Infrastructure to provide a snapshot of our Commonwealth's infrastructure, as it relates to us locally and on a national level. The Report Card sections are graded based on the following eight criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. ASCE defines these grades as follows:



**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



1 Establish sustainable, long-term infrastructure funding. Increase and stabilize state and local investment, maximize available federal funding, and pursue innovative financing and partnerships to address aging infrastructure, maintenance backlogs, and growing capital needs. Consistent funding reduces costs and keeps the civil engineering profession competitive in the employment market.



2 Prioritize asset management and preventive maintenance. Expand condition assessments, life-cycle planning, data-driven decision-making, and preventive maintenance to extend asset life, identify critical needs, reduce emergency repairs, and make the most effective use of limited resources.



3 Build resilience into infrastructure planning and investment. Incorporate hazard mitigation, risk assessment, updated design standards, redundancy, and emergency preparedness into infrastructure decisions to reduce vulnerabilities to flooding, severe storms, and other extreme weather events and improve recovery.



4 Strengthen Kentucky's infrastructure workforce. Expand partnerships with universities, technical schools, training programs, and industry to recruit, train, and retain the engineers, operators, technicians, and skilled tradespeople needed to design, operate, and maintain infrastructure.



5 Plan proactively for growth and changing infrastructure demands. Strengthen coordination among state and local governments, utilities, infrastructure owners, and regional partners to prepare for population and economic growth, changing land use, emerging technologies, and increasing demands on energy, water, and transportation systems.



6 Balance infrastructure investment with affordability. Develop sustainable funding and rate structures that reflect the cost of providing reliable infrastructure while leveraging assistance programs, regionalization, federal funding, and other strategies to limit burdens on households and communities.



7 Modernize policies and regulations. Update standards, permitting, and planning requirements to support sustainable growth, effective maintenance, and future infrastructure needs.

About ASCE-Kentucky

Established in 1936, the ASCE Kentucky Section is a professional organization serving civil engineers across the Commonwealth through four active branches. The Section provides opportunities for members to learn from their peers, share knowledge, collaborate, and build professional relationships. Through conferences, technical programs, scholarships, and other activities, ASCE Kentucky supports the continued development of the civil engineering profession. At its core, the organization supports the purpose of civil engineering: protecting people and the environment through smart, safe, and economical infrastructure solutions.

How You Can Get Involved

Get the full story behind this Report Card at
www.infrastructurereportcard.org/Kentucky.

Ask your elected leaders what they're doing to keep up with
your neighborhood's infrastructure. Use your ZIP Code to get
your list of elected officials at
www.infrastructurereportcard.org/take-action.

INFRASTRUCTURE MATTERS

Kentucky's infrastructure is critical to economic growth, public health and safety, and quality of life across the Commonwealth. From transportation and energy systems to water and wastewater infrastructure, these assets support resilient communities and economic opportunity. While Kentucky has made significant progress in recent years, continued success will require sustained investment, coordinated planning, workforce development, and a focus on long-term resilience.

One of the most pressing issues affecting Kentucky's infrastructure is the increasing frequency of extreme weather. Flooding, tornadoes, and severe winter weather have caused widespread damage, exposing vulnerabilities, and disrupting essential services. Recent disasters have impacted water and wastewater systems, damaged roads and bridges, strained energy infrastructure, and generated significant debris. These events demonstrate that reactive recovery alone is not sustainable. Continued investment in resilience planning, system hardening, hazard mitigation, and updated design standards can help communities anticipate risks, strengthen infrastructure, and reduce service interruptions and recovery costs.

Workforce development is also a critical challenge across nearly all infrastructure sectors. Kentucky depends on skilled engineers, operators, technicians, and tradespeople to design, operate, and maintain increasingly complex systems, but shortages are driven by retirements, private-sector competition, and limited training pipelines. Smaller and rural communities face additional challenges recruiting and retaining qualified personnel. Declining enrollment of civil engineering students and rising higher education costs may further constrain the pipeline of future engineers. Expanding STEM education, strengthening training partnerships, and improving access to higher education and recruitment and retention programs will be essential to building Kentucky's infrastructure workforce.

Affordability remains a central consideration in infrastructure investment. Aging systems, resilience needs, and growing demand require significant upgrades, but utilities and agencies must balance these investments with residents' and businesses' ability to pay. Funding gaps are substantial in sectors such as water and wastewater, yet raising rates can be challenging, particularly for low-income households. Maintaining affordable energy and transportation costs is also critical to economic competitiveness and household stability. Strategic planning, targeted investment, federal funding, and public-private partnerships can help address these challenges while keeping improvements accessible and equitable.

Emerging trends and regulatory requirements further reinforce the importance of forward-looking planning. Growing demand for energy and water, data center development, electric vehicles, and evolving requirements such as PFAS regulations will place new pressures on infrastructure systems and require coordinated planning and investment across sectors.

Land use and development patterns present further challenges. With 120 counties and only 30 planning boards, Kentucky faces limitations in coordinating residential growth, data centers, and industrial development, placing pressure on agricultural lands, natural resources, and local economies. Addressing these challenges early can align infrastructure investments with future growth, protect natural resources, and maintain system reliability.

Looking ahead, Kentucky can strengthen its infrastructure by shifting from reactive recovery to proactive planning focused on preparedness, resilience, and long-term sustainability. Identifying risks, monitoring emerging trends, and investing before problems become emergencies can reduce vulnerabilities, improve reliability, and lower long-term costs while supporting economic competitiveness, protecting public resources, and enhancing quality of life.



REPORT CARD FOR KENTUCKY'S INFRASTRUCTURE



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The 2026 Report Card on Kentucky’s Infrastructure

gave the state an overall G.P.A. of C-. Kentucky’s civil engineers studied eleven infrastructure categories. Of those eleven, two infrastructure categories are in good condition, five are in mediocre condition, and four categories are in poor condition.

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



Aviation C+

Kentucky’s aviation system plays a vital role in the Commonwealth’s economy and transportation network. The state’s airports generate \$23.7 billion in annual economic activity, supporting military operations, medical transport, and cargo movement for the e-commerce marketplace. Kentucky has also experienced tremendous growth in its passenger activity with all primary commercial service airports back to or exceeding pre-pandemic enplanement activity, providing service to 12.8 million passengers in 2024. The condition of Kentucky’s commercial service airports meets or exceeds Federal Aviation Administration (FAA) standards, as these facilities continue to invest in infrastructure to meet demands. Additionally, many of the general aviation airports in the state have been undergoing pavement evaluations in recent years to ensure runways and taxiways are in good repair; however, the focus has shifted to runway and taxiway lighting, visual aids and approach lighting, runway safety obstruction removal, and terminal facilities. Continued investment will be necessary to ensure Kentucky’s aviation system remains safe, reliable, and capable of supporting future economic growth.



Bridges C

Kentucky’s 14,508 bridges are critical to the state’s transportation network, supporting daily travel, economic activity, and freight movement across the Commonwealth. As of 2025, 7.45% of bridges are in poor condition, while nearly two-thirds are in fair condition, representing a significant portion of the system at risk of further deterioration without continued investment. Approximately 4.6% of daily bridge traffic occurs on bridges in poor condition, and there are 4,437 bridges with posted load restrictions, impacting mobility and freight movement. The average bridge age is 48 years, approaching the traditional 50-year service life, meaning that the need for rehabilitation and replacement is increasing. While Kentucky has implemented strong asset management practices and secured major federal investments, funding levels remain insufficient to meet long-term needs, particularly for locally owned bridges, which are more likely to be in poor condition. Continued investment in preservation, resilience, and local system support will be essential to maintain safe and reliable bridge infrastructure.



Dams D+

Dams across Kentucky provide essential water management functions, including flood control, water supply, and recreation, while supporting the state’s economy and public safety. Population growth and development have elevated the potential risk posed by dams, increasing the number classified as high-hazard as more people and structures are located downstream. Nearly 55% of the Commonwealth’s dams (584 of 1074 total dams) are over 60 years old, exceeding their typical design life.

Emergency preparedness has improved. Legislation enacted in 2023 gives the state authority to adopt regulations requiring owners of high- and significant-hazard dams to maintain Emergency Action Plans (EAPs). While 75% of high-hazard dams reportedly had EAPs in 2019, that percentage is now 25%. In recent years, funding for dam safety programs and rehabilitation hasn’t been sufficient to address dam-related needs, limiting the state’s ability to continue to address aging infrastructure. Additional investment is needed to rehabilitate dams, improve maintenance and inspection capabilities, strengthen emergency preparedness, and support staffing and public education efforts.



Drinking Water C+

Kentucky’s drinking water systems serve approximately 4.5 million residents through 1.9 million service connections, and most meet both self-imposed and regulatory standards for water quality. However, aging infrastructure, workforce challenges, and financial constraints present ongoing challenges. Public water systems have a combined treatment capacity of 1.1 billion gallons per day, yet approximately 27% of treated water is lost or unbilled, indicating system inefficiencies. Smaller systems in particular struggle with limited staffing and resources, with only 12% demonstrating sufficient technical, managerial, and financial capacity. The state faces an estimated \$7.84 billion in drinking water infrastructure needs over the next 20 years. Emerging contaminants such as per- and polyfluoroalkyl substances (PFAS) and revised federal lead regulations are increasing costs and operational complexity. Severe weather events have also highlighted system vulnerabilities. Continued investment, regional collaboration, and workforce development will be essential to maintaining safe, reliable drinking water across the Commonwealth.



Energy B-

Kentucky’s energy system provides reliable, affordable service, supported by diverse utilities and low-cost electricity. Coal remains the dominant generation source, accounting for nearly 67% of in-state electricity production in 2024, while natural gas and renewables are increasing their shares. Kentucky is also an energy corridor, with transmission and pipeline networks connecting energy supplies and markets across the Midwest and other regions of the United States.

Current capacity meets demand, but aging infrastructure, evolving energy markets, and more frequent extreme weather events present growing challenges. Electricity demand in Kentucky is projected to increase by more than 40% by 2050, driven in part by increased electrification in transportation, industry, and buildings. This anticipated growth will require expansion of both generation capacity and transmission infrastructure. In response, utilities are already investing in grid modernization and resilience, while diversifying their energy resources to include solar, battery storage, pumped storage hydropower, and advanced nuclear energy. The Kentucky Nuclear Energy Development Authority and new nuclear initiatives reflect growing interest in nuclear energy. Long-term needs include continued investment in transmission, distribution, and workforce development to maintain reliability and affordability while supporting future growth.



Hazardous Waste D

Kentucky’s hazardous waste management system plays a critical role in protecting human health, natural resources, and communities across the Commonwealth. The Division of Waste Management (DWM) within the Energy and Environment Cabinet regulates hazardous waste generators, oversees contaminated site cleanup programs, and manages corrective actions for underground storage tanks and brownfield redevelopment. Through programs such as the Superfund Program and the Kentucky Brownfields Program, contaminated properties are being evaluated and redeveloped to support economic revitalization in local communities. Kentucky’s Emergency Response Team (ERT) is trained to respond immediately to environmental emergencies where hazardous materials may have been spilled. However, the Hazardous Waste Management Fund has experienced declining revenues while cleanup costs and regulatory demands continue to increase. Without additional funding, Kentucky will face growing challenges in addressing contaminated sites, promoting the proper disposal of household hazardous wastes, and the environmental impacts of increasingly frequent natural disasters.



Levees D+

Levees are a critical component of Kentucky’s flood risk reduction system, protecting more than 290,000 residents, 125,000 structures, and \$36 billion in property and assets. The Commonwealth’s 35 levee systems, totaling 127 miles, play a vital role in safeguarding communities along the Ohio and Mississippi Rivers and other waterways. However, Kentucky’s levee infrastructure is aging, with more than half of systems exceeding their 50-year design life and many mechanical components dating to the 1940s and 1950s.

While levee systems have performed well during recent major flood events, ongoing aging, limited funding, and staffing constraints tasked with oversight of these structures present growing challenges. Most levees are locally operated and maintained, often with limited resources, and many systems face increasing costs for repair and replacement.

To sustain system performance and reduce risk, Kentucky must invest in rehabilitation, strengthen funding mechanisms, improve emergency preparedness, and enhance coordination among levee owners and stakeholders.



Roads C-

Kentucky’s roadway system is a critical component of the Commonwealth’s economy, supporting the mobility of millions of residents and the movement of goods across the state. Approximately two million employed people in Kentucky in industries such as tourism, retail, agriculture, and manufacturing are completely dependent on the state’s road network. The network includes approximately 167,000 lane miles of pavement and facilitates nearly 42 billion vehicle miles traveled (VMT) annually. Nearly one-third of Kentucky’s major roads are in poor or mediocre condition, increasing costs for motorists and placing pressure on limited transportation funding. Traffic safety is also a concern, as the state’s fatality rate per VMT remains higher than the national average. Kentucky continues to invest in its roadway network while using asset management, data-driven planning, and innovative technologies to prioritize projects and improve system performance. However, rising construction costs, staffing constraints, and the growing impacts of severe weather further complicate long-term infrastructure management. Addressing Kentucky’s roadway conditions, safety, and long-term funding challenges will require sustained investment and strategic prioritization to maintain a safe, reliable, and resilient roadway system.



Solid Waste B-

Kentucky generates approximately 5.6 million tons of municipal solid waste each year, or about 6.7 pounds per person per day, which is well above the national average. While the state has more than 40 years of landfill capacity and universal access to waste collection across all 120 counties, recycling rates have declined from 31.7% in 2019 to 24.14% in 2024, indicating growing reliance on landfills. The solid waste system is largely self-funded through tipping and permitting fees, generating an estimated \$254 million annually, but funding remains insufficient to address long-term needs such as landfill remediation and waste diversion. The last time Kentucky updated the solid waste permitting fees was 2010. More than 500 orphan landfills remain to be evaluated or closed across the state, posing potential ongoing environmental and public health concerns. Increasingly frequent severe weather events are also placing added strain on debris management systems. Strengthening recycling programs, investing in legacy waste cleanup, and supporting workforce development will be critical to improving system sustainability and resilience.



Stormwater D-

Kentucky’s stormwater infrastructure plays a critical role in managing runoff, protecting water quality, and reducing flood risk. Stormwater services are provided through 109 regulated Municipal Separate Storm Sewer System (MS4) communities, including 15 stormwater utilities serving approximately 1.5 million residents, and numerous unregulated rural areas. However, much of the Commonwealth lacks dedicated funding and comprehensive system oversight. Aging infrastructure, limited condition data, and increasing development pressures are straining system capacity. Stormwater runoff contributes significantly to water quality impairments, with nearly 67% of assessed waterbodies failing to meet at least one of seven designated uses. Kentucky also faces a substantial funding gap, with needs exceeding available resources and average stormwater utility fees below the national benchmark. More frequent extreme weather and continued urbanization are further increasing demands. Sustained investment, improved asset management, and workforce development will be critical to maintaining reliable, resilient stormwater infrastructure.



Wastewater D+

Kentucky’s wastewater infrastructure plays a vital role in protecting public health and water quality across the Commonwealth. About 67% of residents are served by public sewer systems, with treatment plants providing a combined capacity of 708 million gallons per day. However, aging infrastructure, funding limitations, and workforce pipeline challenges continue to strain system performance. In 2021, 40% of sewer lines were more than 50 years old, increasing the risk of failures, overflows, and service disruptions. The state faces an estimated \$6.6 billion in wastewater infrastructure needs, while many utilities are hesitant to raise rates due to affordability concerns. Efforts to improve system performance, including connecting smaller systems to larger facilities, have helped reduce water quality impacts. At the same time, stronger storms and flooding are placing additional stress on wastewater systems. Without sustained investment, better planning, and workforce support, Kentucky will face growing challenges in maintaining reliable and resilient wastewater infrastructure.

Cover photo of US 460 in Pike County, photo credit: Neil Wicker Aerial Photography